ANNUAL COMPLIANCE REPORT

EPBC 2007/3333
NEW SPORTING FIELD
BUNBURY CATHEDRAL GRAMMAR SCHOOL
GELORUP, WESTERN AUSTRALIA

17 JANUARY 2017 TO 16 JANUARY 2018

PREPARED FOR:

BUNBURY CATHEDRAL GRAMMAR SCHOOL
ABN: 36 007 093 540

APRIL 2018

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environmental and geoscience consultants

EPBC NO 2007/3333
ANNUAL COMPLIANCE REPORT 2017

Distribution List:

Company	Contact name	Copies	Date
Bunbury Cathedral Grammar School	Jennifer Nobbs, Bursar	Electronic	9 April 2018

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Draft Annual Compliance Report	Kirsi Kauhanen	Kristy Sell	9 April 2018
Final Annual Compliance Report	Kirsi Kauhanen	Kristy Sell	9 April 2018

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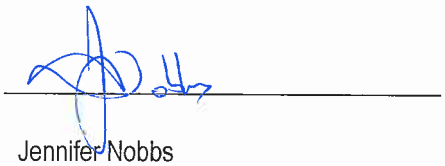
1. DECLARATION OF ACCURACY

In making this declaration, I am aware that sections 490 and 491 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) make it an offence in certain circumstances to knowingly provide false or misleading information or documents. The offence is punishable on conviction by imprisonment or a fine, or both. I declare that all the information and documentation supporting this compliance report is true and correct in every particular. I am authorised to bind the approval holder to this declaration and that I have no knowledge of that authorisation being revoked at the time of making this declaration.

Signed:	
Full name:	Jennifer Nobbs
Position:	Bursar
Organisation:	Bunbury Cathedral Grammar School
Date:	15 / 4 / 2018

2. INTRODUCTION

In December 2010, Bunbury Cathedral Grammar School (BCGS) was granted approval EPBC 2007/3333 under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) to clear 2.3 ha of native vegetation for a new sporting field at the school premises on Lot 73 Allen Road, Gelorup, Western Australia (WA). In order to offset the impacts of the vegetation clearing on Western Ringtail Possum (*Pseudocheirus occidentalis*) and White-tailed Black Cockatoos (*Calyptorhynchus baudinii* and *C. latirostris*), protected under the *EPBC Act*, the approval required the implementation of a Rehabilitation Management Plan (RMP) at Lot 9 on Plan 43302 in Stratham, WA.

The original RMP (September 2010) was a five year plan implemented from May 2011 to April 2016. Due to some of the set completion criteria not being achieved by the end of April 2016, an extension to the rehabilitation program was necessary. EPBC 2007/3333 approval was revised with a Variation to Conditions signed on 23 December 2016 requiring preparation and implementation of a revised RMP. RMP Rev2 (March 2017) was approved in March 2017.

This document comprises the Annual Compliance Report for 2017, for the reporting period of 17 January 2017 to 16 January 2018. It has been prepared to fulfil the requirements of the EPBC 2007/3333 Variation to Conditions (December 2016) or when a condition did not change the original EPBC 2007/3333 approval (December 2010) and the associated RMP Rev2 (March 2017).

3. DESCRIPTION OF ACTIVITIES

EPBC Number:	2007/3333 Original approval dated 21 December 2010 Variation to Conditions dated 23 December 2016
Project Name:	Construction of New Sporting Field
Approval Holder and ABN:	Bunbury Cathedral Grammar School (ABN: 36 007 093 540)
Approved Action:	To construct new sporting field at the school premises involving clearing of up to 2.3 ha of remnant vegetation.
Location of the Project:	Vegetation clearing: Lot 73 Allen Road, Gelorup, WA Offset rehabilitation: Lot 9 Plan 43302 Stratham, WA
Reporting Period:	17 January 2017 - 16 January 2018
Activities undertaken during Reporting Period:	Finalisation and implementation of RMP Rev2 (March 2017).
Person accepting responsibility for the report – signed declaration (see Section 1):	Jennifer Nobbs – Bursar
Date of Report:	09 April 2018

4. ASSESSMENT OF COMPLIANCE WITH EPBC 2007/3333

Compliance with EPBC 2007/3333 during the Reporting Period was determined via a desktop audit by Senior Environmental Scientist Kirsi Kauhanen from MBS Environmental. It comprised two main parts as follows:

- Assessment against EPBC 2007/3333 Variation to Conditions dated 23 December 2016, or when a condition did not change, against the original EPBC 2007/3333 approval dated 21 December 2010. The associated compliance assessment results are detailed in Appendix 1
- Assessment against RMP Rev2 (March 2017). The associated compliance assessment results are detailed in Appendix 2.

5. NON-COMPLIANCE WITH EPBC 2007/3333

5.1 SUMMARY OF NON-COMPLIANCE

No non-compliances were identified with the EPBC 2007/3333 Variation to Conditions (December 2016) or where applicable the original EPBC 2007/3333 approval (December 2010) during the Reporting Period (Appendix 1).

One non-compliance was identified with the RMP Rev2 (March 2017) during the Reporting Period, being the failure to plant the minimum of 10,538 seedlings as detailed in two sections of the RMP (Table 1, Appendix 2). While more than the required number of seedlings were ordered (11,550), only 10,200 local provenance seedlings of the target species could be supplied by the nursery. The non-compliance had no practical adverse impact. The milestones set for plant densities for end of December 2017 were still met and any need for additional infill planting will be addressed as part of the winter 2018 plantings.

Table 1: Non-Compliances with RMP Rev2 (March 2017)

RMP Section	Key Management Measures	Compliance from 17/01/17 to 16/01/18	Evidence/Comments
6.2.7 Planting	Plant 10,538 seedlings in 2017	Non-compliant	More than the required number of seedlings were ordered (11,550) (Appendix 10), but only 10,200 were supplied (and planted) (Appendix 11).
7 Performance and Completion Criteria (Table 9 of RMP Rev2).	Performance targets	Partly non-compliant	Target of planting 10,538 seedlings in 2017 was not met. More than the required number of seedlings were ordered (11,550) (Appendix 10), but only 10,200 were supplied (and planted) (Appendix 11).

5.2 CORRECTIVE/PREVENTATIVE ACTIONS TAKEN

Supply issues with ordered seedlings occur at times, but generally the numbers that cannot be supplied are minor. The original seedling order was intentionally larger than required to cater for this type of an issue.

As noted earlier, any need for additional infill planting will be addressed as part of the winter 2018 plantings.

5.3 RESULTS OF CORRECTIVE/PREVENTATIVE ACTIONS

The preventative action of including a buffer margin in the original seedling order prevented the non-compliance in seedling numbers being larger than it was.

5.4 FURTHER ACTIONS REQUIRED

None.

6. NEW ENVIRONMENTAL RISKS

There were no new risks identified during the Reporting Period. The RMP Rev2 (March 2017) includes a comprehensive risk assessment.

7. ACTIVITIES PLANNED FOR NEXT REPORTING PERIOD

Over the next Reporting Period from 17 January 2018 to 16 January 2019, the following activities are planned:

- BCGS will continue to implement the revised RMP Rev2 (March 2017) including infill planting of seedlings during winter 2018, weed control and biannual monitoring.
- BCGS will seek to remove the 'Sumpland' area from further rehabilitation obligations. Rehabilitation monitoring consistently indicates that completion criteria (environmental outcomes) for this rehabilitation area have been met.

APPENDICES

APPENDIX 1: COMPLIANCE ASSESSMENT - EPBC 2007/3333 VARIATION TO CONDITIONS (DECEMBER 2016) AND ORIGINAL EPBC 2007/3333 APPROVAL (DECEMBER 2010)

Table A1: Compliance Assessment - EPBC 2007/3333 Variation to Conditions (December 2016) and original EPBC 2007/3333 Approval (December 2010)*

Condition Number*	Condition	Compliance from 17/01/2017 to 16/01/18	Evidence/Comments
1	The person taking the action must clear no more than 2.3 hectares of native vegetation at the school premises on Lot 73 Allen Road, Gelorup, Western Australia in the area depicted with the pink line on the map at Attachment A.	Compliant	Clearing was undertaken in 2011 (as previously reported) and no additional clearing under this approval has been undertaken since.
2	By 30 March 2017 the approval holder must submit for the Minister's approval a revised version of the Rehabilitation Management Plan (RMP) at Attachment B of the approval dated 21 December 2010. The purpose of the revised RMP is to rehabilitate the Rehabilitation Areas to provide habitat for the Western Ringtail Possum (*Pseudocheirus occidentalis*) and White-tailed Black Cockatoos (*Calyptorhynchus baudinii* and *C. latirostris*). The revised RMP must be prepared in accordance with the Department's *Environmental Management Plan Guidelines (2014)*, and must include: 1. The following milestones; By 31 December 2017 achieve and maintain an overall plant density: i. of 1500 stems per hectare in the Western Rehabilitation Area and Eastern Rehabilitation Areas. ii. of 380 stems per hectare within the Sumpland Rehabilitation Area. 2. The following outcomes; By 30 June 2021, the Rehabilitation Areas will achieve: i. a self-sustaining vegetation community that, in the longer term, will provide habitat for the Western Ringtail Possum (*Pseudocheirus occidentalis*) and White-tailed Black Cockatoos (*Calyptorhynchus baudinii* and *C. latirostris*). ii. a species diversity of at least 80% of the appropriate species. iii. an average live weed cover of less than 50%. 3. Environmental management actions to achieve the above milestones and outcomes, including; i. site planting activities. ii. ongoing site maintenance. .	Compliant	RMP Rev2 was submitted on 20 March 2017 and was approved on 29 March 2017 (Appendix 3).

Condition Number*	Condition	Compliance from 17/01/2017 to 16/01/18	Evidence/Comments
2	4. Environmental management actions to achieve the above milestones 5. A monitoring program, which must include: i. performance indicators comprised of clear and concise criteria which are capable of accurate and reliable measurement, against which achievement of outcomes will be determined. ii. monitoring requirements, including the timing and frequency of monitoring activities to detect changes in the performance indicators, to determine if outcomes are being achieved, and to inform adaptive implementation of the RMP. 6. Trigger values, and corrective actions where trigger values are reached, reporting requirements, and how environmental incidents and emergencies will be managed. 7. Effort and resources to ensure outcomes and milestones are achieved when monitoring results indicate that outcomes or milestones are not on track to being achieved. 8. Annual reporting requirements including a commitment to notify the Department within 14 days following a failure to meet milestone targets outlined in condition 2. If the Minister approves the revised RMP the revised RMP must be implemented.		
3	~~Within 5 years of the commencement of the action, the person taking the action must implement all of the activities and meet all of the completion criteria in the Rehabilitation Management Plan at Condition 2 above to the satisfaction of the Minister. Any changes to the outcomes to be achieved in the Rehabilitation Management Plan must be approved by the Minister.~~	Not applicable	Condition revoked in Variation to Conditions (December 2016).
4	Within 30 days of commencement of the action, the person taking the action must advise the Department in writing the actual date of commencement.	Not relevant to reporting period	Action substantially commenced in 2011.
5	If at any time after 5 years from the date of this approval, the Minister notifies, in writing, the person taking the action that the Minister is not satisfied that there has been substantial commencement of the action, the action must not thereafter be commenced without written agreement of the Minister.	Not relevant	Action substantially commenced in 2011.
6	If the person taking the action wishes to carry out any activity otherwise than in accordance with the plan, as specified in Condition 2, the person taking the action must submit to the Department for the Minister's written approval a revised version of that plan. The varied activity shall not commence until the Minister has approved the revised plan in writing. The Minister will not approve a revised plan unless the revised plan would result in an equivalent or improved environmental outcome. If the Minister approves the revised plan that plan must be implemented in place of the plan originally approved.	Not relevant to reporting period	There was no need to carry out activity otherwise than in accordance with RMP Rev2 (March 2017).

Condition Number*	Condition	Compliance from 17/01/2017 to 16/01/18	Evidence/Comments
7	The person taking the action must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval, including measures taken to implement the RMP required by this approval, and make them available upon request to the Department. Such records may be subject to audit by the Department or an independent auditor in accordance with section 458 of the EPBC Act, or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the Department's website. The results of audits may also be publicised through the general media.	Compliant	Relevant records attached to this Annual Compliance Report (Appendix 3 to Appendix 11). No records requested by the Department during the Reporting Period.
8	Within three months of every 12 month anniversary of the commencement of the action, the approval holder must publish a compliance report and provide documentary evidence providing proof of the date of publication to the Department by email (to EPBCMonitoring@environment.gov.au or another email address agreed to in writing by the Minister). The first compliance report must cover the period beginning on the day of the commencement of the action through 12 months, and subsequent compliance reports must cover the 12 month period after the previous compliance report. The approval holder may cease preparing compliance reports required by this condition with written agreement of the Minister. Compliance reports must: consider the Department's Annual Compliance Report Guidelines; and must address any contraventions of the conditions of this approval including requirements of the RMP; and must address whether outcomes and milestones required by these conditions have been met or are likely to be achieved.	Compliant	Annual Compliance Report 2016 was submitted to the Department on 17 March 2017 with a screen shot of the school's website (and link to the page) to show that the report had been made public on the same day (Appendix 4). Annual Compliance Reports for 2016 and 2017 were prepared in accordance with the Department's guidelines and address any contraventions of the conditions of the approval relevant to the reporting period.
9	Upon the direction of the Minister, the person taking the action must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the Minister. The independent auditor must be approved by the Minister prior to the commencement of the audit. Audit criteria must be agreed to by the Minister and the audit report must address the criteria to the satisfaction of the Minister.	Not relevant to reporting period	The Minister has not made such a request during the Reporting Period.
10	The revised RMP must be published on the approval holder's website within 1 month of being approved by the Minister.	Compliant	RMP Rev2 (March 2017) was approved on 29 March 2017 and posted on the school's website on 6 April 2017 (Appendix 5).
11	If the Minister believes that it is necessary or convenient for the better protection of listed threatened species to do so, the Minister may request that the person taking the action make specified revisions to the plan/s specified in the conditions and submit the revised plan/s for the Minister's written approval. The person taking the action must comply with any such request. The revised approved plan/s must be implemented. Unless the Minister has approved the revised plan/s, then the person taking the action must continue to implement the plan/s originally approved, as specified in the conditions.	Not relevant to reporting period	The Minister has not made such a request during the Reporting Period.

** Conditions 1, 4 and 5 of the original EPBC 2007/3333 approval did not change and are included in this table. Other conditions either changed, were revoked or added as detailed in EPBC 2007/3333 Variation to Conditions (December 2016).*

APPENDIX 2: COMPLIANCE ASSESSMENT - REHABILITATION MANAGEMENT PLAN REV2 (MARCH 2017)

Table A2: Compliance Assessment - Rehabilitation Management Plan Rev2 (March 2017)

RMP Section	Key Management Measures	Compliance from 17/01/17 to 16/01/18	Evidence/Comments
6.2.3 Fencing	The remaining boundary fencing (north, east, south sides) will be maintained to prevent livestock access from neighbouring properties. Trials involving additional fencing will be considered for the highest mortality areas to reduce grazing impact of kangaroos	Compliant	Fence monitoring was undertaken (Appendix 6 and Appendix 7). Eastern fence was upgraded. Livestock access was detected from the western side (where there should be no livestock) and addressed. A trial fenced enclosure in high mortality area was established (Appendix 7).
6.2.6 Weed Management	Two main control rounds per year (for winter and summer weeds respectively) unless site conditions indicate no benefit. Annual control of any Declared Pest species will also continue.	Compliant	Weed control was undertaken in January-March and June-July 2017 as per invoices attached (Appendix 8) and on a more ongoing basis since then as per records of the School maintenance team (Appendix 9). These covered Declared Pest species. Evidence of effective weed control was low live weed cover recorded in rehabilitation monitoring (Appendices 6 and 7).
6.2.7 Planting	Plant 10,538 seedlings in 2017	Non- compliant	More than the required number of seedlings were ordered (11,550) (Appendix 10), but only 10,200 were supplied (and planted) (Appendix 11).
	Further infill planting will be undertaken in 2018 and subsequent years as necessary.	Not relevant to reporting period	
	Planting will be undertaken during the late autumn – winter period following commencement of substantial seasonal rainfall.	Compliant	Planting undertaken in June-July 2017 following late commencement of substantial winter rains.
	Seedlings will be planted with a slow release native fertiliser pill.	Compliant	As per contractor invoice (Appendix 11).
	Plastic corflute tree guards will be used to protect young seedlings.	Compliant	As per contractor invoice (Appendix 11) and photos in monitoring report (Appendix 11).
	In the areas of very poor success rates, trials of additional treatments (e.g. water crystals and mulching) will be considered.	Compliant	Trials were considered. Soil wetter applied in selected areas (Appendix 11). Mulch applied in selected areas (Appendix 11).
	BCGS will consider undertaking student planting days at the site.	Compliant	Student planting day was undertaken on 29 June 2017 as noted on contractor invoice (Appendix 11).
6.2.9 Revegetation Species	Species for plantings will be chosen from list in Table 7 (of RMP Rev2).	Compliant	Monitoring results show that appropriate species were planted (Appendix 6 and Appendix 7).

RMP Section	Key Management Measures	Compliance from 17/01/17 to 16/01/18	Evidence/Comments
7 Performance and Completion Criteria (Table 9 of RMP Rev2).	Completion criteria (environmental outcome by latest 30 June 2021)	Not applicable to the reporting period	Not required to be achieved within the reporting period.
	Milestones (by 31 December 2017)	Compliant	Achieved as detailed in the spring 2017 monitoring report (Appendix 7).
	Performance targets	Partly non-compliant	Target of planting 10,538 seedlings in 2017 was not met. More than the required number of seedlings were ordered (11,550) (Appendix 10), but only 10,200 were supplied (and planted) (Appendix 11). Performance target on weed control was met as detailed in the spring 2017 monitoring report (Appendix 7).
8 Monitoring Program (Table 13 of RMP Rev2)	Photo monitoring	Compliant	Monitoring undertaken as per autumn and spring 2017 monitoring reports (Appendices 6 and 7).
	Fence monitoring	Compliant	
	Vegetation monitoring	Compliant	
9 Contingency Measures (Table 14 of RMP Rev2)	Contingency measures for fencing	Compliant	Necessary contingency measures identified and implemented as per autumn and spring 2017 monitoring reports (Appendices 6 and 7).
	Contingency measures for vegetation	Compliant	
10 Risk of Failure (Table 15 of RMP Rev2)	Contingency measures and monitoring (as per RMP Rev2 Section 8 and 9.	Compliant	As per comments for RMP Sections 8 and 9 above.
12 Incidents and Emergencies	Environmental incidents will be reported to the BCGS as soon as possible. Depending on the nature of the incident, the BCGS may inform the landowner (WAPC) and seek appropriate advice to mitigate the matter. Records will be kept of any environmental incidents and response measures. In case of any emergency, the first point of contact will be triple zero (call 000). BCGS should be informed of any emergency as soon as possible when safe to do so. BCGS will then inform the landowner (WAPC). Records will be kept of any emergencies and response measures.	Not relevant to reporting period	No incidents or emergencies occurred during the reporting period.

RMP Section	Key Management Measures	Compliance from 17/01/17 to 16/01/18	Evidence/Comments
13 Record keeping	Accurate records will be maintained substantiating all activities associated with approval conditions and the implementation of the RMP Rev2.	Compliant	Records were inspected and utilised in preparation of this Annual Compliance Report 2017.
14 Reporting and Public Availability	The latest version of the RMP will be published on the website of BCGS within one month of being approved by the Minister.	Compliant	RMP Rev2 (March 2018) was approved on 29 March 2017 and posted on the school's website on 6 April 2017 (Appendix 5).
	Annual Compliance Reports (ACR) will be prepared in accordance with the Department's Annual Compliance Report Guidelines.	Compliant	Annual Compliance Reports for 2016 and 2017 were prepared in accordance with the Department's guidelines.
	The ACR is required to be published on BCGS website within three months of the end of the reporting period (17 April) each year and evidence of publication submitted to the Department.	Compliant	Annual Compliance Report 2016 was submitted to the Department on 17 March 2017 with a screen shot of the school's website (and link to the page) to show that the report had been made public on the same day (Appendix 4).
	The ACR will address any contraventions of the conditions of the EPBC approval including requirements of the RMP Rev2 and will detail whether outcomes and milestones required by these conditions have been met or are likely to be achieved.	Compliant	Annual Compliance Reports for 2016 and 2017 address any contraventions of the conditions of the approval relevant to the reporting period.
	Monitoring results will be summarised in a report twice yearly, with spring monitoring results reported by the end of December and autumn monitoring results by end of May. These reports will remain internal BCGS documents until included as evidence in the relevant ACR.	Compliant	Monitoring results for autumn and spring 2017 reported on time (Appendices 6 and 7).
	Approval EPBC 2007/3333 Variation 2016 requires that the Department will be notified within 14 days following failure to meet milestones detailed in Table 9. The achievement and maintenance of the milestones will be determined on the basis of the biannual monitoring rounds (spring and autumn). The spring monitoring results will be analysed and reported by the end of December and the Department notified by 14 January of any failure to meet the milestones. The autumn monitoring results will be analysed and reported by the end of May and the Department notified by 14 June of any failure to meet the milestones.	Compliant	All milestones were met as detailed in spring monitoring report Appendix 7 (no milestones were due earlier) and consequently no reporting to the Department was necessary.
16 Auditing	Internal desktop audits of compliance with the latest version of the RMP and associated approval conditions will be undertaken in preparation of Annual Compliance Report annually.	Compliant	Desktop audit of compliance with RMP Rev2 (March 2017) has been undertaken by MBS Environmental during preparation of the Annual Compliance Report for 2017.

RMP Section	Key Management Measures	Compliance from 17/01/17 to 16/01/18	Evidence/Comments
17 Plan Review	RMP Rev2 will be reviewed on an annual basis during the preparation of the Annual Compliance Report.	Compliant	RMP Rev2 was reviewed by MBS Environmental during preparation of Annual Compliance Report for 2017. No changes are necessary.
	Specific instances that will trigger an immediate review of RMP Rev2 include: • Monitoring reports indicate milestones or performance targets may not be achieved. • Following a significant environmental incident (any incident that would kill or remove large portion of plants e.g. bushfire).	Compliant	One of the performance targets (planting target) was not met and this was considered by MBS Environmental as part of preparing the monitoring reports and this Annual Compliance Report. Because the planting target was missed by only a few hundred plants (3% less plants than target) and the other milestones for the end of 2017 were still met, it was not considered necessary to revise the RMP Rev2.
	If RMP review indicates changes to the plan are necessary, a revision of the RMP will be prepared and submitted to the Department to obtain the Minister's written approval of the revision. The Minister may also ask for a specific revision in which case a revised RMP will be prepared and submitted for approval. The varied activity shall not commence until the Minister has approved the revised plan in writing.	Not relevant to reporting period	

APPENDIX 3: RMP REV2 APPROVAL LETTER

Australian Government
Department of the Environment and Energy

Ms Jennifer Nobbs
Bursar
Bunbury Cathedral Grammar School
PO BOX 1198
BUNBURY WA 6230

Bunbury Cathedral Grammar School, Gelorup, WA – Construction of New Sporting Field (EPBC 2007/3333)

Dear Ms Nobbs,

Thank you for your letter dated 20 March 2017 requesting approval of the *Rehabilitation Management Plan. Revision 2* (Plan) submitted in accordance with condition 2 of EPBC Act approval 2007/3333.

Officers of this Department have reviewed the Rehabilitation Management Plan and advised me on the requirements of condition 2 of the approval. As delegate of the Minister for the Environment and Energy, I have decided to approve the Plan in accordance with condition 2 of EPBC Act approval 2007/3333. The Plan must now be implemented.

In accordance with condition 10 of EPBC Act approval 2007/3333, the Plan must be published on your website within one month of approval and must remain on the website for the period in which the EPBC Act approval has effect. As you are aware, the Department has an active monitoring program which includes monitoring inspections, desk top document reviews and audits.

Should you require any further information, including whether to submit the revised Plan for approval, please contact Justin Williams, on (02) 6275 9492 or by email: postapproval@environment.gov.au.

Yours sincerely

Matthew Dutkiewicz
Acting Assistant Secretary
Compliance & Enforcement Branch
Environment Standards Division

29 March 2017

APPENDIX 4: SUBMISSION OF ACR 2016

Kirsi Kauhanen

From:	Jenny Nobbs <jenny.nobbs@bcgs.wa.edu.au>
Sent:	Friday, 17 March 2017 3:54 PM
To:	EPBCMonitoring@environment.gov.au
Cc:	Kirsi Kauhanen; Mike Giles
Subject:	Lodgement of Annual Compliance Report EPBC 2007/3333
Attachments:	EPBC Compliance Report 2016 - Final.pdf; EPBC Compliance Website screenshot.PNG

Good Afternoon,

Please find attached the School's Annual Compliance Report for EPBC 2007/3333.

Also attached is a screen shot of the School's website page showing that the report has been posted for public notice as of 17 March 2017. The link to this page is http://www.bcgs.wa.edu.au/our-school/annual-report.

It would be appreciated if confirmation of receipt of the report is provided by return email. Please do not hesitate to contact me if further information is required.

Yours sincerely

Jennifer Nobbs
Bursar

Bunbury Cathedral Grammar School
P. O. Box 1198 Bunbury WA 6230
(9722 6010 | 7 9722 6190
Mob: 0439 900 527
* jenny.nobbs@bcgs.wa.edu.au

BE ALL THAT YOU CAN BE

bunbury grammar school cathedral

APPENDIX 5: POSTING OF RMP ON WEBSITE

Kirsi Kauhanen

From: Jenny Nobbs <jenny.nobbs@bcgs.wa.edu.au>
Sent: Friday, 23 March 2018 9:04 AM
To: Kirsi Kauhanen
Subject: Posting of report

Hello Kirsi,

Confirmation of posting on our website.

Mrs Jennifer Nobbs | Bursar

Bunbury Cathedral Grammar School

T (08) 9722 6010
Mobile: 0439 900 527
5 Allen Road, Gelorup WA 6230 | PO Box 1198, Bunbury WA 6231
www.bcgs.wa.edu.au
CRICOS 00431K

From: Danika Wellington
Sent: Friday, 23 March 2018 8:57 AM
To: Jenny Nobbs <jenny.nobbs@bcgs.wa.edu.au>
Subject: RE: Please

Hi Jenny,

Sorry I forgot to look into this yesterday. Yes I was:

NAME	TYPE	USER	SIZE	UPLOADED
Rehabilitation Management Plan EPBC 2007-3333.pdf	Document	danika.wellington	5.92 MB	2017-04-06 11:14
EPBC Compliance Report 2016.pdf	Document	danika.wellington	2.39 MB	2017-03-17 13:47

Kind regards,

Miss Danika Wellington | Media Co-ordinator

Bunbury Cathedral
Grammar School

T (08) 9722 6016

5 Allen Road, Gelorup WA 6230 | PO Box 1198, Bunbury WA 6231

www.bcgs.wa.edu.au

CRICOS 00431K

From: Jenny Nobbs
Sent: Thursday, 22 March 2018 4:56 PM
To: Danika Wellington <danika.wellington@bcgs.wa.edu.au>
Subject: Please

Hello Danika,

Were you able to find the date of posting for that report please?

Mrs Jennifer Nobbs | Bursar

Bunbury Cathedral
Grammar School

T (08) 9722 6010
Mobile: 0439 900 527
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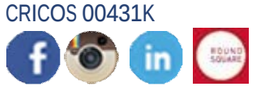
CRICOS 00431K



APPENDIX 6: REHABILITATION MONITORING AUTUMN 2017

MARTINICK BOSCH SELL PTY LTD
ABN 60 102 614 479
MBS ENVIRONMENTAL
environmental and geoscience consultants

4 Cook Street
West Perth WA 6005
Australia

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Facsimile +61 8 9226 3177
Email: info@mbsenvironmental.com.au

MEMORANDUM

Attention:	Jenny Nobbs	From:	Kirsi Kauhanen
Company:	Bunbury Cathedral Grammar School	Date:	29 May 2017
Subject:	Rehabilitation Monitoring - Autumn 2017	Project:	Stratham Offset Rehabilitation

Please advise if any part of this transmission failed or was misdirected.

1. INTRODUCTION

In accordance with approval EPBC 2007/3333 granted under *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the associated Rehabilitation Management Plan (RMP Rev2, March 2017), Bunbury Cathedral Grammar School is undertaking an offset rehabilitation program on Lot 9 on Plan 43302 in Stratham (Figure 1). The rehabilitation is subject to biannual monitoring as detailed in RMP Rev2. This memorandum summarises the results of monitoring undertaken in autumn 2017.

2. METHODS

Monitoring was undertaken between 4 and 19 May 2017 by Ms Kirsi Kauhanen (Senior Environmental Scientist) of MBS Environmental. The monitoring included photo monitoring, fence monitoring and vegetation monitoring and followed methods detailed in RMP Rev2.

Photo monitoring was undertaken at eight permanent locations (Table 1) that have been monitored since 2011.

Table 1: Photo Monitoring Point Locations

Photo Point ID	UTM GDA 94 (Zone 50)		Rehabilitation Area
	Easting	Northing	
ST1	369021	6298362	Western Area
ST2	369100	6298465	Western Area
ST3	369177	6298571	Western Area
ST4	369253	6298487	Sumpland
ST5	369308	6298487	Eastern Area
ST6	369259	6298417	Eastern Area
ST7	369179	6298399	Sumpland
ST8	369159	6298327	Eastern Area

Fence monitoring comprised opportunistic visual inspection of fences and the rehabilitation areas for any signs of livestock access and was undertaken concurrently with vegetation monitoring.

Vegetation monitoring comprised surveying of 11 permanent and 10 random quadrats (each 10 m by 10 m) in the Western Area, three permanent and three random belt transects (2 m by 100 m) in the Eastern Area and three permanent and one random belt transects (2 m by 100 m) in the Sumpland. The locations of the quadrats and transects are presented in Figure 2. Opportunistic observations on vegetation were also be made. Data collection and analysis is summarised in Table 2.

Table 2: Vegetation Monitoring Data Collection and Analysis

Item	Data Collection Method		
	Quadrats	Transects	Opportunistic
Data Collection	• Number of native plants (planted or naturally recruited). • Species of native plants (planted or naturally recruited). • Maximum height for each native species. • Native vegetation structure. • Species of weeds. • Estimated live % foliage cover of weeds. • Qualitative assessment of grazing impact. • Location coordinates and photograph.	• Number of native plants (planted or naturally recruited). • Species of native plants (planted or naturally recruited). • Maximum height for each native species. • Native vegetation structure (note any significant changes along transect). • Species of weeds. • Estimated live % foliage cover of weeds (average of estimates at 20m interval). • Qualitative assessment of grazing impact. • Start and end location coordinates and photograph.	• Native or weed species not observed in quadrats/transects.
Data Analysis	On the basis of the data collected, the following will be calculated/described for each Rehabilitation Area: • Native species composition. • Native vegetation structure. • Average native plant stem density per hectare, standard error of mean and relative standard error (SE/mean as %). • Weed species composition. • Average live weed % foliage cover, standard error of mean and relative standard error (SE/mean as %). • Grazing impact.		

The monitoring results were also assessed against trigger values specified in RMP Rev2 (Table 14), to determine whether contingency measures were necessary.

3. RESULTS

3.1 PHOTO MONITORING

Plates 1 - 8 provide a selection of photos for each monitoring site, showing change from August 2011 to May 2017. Some photo monitoring points, particularly ST8 show significant establishment of native vegetation whereas others, such as ST1 illustrate the patches of high seedling mortality. Photo points ST4 and ST7 are located in the Sumpland Area and show little change as remnant vegetation dominates the view.

3.2 FENCE MONITORING

Fence monitoring in May 2017 identified no issues requiring contingency measures. Lot 9 boundary fence remained in place on three sides (north, east, south) and was sufficient to prevent access by livestock from adjacent grazing properties (north and south sides). The western boundary fence was removed in 2016 to incorporate the property to the Muddy Lakes Regional Open Space. The fence along Minninup Road (eastern boundary) was upgraded in April-May 2017. No evidence of access by livestock was recorded within the rehabilitation areas.

3.3 VEGETATION MONITORING

Photographs of each quadrat and transect surveyed in May 2017 are provided in Plates 9-11.

3.3.1 Native Species Composition

A summary of native species composition results is provided in Table 3 that relates the results to the species composition requirements set in the RMP Rev2. Complete results on native species recorded in May 2017 are provided in Appendix 1.

Table 3: Native Species Composition

Scientific Name	Eastern		Western		Sumpland	
	Listed in RMP Rev2	Recorded in May 2017	Listed in RMP Rev2	Recorded in May 2017	Listed in RMP Rev2	Recorded in May 2017
Trees						
Agonis flexuosa	yes	yes	yes	yes	yes	yes
Banksia attenuata	yes	yes	no	(yes)	no	(no)
Banksia grandis	yes	yes	no	(yes)	no	(no)
Banksia littoralis	no	(no)	no	(no)	yes	no
Corymbia calophylla	yes	yes	yes	yes	no	(no)
Eucalyptus gomphocephala	yes	yes	yes	yes	no	(no)
Eucalyptus marginata	yes	yes	yes	yes	no	(no)
Eucalyptus rudis	yes	yes	yes	yes	yes	yes
Melaleuca preissiana	no	(no)	no	(yes)	yes	yes
Melaleuca rhaphiophylla	no	(no)	no	(no)	yes	yes
Xylomelum occidentalis	yes	yes	no	(yes)	no	(no)
Shrubs						
Acacia cyclops	yes	yes	yes	yes	yes	yes
Acacia saligna	yes	yes	yes	yes	yes	yes
Bossiaea eriocarpa	yes	no	yes	no	no	(no)
Hakea prostrata	yes	yes	yes	yes	no	(no)
Hibbertia cuneiformis	yes	yes	yes	yes	no	(yes)
Jacksonia furcellata	yes	yes	yes	yes	no	(no)
Macrozamia riedlei	yes	yes	no	(no)	no	(no)

Scientific Name	Eastern		Western		Sumpland	
	Listed in RMP Rev2	Recorded in May 2017	Listed in RMP Rev2	Recorded in May 2017	Listed in RMP Rev2	Recorded in May 2017
Rhagodia baccata	yes	yes	yes	yes	yes	yes
Spyridium globulosum	yes	yes	yes	yes	yes	yes
Viminaria juncea	no	(no)	no	(no)	yes	yes
Herbs and Creepers						
Acacia pulchella	yes	yes	yes	yes	no	(no)
Conostylis aculeata	yes	yes	yes	no	no	(no)
Hardenbergia comptoniana	yes	no	yes	no	no	(no)
Sedges and Rushes						
Lepidosperma gladiatum	no	(no)	no	(no)	yes	no
Juncus pallidus	no	(no)	no	(no)	yes	yes
Total	20	18	16	13	12	10
% of species listed in RMP Rev2		90%		81%		83%

Brackets for yes and no were used for May 2017 to indicate that the species was not listed as likely suitable for that particular rehabilitation area in the RMP Rev2 and regardless of presence/absence, the species would not count towards the species composition milestones or outcomes for that particular area.

3.3.2 Native Vegetation Structure

Native vegetation structure in the rehabilitation areas during May 2017 was as per the following:

- Eastern Area:
  - Upper storey (up to 10-15m): Few remnant mature *Agonis flexuosa* and *Eucalyptus gomphocephala*.
  - Middle storey (1-6m): Rehabilitation comprising juvenile *Eucalyptus* spp. (*Eucalyptus gomphocephala, E. marginata, E. rudis, Corymbia calophylla*), *Agonis flexuosa*, *Acacia saligna* and *Jacksonia furcellata* with occasional *Acacia cyclops*.
  - Understorey (up to 1m): Rehabilitation comprising juvenile *Hakea prostrata, Rhagodia baccata, Macrozamia riedlei, Conostylis accuelata, Acacia pulchella* and young individuals of *Acacia* spp., *Agonis flexuosa*, *Eucalyptus* spp., *Banksia* spp., and *Xylomelum occidentale*. Some *Pteridium esculentum* was also present. Groundcover was mainly introduced weed species.
- Western Area:
  - Upper storey (up to 10 m): Few remnant mature *Agonis flexuosa*.
  - Middle storey (1-6 m): Rehabilitation comprising juvenile *Eucalyptus* spp. (mainly *Eucalyptus gomphocephala* and *E. rudis*, but also *E. marginata* and *Corymbia calophylla*), *Agonis flexuosa, Acacia cyclops, Acacia saligna* and *Jacksonia furcellata*.
  - Understorey (up to 1 m): Rehabilitation comprising juvenile *Hakea prostrata, Rhagodia baccata, Acacia pulchella* and young individuals of *Acacia* spp., *Agonis flexuosa, Eucalyptus* spp., *Banksia* spp. and *Xylomelum occidentale*. Groundcover was mainly introduced weed species.

- Sumpland:
  - Upper storey (10-15 m): Remnant mature *Melaleuca rhaphiophylla* and *Eucalyptus rudis*.
  - Middle storey (1-6 m): Remnant *Viminea juncea* with rehabilitation comprising mainly juvenile *Eucalyptus rudis, Agonis flexuosa, Melaleuca rhapiophylla, Viminea juncea* and *Acacia* spp.
  - Understorey (up to 1m tall): Occasional remnant sedges and rushes with rehabilitation comprising *Juncus pallidus* and young individuals of *Melaleuca* spp., *Eucalyptus rudis, Agonis flexuosa, Viminea juncea* and *Acacia* spp. Groundcover was mainly introduced weed species.

Further details on height of native species in each quadrat/transect are provided in Appendix 2.

3.3.3 Native Plant Stem Density

A summary of native plant stem density from October 2012 to May 2017 is provided in Table 4. The reliability measure (SE/Mean) that was introduced in the RMP Rev2 was within target (<30%) for all rehabilitation areas in May 2017. Detailed results for each quadrat and transect surveyed in May 2017 are provided in Appendix 1.

Table 4: Native Plant Stem Density

Monitoring Occasion	Stems per Hectare											
	Eastern Area				Western Area				Sumpland			
	Mean	SE[1]	n[2]	SE/Mean[3]	Mean	SE	n	SE/Mean	Mean	SE	n	SE/Mean
Oct. 2012	1,500	204	4	-	320	193	5	-	2,300	-	1	-
March 2013	775	397	4	-	490	99	10	-	1,400	-	1	-
Nov. 2013	1,650	318	4	-	940	111	10	-	1,300	-	1	-
March 2014	740	258	5	-	600	99	13	-	950	250	2	-
Oct. 2014	975	119	8	-	953	84	15	-	1,700	200	2	-
March 2015	2,033	672	12	-	778	97	23	-	7,183	2,703	6	-
Oct. 2015	1,140	175	5	-	853	110	15	-	7,300	1,900	2	-
April 2016	1,410	544	10	-	594	69	18	-	3,340	1,447	5	-
Oct. 2016	1,619	695	8	-	503	85	18	-	2,767	1,271	3	-
May 2017[4]	1,158	245	6	21%	409	63	21	15%	2,163	468	4	22%

[1] SE = standard error

[2] n = number of quadrats/transects.

[3] '-' = not applicable

[4] Change in methods from May 2017 onwards in Eastern Area and Sumpland.

3.3.4 Weeds

The most common weed species recorded in all three rehabilitation areas was *Cynodon dactylon* (couch grass). Other grasses were also present, but mainly dead. Other relatively common species included *Trachyandra divaricata, Oenothera mollissima* and *Solanum nigrum*. Few individuals of Declared Pest species *Zantedeschia aethiopica* (DP) and *Gomphocarpus fruticosus* (DP) were also recorded. Live percentage weed cover for each rehabilitation area in May 2017 is presented in Table 5. The reliability measure (SE/Mean), that was introduced in RMP Rev2, was within target (<30%) for all rehabilitation areas. Complete results on weed species recorded in May 2017 are provided in Appendix 3.

Table 5: Live Percentage Weed Cover

Monitoring Occasion	Live Weed % Cover											
	Eastern				Western				Sumpland			
	Mean	SE	n^2	SE/Mean	Mean	SE	n^2	SE/Mean	Mean	SE	n^2	SE/Mean
May 2017	7.88	0.85	6	11%	16.05	2.35	21	15%	25.53	7.36	4	29%

3.3.5 Grazing Impact

Evidence of grazing on seedlings was recorded across all rehabilitation areas in May 2017. Grazing appeared particularly damaging on seeding survival in the Western Area. On the basis of scats, tracks, foot prints and diggings, the grazing was mainly undertaken by kangaroos, but also by rabbits. Snail grazing was also observed.

3.4 ASSESSMENT AGAINST TRIGGER VALUES

An assessment of monitoring results against trigger values specified in RMP Rev2 is presented in Table 6. Photo monitoring was undertaken to maintain a visual record of revegetation progress, however photo monitoring is not linked to any trigger values or contingency measures.

Table 6: Assessment Against Trigger Values

Parameter	Performance Indicator	Trigger Value (RMP Rev2)	Assessment	Contingency Measures
Fencing	Fence condition	Fence condition does not prevent livestock access	Not triggered	None necessary
	Signs of livestock access	Signs of livestock access	Not triggered	None necessary
Vegetation	Native species composition	Less than 85% of target flora species for a Rehabilitation Area present in that area (target species listed in Table 7 of RMP Rev2)	Triggered for Western and Sumpland Area (Western = 81%, Sumpland = 83%, however both above the completion criteria of 80%).	Undertake infill planting to increase species diversity in accordance with RMP Rev2
	Native plant density	In 2017 and 2018: • Less than 1,650 stems per hectare on average in Eastern and Western Areas • Less than 420 stems per hectare on average in Sumpland	Triggered for Eastern and Western Area (Eastern = 1,158 and Western = 409)	Undertake infill plantings that increase the stem densities in accordance with RMP Rev2
	Weed species composition	Presence of Declared Pest species	Triggered for all rehabilitation areas	Undertake targeted weed control for the Declared Pest species in accordance with RMP Rev2
	Live weed % foliage cover	In 2017 and 2018: • Average live weed % foliage cover 40% or higher	Not triggered	No contingency measures necessary, but continue with existing weed control in accordance with RMP Rev2

4. DISCUSSION AND CONCLUSION

Native species composition and native plant density recorded in May 2017 triggered contingency measures in for the Western and Sumpland areas and the Western and Eastern areas respectively in accordance with the RMP Rev2. This result had been expected and the planned planting measures for winter 2017 (as described in RMP Rev2) will address these items.

It is recommended that control of weeds continues, including the Declared Pest species recorded in May 2017 (*Zantedeschia aethiopica* and *Gomphocarpus fruticosus*), in accordance with RMP Rev2.

Apart from the trigger values for contingency measures, no other milestones were due for assessment at this point in time.

Yours sincerely
MBS Environmental

Kirsi Kauhanen
Senior Environmental Scientist

enc. Figure 1:Location Plan
Figure 2:Vegetation Monitoring Autumn 2017

Plates 1-11

Appendix 1: Native Species Recorded
Appendix 2: Native Species Heights
Appendix 3: Weed Species and Live % Cover

Scale: 1:200000
Original Size: A4
Grid: MGA94(50)

0 5 km

Bunbury Cathedral Grammar School
Rehabilitation Monitoring
Autumn 2017
Lot 9 Plan 43302 Stratham

Figure 1

Location Plan

Martinick Bosch Sell Pty Ltd
4 Cook St
West Perth WA 6005
Ph: (08) 9226 3166
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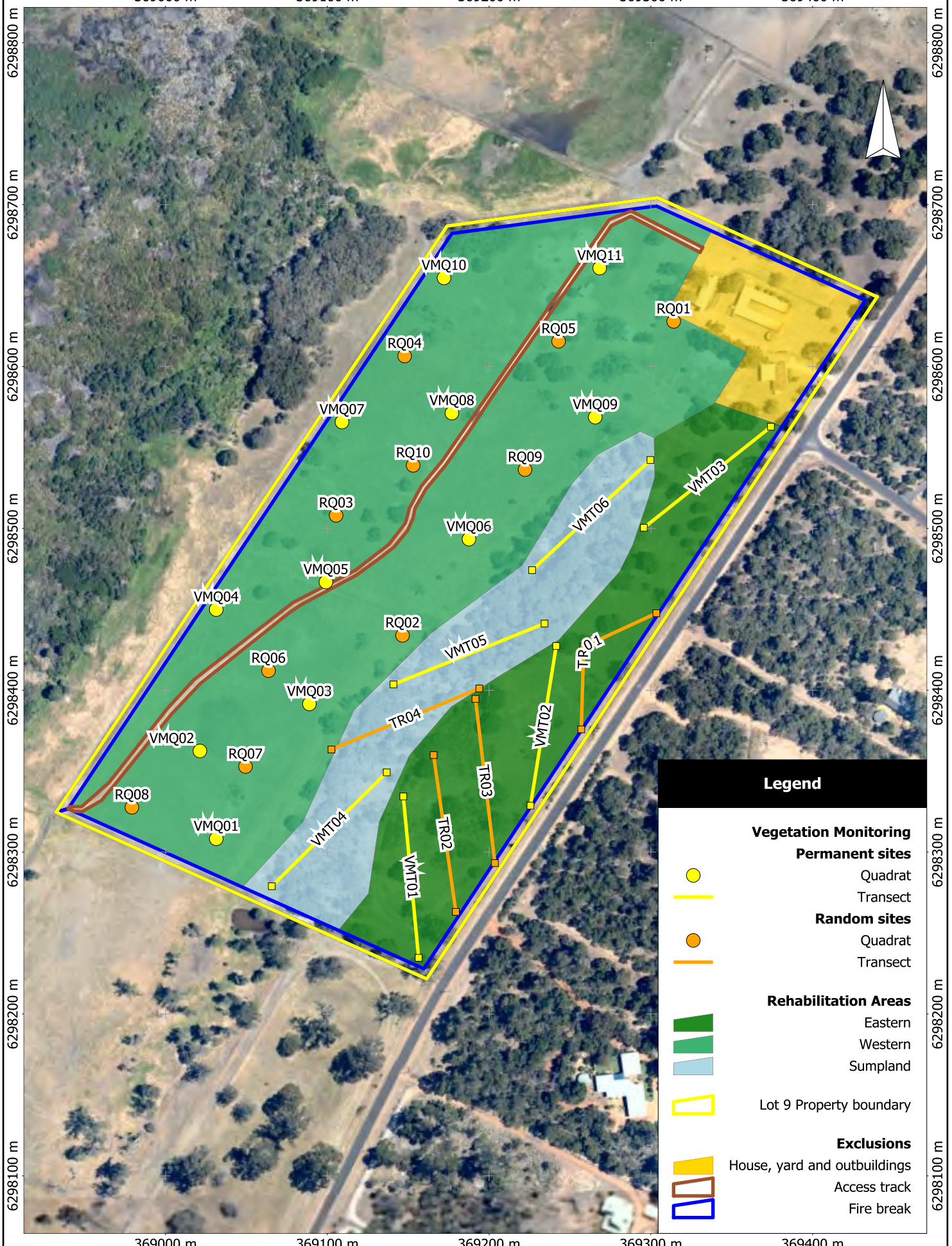
www.mbsenvironmental.com.au

MBS ENVIRONMENTAL

C:\Users\kkauhanen\Documents\Bunbury Grammar\Drawings\Monitoring reports\Autumn 2017\F1 - Location Plan.map 23/05/2017 F1



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Original Size: A4
Air Photo Date: NearMap Dec 2009
Grid: MGA94(50)
0 100 m

Bunbury Cathedral Grammar School
Rehabilitation Monitoring
Autumn 2017
Lot 9 on Plan 43302 Stratham

Figure 2

Vegetation Monitoring Autumn 2017

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4 Cook St
West Perth WA 6005
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C:\Users\kkauhanen\Documents\Bunbury Grammar\Drawings\Monitoring reports\Autumn 2017\Figures.map 23/05/2017 F7

PLATES 1-11

Plate 1: View Northeast from ST1 - Western Rehabilitation Area

August 2011

February 2012

July 2012

October 2012

March 2013

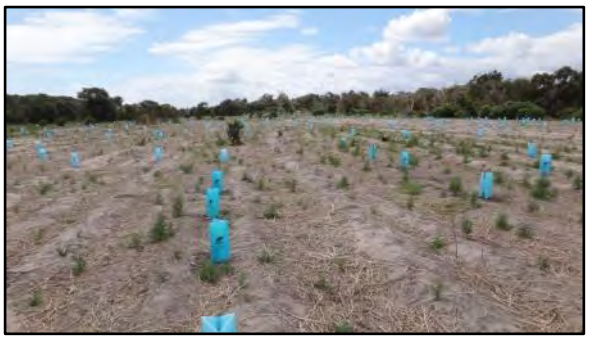
November 2013

March 2014

October 2014

March 2015

October 2015



April 2016

October 2016

May 2017

Plate 2: View Northeast from ST2 - Western Rehabilitation Area

August 2011

February 2012

July 2012

October 2012

March 2013

November 2013

March 2014

October 2014

March 2015

October 2015

April 2016

October 2016

May 2017

Plate 3: View Northeast from ST3 - Western Rehabilitation Area

August 2011

February 2012

July 2012

October 2012

March 2013

November 2013

March 2014

October 2014

March 2015

October 2015

April 2016

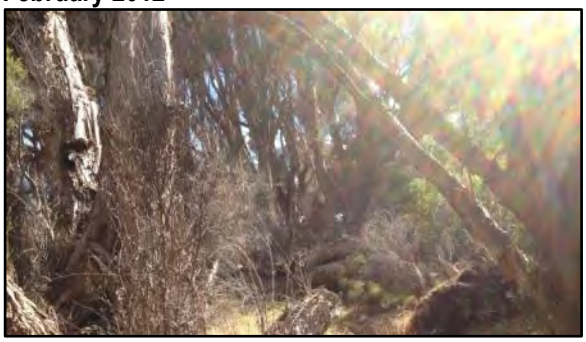
October 2016

May 2017

Plate 4: View Northeast from ST4 - Sumpland Area

August 2011

February 2012



July 2012

October 2012

March 2013

November 2013

March 2014

October 2014

March 2015

October 2015

April 2016

October 2016

May 2017

Plate 5: View Southwest from ST5 - Eastern Rehabilitation Area

August 2011

February 2012

July 2012

October 2012

March 2013

November 2013

March 2014

October 2014

March 2015

October 2015

April 2016

October 2016

May 2017

Plate 6: View Southwest from ST6 - Eastern Rehabilitation Area

August 2011

February 2012

July 2012

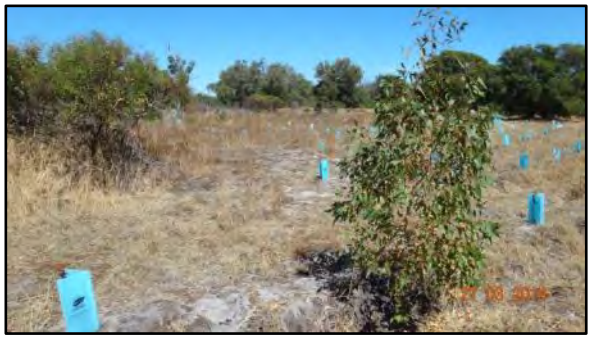
October 2012

March 2013

No data (incorrect view)

November 2013

March 2014



October 2014

March 2015

October 2015

April 2016

October 2016

May 2017

Plate 7: View Southwest from ST7 - Sumpland Area

August 2011

February 2012

No data (incorrect view)

July 2012

October 2012

March 2013

November 2013

March 2014

October 2014

March 2015

October 2015

April 2016

October 2016

May 2017

Plate 8: View Southwest from ST8 - Eastern Rehabilitation Area

August 2011

February 2012

July 2012

October 2012

March 2013

November 2013

March 2014

October 2014

March 2015

October 2015

April 2016

October 2016

May 2017

Plate 9: Eastern Area

VMT01 - Start

VMT02 - Start

VMT03 - Start

TR01 - Start

TR02 - Start

TR03 - Start

VMT01 - End

VMT02 - End

VMT03 - End

TR01 - End

TR02 - End

TR03 - End

Plate 10: Western Area

VMQ01

VMQ02

VMQ03

VMQ04

VMQ05

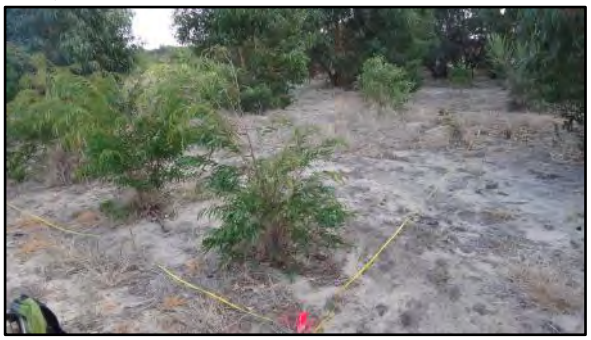
VMQ06

VMQ07

VMQ08

VMQ09

VMQ10



VMQ11

RQ01

RQ02

RQ03

RQ04

RQ05

RQ06

RQ07

RQ08

RQ09

RQ10

Plate 11: Sumpland

VMT04 - Start

VMT05 - Start

VMT06 - Start

TR04 - Start

VMT04 - End

VMT05 - End

VMT06 - End

TR04 - End

APPENDICES

APPENDIX 1: NATIVE SPECIES RECORDED

Table A1.1: Native Species Recorded in May 2017 - Eastern Area

Species	Number of Individuals per Transect (2m by 100 m)						Obs.*
	VMT01	VMT02	VMT03	TR01	TR02	TR03	
Acacia cyclops	0	0	0	0	0	0	Y
Acacia pulchella	0	0	0	0	0	0	Y
Acacia saligna	0	0	0	2	11	10	Y
Agonis flexuosa	15	4	1	19	25	5	Y
Banksia attenuata	0	0	0	0	0	0	Y
Banksia grandis	0	0	0	0	0	0	Y
Bossiaea eriocarpa	0	0	0	0	0	0	N
Conostylis acuelata	0	0	0	0	0	0	Y
Corymbia calophylla	0	0	1	0	0	0	Y
Eucalyptus gomphocephala	6	3	2	4	2	0	Y
Eucalyptus marginata	1	4	0	1	1	1	Y
Eucalyptus rudis	3	1	2	0	1	2	Y
Hakea prostrata	3	0	0	0	1	2	Y
Hardenbergia comptoniana	0	0	0	0	0	0	N
Hibbertia cuneiformis	0	0	0	0	0	0	Y
Jacksonia furcellata	0	0	1	0	0	0	Y
Macrozamia riedlei	0	0	0	1	0	1	Y
Rhagodia baccata	0	0	1	0	0	1	Y
Spyridium globulosum	0	0	0	0	0	0	Y
Xylomelum occidentalis	0	0	0	1	0	0	Y
Total per 200 m^2 transect	28	12	8	28	41	22	

**Obs. = Opportunistic observation within the Eastern Area. Y = Yes, observed. N = No, not observed.*

Table A1.2: Native Species Recorded in May 2017 - Western Area

Species	Number of Individuals per Quadrat (10 by 10 m)																				Obs.*
	VMQ01	VMQ02	VMQ03	VMQ04	VMQ05	VMQ06	VMQ07	VMQ08	VMQ09	VMQ10	VMQ11	RQ01	RQ02	RQ03	RQ04	RQ05	RQ06	RQ07	RQ08	RQ09	RQ10	
Acacia cyclops	0	0	1	0	1	0	1	0	0	0	0	1	0	0	0	0	1	0	1	0	1	Y
Acacia pulchella	0	0	0	0	0	0	0	0	1	0	0	1	1	0	1	0	0	0	0	0	0	Y
Acacia saligna	0	1	0	0	0	1	7	0	0	1	1	0	1	1	0	0	0	0	0	1	2	Y
Agonis flexuosa	0	0	0	1	0	0	0	0	0	5	1	5	0	0	1	1	0	0	1	0	0	Y
Banksia attenuata	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	Y
Banksia grandis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Y
Bossiaea eriocarpa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N
Conostylis acuelata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N
Corymbia calophylla	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	Y
Eucalyptus gomphocephala	0	0	1	2	4	0	3	3	2	3	3	0	1	0	3	1	0	0	0	0	1	Y
Eucalyptus marginata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	Y
Eucalyptus rudis	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	Y
Hakea prostrata	2	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	2	0	0	Y
Hardenbergia comptoniana	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N
Hibbertia cuneiformis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Y
Jacksonia furcellata	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	Y
Melaleuca preissiana	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Y
Rhagodia baccata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Y
Spyridium globulosum	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	Y
Xylomelum occidentalis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Y
Total per 100m^2	2	2	4	3	5	2	11	4	4	10	7	8	3	1	6	3	2	0	4	1	4	

**Obs. = Opportunistic observation within the Western Area. Y = Yes, observed. N = No, not observed.*

Table A1.3: Native Species Recorded in May 2017 - Sumpland

Species	Number of Individuals per Transect (2 by 100 m)				Obs.*
	VMT04	VMT05	VMT06	TR04	
Acacia cyclops	0	0	0	1	Y
Acacia saligna	5	0	0	7	Y
Agonis flexuosa	1	8	7	2	Y
Banksia littoralis	0	0	0	0	N
Eucalyptus rudis	15	14	51	26	Y
Juncus pallidus	1	0	5	0	Y
Lepidosperma gladiatum	0	0	0	0	N
Melaleuca preissiana	0	0	0	0	Y
Melaleuca rhaphiophylla	12	1	2	0	Y
Rhagodia baccata	1	0	0	0	Y
Spyridium globulosum	0	0	0	0	Y
Viminaria juncea	0	7	6	1	Y
Total per 200m^2 transect	35	30	71	37	

**Obs. = Opportunistic observation within the Sumpland. Y = Yes, observed. N = No, not observed.*

APPENDIX 2: NATIVE SPECIES HEIGHTS

Table A2.1: Native Species Heights Recorded in May 2017 - Eastern Area

Species	Plant Height (up to m)					
	VMT01	VMT02	VMT03	TR01	TR02	TR03
Acacia cyclops	0	0	0	0	0	0
Acacia pulchella	0	0	0	0	0	0
Acacia saligna	0	0	0	1.5	3	1.5
Agonis flexuosa	2.5	2	2.5	2	2	3
Banksia attenuata	0	0	0	0	0	0
Banksia grandis	0	0	0	0	0	0
Bossiaea eriocarpa	0	0	0	0	0	0
Conostylis acuelata	0	0	0	0	0	0
Corymbia calophylla	0	0	0.5	0	0	0
Eucalyptus gomphocephala	6	5	2.5	6	3.5	0
Eucalyptus marginata	3.5	2	0	3	1	3
Eucalyptus rudis	5	1	5	0	3	2
Hakea prostrata	0.5	0	0	0	1	1
Hardenbergia comptoniana	0	0	0	0	0	0
Hibbertia cuneiformis	0	0	0	0	0	0
Jacksonia furcellata	0	0	2	0	0	0
Macrozamia riedlei	0	0	0	0.4	0	1
Rhagodia baccata	0	0	0.5	0	0	0.8
Spyridium globulosum	0	0	0	0	0	0
Xylomelum occidentalis	0	0	0	0.5	0	0

0 = Species not recorded.

Table A2.2: Native Species Heights Recorded in May 2017 - Western Area

Species	Plant Height (up to m)																			
	VMQ01	VMQ02	VMQ03	VMQ04	VMQ05	VMQ06	VMQ07	VMQ08	VMQ09	VMQ10	VMQ11	RQ01	RQ02	RQ03	RQ04	RQ05	RQ06	RQ07	RQ08	RQ09	RQ10
Acacia cyclops	0	0	0.5	0	1	0	0.5	0	0	0	0	1.8	0	0	0	0	0.5	0	0.4	0	2
Acacia pulchella	0	0	0	0	0	0	0	0	0.5	0	0	1	1	0	0.5	0	0	0	0	0	0
Acacia saligna	0	0.5	0	0	0	1	0.15	0	0	1	1.7	0	1	1.5	0	0	0	0	0	1	1.5
Agonis flexuosa	0	0	0	2.5	0	0	0	0	0	2.5	1	2	0	0	2	3	0	0	0.4	0	0
Banksia attenuata	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Banksia grandis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bossiaea eriocarpa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Conostylis acuelata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Corymbia calophylla	0	0	0	0	0	0	0	0	0	0.8	0	0	0	0	0	0	0	0	0	0	0
Eucalyptus gomphocephala	0	0	2	6	6	0	5	6.5	2	6	4.5	0	1.7	0	3.5	5	0	0	0	0	4
Eucalyptus marginata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.8	0.5	0	0	0	0	0
Eucalyptus rudis	0	0	1.2	0	0	2.5	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Hakea prostrata	0.5	0	0.5	0	0	0	0	0	0	0	1.7	0	0	0	0	0	0.5	0	0.5	0	0
Hardenbergia comptoniana	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hibbertia cuneiformis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jacksonia furcellata	0	0.5	0	0	0	0	0	0	0	0	1.2	0	0	0	0	0	0	0	0	0	0
Melaleuca preissiana	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rhagodia baccata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spyridium globulosum	0	0	0	0	0	0	0	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0
Xylomelum occidentalis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = Species not recorded.

Table A2.3: Native Species Heights Recorded in May 2017 - Sumpland

Species	Plant Height (up to m)			
	VMT04	VMT05	VMT06	TR04
Acacia cyclops	0	0	0	1
Acacia saligna	2.5	0	0	2
Agonis flexuosa	2	0.8	4	3
Banksia littoralis	0	0	0	0
Eucalyptus rudis	2.5	1	7	1
Juncus pallidus	1.5	0	2	0
Lepidosperma gladiatum	0	0	0	0
Melaleuca preissiana	0	0	0	0
Melaleuca rhaphiophylla	2	0.4	2	0
Rhagodia baccata	0.3	0	0	0
Spyridium globulosum	0	0	0	0
Viminaria juncea	0	0.5	2	1.5

0 = Species not recorded.

APPENDIX 3: WEED SPECIES AND LIVE % COVER

Table A3.1: Weed Species and Live % Cover Recorded in May 2017 - Eastern Area

Species	Weed Species Present and Live % Cover					
	VMT01	VMT02	VMT03	TR01	TR02	TR03
Cynodon dactylon	p	p	p	p	p	p
Erodium sp.	a	a	a	a	p	p
Lupinus sp.	a	a	a	a	p	a
Oenothera mollissima	a	p	a	p	p	p
Oxalis sp.	p	a	a	a	a	p
Solanum nigrum	p	a	a	p	a	a
Trachyandra divaricata	p	p	p	p	p	p
Verbascum virgatum	a	a	a	a	a	p
Zantedeschia aethiopica (DP)	a	a	a	a	a	p
Other grasses	p	p	p	p	p	p
Live % Cover	7	5	11	9	6	9

p = present, a= absent

Table A3.2: Weed Species and Live % Cover Recorded in May 2017 - Western Area

Species	Weed Species Present and Live % Cover																				
	VMQ01	VMQ02	VMQ03	VMQ04	VMQ05	VMQ06	VMQ07	VMQ08	VMQ09	VMQ10	VMQ11	RQ01	RQ02	RQ03	RQ04	RQ05	RQ06	RQ07	RQ08	RQ09	RQ10
Conyza sp.	a	p	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	p	a	a
Cucumis myriocarpus	a	a	a	a	a	a	a	a	a	a	a	p	a	a	a	a	a	a	a	a	a
Cynodon dactylon	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p
Gomphocarpus fruticosus (DP)	a	a	a	p	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a
Lupinus sp.	a	a	a	a	a	a	a	a	a	a	p	a	a	a	p	a	a	a	a	a	a
Oenothera mollissima	p	a	p	a	a	a	a	a	a	a	p	a	a	a	a	a	a	a	a	a	a
Oxalis sp.	a	a	a	a	a	a	a	a	a	a	a	p	a	a	a	a	a	a	a	a	a
Solanum nigrum	a	p	p	p	a	a	a	p	a	p	a	p	a	p	a	a	p	p	a	a	a
Trachyandra divaricata	p	p	p	a	a	a	a	p	p	p	p	p	a	a	a	p	p	a	p	a	a
Verbascum virgatum	a	p	a	p	a	a	a	a	a	a	a	a	a	a	a	a	a	a	p	a	a
Other grasses	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p
Live % Cover	20	25	5	20	10	2	10	5	15	5	15	10	5	45	15	25	20	25	30	25	5

p = present, a= absent

Table A3.3: Weed Species and Live % Cover Recorded in May 2017 - Sumpland

Species	Weed Species Present and Live % Cover			
	VMT04	VMT05	VMT06	TR04
Atriplex prostrata	p	p	p	p
Cynodon dactylon	p	p	p	p
Solanum nigrum	p	p	p	p
Verbascum virgatum	a	a	a	a
Zantedeschia aethiopica (DP)	a	a	a	p
Other grasses	p	p	p	p
Live % Cover	20	10	45	27

p = present, a= absent

APPENDIX 7: REHABILITATION MONITORING SPRING 2017

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MEMORANDUM

Attention:	Jenny Nobbs	From:	Kirsi Kauhanen
Company:	Bunbury Cathedral Grammar School	Date:	29 December 2017
Subject:	Rehabilitation Monitoring - Spring 2017	Project:	Stratham Offset Rehabilitation

Please advise if any part of this transmission failed or was misdirected.

1. INTRODUCTION

In accordance with approval EPBC 2007/3333 granted under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the associated Rehabilitation Management Plan (RMP Rev2, March 2017), Bunbury Cathedral Grammar School is undertaking an offset rehabilitation program on Lot 9 on Plan 43302 in Stratham (Figure 1). The rehabilitation is subject to biannual monitoring as detailed in RMP Rev2. This memorandum summarises the results of monitoring undertaken in spring 2017.

2. METHODS

Monitoring was undertaken between 30 October and 3 November 2017 by Ms Kirsi Kauhanen (Senior Environmental Scientist) of MBS Environmental. The monitoring included photo monitoring, fence monitoring and vegetation monitoring and followed methods detailed in RMP Rev2.

Photo monitoring was undertaken at eight permanent locations (Table 1) that have been monitored since 2011.

Table 1: Photo Monitoring Point Locations

Photo Point ID	UTM GDA 94 (Zone 50)		Rehabilitation Area
	Easting	Northing	
ST1	369021	6298362	Western Area
ST2	369100	6298465	Western Area
ST3	369177	6298571	Western Area
ST4	369253	6298487	Sumpland
ST5	369308	6298487	Eastern Area
ST6	369259	6298417	Eastern Area
ST7	369179	6298399	Sumpland
ST8	369159	6298327	Eastern Area

Fence monitoring comprised opportunistic visual inspection of fences and the rehabilitation areas for any signs of livestock access and was undertaken concurrently with vegetation monitoring.

Vegetation monitoring comprised surveying of 11 permanent and 11 random quadrats (each 10 m by 10 m) in the Western Area, three permanent and four random belt transects (2 m by 100 m) in the Eastern Area and three permanent and one random belt transects (2 m by 100 m) in the Sumpland. The locations of the quadrats and transects are presented in Figure 2. Opportunistic observations on vegetation were also be made. Data collection and analysis is summarised in Table 2.

Table 2: Vegetation Monitoring Data Collection and Analysis

Item	Data Collection Method		
	Quadrats	Transects	Opportunistic
Data Collection	• Number of native plants (planted or naturally recruited). • Species of native plants (planted or naturally recruited). • Maximum height for each native species. • Native vegetation structure. • Species of weeds. • Estimated live % foliage cover of weeds. • Qualitative assessment of grazing impact. • Location coordinates and photograph.	• Number of native plants (planted or naturally recruited). • Species of native plants (planted or naturally recruited). • Maximum height for each native species. • Native vegetation structure (note any significant changes along transect). • Species of weeds. • Estimated live % foliage cover of weeds (average of estimates at 20m interval). • Qualitative assessment of grazing impact. • Start and end location coordinates and photograph.	• Native or weed species not observed in quadrats/transects.
Data Analysis	On the basis of the data collected, the following will be calculated/described for each Rehabilitation Area: • Native species composition. • Native vegetation structure. • Average native plant stem density per hectare, standard error of mean and relative standard error (SE/mean as %). • Weed species composition. • Average live weed % foliage cover, standard error of mean and relative standard error (SE/mean as %). • Grazing impact.		

The monitoring results were also assessed against trigger values specified in RMP Rev2 (Table 14), to determine whether contingency measures were necessary.

3. RESULTS

3.1 PHOTO MONITORING

Plates 1 - 11 provide a selection of photos for each monitoring site, showing change from August 2011 to October/November 2017. Some photo monitoring points, particularly ST8 show significant establishment of native vegetation whereas others, such as ST1 illustrate the patches of high seedling mortality. Photo points ST4 and ST7 are located in the Sumpland Area and show little change as remnant vegetation dominates the view.

3.2 FENCE MONITORING

Fence monitoring in October/November 2017 identified no issues requiring contingency measures. Lot 9 boundary fence remained in place on three sides (north, east, south) and was sufficient to prevent access by livestock from adjacent grazing properties (north and south sides). The western boundary fence was removed in 2016 to incorporate the property to the Muddy Lakes Regional Open Space. The fence along Minninup Road (eastern boundary) was upgraded in April-May 2017.

Evidence of cows was recorded in the adjacent Muddy Lakes Regional Open Space and in parts of the rehabilitation area in June/July 2017. Contact was made with the manager of the Regional Open Space (WAPC, Department of Planning) who organised removal of the cows (no livestock allowed in the Regional Open Space). Damage to rehabilitation was limited to few tree guards being knocked over and some broken branches on larger trees due to cows rubbing against them. No seedlings were destroyed.

A fenced enclosure was established in the poorly performing part of the Western Area as shown in Figure 2. The purpose of this enclosure was to improve seedling survival by excluding grazing kangaroos.

3.3 VEGETATION MONITORING

Photographs of each quadrat and transect surveyed in October/November 2017 are provided in Plates 9-11. It is noted that between the spring 2017 monitoring round and the previous autumn 2017 monitoring round, a mass planting of seedlings (10,200) was undertaken in the Western and Eastern Areas.

3.3.1 Native Species Composition

A summary of native species composition results is provided in Table 3 that relates the results to the species composition requirements set in RMP Rev2. Complete results on native species recorded in October/November 2017 are provided in Appendix 1.

Table 3: Native Species Composition

Scientific Name	Eastern		Western		Sumpland	
	Listed in RMP Rev2	Recorded in October/ November 2017	Listed in RMP Rev2	Recorded in October/ November 2017	Listed in RMP Rev2	Recorded in October/ November 2017
Trees						
Agonis flexuosa	Yes	Yes	Yes	Yes	Yes	Yes
Banksia attenuata	Yes	Yes	No	(Yes)	No	(No)
Banksia grandis	Yes	Yes	No	(Yes)	No	(No)
Banksia littoralis	No	(No)	No	(No)	Yes	No
Corymbia calophylla	Yes	Yes	Yes	Yes	No	(No)
Eucalyptus gomphocephala	Yes	Yes	Yes	Yes	No	(No)
Eucalyptus marginata	Yes	Yes	Yes	Yes	No	(No)
Eucalyptus rudis	Yes	Yes	Yes	Yes	Yes	Yes
Melaleuca preissiana	No	(No)	No	(Yes)	Yes	Yes
Melaleuca rhaphiophylla	No	(No)	No	(No)	Yes	Yes
Xylomelum occidentalis	Yes	Yes	No	(Yes)	No	(No)

Scientific Name	Eastern		Western		Sumpland	
	Listed in RMP Rev2	Recorded in October/ November 2017	Listed in RMP Rev2	Recorded in October/ November 2017	Listed in RMP Rev2	Recorded in October/ November 2017
Shrubs						
Acacia cyclops	Yes	Yes	Yes	Yes	Yes	Yes
Acacia saligna	Yes	Yes	Yes	Yes	Yes	Yes
Bossiaea eriocarpa	Yes	No	Yes	No	No	(No)
Hakea prostrata	Yes	Yes	Yes	Yes	No	(No)
Hibbertia cuneiformis	Yes	Yes	Yes	Yes	No	(Yes)
Jacksonia furcellata	Yes	Yes	Yes	Yes	No	(No)
Macrozamia riedlei	Yes	Yes	No	(No)	No	(No)
Rhagodia baccata	Yes	Yes	Yes	Yes	Yes	Yes
Spyridium globulosum	Yes	Yes	Yes	Yes	Yes	Yes
Viminaria juncea	No	(No)	No	(No)	Yes	Yes
Herbs and Creepers						
Acacia pulchella	Yes	Yes	Yes	Yes	No	(No)
Conostylis aculeata	Yes	Yes	Yes	No	No	(No)
Hardenbergia comptoniana	Yes	No	Yes	No	No	(No)
Sedges and Rushes						
Lepidosperma gladiatum	No	(No)	No	(No)	Yes	Yes
Juncus pallidus	No	(No)	No	(No)	Yes	Yes
Total	20	18	16	13	12	11
% of species listed in RMP Rev2		90%	81%		92%	

Brackets for Yes and No were used for October/November 2017 to indicate that the species was not listed as likely suitable for that particular rehabilitation area in the RMP Rev2 and regardless of presence/absence, the species would not count towards the species composition milestones or outcomes for that particular area.

3.3.2 Native Vegetation Structure

Native vegetation structure in the rehabilitation areas during October/November 2017 was as per the following:

- Eastern Area:
  - Upper storey (up to 10 - 15m): Few remnant mature *Agonis flexuosa* and *Eucalyptus gomphocephala*.
  - Middle storey (1 - 6m): Rehabilitation comprising juvenile *Eucalyptus* spp. (*Eucalyptus gomphocephala, E. marginata, E. rudis, Corymbia calophylla*), *Agonis flexuosa*, *Acacia saligna* and *Jacksonia furcellata* with occasional *Acacia cyclops*.
  - Understorey (up to 1m): Rehabilitation comprising juvenile *Hakea prostrata, Rhagodia baccata, Macrozamia riedlei, Conostylis accuelata, Spyridium globulosum, Acacia pulchella* and young individuals of *Acacia* spp., *Agonis flexuosa*, *Eucalyptus* spp., *Banksia* spp., and *Xylomelum occidentale*. Some *Pteridium esculentum* was also present. Groundcover was mainly introduced weed species.

- Western Area:
  - Upper storey (up to 10 m): Few remnant mature *Agonis flexuosa*.
  - Middle storey (1 - 6 m): Rehabilitation comprising juvenile *Eucalyptus* spp. (mainly *Eucalyptus gomphocephala* and *E. rudis,* but also *E. marginata* and *Corymbia calophylla*), *Agonis flexuosa, Acacia cyclops, Acacia saligna* and *Jacksonia furcellata*.
  - Understorey (up to 1 m): Rehabilitation comprising juvenile *Hakea prostrata, Rhagodia baccata, Spyridium globulosum, Acacia pulchella* and young individuals of *Acacia* spp., *Agonis flexuosa, Eucalyptus* spp., *Banksia* spp. and *Xylomelum occidentale*. Groundcover was mainly introduced weed species.
- Sumpland:
  - Upper storey (10 - 15 m): Remnant mature *Melaleuca rhaphiophylla* and *Eucalyptus rudis*.
  - Middle storey (1 - 6 m): Remnant *Viminea juncea* with rehabilitation comprising mainly juvenile *Eucalyptus rudis, Agonis flexuosa, Melaleuca rhapiophylla, Viminea juncea* and *Acacia* spp.
  - Understorey (up to 1m tall): Occasional remnant sedges and rushes with rehabilitation comprising *Juncus pallidus* and young individuals of *Melaleuca* spp., *Eucalyptus rudis, Agonis flexuosa, Viminea juncea* and *Acacia* spp. Groundcover was mainly introduced weed species.

Further details on height of native species in each quadrat/transect are provided in Appendix 2.

3.3.3 Native Plant Stem Density

A summary of native plant stem density from October 2012 to October/November 2017 is provided in Table 4. The reliability measure (SE/Mean) that was introduced in the RMP Rev2 was within target (<30%) for all rehabilitation areas in October/November 2017. Detailed results for each quadrat and transect surveyed in October/November 2017 are provided in Appendix 1.

Table 4: Native Plant Stem Density

Monitoring Occasion	Stems per Hectare											
	Eastern Area				Western Area				Sumpland			
	Mean	SE[1]	n[2]	SE/Mean[3]	Mean	SE	n	SE/Mean	Mean	SE	n	SE/Mean
Oct. 2012	1,500	204	4	-	320	193	5	-	2,300	-	1	-
March 2013	775	397	4	-	490	99	10	-	1,400	-	1	-
Nov. 2013	1,650	318	4	-	940	111	10	-	1,300	-	1	-
March 2014	740	258	5	-	600	99	13	-	950	250	2	-
Oct. 2014	975	119	8	-	953	84	15	-	1,700	200	2	-
March 2015	2,033	672	12	-	778	97	23	-	7,183	2,703	6	-
Oct. 2015	1,140	175	5	-	853	110	15	-	7,300	1,900	2	-
April 2016	1,410	544	10	-	594	69	18	-	3,340	1,447	5	-
Oct. 2016	1,619	695	8	-	503	85	18	-	2,767	1,271	3	-
May 2017[4]	1,158	245	6	21%	409	63	21	15%	2,163	468	4	22%
Oct/Nov 2017	1,536	129	7	8%	1,759	131	22	7%	2,038	464	4	23%

[1] SE = standard error [2] n = number of quadrats/transects [3] '-' = not applicable

[4] Change in methods from May 2017 onwards in Eastern Area and Sumpland.

3.3.4 Weeds

The most common weed species recorded in all three rehabilitation areas were *Cynodon dactylon* (couch grass) and various pasture grasses. Other relatively common species included *Trachyandra divaricata, Lupinus sp., Oenothera mollissima* and *Solanum nigrum*. Few individuals of Declared Pest species *Zantedeschia aethiopica* (DP) and *Gomphocarpus fruticosus* (DP) were also recorded.

Live percentage weed cover for each rehabilitation area in October/November 2017 is presented in Table 5. The reliability measure (SE/Mean), that was introduced in RMP Rev2, was within target (<30%) for all rehabilitation areas. Complete results on weed species recorded in October/November 2017 are provided in Appendix 3. Spring weed cover has historically been higher than autumn weed cover due to higher soil moisture levels.

Table 5: Live Percentage Weed Cover

Monitoring Occasion	Live Weed % Cover											
	Eastern				Western				Sumpland			
	Mean	SE	n^2	SE/Mean	Mean	SE	n^2	SE/Mean	Mean	SE	n^2	SE/Mean
May 2017	7.88	0.85	6	11%	16.05	2.35	21	15%	25.53	7.36	4	29%
Oct/Nov 2017	19.69	3.82	7	19%	21.23	3.19	22	15%	44.88	1.43	4	3%

3.3.5 Grazing Impact

Evidence of grazing on seedlings was recorded across all rehabilitation areas in October/November 2017. This grazing was unrelated to the cows observed in June/July and was rather undertaken by kangaroos and rabbits as their scats, tracks, foot prints and diggings were observed across the site. Grazing appeared particularly damaging on seeding survival in the Western Area. Snail grazing was also observed, especially in the Western Area.

3.4 ASSESSMENT AGAINST TRIGGER VALUES

An assessment of monitoring results against trigger values specified in RMP Rev2 is presented in Table 6. Photo monitoring was undertaken to maintain a visual record of revegetation progress, however photo monitoring is not linked to any trigger values or contingency measures.

Table 6: Assessment Against Management Trigger Values

Parameter	Performance Indicator	Trigger Value (RMP Rev2)	Assessment	Contingency Measures
Fencing	Fence condition	Fence condition does not prevent livestock access	Not triggered	None necessary
	Signs of livestock access	Signs of livestock access	Not triggered during monitoring, but was triggered in June/July.	Property fence was inspected but not at fault. WAPC/Department of Planning was contacted and they organised for the cows to be removed as described in Section 3.2.
Vegetation	Native species composition	Less than 85% of target flora species for a Rehabilitation Area present in that area (target species listed in Table 7 of RMP Rev2)	Triggered for Western Area (Western = 81%, however above the completion criteria of 80%).	Undertake infill planting during winter 2018 to increase species diversity in accordance with RMP Rev2.
	Native plant density	In 2017 and 2018: • Less than 1,650 stems per hectare on average in Eastern and Western Areas • Less than 420 stems per hectare on average in Sumpland	Triggered for Eastern Area (Eastern = 1,536 stems per hectare, however above the completion criteria of 1,500	Undertake infill plantings during winter 2018 that increase the stem densities in accordance with RMP Rev2.
	Weed species composition	Presence of Declared Pest species	Triggered for all rehabilitation areas	Continue targeted weed control of the Declared Pest species in accordance with RMP Rev2.
	Live weed % foliage cover	In 2017 and 2018: • Average live weed % foliage cover 40% or higher	Triggered for Sumpland (Live weed cover in Sumpland 45%, however below completion criteria of 50%).	Undertake weed control in accordance with RMP Rev2.

4. ASSESSMENT AGAINST MILESTONES AND PERFORMANCE TARGETS

An assessment of monitoring results against milestones and performance targets specified in RMP Rev2 is presented in Table 7.

Table 7: Assessment Against RMP Rev2 Milestones and Performance Targets

Completion Criteria - Environmental Outcome Latest by 30 June 2021	Milestone[1]	Assessment Against Milestone	Performance Target	Assessment Against Performance Target
At least 80% of the species listed in RMP Rev2 Table 7 for a particular Rehabilitation Area are present in that Rehabilitation Area[2]	By 31 December 2017, achieve and maintain at least 80% of the species listed in RMP Rev2 Table 7 for a particular rehabilitation area[2]	Milestone of 80% target species achieved in all rehabilitation areas as shown in Table 3.	Plant at least 10,538 stems of appropriate species as detailed in RMP Rev2 Table 6 and Table 7 across rehabilitation areas in 2017.	Performance target not met due to supply issue. While more than the necessary number of seedlings were ordered (11,550) from nursery, some could not be supplied and in total 10,200 were planted.
Achieve a self-sustaining vegetation community that, in the longer term, will provide habitat for the Western Ringtail Possum (*Pseudocheirus occidentalis*) and White-tailed Black Cockatoo (*Calyptorhynchus baudinii* and *C. latirostris*)	By 31 December 2017, achieve and maintain on average at least 1,500 stems per hectare in the Western and Eastern Areas[2] By 31 December 2017, achieve and maintain on average at least 380 stems per hectare in the Sumpland[2]	Milestone of 1,500 stems per hectare achieved in both Western and Eastern Areas as shown in Table 4. Milestone of 380 stems per hectare achieved in the Sumpland as shown in Table 4.	Plant at least 10,538 stems of appropriate species as detailed in RMP Rev2 Table 6 and Table 7 across rehabilitation areas in 2017.	
The average live weed cover is <50%	By 31 December 2017, achieve and maintain the average live weed cover of <50%	Milestone of <50% live weed cover achieved in all rehabilitation areas as shown in Table 5.	Undertake weed control biannually	Performance target met. Spraying undertaken for summer and winter weeds.

1 These milestones will be assessed on the basis of rehabilitation monitoring scheduled for October 2017 (see RMP Rev2 Section 8).

2 Including planted seedlings and native regrowth.

5. DISCUSSION AND CONCLUSION

Rehabilitation monitoring results from October/November 2017 showed that all milestones set in RMP Rev2 were met. Failure to meet milestones would have required notifying the Commonwealth Department of Environment and Energy (DoEE) by 14 January 2018, but as the milestones were met, no such notification will be necessary. It is noted that one of the performance targets requiring planting of 10,538 seedlings was not met due to a supply issue (10,200 seedlings planted vs the 10,538 required), however this did not adversely impact on achievement of required milestones.

Assessment against management trigger values indicated that contingency measures were required to address species composition in the Western Area, native plant density in the Eastern Area and live weed cover in the Sumpland. The management trigger values are for operational purposes only and provide a safety margin against potential future compliance issues. The management trigger values will not be taken into consideration in determining whether the final completion criteria have been met.

The Sumpland area continues to consistently meet the final completion criteria and it is recommended that communication with DoEE is commenced to relinquish any further rehabilitation obligation in regards to this area.

Due to mass planting of seedlings in winter 2017, many of the seedlings in the Western Area were very young and anticipated to be subject to higher mortality over summer 2017/2018 than older seedlings. Consequently substantial infill planting is likely necessary during winter 2018 in order to maintain current stem densities.

While the Eastern Area has more established revegetation than the Western Area, it also has large number of seedlings planted in winter 2017 that will likely be subject to high mortality during summer 2017/2018. Similarly to the Western Area, it is likely that substantial infill planting will be necessary during winter 2018 in order to maintain current stem densities.

Yours sincerely
MBS Environmental

Kirsi Kauhanen
Senior Environmental Scientist

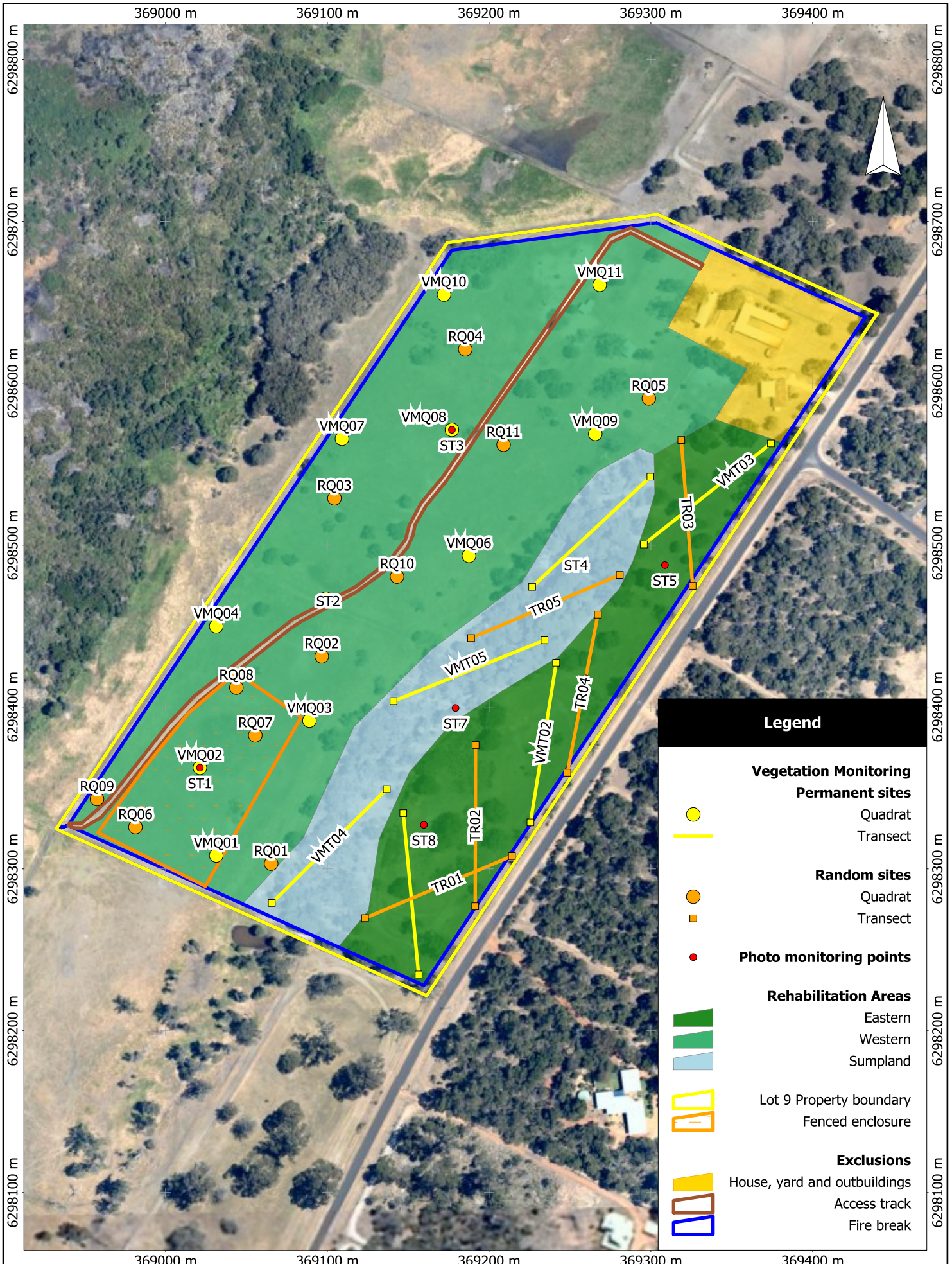
enc. Figure 1:Location Plan
Figure 2:Vegetation Monitoring Spring 2017

Plates 1-11

Appendix 1: Native Species Recorded
Appendix 2: Native Species Heights
Appendix 3: Weed Species and Live % Cover

Scale: 1:200000 Original Size: A4 Grid: MGA94(50) 0 5 km	Bunbury Cathedral Grammar School Rehabilitation Monitoring Spring 2017 Lot 9 Plan 43302 Stratham	**Figure 1** **Location Plan**	Martinick Bosch Sell Pty Ltd 4 Cook St West Perth WA 6005 Ph: (08) 9226 3166 Fax: (08) 9226 3177 info@mbsenvironmental.com.au www.mbsenvironmental.com.au MBS ENVIRONMENTAL

C:\Users\kkauhanen\Documents\Bunbury Grammar\Drawings\Monitoring reports\Spring 2017\F1 - Location Plan.map 22/12/2017 F1



Scale: 1:3000
Original Size: A4
Air Photo Date: NearMap Dec 2009
Grid: MGA94(50)
0 100 m

Bunbury Cathedral Grammar School
Rehabilitation Monitoring
Spring 2017
Lot 9 on Plan 43302 Stratham

Figure 2

Vegetation Monitoring Spring 2017

Martinick Bosch Sell Pty Ltd
4 Cook St
West Perth WA 6005
Ph: (08) 9226 3166
Fax: (08) 9226 3177
info@mbsenvironmental.com.au
www.mbsenvironmental.com.au

MBS ENVIRONMENTAL

PLATES 1 - 11

Plate 1: View Northeast from ST1 - Western Rehabilitation Area

August 2011

February 2012

July 2012

October 2012

March 2013

November 2013

March 2014

October 2014

March 2015

October 2015

April 2016

October 2016

May 2017

October/November 2017

Plate 2: View Northeast from ST2 - Western Rehabilitation Area

August 2011

February 2012

July 2012

October 2012

March 2013

November 2013

March 2014

October 2014

March 2015

October 2015

April 2016

October 2016

May 2017

October/November 2017

Plate 3: View Northeast from ST3 - Western Rehabilitation Area

August 2011

February 2012

July 2012

October 2012

March 2013

November 2013

March 2014

October 2014

March 2015

October 2015

April 2016

October 2016

May 2017

October/November 2017

Plate 4: View Northeast from ST4 - Sumpland Area

August 2011

February 2012

July 2012

October 2012

March 2013

November 2013

March 2014

October 2014

March 2015

October 2015

April 2016

October 2016

May 2017

October/November 2017

Plate 5: View Southwest from ST5 - Eastern Rehabilitation Area

August 2011

February 2012

July 2012

October 2012

March 2013

November 2013

March 2014

October 2014

March 2015

October 2015

April 2016

October 2016

May 2017

October/November 2017

Plate 6: View Southwest from ST6 - Eastern Rehabilitation Area

August 2011

February 2012

July 2012

October 2012

March 2013

No data (incorrect view)

November 2013

March 2014

October 2014

March 2015

October 2015

April 2016

October 2016

May 2017

October/November 2017

Plate 7: View Southwest from ST7 - Sumpland Area

August 2011

February 2012

No data (incorrect view)

July 2012

October 2012

March 2013

November 2013

March 2014

October 2014

March 2015

October 2015

April 2016

October 2016

May 2017

October/November 2017

Plate 8: View Southwest from ST8 - Eastern Rehabilitation Area

August 2011

February 2012

July 2012

October 2012

March 2013

November 2013

March 2014

October 2014

March 2015

October 2015

April 2016

October 2016

May 2017

October/November 2017

Plate 9: Eastern Area

VMT01 - Start

VMT02 - Start

VMT03 - Start

TR01 - Start

TR02 - Start

TR03 - Start

VMT01 - End

VMT02 - End

VMT03 - End

TR01 - End

TR02 - End

TR03 - End

TR04 - Start

TR04 - End

Plate 10: Western Area

VMQ01

VMQ02

VMQ03

VMQ04

VMQ05

VMQ06

VMQ07

VMQ08

VMQ09

VMQ10

VMQ11

RQ01

RQ02

RQ03

RQ04

RQ05

RQ06

RQ07

RQ08

RQ09

RQ10

RQ11

Plate 11: Sumpland

VMT04 - Start

VMT05 - Start

VMT06 - Start

TR05 - Start

VMT04 - End

VMT05 - End

VMT06 - End

TR05 - End

APPENDICES

APPENDIX 1: NATIVE SPECIES RECORDED

Table A1.1: Native Species Recorded in October/November 2017 - Eastern Area

Species	Number of Individuals per Transect (2m by 100 m)							Obs.*
	VMT01	VMT02	VMT03	TR01	TR02	TR03	TR04	
Acacia cyclops	0	2	1	0	0	4	3	Y
Acacia pulchella	0	0	2	0	0	0	0	Y
Acacia saligna	0	4	0	2	7	2	2	Y
Agonis flexuosa	18	4	8	19	5	7	12	Y
Banksia attenuata	0	0	1	0	0	1	0	Y
Banksia grandis	2	0	3	1	0	1	2	Y
Bossiaea eriocarpa	0	0	0	0	0	0	0	N
Conostylis acuelata	0	0	0	1	0	0	0	Y
Corymbia calophylla	0	0	2	4	0	0	2	Y
Eucalyptus gomphocephala	7	8	5	3	7	6	3	Y
Eucalyptus marginata	0	3	0	4	2	0	0	Y
Eucalyptus rudis	9	3	2	1	0	4	0	Y
Hakea prostrata	3	0	0	1	2	1	0	Y
Hardenbergia comptoniana	0	0	0	0	0	0	0	N
Hibbertia cuneiformis	0	0	0	0	0	0	0	Y
Jacksonia furcellata	0	0	1	0	0	0	1	Y
Macrozamia riedlei	0	0	0	0	2	0	0	Y
Rhagodia baccata	0	1	1	0	0	0	2	Y
Spyridium globulosum	0	0	0	5	0	6	0	Y
Xylomelum occidentalis	0	0	0	0	0	0	0	Y
Total per 200 m^2 transect	39	25	26	41	25	32	27	

**Obs. = Opportunistic observation within the Eastern Area.* *Y = Yes, observed.* *N = No, not observed.*

Table A1.2: Native Species Recorded in October/November 2017 - Western Area

Species	Number of Individuals per Quadrat (10 by 10 m)																					Obs.*
	VMQ01	VMQ02	VMQ03	VMQ04	VMQ05	VMQ06	VMQ07	VMQ08	VMQ09	VMQ10	VMQ11	RQ01	RQ02	RQ03	RQ04	RQ05	RQ06	RQ07	RQ08	RQ09	RQ10	RQ11	
Acacia cyclops	1	0	0	2	2	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	Y
Acacia pulchella	0	0	0	1	0	3	0	0	1	0	0	0	2	0	0	0	0	1	0	0	0	0	Y
Acacia saligna	0	0	1	0	0	1	4	0	2	1	3	0	2	1	2	0	0	2	0	0	5	0	Y
Agonis flexuosa	1	8	5	5	1	10	3	5	0	13	3	8	2	1	2	11	6	2	8	13	3	4	Y
Banksia attenuata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Y
Banksia grandis	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	Y
Bossiaea eriocarpa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N
Conostylis acuelata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N
Corymbia calophylla	0	2	1	1	2	1	1	0	1	3	0	1	0	1	1	0	1	3	0	0	5	3	Y
Eucalyptus gomphocephala	1	8	5	4	9	0	3	3	3	6	4	3	5	2	4	2	11	3	9	10	1	7	Y
Eucalyptus marginata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Y
Eucalyptus rudis	0	0	10	0	0	5	0	0	1	1	0	6	0	0	0	1	0	0	0	0	1	1	Y
Hakea prostrata	2	0	3	1	0	0	0	0	0	0	1	2	1	0	0	1	5	1	5	1	1	3	Y
Hardenbergia comptoniana	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N
Hibbertia cuneiformis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Y
Jacksonia furcellata	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	Y
Melaleuca preissiana	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Y
Rhagodia baccata	0	0	1	2	0	1	0	0	0	0	0	1	2	0	0	0	0	1	0	0	0	2	Y
Spyridium globulosum	0	0	0	0	0	1	0	7	1	1	0	4	2	2	3	7	0	0	0	0	4	0	Y
Xylomelum occidentalis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Y
Total per 100m^2	5	19	26	16	14	23	11	15	9	25	12	25	19	9	13	22	23	13	23	24	21	20	

**Obs. = Opportunistic observation within the Western Area.* *Y = Yes, observed.* *N = No, not observed.*

Table A1.3: Native Species Recorded in October/November 2017 - Sumpland

Species	Number of Individuals per Transect (2 by 100 m)				Obs.*
	VMT04	VMT05	VMT06	TR05	
Acacia cyclops	0	0	0	0	Y
Acacia saligna	4	0	0	2	Y
Agonis flexuosa	1	8	7	5	Y
Banksia littoralis	0	0	0	0	N
Eucalyptus rudis	19	13	46	13	Y
Juncus pallidus	1	0	5	0	Y
Lepidosperma gladiatum	0	1	0	0	Y
Melaleuca preissiana	0	0	0	0	Y
Melaleuca rhaphiophylla	14	1	2	1	Y
Rhagodia baccata	0	0	0	0	Y
Spyridium globulosum	0	4	0	1	Y
Viminaria juncea	0	6	7	2	Y
Total per 200m^2 transect	39	33	67	24	

**Obs. = Opportunistic observation within the Sumpland. Y = Yes, observed. N = No, not observed.*

APPENDIX 2: NATIVE SPECIES HEIGHTS

Table A2.1: Native Species Heights Recorded in October/November 2017 - Eastern Area

Species	Plant Height (up to m)						
	VMT01	VMT02	VMT03	TR01	TR02	TR03	TR04
Acacia cyclops	0	0.5	0.3	0	0	0.5	0.4
Acacia pulchella	0	0	0.5	0	0	0	0
Acacia saligna	0	0.5	0	1.8	1.5	0.6	1
Agonis flexuosa	5	2	2.5	2	2.5	2.5	1.8
Banksia attenuata	0	0	0.3	0	0	0.3	0
Banksia grandis	0.3	0	0.3	0.2	0	0.3	0.3
Bossiaea eriocarpa	0	0	0	0	0	0	0
Conostylis acuelata	0	0	0	0.25	0	0	0
Corymbia calophylla	0	0	0.5	1.8	0	0	0.6
Eucalyptus gomphocephala	6	5	3.5	4	1.5	7	5
Eucalyptus marginata	0	2	0	2	2	0	0
Eucalyptus rudis	5	3	5.5	2	0	2	0
Hakea prostrata	0.5	0	0	1	1	0	0
Hardenbergia comptoniana	0	0	0	0	0	0	0
Hibbertia cuneiformis	0	0	0	0	0	0	0
Jacksonia furcellata	0	0	2	0	0	0	2
Macrozamia riedlei	0	0	0	0	0.6	0	0
Rhagodia baccata	0	0.5	0.4	0	0	0.2	0
Spyridium globulosum	0	0	0	0.3	0	0.4	0
Xylomelum occidentalis	0	0	0	0	0	0	0

0 = Species Not recorded.

Table A2.2: Native Species Heights Recorded in October/November 2017 - Western Area

Species	Plant Height (up to m)																				
	VMQ01	VMQ02	VMQ03	VMQ04	VMQ05	VMQ06	VMQ07	VMQ08	VMQ09	VMQ10	VMQ11	RQ01	RQ02	RQ03	RQ04	RQ05	RQ06	RQ07	RQ08	RQ09	RQ10	RQ11
Acacia cyclops	0.2	0	0	0.3	1	0.6	0	0	0	0	0	0	0	0.3	2.5	0	0	0	0	0	0.4	0
Acacia pulchella	0	0	0	0.3	0	0.5	0	0	0.5	0	0	0	0.3	0	0	0	0	1	0	0	0	0
Acacia saligna	0	0	0.5	0	0	1	0.3	0	0.3	1.2	1	0	0.1	0.8	2.5	0	0	0.3	0	0	0.5	0
Agonis flexuosa	0.3	0.6	0.5	3.5	0.4	0.4	0.5	0.3	0	2.5	2.5	1.2	0.3	0.5	0.4	1.5	0.6	0.8	0.4	0.4	0.4	0.5
Banksia attenuata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Banksia grandis	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0	0	0	0	0	0	0	0	0
Bossiaea eriocarpa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Conostylis acuelata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Corymbia calophylla	0	0.2	0.5	0.2	0.3	0.4	0.3	0	0.3	0.5	0	0.4	0	0.3	0.3	0	0.2	0.3	0	0	0.6	0.4
Eucalyptus gomphocephala	0.5	0.5	2.5	6	6	0	6	6.5	0.5	6	4.5	0.4	1.5	2.5	4.5	4	0.5	0.4	1.8	0.4	1.5	0.5
Eucalyptus marginata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eucalyptus rudis	0	0	1.2	0	0	2.5	0	0	2	0.5	0	3.5	0	0	0	1.5	0	0	0	0	0.4	0.4
Hakea prostrata	0.4	0	0.5	0.3	0	0	0	0	0	0	2.5	0.4	0.2	0	0	0.3	0.6	0.3	0.4	0	0.5	0.3
Hardenbergia comptoniana	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0	0
Hibbertia cuneiformis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jacksonia furcellata	0	0.5	0	0	0	0	0	0	0	0	1.2	0	0	1.5	0	0	0	0	0.3	0	0	0
Melaleuca preissiana	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rhagodia baccata	0	0	0.5	0.3	0	0.3	0	0	0	0	0	1	0.7	0	0	0	0	0.3	0	0	0	0.3
Spyridium globulosum	0	0	0	0	0	0.3	0	0.5	0.5	0.3	0	0.4	0.4	0.3	0.4	0.3	0	0	0	0	0.3	0
Xylomelum occidentalis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = Species Not recorded.

Table A2.3: Native Species Heights Recorded in October/November 2017 - Sumpland

Species	Plant Height (up to m)			
	VMT04	VMT05	VMT06	TR05
Acacia cyclops	0	0	0	0
Acacia saligna	2.5	0	0	3
Agonis flexuosa	2	3	5	1.5
Banksia littoralis	0	0	0	0
Eucalyptus rudis	4	1	7	0.3
Juncus pallidus	1.5	0	2	0
Lepidosperma gladiatum	0	0.4	0	0
Melaleuca preissiana	0	0	0	0
Melaleuca rhaphiophylla	2	0.2	2	0.2
Rhagodia baccata	0	0	0	0
Spyridium globulosum	0	0.3	0	0.2
Viminaria juncea	0	2.5	2	0.2

0 = Species Not recorded.

APPENDIX 3: WEED SPECIES AND LIVE % COVER

Table A3.1: Weed Species and Live % Cover Recorded in October/November 2017 - Eastern Area

Species	Weed Species Present and Live % Cover						
	VMT01	VMT02	VMT03	TR01	TR02	TR03	
Arctotheca calendula	p	p	a	p	p	p	p
Crassula sp.	p	p	a	p	a	a	p
Cynodon dactylon	p	p	p	p	p	p	p
Erodium sp.	p	p	p	p	p	p	p
Hypochaeris sp.	p	a	a	a	a	a	a
Lupinus sp.	p	p	p	p	p	p	p
Oenothera mollissima	a	a	a	p	a	a	p
Oxalis sp.	p	a	a	a	a	a	p
Solanum nigrum	p	a	a	a	p	p	a
Trachyandra divaricata	p	p	p	p	p	p	p
Trifolium sp.	p	a	a	a	a	a	a
Verbascum virgatum	a	a	a	a	a	a	a
Wahlenbergia capensis	p	a	a	a	a	a	a
Zantedeschia aethiopica (DP)	a	a	a	a	p	a	a
Other grasses	p	p	p	p	p	p	p
Live % Cover	9	29	16	14	38	13	20

p = present *a= absent*

Table A3.2: Weed Species and Live % Cover Recorded in October/November 2017 - Western Area

Species	Weed Species Present and Live % Cover																				
	VMQ01	VMQ02	VMQ03	VMQ04	VMQ05	VMQ06	VMQ07	VMQ08	VMQ09	VMQ10	VMQ11	RQ01	RQ02	RQ03	RQ04	RQ05	RQ06	RQ07	RQ08	RQ09	RQ10	RQ11
Arctotheca calendula	a	a	a	p	a	a	a	p	a	a	a	a	a	a	p	a	a	a	p	a	a	a
Conyza sp.	a	p	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a
Crassula sp.	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	p	a	a	a
Cucumis myriocarpus	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a
Cynodon dactylon	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p
Erodium sp.	a	a	a	a	a	a	a	p	a	a	a	a	a	a	p	a	a	a	a	a	a	a
Gomphocarpus fruticosus (DP)	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a
Lupinus sp.	a	p	p	p	p	p	p	a	p	p	a	a	a	p	p	p	p	p	p	a	a	a
Malva parviflora	a	a	a	p	p	a	a	a	a	a	a	a	a	a	a	a	p	a	a	a	a	a
Oenothera mollissima	p	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	p	a	a	a
Oxalis sp.	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a
Solanum nigrum	a	p	a	p	a	a	a	a	a	a	a	a	a	a	a	a	p	a	a	a	a	a
Sonchus sp.	a	a	a	a	p	a	a	a	a	a	a	p	a	a	a	a	a	a	a	a	a	a
Trachyandra divaricata	p	p	p	a	a	a	a	p	a	a	p	a	p	a	a	a	p	a	a	a	p	a
Verbascum virgatum	a	p	a	a	a	a	a	a	a	a	a	a	a	a	a	a	p	a	p	a	p	a
Other grasses	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p
Live % Cover	45	50	5	30	20	10	20	10	15	15	5	40	10	25	15	15	40	40	40	2	5	10

p = present *a= absent*

Table A3.3: Weed Species and Live % Cover Recorded in October/November 2017 - Sumpland

Species	Weed Species Present and Live % Cover			
	VMT04	VMT05	VMT06	TR05
Atriplex prostrata	p	p	a	a
Cynodon dactylon	p	p	p	p
Oxalis sp.	a	a	a	p
Solanum nigrum	p	p	p	p
Sonchus sp.	p	p	a	p
Verbascum virgatum	a	a	a	a
Zantedeschia aethiopica (DP)	a	p	a	p
Other grasses	p	p	p	p
Live % Cover	48	47	44	42

p = present *a= absent*

APPENDIX 8: WEED CONTRACTOR INVOICES

MAINSPRAY

VEGETATION CONTROL & ROADSIDE MANAGEMENT

RECEIVED
27 APR 2017

TAX INVOICE

Bunbury Cathedral Grammar School
PO Box 1198
BUNBURY WA 6231

EFT payment preferred
Direct Banking Details for Mainspray

BSB: 036 122
Account: 335 743

Remittance advice to: admin@mainspray.com.au

Invoice #: 00002961 **Date** 10/04/2017 **Order No.** Client request

Qty	Description	Unit Price	Total (exc)
	Stratham Regional Park: Jan - Mar work. Spray throughout seedlings area to control summer weeds.		
10	10 hours: boom spray selective herbicides over seedlings to control couch and kikuyu grasses.	[redacted]	
20	20 hours: hand spray glyphosate throughout seedlings to control weeds not affected by the selective herbicides; e.g. deadly nightshade and melons.		
18	Glyphosate bi-active @ 2 litres: 100		
4	Verdict 520 @ 400ml/ha		
6	Hot-up Adjuvant		

SUP REF .....
INV No .....
PO No .....
GL No .....
AMOUNT .....
SIGN .....
Grands.

SubTotal [redacted]
GST
TOTAL

ACCOUNT TERMS AND CONDITIONS

Payment is to be made within pay period of 30 days EOM. A late fee of 2% may be charged.

Thankyou for your business.

Office Use Only

Yard Located at 1 Nicholson Rd, Picton East

MAINSPRAY

VEGETATION CONTROL AND ROADSIDE MANAGEMENT

Postal Address

PO Box 6091
SOUTH BUNBURY WA 6230

T: 08 9726 2877
E: admin@mainspray.com.au
1 Nicholson Road; Picton East 6229

INVOICE TO:

Bunbury Cathedral Grammar School
PO Box 1198
BUNBURY WA 6231

TAX INVOICE

ABN 46 086 647 314

Order No. Client Request **Date** 29/06/2017 **Invoice** 00003000

QTY	DESCRIPTION	UNIT PRICE	TOTAL exc
	Stratham Regional Park: Sprayed out front section for grasses and other weeds. Completed by Tim and Matt on 20/6/17.		
6.5	Certified Pest Management Tech	[redacted]	
6.5	Multi-skilled Plant Operator		
6.5	4WD Spray Vehicle <1000 litres		
10	Glyphosate		
1	Hot-up Adjuvant		

Subtotal: [redacted]

GST:

Total:

Account terms and conditions

Payment is to be made by the due date which is the 25th of the month following the invoice date.
A late fee of 2% may be charged.
Please call us if you are having diffculty paying this account.

EFT payment preferred.
Direct Banking Details for Mainspray:
BSB:- 036 122
Account:- 335 743

Cheques accepted: Please post to our postal address provided at the top of this invoice.

Office use only

Date Paid

Paym Type

MAINSPRAY

VEGETATION CONTROL AND ROADSIDE MANAGEMENT

Postal Address

PO Box 6091
SOUTH BUNBURY WA 6230

T: 08 9726 2877
E: admin@mainspray.com.au
1 Nicholson Road; Picton East 6229

INVOICE TO:

Bunbury Cathedral Grammar School
PO Box 1198
BUNBURY WA 6231

TAX INVOICE

ABN 46 086 647 314

Order No. Client Request **Date** 21/07/2017 **Invoice** 00003004

QTY	DESCRIPTION	UNIT PRICE	TOTAL exc
	Stratham Regional Park: Mounds and inter-rows sprayed out by Tim and Matt; all weeds on site sprayed by Adam; all grasses and capeweed in rehab area spot-sprayed by Adam. Work carried out on 11th and 13th July.		
22	Certified Pest Management Tech		
7.5	Multi-skilled Plant Operator		
22	4WD Spray Vehicle <1000 litres		
34	Glyphosate @ 2 litres : 100 litres		
1.6	Envirodye @ .075%		
0.8	Lontrel @ 200 ml: 100 litres		
1.2	Verdict @300 ml:100 litres		
4.2	Hot-up Adjuvant @ 0.2%		

Subtotal: [redacted]

GST:

Total:

Account terms and conditions

Payment is to be made by the due date which is the 25th of the month following the invoice date.
A late fee of 2% may be charged.
Please call us if you are having diffculty paying this account.

EFT payment preferred.
Direct Banking Details for Mainspray:
BSB:- 036 122
Account:- 335 743

Cheques accepted: Please post to our postal address provided at the top of this invoice.

Office use only

Date Paid

Paym Type

APPENDIX 9: SCHOOL MAINTENANCE DETAILS

Kirsi Kauhanen

To: Paul Davey
Subject: RE: Stratham rehabilitation

From: Paul Davey [mailto:paul.davey@bcgs.wa.edu.au]
Sent: Wednesday, 4 April 2018 2:14 PM
To: Kirsi Kauhanen
Subject: RE: Stratham rehabilitation

Hi Kirsi,
From 23rd till the 27th October 2017 I carried out a non-selective herbicide spray of the entire Stratham block (Both inside and outside our Kangaroo fence) using both Boom spray in combination with a hand lance and Glyphosate 420 at a one percent rate.
Upon review in November it was deemed to be a very effective eradication of 90% of annual weeds and 70% perennial grasses (couch, Kikuyu).

Mid November all seedlings inside the fenced area were watered with approximately 2 litres of water each mixed with wetter soil @ 0.3%. The watering was carried out using injection spikes which deliver the water into the root zone area, 200mm – 300mm deep.

November 23rd we had a class of 52 year 5 students led by Mr Geoff Dunbar and 3 other teaching staff for half a day pulling out remanent vegetation and dead weed stalks within the fenced area.

Mid December I spent a day spot spraying any weed/grass patches that survived the October herbicide with Glyphosate 420 @ 0.8% rate.

January 2nd -4th 2018 all seedlings watered within fenced area, selected seedlings watered outside fenced area. 3ltrs of water mixed with 0.3% soil wetter per plant using the injection spikes.

March 1st and 2nd all seedlings within fenced area watered @ 3ltrs water and 0.3% soil wetter per plant.

Overall it seems to have been a very useful exercise carrying out the watering regime over the summer months with a relatively high survival rate of plants within the very difficult fenced area that seems to have a slightly lower water table that the seedlings have previously struggled to get their roots into in the first season.

Let me know if I can help with anything else Kirsi.

Regards
Paul Davey
BCGS

APPENDIX 10: AUSTRALIND CONTRACTING QUOTE

Australind Contracting

ABN: 18 346 849 973 ACN: 153 384 877
atf the DM & ND Kelly Family Trust
PO Box 2652
BUNBURY WA 6231

info@australindcontracting.com.au
www.australindcontracting.com.au

Quote

Bunbury Cathedral Grammar School
PO Box 1198
Bunbury WA 6230

Invoic	00002309
Date:	15/01/2017
PO No:	
Terms:	Net 14

Date	Details	Total (inc-GST)
	Off set revegatation site Lot 9 Minninup Road South, Stratham Infill plant 11000 seedlings (cells @$5.40 per stem) seedlings into western & eastern sides inclusive of fertiliser pill and corflute tree guard with 2 stakes. Infill plant 500 seedlings (forestry tubes @$6.00 per stem) seedlings into marginal areas on western & eastern sides inclusive of fertiliser pill, water crystals, mulch and corflute tree guard with 2 stakes. Infill plant 50 Coastal Sword Sedges (forestry tubes @$4.50 per stem) randomly throughout sump area inclusive of fertiliser pill.	[redacted]

Subtotal:	[redacted]
GST:	
Total (inc-GST):	
Paid to Date:	
Balance Due:	

Powered by MYOB

by EFT
Name: Australind Contracting
BSB No: 086-554
A/C No: 12-573-0728

Quote 00002309

by mail
Detach this section and mail your cheque or money order to ...

Australind Contracting

PO Box 2652 BUNBURY WA 6231

in person
Call 0427 947260 to make an appointment

Invoice #: 00002309 Amount Due: **$68,887.50**

APPENDIX 11: AUSTRALIND CONTRACTING INVOICE

Australind Contracting

ABN: 18 346 849 973 ACN: 153 384 877

atf the DM & ND Kelly Family Trust
PO Box 2652
BUNBURY WA 6231

Tax Invoice

info@australindcontracting.com.au
www.australindcontracting.com.au

Bunbury Cathedral Grammar School
PO Box 1198
Bunbury WA 6230

Invoic	00002379
Date:	29/07/2017
PO No:	
Terms:	Net 14

Date	Details	Total (inc-GST)
	Off set re vegetation site Lot 9 Minninup Road South, Stratham	[redacted]
30/06/2017	Infill plant (S/E corner) with school staff/children 320 seedlings inclusive of fertiliser pill and corflute tree guard.	
7/07/2017	Infill 1116 seedlings @$4.00 per plant into fenced compound inclusive of fertiliser pill, soil wetter (Scotts Everdrop @250ml per plant) and mulch (supplied by client).	
7/07/2017	Infill 8764 seedlings @$5.40 per plant into eastern/western/sump areas inclusive of fertiliser pill and corflute tree guard.	

Subtotal:	[redacted]
GST:	
Total (inc-GST):	
Paid to Date:	
Balance Due:	

Powered by MYOB

by EFT
Name: Australind Contracting
BSB No: 086-554
A/C No: 12-573-0728

Quote 00002379

by mail
Detach this section and mail your cheque or money order to ...

Australind Contracting

PO Box 2652 BUNBURY WA 6231

in person
Call 0427 947260 to make an appointment

▪ Firebreaks ▪ Slashing
▪ Rotary Hoeing
▪ Mechanical Pruning
▪ Fertiliser Spreading
▪ Revegetation work
Australind contracting
0427 947 260

Invoice #:)0002379 Amount Due: **$51,789.60**