



COMPLIANCE REPORT

EPBC 2011/6228

Mount Emerald Wind Farm

June 2023



CONFIDENTIALITY

This document contains proprietary and confidential information, which is provided on a commercial in confidence basis. It may not be reproduced or provided in any manner to any third party without the consent of Mount Emerald Wind Farm Pty Ltd.

The recipient by retaining and using this document agrees to the above restrictions and shall protect the document and information contained in it from loss, theft and misuse.

DISCLAIMER

Whilst every effort has been made to ensure the accuracy of this information, the publisher accepts no responsibility for any discrepancies and omissions that may be contained herein.

DOCUMENT STATUS

Version	Purpose of Document	Author	Review	Approval	Date
1	EPBC - Annual Compliance Report	P McDonald	J Lee	J Lee	27-06-2023

TABLE OF CONTENTS

1. Declaration of Accuracy1

2. Project Description2

3. Project Activity Status2

4. Compliance Table3

ATTACHMENTS

- A. MEWF Offset Biocondition Report

1. DECLARATION OF ACCURACY

In making this declaration, I am aware that sections 490 and 491 of the Environmental 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 (please print):

James Lee

Position (please print):

Executive General Manager

Organisation (please print including ABN/ACN if applicable):

Mount Emerald Wind Farm Pty Ltd

ACN – 149 050 322

ABN – 19 149 050 322

Date:

27 June 2023

2. PROJECT DESCRIPTION

The Mount Emerald wind farm site is a large rural allotment (Lot 7 SP235224) comprising some 2,422ha. It is located approximately 3.5km south-west of Walkamin, off Springmount Road at Arriga on the Atherton Tablelands. Topographically, the site is situated at the northern most end of the Herberton Range (part of the Great Dividing Range) with the north-western section of the site being dominated by Walsh's Bluff.

The site is characterised by rugged terrain with elevations of between 540m up to 1089m ASL (above sea level). The town centre of Mareeba is situated approximately 18km to the north of the site, with the town of Atherton approximately 12km south-east of the site.

Other features of the site include a series of ephemeral drainage lines, including the headwaters of Granite Creek. An established 275kV transmission line (Powerlink: Chalumbin-Woree) and its associated easement traverses the site in an east-west direction, broadly bisecting it.

3. PROJECT ACTIVITY STATUS

The project commenced construction on the 7th February 2017.

On the 22nd February 2019, a notice of Commencement of Operation was issued under the terms of the construction contract, as such the wind farm is now considered to be currently in the "Operation" phase.

During this reporting period activities relating to conditions 16 and 21 have occurred and are documented in this report.

4. COMPLIANCE TABLE

No.	CONDITION	DELIVERABLE	DESIGNATION	CURRENT STATUS
General				
1	The action is limited to the construction of a maximum of 63 wind turbines and associated infrastructure on the wind farm site	Max. 63 WTG	COMPLIANT	No further action in this reporting period. Compliance detailed in Year 2 Compliance Report (Attachment A).
2	To minimise impacts to EPBC Act listed threatened species, the approval holder must not disturb more than 78 ha of habitat for EPBC Act listed threatened species on the wind farm site	Max. 78ha of disturbed area	COMPLIANT	No further action in this reporting period. Compliance detailed in Year 2 Compliance Report (Attachment B).
3	Prior to commencement of the action, the approval holder must submit a Turbine Location and Development Footprint Plan identifying the final position of all proposed turbines, access roads and associated operational and maintenance infrastructure, for the written approval of the Minister	Turbine Location and Development Footprint Plan (TLDFP)	COMPLIANT	Approval received 18/1/17. (Previously supplied in 2018 Year 1 Compliance Report) TLDFP sent to DOEE 13/01/2017 TLDFP (Previously supplied in 2019 Year 2 Compliance Report)
4	The Turbine Location and Development Footprint Plan must demonstrate how the approval holder has avoided and minimised disturbance to denning habitat for the Northern Quoll (<i>Dasyurus hallucatus</i>) and to <i>Grevillea glossadenia</i> and <i>Homoranthus porteri</i> .	Turbine Location and Development Footprint Plan (TLDFP)	COMPLIANT	Approval received 18/1/2017 (Previously supplied in 2018 Year 1 Compliance Report) Documents sent to DOEE 13/01/2017 TLDFP shows locations of plant species (Previously supplied in 2019 Year 2 Compliance Report) Refer to Design Justification Report (Previously supplied in 2018 Year 1 Compliance Report)
5	The approval holder must not commence the action until the Turbine Location and Development Footprint Plan has been approved by the Minister in writing.	Minister Sign-off	COMPLIANT	Approval of TLDFP received 18/1/2017. (Previously supplied in 2018 Year 1 Compliance Report) Date of Commencement 7/2/2017.

No.	CONDITION	DELIVERABLE	DESIGNATION	CURRENT STATUS
6	The Turbine Location and Development Footprint Plan must be implemented	Turbine Location and Development Footprint Plan (TLDFP)	COMPLIANT	Construction completed in compliance with TLDFP. No further action in this reporting period. Compliance detailed in Year 2 Compliance Report (Attachment A).
Northern Quoll Management				
7	For the protection of the Northern Quoll, the approval holder must maintain a viable population of Northern Quoll on the wind farm site.	Northern Quoll population ~50		Current estimate of population remains as per previous study. Refer to Northern Quoll Monitoring Report - Mt Emerald Wind Farm (2021) , Year 5 Annual report - Attachment A)
8	The approval holder must prepare and submit an Outcomes Strategy for the Minister's written approval which describes a monitoring program to inform adaptive management and determine whether the outcome required under condition 7 is being or has been met. The Outcomes Strategy must: (a) be prepared by a suitably qualified expert; (b) identify and justify performance measures, which are capable of accurate and reliable measurement, and will be used to measure the outcome required under condition 7; (c) include a monitoring program, to detect changes in the performance measures. The monitoring must include baseline surveys, control sites and experimental design (to test the effectiveness of different management measures); and (d) describe how the baseline and monitoring data will be adequate to: inform adaptive management; enable an objective decision to be made on whether the outcome described in condition 7 has been met.	Northern Quoll Outcomes Strategy (NQOS)	COMPLIANT	Approval received 23/12/16. (Previously supplied in 2018 Year 1 Compliance Report) NQOS submitted 7/12/2016. (Previously supplied in 2018 Year 1 Compliance Report)

No.	CONDITION	DELIVERABLE	DESIGNATION	CURRENT STATUS
9	The approval holder must not commence construction until the Minister has approved the Outcomes Strategy in writing.	Minister Sign-off	COMPLIANT	Approval received 23/12/2016 (Previously supplied in 2018 Year 1 Compliance Report)
10	The approved Outcomes Strategy must be implemented.	Quoll Monitoring Report	COMPLIANT	All Survey Results have been posted to Project WEBSITE. www.mtemeraldwindfarm.com.au/compliance/ Refer to Mt Emerald Wind Farm – Quoll Monitoring Final Report (Year 3 Annual report - Attachment A) Refer to Norther Quoll Monitoring Report - Mt Emerald Wind Farm (2021) , Year 5 Annual report - Attachment A)
11	If the Minister is not satisfied that either the outcomes required under condition 7 are likely to be achieved, or there is insufficient evidence that the outcomes required under condition 7 are being achieved, the Minister may (in writing) require the approval holder to submit a plan for the Minister's approval to reduce, mitigate, remediate, or offset impacts to matters protected under the controlling provisions of this approval within a designated timeframe. The Minister may require the plan be prepared or reviewed by a suitably qualified person or another person specified or agreed to by the Minister. If the Minister approves the plan then the approved plan must be implemented.	Northern Quoll Mitigation Plan	NOT APPLICABLE	Not required at this time.
Bare-rumped Sheathtail Bat and Spectacled Flying-fox Management				
12	Prior to commissioning, the approval holder must evaluate the effectiveness of suitable measures, including changed cut-in speed, avian radar system and SCADA system, to avoid and mitigate the impacts of turbine collision to Spectacled Flying-fox (<i>Pteropus conspicillatus</i>) and Bare-rumped Sheathtail Bat (<i>Saccolaimus saccolaimus nudicluniatatus</i>) on the wind farm site.	Evaluation of Potential Measures to Reduce Turbine Collision	COMPLIANT	Email from DoEE confirming requirements met - 2/6/2017 (Previously supplied in 2018 Year 1 Compliance Report) Report provided to DoEE 5/5/2017. (Previously supplied in 2018 Year 1 Compliance Report)

No.	CONDITION	DELIVERABLE	DESIGNATION	CURRENT STATUS
13	<p>Prior to commissioning, the approval holder must submit to the Minister for written approval, a Wind Farm Implementation Plan that is informed by the results of the evaluation required by condition 12. The Wind Farm Implementation Plan must include:</p> <p>(a) details of intended outcomes and measurable performance criteria for the Spectacled Flying-fox and Bare-rumped Sheath-tail Bat which are based on information contained in relevant guidance material including;</p> <p>- <i>Matters of National Environmental Significance: Significant Impact Guidelines 1.1 Environmental Protection and Biodiversity Conservation Act 1999 (2013);</i></p> <p>- <i>EPBC Act Policy Statement 2.3 Wind Farm Industry (2009); and</i></p> <p>- <i>Draft Referral Guideline for 14 birds listed as migratory species under the EPBC Act (2015).</i></p> <p>(aa) a program to implement a <i>Low Windspeed Curtailment Study</i>;</p> <p>(b) a program to monitor the effectiveness of progress against performance criteria; and</p> <p>(c) contingency measures and corrective actions that will be implemented if performance criteria are not being or are not likely to be met.</p>	Wind Farm Implementation Plan (WFIP)	COMPLIANT	<p>WFIP approved 4/05/2018 (Previously supplied in 2019 Year 2 Compliance Report)</p> <p>Final WFIP submitted to DoEE 24/4/2018. (Previously supplied in 2019 Year 2 Compliance Report)</p>
14	<p>The Wind Farm Implementation Plan must be reviewed by a suitably qualified expert prior to submission to the Minister for approval. The Wind Farm Implementation Plan must include the findings of the review undertaken by the suitably qualified expert and details of how any recommendations made by the suitably qualified expert have been addressed.</p>	Wind Farm Implementation Plan Review (WFIP)	COMPLIANT	<p>WFIP approved 4/5/2018 (Previously supplied in 2019 Year 2 Compliance Report)</p>

No.	CONDITION	DELIVERABLE	DESIGNATION	CURRENT STATUS
15	The approval holder must not commission the wind farm until the Wind Farm Implementation Plan has been approved by the Minister in writing.	Minister Sign-off	COMPLIANT	WFIP approved 4/5/2018 (Previously supplied in 2019 Year 2 Compliance Report)
16	The approved Wind Farm Implementation Plan must be implemented.		IN PROGRESS	<p>Environmental consultant engaged to undertake the activities as per WFIP.</p> <p>Bird and Bat Collision Mortality Studies Progress Report R2019-016 (previously supplied in Year 3 Compliance Report - Attachment B)</p> <p>Year 1 of Low Windspeed Curtailment Study (previously supplied in Year 4 Compliance Report – Attachment A)</p> <p>Year 2 of Low Windspeed Curtailment Study (previously supplied in Year 5 Compliance Report – Attachment B)</p> <p>Extension to the Wind Farm Implementation Plan approved by DAWE on 15 July 2022. Work has occurred since this time and reports will be issued in the next reporting period.</p>
17	Upon the direction of the Minister, the approval holder must cease to operate any specified wind turbine generator/s if the Minister considers that, based on compliance reporting required by condition 26, they are having an impact on Bare-rumped Sheath-tail Bat and Spectacled Flying-fox greater than the performance criteria required by condition 13(a) that cannot be mitigated or compensated.	Operational Strategy		Not required at this time.
Offsets				

No.	CONDITION	DELIVERABLE	DESIGNATION	CURRENT STATUS
18	To compensate for residual significant impacts to EPBC Act listed threatened species, the approval holder must provide environmental offsets that comply with the principles of the EPBC Act Environmental Offsets Policy.	Offset Area Management Plan (OAMP)	COMPLIANT	Approval of OAMP provided 20/12/2016 (Previously supplied in 2018 Year 1 Compliance Report) Response and final OAMP submitted 16/12/2016. (Previously supplied in 2018 Year 1 Compliance Report)
19	<p>The approval holder must prepare and submit an Offset Management Plan to the Minister for approval in writing . The Offset Management Plan must include:</p> <p>(a) details of the minimum offset areas proposed to compensate for the loss of habitat for EPBC Act listed threatened species from the wind farm site,</p> <p>(b) information about how the offset area/s provide connectivity with other relevant habitats and biodiversity corridors, including a map depicting the offset areas in relation to other habitats and biodiversity corridors;</p> <p>(c) a description of the management measures that will be implemented on the offset site for the protection and management of habitat for EPBC Act listed threatened species, including a discussion of how measures proposed are consistent with the measures in conservation advice, recovery plans and relevant threat abatement plans;</p> <p>(d) performance and completion criteria for evaluating the management of the offset area/s, and criteria for triggering remedial action (if necessary);</p> <p>(e) a program, including timelines to monitor and report on the effectiveness of these measures, and progress against the performance and completion criteria;</p> <p>(f) a description of potential risks to the successful implementation of the plan, and a description of the contingency measures that would be implemented to mitigate against these risks;</p>	Offset Area Management Plan (OAMP)	COMPLIANT	Approval of OAMP provided 20/12/2016 (Previously supplied in 2018 Year 1 Compliance Report) Response and final OAMP submitted 16/12/2016. (Previously supplied in 2018 Year 1 Compliance Report)

No.	CONDITION	DELIVERABLE	DESIGNATION	CURRENT STATUS
	(g) the proposed legal mechanism and timelines for securing the offset/s; and (h) a textual description and map to clearly define the location and boundaries of the offset area. This must be accompanied with the offset attributes and a shapefile.			
20	The approval holder must not commence construction until the Offset Management Plan has been approved by the Minister in writing.	Minister Sign-off	COMPLIANT	Approval of OAMP provided 20/12/2016 (Previously supplied in 2018 Year 1 Compliance Report)
21	The approved Offset Management Plan must be implemented	Monitoring Report	COMPLIANT	2017 Monitoring Report submitted 17/04/2018 2018 Monitoring Report submitted 6/12/2018 2019 Monitoring Report submitted 17/7/2019 2020 BioCondition Survey submitted 4/12/2020 2021 Monitoring Report submitted 28/09/2021. 2022 BioCondition Survey submitted 29/6/22. R2023-131 MEWF Offset Biocondition submitted 27/06/22
Administrative Conditions				

No.	CONDITION	DELIVERABLE	DESIGNATION	CURRENT STATUS
22	<p>To avoid duplication, the approval holder may provide the Minister with plans and strategies prepared for the State and/or an Authority provided the plans, and/or strategies meets the conditions specified in this approval. The plans and/or strategies must include a cross reference table that clearly identifies:</p> <p>(a) the condition specified in the approval for which the plan or strategy is being provided; and</p> <p>(b) the relevant folder, chapter, section number and page number in the plan or strategy where the condition has been addressed.</p>		NOT APPLICABLE	Plans and Strategies have been provided to directly address conditions of this approval.
23	Within 10 business days after the commencement of the action, the approval holder must advise the Department in writing of the actual date of commencement.	Notification of Commencement of Construction	COMPLIANT	<p>Date of Commencement 7 February 2017.</p> <p>Notice provided 13/2/2017 (Previously supplied in 2018 Year 1 Compliance Report) and acknowledged. (Previously supplied in 2018 Year 1 Compliance Report)</p>

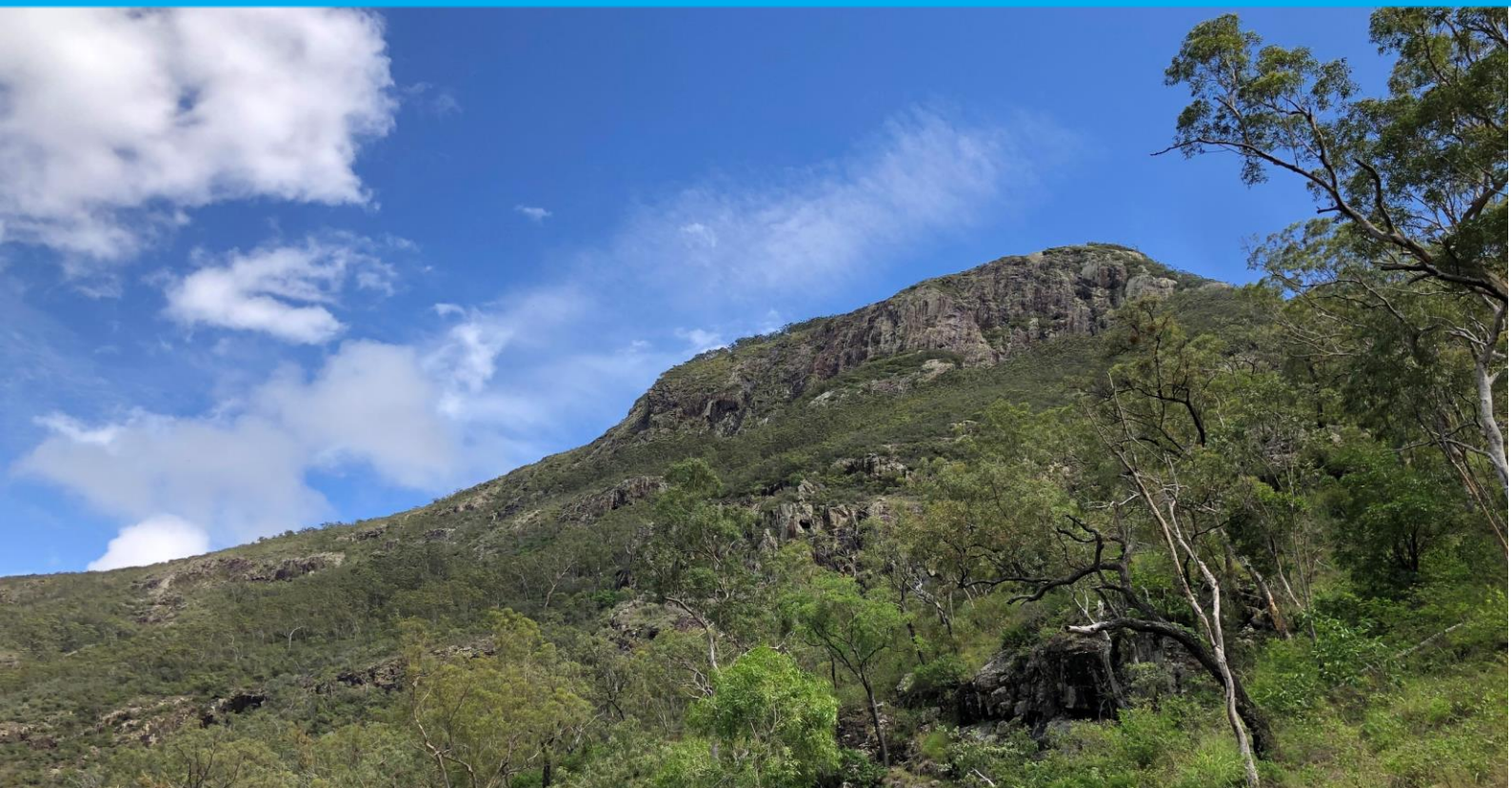
No.	CONDITION	DELIVERABLE	DESIGNATION	CURRENT STATUS
24	<p>The approval holder must maintain a dedicated webpage on compliance with these conditions that is publically available on the approval holder's website for the life of the approval. The webpage must include:</p> <ul style="list-style-type: none"> • a copy of the approval conditions (and any subsequent variations or other formal changes to the approval); • all monitoring results and • documentation required under these conditions and any other relevant information as directed by the Minister in writing. <p>Unless otherwise agreed to in writing by the Minister, the approval holder must provide a copy of documents required to be published on the dedicated webpage to members of the public upon request, within a reasonable time of the request.</p>	Website	COMPLIANT	<p>EPBC Decision Notice and Conditions placed on website. www.mtemeraldwindfarm.com.au/compliance/</p>
25	<p>The approval holder must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval, including measures taken to implement any plans and strategies required by this approval and measures taken to achieve the outcomes specified in conditions 7 and 13 and make them available upon request to the Department.</p> <p>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.</p>	File management		

No.	CONDITION	DELIVERABLE	DESIGNATION	CURRENT STATUS
26	<p>Within three months of every 12 month anniversary of the commencement of the action, the approval holder must publish a report on the webpage required in condition 24 addressing compliance with each of the conditions of this approval, including implementation of any plans and strategies as specified in these conditions and whether the outcome required by conditions 7 and 13 have been or are track to being met. The compliance report must consider the Department's Annual Compliance Report Guidelines.</p> <p>Documentary evidence providing proof of the date of publication and non-compliance with any of the conditions of this approval must be provided to the Department at the same time as the compliance report is published.</p>	EIS Compliance Report	COMPLIANT	<p>Date of Commencement 7 February 2017.</p> <p>2018 Year 1 Compliance Report – issued.</p> <p>2019 Year 2 Compliance Report – issued.</p> <p>2020 Year 3 Compliance Report – issued.</p> <p>2021 Year 4 Compliance report – issued.</p> <p>2022 Year 5 Compliance report – issued.</p> <p>2023 Year 6 Compliance report (this report)</p>
27	The approval holder must report any contravention of the conditions of this approval to the Department within 2 business days of the approval holder becoming aware of the contravention.	Notification of Contravention	COMPLIANT	No contravention identified.
28	Upon the direction of the Minister, the approval holder must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the Minister. The audit must not commence until the Minister has approved the independent auditor and audit criteria. The audit report must address the criteria to the satisfaction of the Minister.	Independent Audit	NOT APPLICABLE	No direction from Minister at this time.

No.	CONDITION	DELIVERABLE	DESIGNATION	CURRENT STATUS
29	<p>The approval holder may choose to revise a plan or strategy approved by the Minister under conditions 3, 8, 13 and 19 without submitting it for approval under section 143A of the EPBC Act, if the taking of the action in accordance with the revised plan or strategy would not be likely to have a new or increased impact. If the approval holder makes this choice they must:</p> <p>(a) notify the Department in writing that the approved plan or strategy has been revised and provide the Department with an electronic copy of the revised plan or strategy;</p> <p>(b) implement the revised plan or strategy from the date that the plan or strategy is submitted to the Department; and</p> <p>(c) for the life of this approval, maintain a record of the reasons the approval holder considers that taking the action in accordance with the revised plan or strategy would not be likely to have a new or increased impact.</p>	<p>Revised Plans:</p> <p>#3 - Turbine Location and Development Footprint Plan</p> <p>#8 - Northern Quoll Outcomes Strategy</p> <p>#13 - Wind Farm Implementation Plan</p> <p>#19 - Offset Area Management Plan</p>	NOT APPLICABLE	<p>TLDFP submitted 13/1/2017; approved 18/1/2017</p> <p>TLDFP as-built (Previously supplied in 2019 Year 2 Compliance Report)</p> <p>NQOS submitted 7/12/2016; approved 23/12/2016</p> <p>WFIP submitted 24/4/2018; approved 4/5/2018</p> <p>OAMP submitted 16/12/2016; approved 20/12/2016</p>
30	<p>The approval holder may revoke its choice under condition 29 at any time by notice to the Department. If the approval holder revokes the choice to implement a revised plan without approval under section 143A of the Act, the approval holder must implement the version of the plan most recently approved by the Minister.</p>	Revised Plans	NOT APPLICABLE	No revisions made at this time.
31	<p>Condition 29 does not apply if the revisions to the approved plan or strategy include changes to environmental offsets provided under the plan or strategy in relation to a matter protected by a controlling provision for the action, unless otherwise agreed in writing by the Minister. This does not otherwise limit the circumstances in which the taking of the action in accordance with a revised plan or strategy would, or would not, be likely to have new or increased impacts.</p>	Revised Plans	NOT APPLICABLE	No revisions made at this time.

No.	CONDITION	DELIVERABLE	DESIGNATION	CURRENT STATUS
32	<p>If the Minister gives a notice to the approval holder that the Minister is satisfied that the taking of the action in accordance with the revised plan would be likely to have a new or increased impact, then:</p> <p>(a) condition 29 does not apply, or ceases to apply, in relation to the revised plan; and</p> <p>(b) the approval holder must implement the version of the plan most recently approved by the Minister.</p> <p>To avoid any doubt, this condition does not affect any operation of conditions 29 and 30 in the period before the day after the notice is given.</p>	Revised Plans	NOT APPLICABLE	No revisions made at this time.
33	<p>At the time of giving a notice under condition 32, the Minister may also notify that for a specified period of time condition 29 does not apply for one or more specified plans required under the approval.</p>	Revised Plans	NOT APPLICABLE	No revisions made at this time.
34	<p>Conditions 29, 30, 31 and 32 are not intended to limit the operation of section 143A of the EPBC Act which allows the approval holder to submit a revised plan to the Minister for approval.</p>	Revised Plans	NOT APPLICABLE	No revisions made at this time.
35	<p>If, at any time after five years from the date of this approval, the approval holder has not substantially commenced the action, then the approval holder must not commence the action without the written agreement of the Minister.</p>	Drop Dead Date - 26 November 2020	COMPLIANT	Refer to Condition 23.

A. MEWF OFFSET BIOCONDITION REPORT



Offset Monitoring Program – Mount Emerald Wind
Farm.

BIOCONDITION SURVEY RESULTS

RATCH Australia Corporation Limited



4 elements

BIOCONDITION SURVEY RESULTS

RATCH Australia Corporation Limited

Revision History

Version	Purpose	Issued by	Date	Reviewer	Date
1	Draft	Ryan Hughes	20/06/2023	Mellissa Brown	26/06/2023

The views and opinions expressed in this publication are those of the author(s) and do not necessarily reflect those of 4 Elements Consulting.

This publication is provided for the purpose of disseminating information relating to technical matters. While reasonable effort has been made to ensure the contents of this publication are factually correct, 4 Elements Consulting accepts no liability for any loss and/or damage resulting from the reliance upon any information, advice or recommendations contained in or arising from this publication.

© The Copyright Act 1968 permits fair dealing for study, research, information or educational purposes subject to inclusion of a sufficient acknowledgement of the source.

4 Elements Consulting

PO Box 1059

Earlville, QLD 4870

www.4elementsconsulting.net.au

Contents

1.0 Introduction	1
1.1 Background.....	1
1.2 Objectives and Outcomes	3
1.2.1 Regional Ecosystems:.....	3
2.0 Methods	10
2.1 Targeted Weed Surveys	10
2.2 Photo-Monitoring Points	12
3.0 Results	13
3.1.1 Fire Impacts on the MEWF Offset Site	13
3.2 Weed Monitoring & Control.....	14
3.3 Photo Monitoring Points	16
4.0 Discussion	21
4.1 Biodiversity Management Issues	21
4.1.1 Weeds	21
5.0 Summary	22
6.0 References	23

Tables

Table 1: Regional Ecosystems Present Within the Proposed Offset Site	3
Table 4: Photo Monitoring Points.....	17

Figures

Figure 1	MEWF Offset Location	2
Figure 2	MEWF Offset Site Regional Ecosystems.....	9
Figure 3	Monitoring Points on Offset Lot	11

Plates

Plate 1	North East Facing Boundary Displaying Epicormic Sprouting in Regenerating Canopy	13
Plate 2	Lemontree Drive Turnaround Grader Grass Incursion Post Treatment (-17.21175, 145.39055).....	15
Plate 3	<i>Melinis minutiflora</i> Growing Near to Of Concern RE 7.12.65k (-17.20127, 145.40718).....	15
Plate 4	Grader Grass Incursion Post Treatment (-17.19771, 145.40668)	16

Appendices

Appendix A	Fauna List	
------------	------------	--

1.0 Introduction

1.1 Background

The Mount Emerald Wind Farm (MEWF) Offset Site (study site) is located within land described as Lot 22 SP210202 and comprises approximately 434.9 ha (**Figure 1**). It is located immediately to the southeast of the MEWF site at Mutchilba, within the Mareeba Shire Council Area, with vehicle access through Lemontree Drive. The lot tenure is freehold and the primary land use is vacant. The area fringes the Baldy Mountain Forest Reserve and the Herberton Range National Park, via the Herberton Range (Queensland Government 2016).

On 26 November 2016, approval under the provisions of the *Environmental Protection and Biodiversity Conservation (EPBC) Act*, was granted to RATCH Australia Corporation Limited (RACL). As a requirement of the EPBC Act approval 2011/6228, as issued by the Federal Department of the Agriculture Water and the Environment (DAWE), a Biodiversity Offset Area was developed to compensate for the clearing of ~73 ha of habitat on the MEWF Project Site. The MEWF Offset site has been designated as a Nature Reserve under the *Nature Conservation Act 1992* by the Queensland Department of Environment and Science (DES).

The MEWF Offset site is located entirely within the Wet Tropics bioregion. It is mountainous with narrow ridges and rocky terrain that are steeply dissected along three dominant ridge lines. The offsets site lies adjacent to the MEWF project site. The majority of the site consists of remnant vegetation with ~192.89 ha consisting of Least Concern vegetation listed under the *Vegetation Management Act 1999* and the remaining ~242 ha listed as Of Concern vegetation.

4 Elements Consulting was commissioned by RACL to conduct annual photo monitoring point (this years survey) and biennial full site biocondition surveys on the MEWF Offset Site. This current report details the results of the fifth biocondition survey since 2017. This report has been prepared to comply with the requirements outlined in the Mount Emerald Wind Farm Offset Area Management Plan (RPS 2016), which details monitoring management actions. The data collected in 2016 provided baseline data for future monitoring to be compared against and enables targeted and adaptive management procedures to be implemented to ensure the biological integrity of the biodiversity area is maintained or improved and conserved into the future.

The actions required include:

- ▶ Photo-monitoring points to determine variation over time; and
- ▶ Targeted weed surveys.

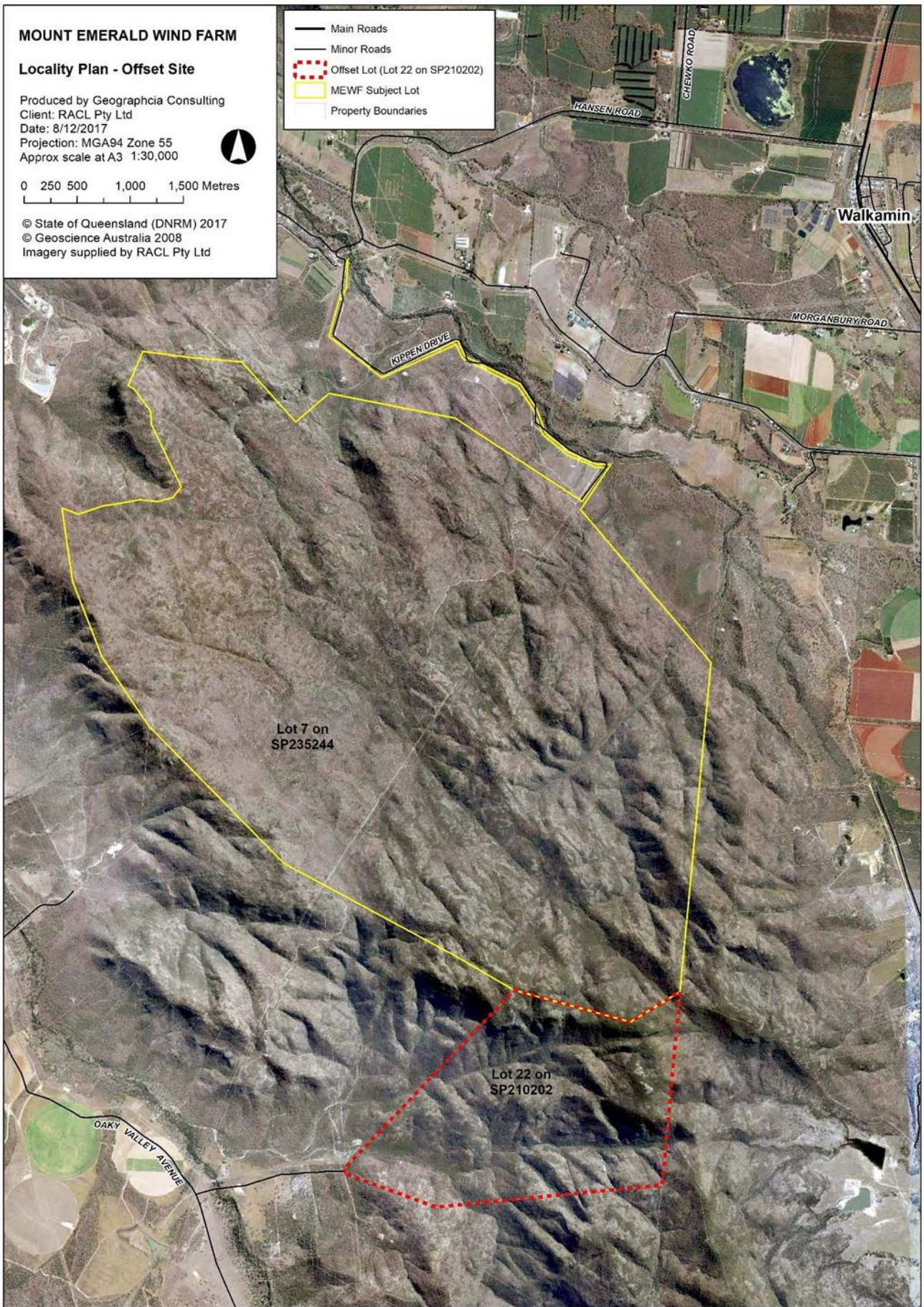


Figure 1 MEWF Offset Location

1.2 Objectives and Outcomes

As identified in the Offset Area Management Plan (RPS 2016), the offset area provides for the long-term protection of habitat for seven threatened species and, through the implementation of adaptive management practices, the quality of the habitat will be improved and maintained over time. The offset area is to be protected in perpetuity as a Nature Refuge. The management plan objectives and outcomes are to:

- ▶ Protect remnant vegetation communities within the offset area from degradation;
- ▶ Protect native fauna within the offset area from introduced weeds and pest fauna;
- ▶ Protect the site vegetation and fauna from wildfires;
- ▶ Maintain the ecological condition of remnant vegetation listed as Of Concern and Least Concern under the *Vegetation Management Act 1999* within the Offset area, where the BioCondition Class of 1, for each assessment unit does not change.

This report presents the methods and results of the 2023 biocondition monitoring program at the MEWF Biodiversity Offset Area, including a discussion of the findings and comparisons with the results of the baseline data conducted in 2016. Management recommendations that relate to the current monitoring phase are documented in **Section 4.0**.

1.2.1 Regional Ecosystems:

The Regional Ecosystems (REs) mapped for the offset site are described in **0** and shown on the mapping in **Figure 2**. Baseline surveys in 2016 identified that RE mapping was consistent with ground truthed vegetation assessments.

Table 1: Regional Ecosystems Present Within the Proposed Offset Site

RE	RE Description	VMA ¹	Bio. ²	Area ³
7.3.26a	Riverine wetland or fringing riverine wetland. <i>Casuarina cunninghamiana</i> , <i>Eucalyptus tereticornis</i> , <i>Lophostemon suaveolens</i> , <i>Melaleuca leucadendra</i> , <i>M. fluviatilis</i> , <i>Buckinghamia celsissima</i> , <i>Mallotus philippensis</i> woodland and forest with an understorey of <i>Melaleuca viminalis</i> and <i>Bursaria tenuifolia</i> . Fringing forests of larger streams. (BVG1M: 16a).	OC	E	2.63
7.12.7c	Simple notophyll semi-evergreen vine forest. Uplands of the dry rainfall zone. Rhyolite. (BVG1M: 5c).	LC	NCP	1.24
7.12.9	<i>Acacia celsa</i> (brown salwood) open forest to closed forest. Foothills, uplands and highlands on granites and rhyolites, of the very wet and wet rainfall zone. (BVG1M: 5d).	OC	OC	1.16

RE	RE Description	VMA ¹	Bio. ²	Area ³
7.12.16a	Simple to complex notophyll vine forest, including small areas of <i>Araucaria bidwillii</i> (Bunya pine). Uplands and highlands on granites and rhyolites, of the cloudy wet to moist rainfall zones. (BVG1M: 6b).	LC	NCP	9.34
7.12.26a	<i>Syncarpia glomulifera</i> , <i>Allocasuarina torulosa</i> and/or <i>A. littoralis</i> open-forest and woodland. Uplands and highlands, often on steep slopes, of the wet rainfall zone. Granite and rhyolite. (BVG1M: 28e).	LC	NCP	4.41
7.12.26e	<i>Syncarpia glomulifera</i> low open forest and low woodland. Uplands on steep rocky slopes, of the moist and dry rainfall zone. Granite and rhyolite. (BVG1M: 28e).	LC	NCP	8.99
7.12.29a	<i>Corymbia intermedia</i> , <i>Eucalyptus tereticornis</i> , <i>E. drepanophylla</i> open forest to low open forest and woodland with <i>Allocasuarina torulosa</i> , <i>A. littoralis</i> , <i>Lophostemon suaveolens</i> , <i>Acacia cincinnata</i> , <i>A. flavescens</i> , <i>Banksia aquilonia</i> and <i>Xanthorrhoea johnsonii</i> . Uplands, on granite and rhyolite. (BVG1M: 9c).	LC	NCP	4.60
7.12.30d	Open woodland to open forest (10-20 m tall) mosaic with variable dominance, often including <i>Eucalyptus cloeziana</i> , <i>C. citriodora</i> , <i>E. portuensis</i> , <i>E. lockyeri</i> , <i>C. leichhardtii</i> , <i>E. atrata</i> , <i>E. pachycalyx</i> , <i>E. reducta</i> , <i>C. intermedia</i> and <i>E. shirleyi</i> . There is often a very sparse to mid-dense secondary tree layer of <i>C. abergiana</i> and/or <i>C. stockeri</i> . A very sparse to sparse tall shrub layer may be present and can include <i>Acacia flavescens</i> , <i>Persoonia falcata</i> , <i>Bursaria spinosa</i> subsp. <i>spinosa</i> , <i>Allocasuarina inophloia</i> , <i>Petalostigma pubescens</i> and <i>Grevillea glauca</i> . A sparse to dense lower shrub layer may include <i>Jacksonia thesioides</i> , <i>Acacia calyculata</i> , <i>Xanthorrhoea johnsonii</i> and <i>Grevillea glossadenia</i> . The ground layer may be dominated by species such as <i>Themeda triandra</i> , <i>Heteropogon triticeus</i> , <i>Mnesithea rottboellioides</i> , <i>Arundinella setosa</i> , <i>Cleistochloa subjuncea</i> , <i>Eriachne pallescens</i> var. <i>pallescens</i> , <i>Lepidosperma laterale</i> and <i>Xanthorrhoea johnsonii</i> . Rocky slopes on granite and rhyolite. (BVG1M: 9d).	LC	NCP	133.42
7.12.34	<i>Eucalyptus portuensis</i> (white mahogany) and/or <i>E. drepanophylla</i> (ironbark), +/- <i>C. intermedia</i> (pink bloodwood), +/- <i>C. citriodora</i> (lemon-scented gum), +/- <i>E. granitica</i> (granite ironbark) open woodland to open forest. Uplands on granite, of the dry rainfall zone. (BVG1M: 9d).	LC	NCP	23.76

RE	RE Description	VMA ¹	Bio. ²	Area ³
7.12.57a	Shrubland and low woodland mosaic with <i>Syncarpia glomulifera</i> (turpentine), <i>Corymbia abergiana</i> (range bloodwood), <i>Eucalyptus portuensis</i> (white mahogany), <i>Allocasuarina littoralis</i> (black sheoak) and <i>Xanthorrhoea johnsonii</i> (grasstree). Uplands and highlands on granite and rhyolite, of the moist and dry rainfall zones. (BVG1M: 9d). Vegetation communities in this regional ecosystem include: 7.12.57a: Shrubland and low woodland mosaic with <i>Syncarpia glomulifera</i> , <i>Corymbia abergiana</i> , <i>Eucalyptus portuensis</i> , <i>Allocasuarina littoralis</i> and <i>Xanthorrhoea johnsonii</i> . Uplands and highlands on granite and rhyolite, of the moist and dry rainfall zones. (BVG1M: 9d).	OC	OC	58.60
7.12.57c	Shrubland/low woodland (1.5-9 m tall) mosaic with variable dominance, often including <i>Eucalyptus cloeziana</i> , <i>Corymbia abergiana</i> , <i>E. portuensis</i> , <i>E. reducta</i> , <i>E. lockyeri</i> , <i>C. leichhardtii</i> , <i>Callitris intratropica</i> , <i>E. atrata</i> , <i>E. pachycalyx</i> , <i>E. shirleyi</i> , <i>E. drepanophylla</i> and <i>Homoranthus porteri</i> , on rhyolite and granite. There is occasionally a very sparse to sparse secondary tree layer of <i>C. abergiana</i> and/or <i>C. stockeri</i> . A very sparse to sparse tall shrub layer may be present and can include <i>Persoonia falcata</i> , <i>Exocarpos cupressiformis</i> and <i>Melaleuca viridiflora</i> var. <i>viridiflora</i> . A sparse to dense lower shrub layer may include <i>Jacksonia thesioides</i> , <i>Acacia calyculata</i> , <i>Coelospermum reticulatum</i> , <i>Xanthorrhoea johnsonii</i> , <i>Acacia humifusa</i> , <i>Dodonaea lanceolata</i> var. <i>subsessilifolia</i> , <i>Grevillea dryandri</i> subsp. <i>dryandri</i> , <i>Grevillea glossadenia</i> , <i>Acacia umbellata</i> and Ericaceae spp. The ground layer may be dominated by species such as <i>Themeda triandra</i> , <i>Xanthorrhoea johnsonii</i> , <i>Eriachne pallescens</i> var. <i>pallescens</i> , <i>Cleistochloa subjuncea</i> , <i>Borya septentrionalis</i> , and <i>Eriachne</i> spp. Includes open rocky dominated by herbs and grasses. This RE includes areas of 7.12.65k (rocky areas with shrubby/herbaceous cover) which are too small to map. Rocky slopes on granite and rhyolite. (BVG1M: 9d).	OC	OC	107.32

RE	RE Description	VMA ¹	Bio. ²	Area ³
7.12.58	<i>Eucalyptus reducta</i> woodland to open forest (6-18 m tall). Common associated species include <i>E. granitica</i> , <i>Corymbia dimorpha</i> , <i>C. citriodora</i> , <i>E. cloeziana</i> and occasionally <i>C. intermedia</i> . There is often a sparse secondary tree layer of <i>C. abergiana</i> and/or <i>E. lockyeri</i> . There may be a very sparse tall shrub layer of species such as <i>Acacia flavescens</i> , <i>Persoonia falcata</i> , <i>Allocasuarina littoralis</i> and <i>Acacia simsii</i> , and a very sparse to dense lower shrub layer of <i>Acacia calyculata</i> , <i>Pultenaea millarii</i> , <i>Jacksonia thesioides</i> , <i>Grevillea glossadenia</i> , <i>Grevillea dryandri</i> subsp. <i>dryandri</i> , <i>Homoranthus porteri</i> and <i>Dodonaea lanceolata</i> var. <i>subsessilifolia</i> . The ground layer is often dominated by species such as <i>Themeda triandra</i> , <i>Eriachne</i> spp., <i>Cleistochloa subjuncea</i> , <i>Lomandra longifolia</i> , <i>Mnesithea rottboellioides</i> , <i>Xanthorrhoea johnsonii</i> , <i>Heteropogon triticeus</i> and <i>Coronidium newcastlianum</i> . Granite and rhyolite. (BVG1M: 9d).	OC	OC	72.45
7.12.65k	Granite and rhyolite rock outcrop, of dry western areas, associated with shrublands to closed forests of <i>Acacia</i> spp. and/or <i>Lophostemon</i> spp. and/or <i>Allocasuarina</i> spp. In the Mount Emerald area, shrubs may include <i>Acacia umbellata</i> , <i>Melaleuca borealis</i> , <i>Homoranthus porteri</i> , <i>Leptospermum neglectum</i> , <i>Melaleuca recurva</i> , <i>Melaleuca uxorum</i> , <i>Grevillea glossadenia</i> , <i>Corymbia abergiana</i> , <i>Eucalyptus lockyeri</i> , <i>Sannantha angusta</i> , <i>Pseudanthus ligulatus</i> subsp. <i>ligulatus</i> , <i>Acacia aulacocarpa</i> , <i>Leptospermum amboinense</i> , <i>Xanthorrhoea johnsonii</i> and <i>Jacksonia thesioides</i> . Ground-cover species may include <i>Borya septentrionalis</i> , <i>Lepidosperma laterale</i> , <i>Eriachne</i> spp., <i>Cleistochloa subjuncea</i> , <i>Boronia occidentalis</i> , <i>Cheilanthes</i> spp., <i>Coronidium newcastlianum</i> , <i>Schizachyrium</i> spp., <i>Tripogon loliiformis</i> , <i>Gonocarpus acanthocarpus</i> and <i>Eragrostis</i> spp. Dry western areas. Granite and rhyolite. (BVG1M: 29b).	LC	OC	7.03

RE	RE Description	VMA ¹	Bio. ²	Area ³
9.5.8	Woodland to open-woodland of <i>Eucalyptus cullenii</i> (Cullen's ironbark) and/or <i>E. leptophleba</i> (Molloy red box) +/- <i>Corymbia erythrophloia</i> (red bloodwood) +/- <i>Erythrophleum chlorostachys</i> (Cooktown ironwood). <i>Eucalyptus tardecidens</i> (box) may also occur as a subdominant in northern extent of this regional ecosystem. A sparse shrub layer includes <i>Petalostigma</i> spp., <i>Melaleuca</i> spp., <i>Grevillea</i> spp., <i>Alphitonia pomaderroides</i> and <i>Maytenus cunninghamii</i> (yellowberry bush). The sparse to dense ground layer is dominated by <i>Heteropogon contortus</i> (black speargrass) and <i>Sarga plumosum</i> (plume sorghum). Occurs on undulating plains in valleys in ranges on Tertiary/Quaternary soils overlying granite and metamorphic geologies. (BVG1M: 13a)	LC	NCP	0.01
9.5.9a	Woodland to open-woodland of <i>Corymbia clarksoniana</i> (Clarkson's bloodwood) +/- <i>Eucalyptus platyphylla</i> (poplar gum) +/- <i>E. leptophleba</i> (Molloy red box) +/- <i>C. tessellaris</i> (Moreton Bay ash) with a distinct to sparse sub-canopy layer often including <i>Melaleuca viridiflora</i> (broad-leaved paperbark), <i>Grevillea glauca</i> (bushman's clothes peg), <i>Petalostigma pubescens</i> (quinine) and <i>Alphitonia pomaderroides</i> (soapbush). An open to sparse shrub layer includes <i>Melaleuca</i> spp., <i>Persoonia falcata</i> , <i>Grevillea</i> spp. and <i>Petalostigma pubescens</i> (quinine). The sparse to mid-dense ground layer is dominated by <i>Themeda triandra</i> (kangaroo grass), <i>Aristida</i> spp., <i>Heteropogon contortus</i> (black speargrass), <i>H. triticeus</i> (giant speargrass), and <i>Sarga plumosum</i> (plume sorghum). Occurs on undulating plains. (BVG1M: 9e).	LC	NCP	
9.12.7a	Woodland to open-woodland of <i>Eucalyptus cullenii</i> (Cullen's ironbark) +/- <i>Corymbia erythrophloia</i> (red bloodwood) +/- <i>Erythrophleum chlorostachys</i> (Cooktown ironwood) +/- <i>C. dallachiana</i> (Dallachy's gum). An open to mid-dense subcanopy can occur and includes a variety of species. The shrub layer is absent to open and dominated by <i>Maytenus cunninghamii</i> (yellowberry bush), <i>Alphitonia pomaderroides</i> (soapbush), <i>Petalostigma</i> spp., and <i>Acacia</i> spp. The ground layer is sparse to dense and dominated by <i>Heteropogon contortus</i> (black speargrass), <i>H. triticeus</i> (giant speargrass), <i>Themeda triandra</i> (kangaroo grass) and <i>Sarga plumosum</i> (plume sorghum) with a <i>Xanthorrhoea</i> sp. (grasstree) occurring in some areas. Occurs on rhyolite hills. (BVG1M: 13a).	LC	NCP	0.01

RE	RE Description	VMA ¹	Bio. ²	Area ³
9.12.40	Low open-woodland to low woodland of <i>Melaleuca citrolens</i> (scrub teatree) +/- <i>Terminalia platyptera</i> (yellow-wood) +/- <i>Corymbia dallachiana</i> (Dallachy's gum) +/- <i>Erythrophleum chlorostachys</i> (Cooktown ironwood). The sparse shrub layer consists of <i>Petalostigma banksii</i> (smooth-leaved quinine), <i>M. citrolens</i> and <i>Gardenia vilhelmii</i> (breadfruit). The ground layer is frequently bare, with patches of short grasses including <i>Eriachne</i> spp., <i>Aristida</i> spp. and <i>Schizachyrium</i> spp. (firegrass). This community also occurs as short open-tussock grassland wooded with low trees and shrubs of <i>Melaleuca citrolens</i> +/- <i>Terminalia</i> spp. Occurs on gentle slopes, footslopes, rolling hills and colluvial low slopes. (BVG1M: 21b).	LC	NCP	
Non-rem	Non-remnant: modified land, roads, clearings and tracks.			0.08
<p>¹ Status under Vegetation Management Act 1999: OC - Of Concern; LC - Least Concern.</p> <p>² Biodiversity management status: E - Endangered; OC - Of Concern, NCP - No Concern at Present.</p> <p>³ Area - total area in hectares of RE type within offset site.</p>				

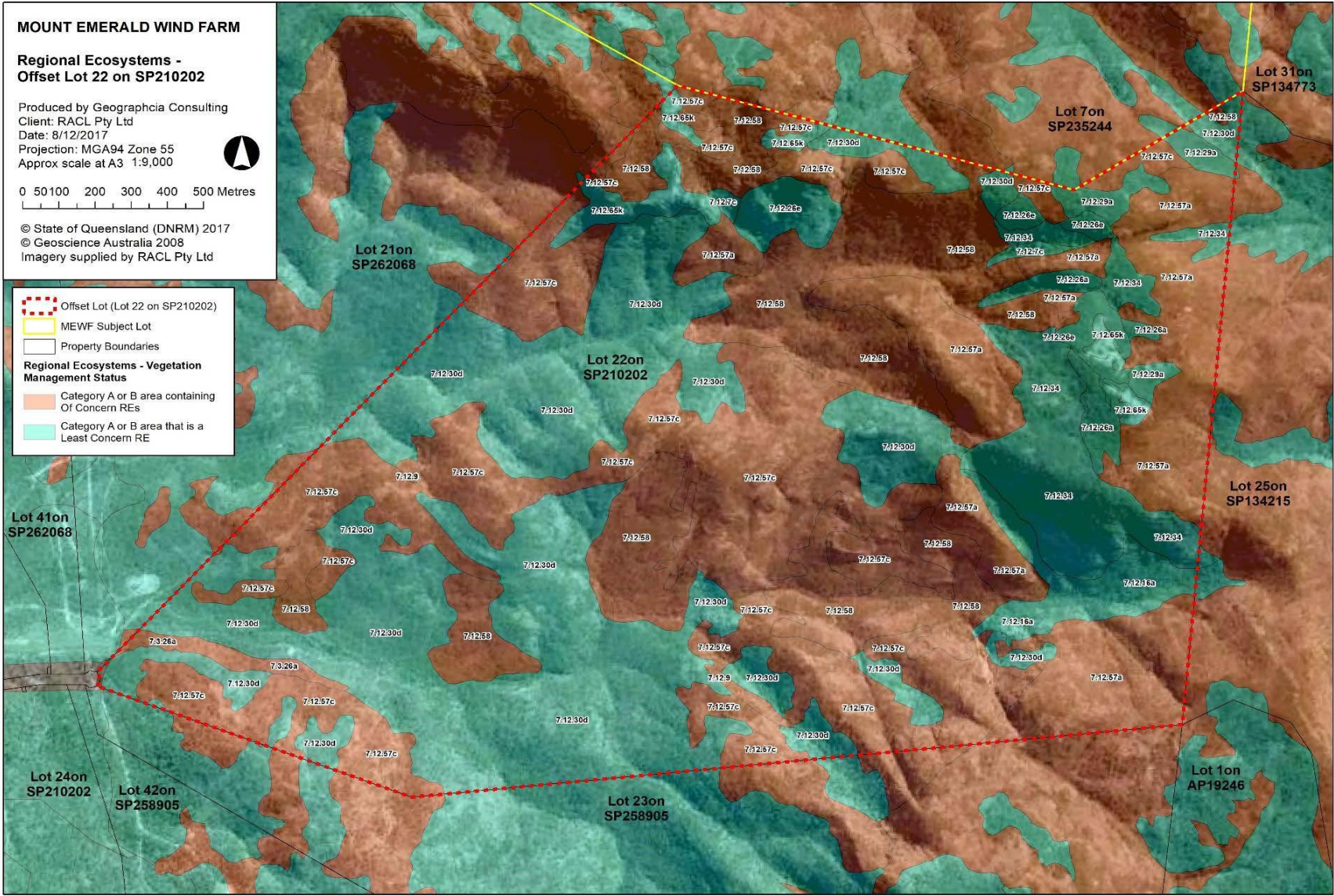


Figure 2 MEWF Offset Site Regional Ecosystems

2.0 Methods

The following sections detail the methods employed for the 2023 ecological offset area monitoring program. The methods employed as part of this monitoring program are consistent with those outlined in the MEWF Offset Area Management Plan (RPS 2016).

Field surveys were conducted on site over 5 days, from the 03-04 May and 14-16 May, 2023. Monitoring points are provided in **Figure 3** below.

Total rainfall during the month of May was 30 mm. Mean minimum and maximum temperatures were 22.0°C and 29.5°C respectively (BOM 2023).

2.1 Targeted Weed Surveys

A weed assessment was undertaken within the MEWF Offset site which concentrated on the access track from Lemon Tree Drive and the Mount Emerald Walking Track that leads to the summit of Mount Emerald. The entire length of these tracks was traversed on foot by a field botanist. Additional spot observations of weed presence in remnant, undisturbed vegetation was undertaken previously in 2016, 2017, 2019 and during the current survey effort.

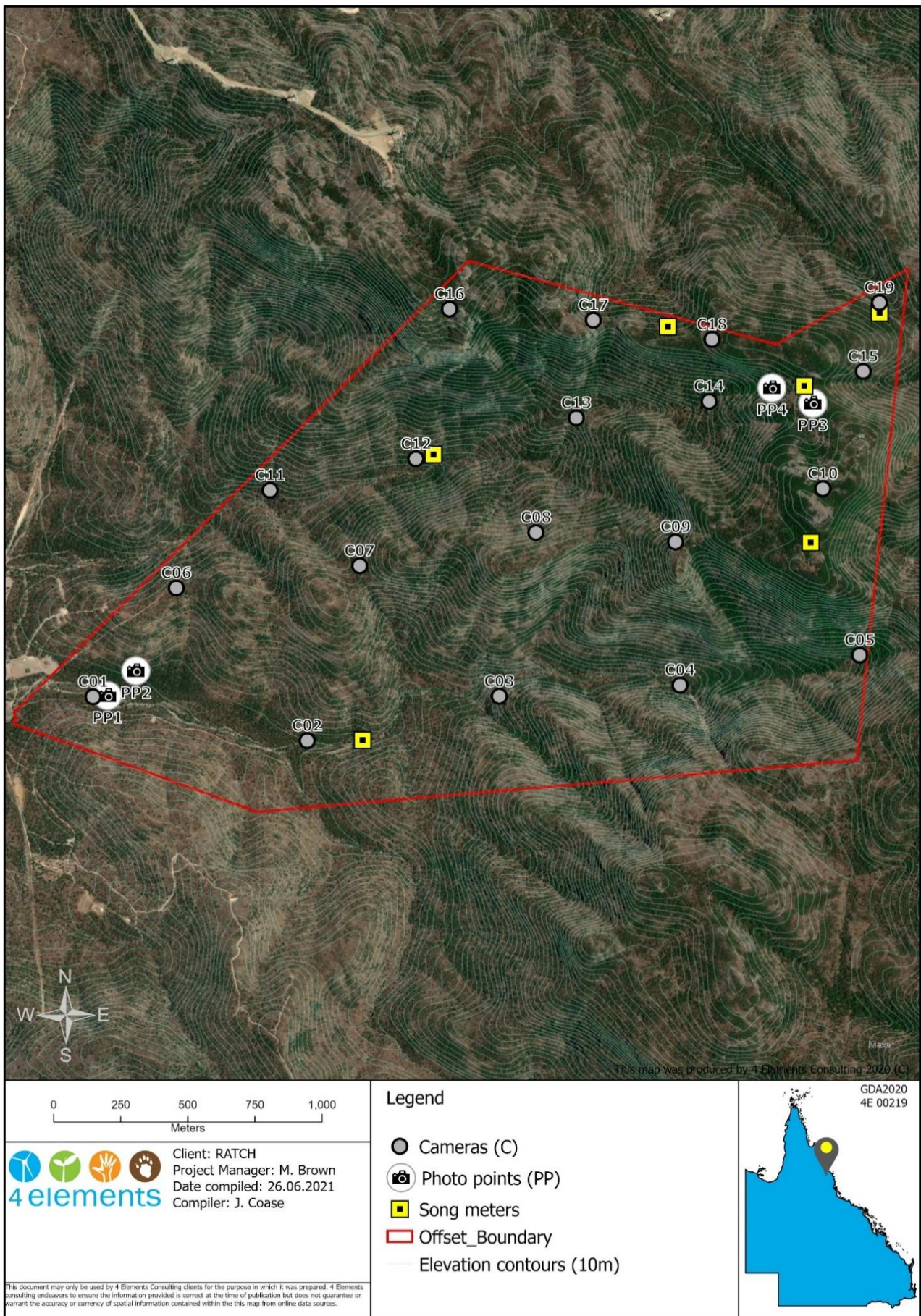


Figure 3 Monitoring Points on Offset Lot

2.2 Photo-Monitoring Points

Four photo monitoring points were established in 2016 within the offset area to enable a visual assessment of changes over time within distinct vegetation types (**Figure 3**). Each point was:

- ▶ Marked with a 1 m star picket which was flagged with yellow tape and the GPS points recorded;
- ▶ Each point had photographs taken in all cardinal directions; and
- ▶ Metadata which included GPS co-ordinates, data and time were recorded.
- ▶ Photographic and metadata records are taken at these photo monitoring points annually.

3.0 Results

3.1.1 Fire Impacts on the MEWF Offset Site

A high intensity fire moved through parts of the MEWF Offset site in late September 2020 with three (3) of the four (4) photo monitoring points burning during the fire event (see **Figure 3** and Section 4.1 **Table 4**). The only photo monitoring point that did not burn was point 4 which is located in a deep boulder lined gully supporting dry rainforest vegetation. All other monitoring sites are within sclerophyll open woodland communities. All very high intensity canopy fires were recorded on the eastern boundary (**Plate 1**). At the time of survey, these areas were in recovery with nearly all canopy trees displaying epicormic budding. As a result of this fire event, no canopy tree flowering was observed in these areas (near to photo monitoring point 3). The same fire has travelled through to the western boundary of the property to impact a high proportion of the western slopes. At this section of the property visual assessment appeared to indicate a less intense fire. Although, much of the understory was burned in this section.

Plate 1 North East Facing Boundary Displaying Epicormic Sprouting in Regenerating Canopy



3.2 Weed Monitoring & Control

Since it was first recorded in a weed survey conducted in January 2018, a population of Grader Grass (*Themeda quadrivalvis*) has established a seed bank along the main access track from Lemontree Drive. This species is readily detectable, had not been previously recorded on site prior to this January 2018 survey. In 2018, Grader Grass extended from the access track entry gate to the vehicle turnaround at the end of the track. The extent was similar in 2020, with the population distributed along the length of the access track with most individuals occurring at the vehicle turnaround (**Plate 3**). In 2020, the Grader Grass infestation was hand-pulled twice per wet season and placed into garbage bags and removed from site. This control method was continued in 2021 with a noticeable reduction in the size of the infestation at this location.

The Mount Emerald walking track, which provides pedestrian access to the summit of Mount Emerald, is another source of weeds for the study site. Close to the walking track, a number of weed populations have been recorded. These include Molasses Grass (*Melinis minutiflora*) which occurs in exposed situations at high elevations (**Plate 4**) and occasionally in rocky gullies. This species is potentially problematic and will be monitored to determine if it is likely to spread further and present a threat to high elevation rock pavement communities on the offset site. At this stage the site population of this species, as shown in **Plate 4**, is restricted and has no vehicular access to support herbicide application. The rock pavement communities have shallow soil lenses which may be eroded during the wet season if the current stabilising *Melinis* population is killed/removed. If the population is not invading the site further no action is recommended except to monitor the population for spread.

Three (3) discrete Grader Grass incursions have been recorded near the summit of Mount Emerald since 2018. These have been actively managed by hand pulling and covering in thick black builder's plastic as a method of killing the plants (solarisation). This control method has continued in the current weed treatment. No expansion of these three (3) populations has been recorded. Results of the treatment are shown in **Plate 5**.

Plate 2 Lemontree Drive Turnaround Grader Grass Incursion Post Treatment (-17.21175, 145.39055)



Plate 3 *Melinis minutiflora* Growing Near to Of Concern RE 7.12.65k (-17.20127, 145.40718)




Plate 4 Grader Grass Incursion Post Treatment (-17.19771, 145.40668)







3.3 Photo Monitoring Points





A visual assessment was undertaken at four photo monitoring points. These locations were selected based on habitat quality, Regional Ecosystem attributes and location. **04** below summarises the characteristics of these sites where photographs are orientated towards the North, South, East and West facing directions. Whilst the photo will aid in the broad comparisons over time, they are best used in combination with floristic data (Gleed 2017) as they are unlikely to show fine scale changes on their own.

Table 4: Photo Monitoring Points

Site ID	Description	Photograph from North, South, East, West	
<p>Photo Point 1</p> <p>Location: UTM 55K 0327999, 8096486</p>	<p>Mapped as RE 7.3.26a</p> <p>Site only partially conforms to mapped RE absence of <i>Allocasuarina cunninghamii</i>.</p> <p>Alluvial sandy loam on riverine wetland.</p> <p>Canopy of <i>Eucalyptus tereticornis</i>, <i>Corymbia leichardtii</i> with a sparse shrub layer containing <i>Lophostemon grandiflorus</i>, <i>Bursaria tenuifolia</i>, <i>Exocarpus cupressiformis</i>, <i>Callitris intratropica</i>, <i>Acacia spp.</i> with a ground layer containing <i>Heteropogon triticeus</i>, <i>Sarga spp.</i> and <i>Themeda triandra</i>.</p>	 <p>North</p>	 <p>South</p>
		 <p>East</p>	 <p>West</p>

Site ID	Description	Photograph from North, South, East, West	
<p>Photo Point 2 Location: UTM 55K 0328099, 8096579</p>	<p>Mapped 7.12.30d Site conforms to RE containing dominant canopy and shrub and ground layer associates.</p> <p>Rocky slopes on granite and rhyolite. Canopy <i>Eucalyptus cloeziana</i>, <i>Corymbia leichardtii</i> and <i>Eucalyptus crebra</i> with a very sparse shrub layer containing <i>Petalostigma pubescens</i>, <i>Coelospermum reticulatum</i>, <i>Persoonia falcata</i>, <i>Grevillea parrallela</i> and a ground layer containing <i>Heteropogon triticeus</i>, <i>Sarga spp.</i> and <i>Themeda triandra</i>.</p>	 <p data-bbox="936 737 1019 766" style="text-align: center;">North</p>	 <p data-bbox="1729 737 1812 766" style="text-align: center;">South</p>
		 <p data-bbox="947 1292 1008 1321" style="text-align: center;">East</p>	 <p data-bbox="1733 1292 1807 1321" style="text-align: center;">West</p>

Site ID	Description	Photograph from North, South, East, West	
<p>Photo Point 3</p> <p>Location: UTM 55K 0330501, 8097591</p>	<p>Site conforms to RE 7.12.57a containing low open woodland to shrubland containing key canopy and lower level associates.</p> <p>High uplands slopes on granite and rhyolite. Tall shrub/ low tree layer</p> <p><i>Syncarpia glomulifera</i>, <i>Corymbia abergiana</i>, <i>Eucalyptus portuensis</i>, <i>Eucalyptus crebra</i>, <i>Allocasuarina littoralis</i>, <i>Banksia aquilonia</i>. Ground layer <i>Xanthorrea johnsoni</i>, <i>Themeda triandra</i>, <i>Imperata cylindrica</i>, <i>Pteridium esculentum</i>,</p>	 <p data-bbox="943 746 1016 770" style="text-align: center;">North</p>	 <p data-bbox="1733 746 1807 770" style="text-align: center;">South</p>
		 <p data-bbox="954 1353 1005 1377" style="text-align: center;">East</p>	 <p data-bbox="1738 1353 1812 1377" style="text-align: center;">West</p>

Site ID	Description	Photograph from North, South, East, West	
<p>Photo Point 4</p> <p>Location: UTM 55K 0330355, 8097647</p>	<p>Mapped as RE 7.12.16a</p> <p>Site conforms to mapped RE containing simple to complex notophyll vine forest with emergent <i>Agathis microstachya</i> on granite and rhyolite in the uplands of the moist rainfall zone.</p> <p><i>Agathis microstachya</i> emergent layer absent. All other vegetation layers conform to RE 7.12.16a.</p>	 <p style="text-align: center;">North</p>	 <p style="text-align: center;">South</p>
		 <p style="text-align: center;">East</p>	 <p style="text-align: center;">West</p>

4.0 Discussion

4.1 Biodiversity Management Issues

4.1.1 Weeds

The most prominent biodiversity management issue for the offset site is the control of invasive weeds. Whilst several weed species occur across the offset site, a major weed of concern is Grader Grass (*Themeda quadrivalvis*). Incursion of this invasive grass has occurred along areas of the access track off Lemontree Drive, as well as three (3) small patches on the northern slopes of the offset site. These populations have been effectively managed in the current weed treatment; however, ongoing monitoring and management will be required at the commencement of the next wet season to prevent populations from re-establishing. Other weeds, such as *Mesosphaerum suaveolens* (syn: *Hyptis suaveolens*) have been recorded on the access track and will require further control and monitoring prior to the next wet season. No expansion of weeds has been recorded in the last seven (7) years of monitoring. This would indicate that although eradication of these weeds has not been achieved, management to prevent spread has been effective. With continued management it is expected that the weed seed bank will be further reduced in subsequent years.

5.0 Summary

This report presents results of the 7th photopoint biocondition survey for the Mount Emerald Windfarm Offset Site.

The ground cover layer has remained relatively consistent on the site since surveys began in 2016, despite the recent fire which occurred in October 2020. Recent good rains have promoted a dense ground layer across the site. Suitable amounts of coarse woody debris remain across the site, which provides excellent habitat for small mammals and reptiles.

Weed surveys indicate there are currently no priority listed weed species on site, however, vigilance will be required along the walking track and road entry to ensure there are no access points for these threats. Continued management measures to remove weeds from tracks and external site boundaries will reduce the risks significantly.

Fauna habitat resources remain abundant within the MEWF Offset Site, and the habitat is of high quality. The offset site has a high density of the large hollows that several nocturnal birds of prey, bat and small to medium sized mammal species require for breeding. In addition, small mammals (terrestrial and arboreal), which are the respective prey of a number of predatory species, were identified throughout the site. Canopy tree species and understorey shrubs within the site provide abundant foraging resources such as foliage, seeds, pollen, nectar and invertebrates for variety of species on a seasonal basis and may potentially influence the occurrence and abundance of arboreal mammal species and birds.

The ecological condition of the MEWF Offset Site has been maintained since baselines surveys were conducted in 2016.

6.0 References

- 4 Elements Consulting (2017) Mount Emerald Offset Area Monitoring Program Report. Prepared for RATCH Australia Corporation, Brisbane.
- 4 Elements Consulting (2018) Mount Emerald Offset Area Monitoring Program Report. Prepared for RATCH Australia Corporation, Brisbane.
- 4 Elements Consulting (2019) Mount Emerald Offset Area Monitoring Program Report. Prepared for RATCH Australia Corporation, Brisbane.
- 4 Elements Consulting (2021) Mount Emerald Offset Area Monitoring Program Report. Prepared for RATCH Australia Corporation, Brisbane.
- Burnett S, Shimizu Y and Middleton J (2013) Distribution and abundance of the northern quoll (*Dasyurus hallucatus*) in far north Queensland. Unpublished report to Ratch Australia.
- Bureau of Meteorology (2021) [Walkamin, Qld - Daily Weather Observations \(bom.gov.au\)](https://www.bom.gov.au/walkamin/), Brisbane
- Eyre TJ, Ferguson DJ, Hourigan CL, Smith GC, Mathieson MT, Kelly, AL, Venz MF, Hogan, LD & Rowland, J (2014) Terrestrial Vertebrate Fauna Survey Assessment Guidelines for Queensland. Department of Science, Information Technology, Innovation and the Arts, Queensland Government, Brisbane.
- Eyre T, Ferguson DJ, Hourigan CL, Smith GC, Mathieson MT, Kelly AL, Venz MF, Hogan LD A Rowland, J (2014) Terrestrial Vertebrate Fauna Survey Assessment Guidelines for Queensland. Department of Science, Information Technology, Innovation and the Arts, Queensland Government, Brisbane.
- Gleed S (2016) Mt Emerald Threatened Species Management Plan. Prepared for RATCH Australia Corporation, Brisbane.
- RPS Australia East (2016) Offset Area Management Plan. Unpublished Report prepared for RATCH Australia Corporation Limited, Brisbane.
-