

Crudine Ridge Wind Farm



Biodiversity Management Plan (Operational)

28 February 2024



Final

Revision Control

Revision	Date	Issue	Author	Reviewed	Approved	Comment
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2	08/08/2017	Draft	Rachel Murray (ELA)	Daniel Magdi (ELA)	Mark Branson CWP Renewables	Draft for Consultation
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4	27/06/2019	Final/Issued	Patric Millar (CWP) Cheryl ODwyer (ELA) Kayla Abbey (ELA)	Kayla Abbey (ELA)	Ed Mounsey CWP Renewables	Update following Mod 1
5	12/07/2019	Final/Issued	Patric Millar (CWP)	Ed Mounsey CWP Renewables	Ed Mounsey CWP Renewables	Update following DPE comments
6	28/02/24	Final/Issued	C. George	Z Jokadar (SQE)	Z Jokadar (SQE)	Update for Operation phase

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Key Terms and Abbreviations

Term	Meaning
BC Act	NSW <i>Biodiversity Conservation Act 2016</i>
BA Act	NSW <i>Biosecurity Act 2015</i>
BCD	Biodiversity Conservation Division of DPE
BGW	Box Gum Woodland
BMP	Biodiversity Management Plan
Vegetation clearing	Clearing of native vegetation as per the meaning in Part 5A of the <i>Local Land Services Act 2013</i>
CEEC	Critically Endangered Ecological Community
CRWF	Crudine Ridge Wind Farm
Department, the	Commonwealth Department of the Climate Change, Energy, the Environment and Water
Development Corridor	The approved Development Corridor as shown in Appendix 2 of the Development Consent, comprising of a 100m buffer around all approved infrastructure.
Development Footprint	The area of physical disturbance associated with the construction and operation of the Project, comprised of temporary impacts and permanent impacts..
DOEE	Commonwealth Department of the Environment and Energy (Now DCCEEW)
DPIE (now DPE)	NSW Department of Planning, Industry and the Environment (Now Department of Planning and the Environment)
EA	Environmental Assessment
EEC	Endangered Ecological Community
EMS	Environmental Management Strategy
EPA	NSW Environment Protection Authority
EP&A Act	NSW <i>Environmental Planning and Assessment Act 1979</i>
EPBC Act	Commonwealth <i>Environmental Protection and Biodiversity Conservation Act 1999</i>
ESCP	Erosion and Sediment Control Plan
FSA (contractor)	Facility Service Agreement (contractor)
LGA	Local Government Area
LLS Act	<i>Local Land Services Act 2013</i>
Minister, the	Commonwealth Minister for the Environment and Energy (now DCCEEW)
MWRC	Mid-Western Regional Council
Project Site	The land defined in Appendix 1 of the Development Consent.
RMS	NSW Roads and Maritime Services (now TfNSW)
Secretary, the	Secretary for the NSW Department of Planning, Industry and the Environment (now DPE)
TEC	Threatened Ecological Community

1 Introduction

1.1 Overview

Squadron Energy Pty Ltd (SQE) has updated the Biodiversity Management Plan (BMP), originally prepared by Eco Logical Australia (ELA), on behalf of Crudine Ridge Wind Farm Pty Ltd (The Proponent), to reflect the operational phase of the Crudine Ridge Farm (CRWF, the Project).

The Project consists of 37 wind turbine generators (WTGs), access roads, hardstands, internal electrical reticulation, operations and maintenance facility, a TransGrid operated substation, and approximately 15 km overhead transmission line. A map showing the final Project layout is shown in Figure 1.

Operation of the CRWF formally commenced on 20 December 2021. GE Renewable Energy Australia (GE) is contracted under a Full Services Agreement (FSA) by the Proponent to operate and maintain the WTGs. TransGrid own and manage the substation. Operation of the substation is undertaken remotely by TransGrid or locally from the control room in the substation as required. As such the environmental management and compliance requirements of the substation is entirely outside the remit of the Proponent.

1.1.1 Operation and Maintenance Activities

Activities on site are associated with the ongoing maintenance of the wind turbines, the Substation (by TransGrid) and the associated electrical and civil infrastructure. This will include maintenance works for the roads, hardstands, drainage systems, fences and gates.

CRWF is operated from the Operations and Maintenance Building (O&M) located in the Service Compound and control room, which is next to the TransGrid Substation. Except when major repairs are being undertaken, site maintenance activity will generally be undertaken by light vehicles and the occasional delivery truck for spare parts. When major repairs are required, equipment such as large cranes and trucks will be brought onto site.

1.2 Purpose and Objectives

This BMP has been prepared to meet the NSW Development Consent SSD-6697 Modification 3 (SSD-6697 Mod 3) and Commonwealth approval 2011/6206 Variation 1 (EPBC 2011/6206) that relate to biodiversity issues.

The BMP describes the biodiversity management measures that will be implemented to manage and mitigate unavoidable impacts to biodiversity associated with the operational phase of the Project.

Table 1 and Table 2 lists the biodiversity conditions of SSD-6697 and EPBC 2011/6206 and provides a reference to sections within the BMP where the conditions have been addressed.

1.3 Consultation

Pursuant to the requirements of Condition 22, Schedule 3 of the NSW Development Consent, consultation was undertaken for the preparation of the BMP prior to the commencement of construction. This BMP has been updated to reflect the operational phase of the Project, in accordance with the review schedule outlined in Section 7 of the 2019 approved BMP, which stated:

The Project Environment Officer will be responsible for reviewing this plan within five years of the commencement of construction, and every five years thereafter. The plan may also be required to be reviewed in response to the occurrence of an incident, the submission of an audit report, or modification to the conditions of the Development Consent, in accordance with Condition 4 of Schedule 5 of the Development Consent. Review of the plan will be undertaken in consultation with the NSW BCD and DPIE. Updates to the plan will be made available on the Project website.

1.4 Project Environmental Management Strategy

This BMP should be read in conjunction with the Project's Environmental Management Strategy (EMS). The EMS provides the strategic framework for environmental management of the Project in accordance with Condition 1, Schedule 5. The EMS is available on the Project website:

<https://www.squadronenergy.com/our-projects/crudine-ridge-wind-farm>

1.5 Project Compliance Requirements

Table 1 and Table 2 provides a summary of the conditions of approval within SSD-6697 Mod 3 and EPBC 2011/6206 relating to biodiversity management.

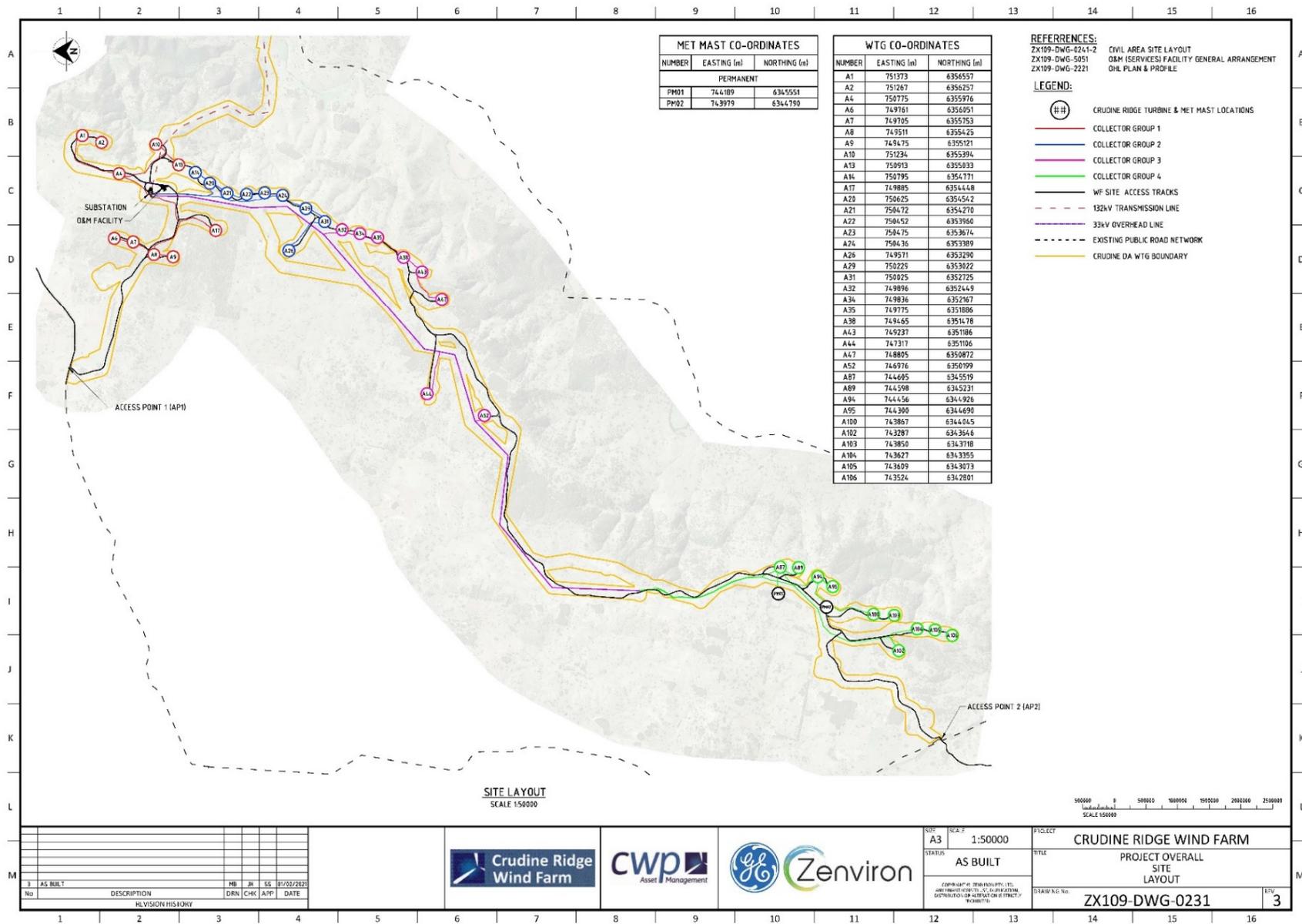


Figure 1 Approved Project infrastructure of the Crudine Ridge Wind Farm

Table 1 SSD-6697 Mod 3 Conditions relating to biodiversity

Condition of Approval	Requirement	Section this is addressed
Condition 19, Schedule 3	<p>Operating Conditions</p> <p><i>The Applicant shall:</i></p> <p>a. <i>ensure unless the Secretary agrees otherwise that no more than:</i></p> <ul style="list-style-type: none"> • 5.7 hectares of Box Gum Woodland EEC is cleared for the development including the 0.95 hectares that would be cleared for Aarons Pass Road upgrades; and • 5.64 hectares of Red Stringybark - Red Box - Long-leaved Box – Inland Scribbly Gum is cleared for the Aarons Pass Road upgrades; and <p>b. <i>implement all reasonable and feasible measures to minimise:</i></p> <ul style="list-style-type: none"> • impacts on the Small-Purple Pea (<i>Swainsona recta</i>), <i>Acacia meiantha</i> and <i>Pomaderris cotoneaster</i>; • limb-logging of hollow bearing trees along Aarons Pass Road; • impacts on threatened bird and bat populations; • the approved clearing of native woodland vegetation and fauna habitat including hollow-bearing trees; and <p>c. <i>if micro-siting wind turbines, ensure that the revised location of the turbine is at least 30 metres from any existing hollow-bearing trees, and where reasonable and feasible, 50 metres from any existing hollow-bearing tree, unless the Secretary agrees otherwise.</i></p> <p><i>Note: In considering a request for micro-siting of turbines within 30 m of existing hollow-bearing trees, the Secretary will consider safety concerns, the constructability of the turbine, and/or whether the micro-siting would materially increase biodiversity impacts.</i></p>	<p><i>Not relevant</i></p> <p>Upgrade works to Aarons Pass Road (APR) have been completed. The ARP Vegetation Clearing Audit Report identified:</p> <ul style="list-style-type: none"> • 0.56 ha of Box Gum Woodland and • 4.86 ha of Red Stringybark were cleared during the civil works <p><i>Not relevant</i></p> <p>Upgrade works to APR and construction of the wind farm has completed. No further vegetation clearing or limb lopping is required.</p> <p>Mitigations measure to minimise impacts from operational maintenance activities are provided in Section 3.</p> <p>Bird and bat monitoring is implemented in accordance with the approved Bird and Bat Management Plan (<i>Separate document – not included within the BMP</i>)</p> <p><i>Not relevant</i></p> <p>No wind turbine has moved more than 100m from the original planning location. No turbines have been micro-sited within 30m of an existing hollow bearing tree.</p>
Condition 20, Schedule 3	<p>Biodiversity Offset Strategy</p> <p><i>Within 2 years of the commencement of construction, unless the Secretary agrees otherwise, the Applicant must enter into a stewardship agreement under the BC Act for the enhancement and protection of the Biodiversity Offset Area (see the figure in Appendix 5) in accordance with the biodiversity offset strategy described in the EA for the development.</i></p>	<p><i>Not relevant.</i></p> <p><i>Separate document– not included within the BMP.</i></p> <p>Consistent with the NSW <i>Biodiversity Conservation Act</i>, CRWF entered into a Biodiversity Stewardship Agreement (BS0050 Glen Maye) on 19 August 2022,</p>

Condition of Approval	Requirement	Section this is addressed
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		for the protection and ongoing conservation management of the offset site in perpetuity
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Condition 21, Schedule 3	Biodiversity Offset Strategy – Aarons Pass Road <i>Within 2 years of the commencement of construction, unless the Secretary agrees otherwise, the Applicant must retire biodiversity credits of a number and class specified in Tables 5 and 6 below. The retirement of credits must be carried out in accordance with the requirements of the NSW Biodiversity Offsets Scheme and can be achieved by:</i> <ol style="list-style-type: none"> <i>i. acquiring or retiring 'biodiversity credits' within the meaning of the Biodiversity Conservation Act 2016;</i> <i>ii. making payments into the Biodiversity Conservation Fund; and</i> <i>iii. funding a biodiversity conservation action that benefits the threatened entity impacted by the development, consistent with the 'Ancillary rules: Biodiversity conservation actions'</i> 	<i>Not relevant</i> <i>Biodiversity Offset Strategy (separate document to this BMP)</i> Biodiversity credits of a number and class specified in Table 5 and 6 were purchased and retired during the construction phase.																						
	<p><i>Table 5: Ecosystem Credit Requirements</i></p> <table border="1"> <thead> <tr> <th><i>Vegetation Community</i></th> <th><i>PCT ID</i></th> <th><i>Credits Required</i></th> </tr> </thead> <tbody> <tr> <td><i>Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion</i></td> <td><i>277</i></td> <td><i>16</i></td> </tr> <tr> <td><i>Red Stringybark – Red Box – Long-leaved Box – Inland Scribbly Gum tussock grass shrub low open forest on hills in the southern part of the NSW South Western Slopes Bioregion</i></td> <td><i>290</i></td> <td><i>123</i></td> </tr> </tbody> </table> <p><i>Table 6 Species Credit Requirements</i></p> <table border="1"> <thead> <tr> <th><i>Species</i></th> <th><i>Credits Required</i></th> </tr> </thead> <tbody> <tr> <td><i>Glossy Black Cockatoo</i></td> <td><i>154</i></td> </tr> <tr> <td><i>Powerful Owl</i></td> <td><i>154</i></td> </tr> <tr> <td><i>Masked Owl</i></td> <td><i>154</i></td> </tr> <tr> <td><i>Koala</i></td> <td><i>156</i></td> </tr> <tr> <td><i>Acacia meiantha</i></td> <td><i>5</i></td> </tr> <tr> <td><i>Pomaderris cotoneaster</i></td> <td><i>1</i></td> </tr> </tbody> </table>	<i>Vegetation Community</i>	<i>PCT ID</i>	<i>Credits Required</i>	<i>Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion</i>	<i>277</i>	<i>16</i>	<i>Red Stringybark – Red Box – Long-leaved Box – Inland Scribbly Gum tussock grass shrub low open forest on hills in the southern part of the NSW South Western Slopes Bioregion</i>	<i>290</i>	<i>123</i>	<i>Species</i>	<i>Credits Required</i>	<i>Glossy Black Cockatoo</i>	<i>154</i>	<i>Powerful Owl</i>	<i>154</i>	<i>Masked Owl</i>	<i>154</i>	<i>Koala</i>	<i>156</i>	<i>Acacia meiantha</i>	<i>5</i>	<i>Pomaderris cotoneaster</i>	<i>1</i>
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<i>Pomaderris cotoneaster</i>	<i>1</i>																							

Condition 22, Schedule 3	Biodiversity Management Plan <i>Prior to carrying out further work on the upgrades on Aarons Pass Road after the date of approval of Modification 1,, the Applicant must prepare a revised Biodiversity Management Plan for the development to the satisfaction of the Secretary. This plan must:</i>	Upgrades to APR are complete and the CRWF has been operational since 2021.
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Condition of Approval	Requirement	Section this is addressed
	<p>(a) <i>be prepared in consultation with BCD and DoE; and</i></p> <p>(b) <i>include a:</i></p> <ul style="list-style-type: none"> • <i>description of the measures that would be implemented for:</i> <ul style="list-style-type: none"> - <i>satisfying the requirements in condition 19 above;</i> - <i>rehabilitating and revegetating temporary disturbance areas;</i> - <i>protecting vegetation and fauna habitat outside the approved disturbance area;</i> - <i>maximising the salvage of resources such as vegetative and soil resources within the approved disturbance area, including along Aarons Pass Road, for beneficial reuse such as fauna habitat enhancement on site and/or in the biodiversity offset area;</i> - <i>collecting and propagating seed (where relevant);</i> - <i>minimising the impacts on fauna on site, including undertaking pre-clearance surveys;</i> - <i>controlling weeds and feral pests;</i> - <i>controlling erosion;</i> - <i>controlling access; and</i> - <i>minimising bushfire risks;</i> 	<p>This BMP is being updated to reflect the Operational Phase of the CRWF.</p> <p>(a) Section 1.3 (b) Section 3</p> <p><i>Not relevant</i> Salvage not relevant for operation</p> <p><i>Not relevant</i> Seed collection not relevant for operation</p>
	<ul style="list-style-type: none"> • <i>a Translocation Plan for moving any Acacia meiantha in the approved development area for the Aarons Pass Road upgrades;</i> 	<p><i>Not relevant</i></p> <p>Translocation completed during construction. Not applicable to operation</p>
	<ul style="list-style-type: none"> • <i>Bird and Bat Adaptive Management Plan, that includes:</i> <ul style="list-style-type: none"> - <i>baseline data on bird and bat populations in the locality that could potentially be affected by the development, particularly 'at risk' species and threatened species;</i> - <i>a detailed description of the measures that would be implemented on site for minimising bird and bat strike during operation of the development, including:</i> <ul style="list-style-type: none"> ▪ <i>minimising the availability of raptor perches;</i> ▪ <i>prompt carcass removal;</i> ▪ <i>controlling pests;</i> ▪ <i>using best practice methods for bat deterrence, including managing potential lighting impacts;</i> ▪ <i>adaptive management of turbines to reduce mortality; and</i> 	<p><i>Not relevant</i></p> <p>BBAMP is a standalone plan.</p>

Condition of Approval	Requirement	Section this is addressed
	<ul style="list-style-type: none"> • a program to monitor and report on the vegetation clearing required for the Aarons Pass Road upgrades, including: <ul style="list-style-type: none"> ▪ a clear methodology to calculate and verify the vegetation clearing. ▪ verification of the vegetation clearing by suitably qualified experts; ▪ regular reporting on the scale and nature of the vegetation clearing on the proponent's website; and ▪ the publication of a detailed report documenting all the clearing undertaken for the road upgrades on the proponent's website within 4 weeks of completing the final clearing; and (c) Include a detailed program to monitor and report on: <ul style="list-style-type: none"> • The effectiveness of these measures and plans; and • bird and bat strike annually, or as otherwise directed by the Secretary. 	<p><i>Not relevant</i></p> <p>Vegetation clearing completed along APR. Not applicable to operation</p> <p>The vegetation clearing report was completed in September 2020 and is available on the Project's website.</p> <ul style="list-style-type: none"> • Appendix A • <i>Not relevant</i> Bird and Bat strike reporting mechanism is detailed in the BBAMP
Condition 23, Schedule 3	<p><i>Following approval, the Applicant must implement the measures described in the Biodiversity Management Plan.</i></p>	<p>The Applicant will implement the measures described in this BMP, as described in Section 3 and 4</p>
Condition 41, Schedule 3	<p><i>Progressive Rehabilitation</i></p> <p><i>The Applicant shall rehabilitate all areas of the site not proposed for future disturbance progressively, that is, as soon as reasonably practicable following construction or decommissioning. All reasonable and feasible measures must be taken to minimise the total area exposed at any time. Interim rehabilitation strategies shall be employed when areas prone to dust generation, soil erosion and weed incursion cannot yet be permanently rehabilitated.</i></p>	<p>Summary of rehabilitation in Section 2.4</p> <p>Ongoing measures in Section 3 and 4</p>

Condition of Approval	Requirement	Section this is addressed
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Condition 42, Schedule 3

Rehabilitation Objectives - Decommissioning

The Applicant shall rehabilitate the site to the satisfaction of the Secretary. This rehabilitation must comply with the objectives in Table 7

Table 7 rehabilitation Objectives.

Feature	Objective
Development site (as a whole)	- safe, stable, non-polluting - minimise the visual impact of any above ground ancillary infrastructure agreed to be retained for an alternative use as far as is reasonable and feasible
Revegetation	- Restore native vegetation generally as identified in the EA
Above ground wind turbine infrastructure (excluding wind turbine pads)	- To be decommissioned and removed, unless the Secretary agrees otherwise.
Above ground ancillary infrastructure	- To be decommissioned and removed, unless an agreed alternative use is identified to the satisfaction of the Secretary
Internal access roads	- To be decommissioned and removed, unless an agreed alternative use is identified to the satisfaction of the Secretary
Land Use	- Restore or maintain land capability as described in the EA
Community	- Ensure public safety

Upon completion of Decommissioning of the CRWF, the Proponent commits to comply with this condition.

Table 2 EPBC 2011/6206 Conditions relating to biodiversity

Condition of Approval	Requirement	Section this is Addressed
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1 To minimise the impacts of the action on protected matters, the person taking the action must:
a Implement administrative conditions 1,4, 6; environmental conditions 19 (b)(c) - 23, 41, 42 of the Development Consent where they relate to monitoring, managing, mitigating, avoiding, offsetting, recording, or reporting on, impacts to protected matters.

As discussed in Table 1
Section 3 and 4

2 If the approval holder does not secure the offset site through a NSW BioBanking Agreement, then the approval holder must protect the offset site under a legal instrument, approved by the Minister within 12 months of the commencement of construction. The legal instrument must:

Not relevant
Biodiversity Offset Strategy (separate to this document)
Consistent with the NSW Biodiversity Conservation Act, CRWF entered into a Biodiversity Stewardship Agreement (BS0050 Glen Maye) on 19 August 2022, for

Condition of Approval	Requirement	Section this is Addressed
	<p>a. Be register on title of the offset site once approved, and</p> <p>a. Provide for the protection and ongoing conservation management of the offset site in perpetuity.</p>	<p>the protection and ongoing conservation management of the offset site in perpetuity.</p> <p>The BSA was registered on title on 12 September 2022, within 6 months of entering into the Stewardship Agreement.</p>
3	<p><i>The person taking the action must not clear more than 3.28 hectares of White Box Yellow Box Blakely's Red Gum Grassy Woodland and Derived Native Grassland ecological community, for the development of the proposed action, as defined in Schedule 1 of this approval.</i></p>	<p><i>Not relevant</i></p> <p>A cumulative total of 2.48 ha of White Box Yellow Box Blakely's Red Gum Grassy Woodland and Derived Native Grassland ecological community was cleared by the development of the proposed action. The CRWF is now operational, and no additional clearing is required.</p>
4	<p><i>The person undertaking the action must not clear known locations of Small Purple Pea (<i>Swainsona recta</i>) within the Project Area (identified within the Environmental Assessment). The person taking the action must not clear any additional populations of Small Purple Pea (not identified in the Environmental Assessment), without the approval of the Minister.</i></p>	<p><i>Not relevant</i></p> <p>All known locations of Small Purple Pea (<i>Swainsona recta</i>) within the project area (identified within the Environmental Assessment) were marked during construction as no go zones in the field and have not been cleared. All works have been completed within known locations of Small Purple Pea (<i>Swainsona recta</i>) and no known individuals were harmed. The CRWF is now operational, and no additional clearing is required.</p>

2 Existing Environment

2.1 Overview

The Project Site is located on the Great Dividing Range in the northern central tablelands of NSW. The landscape is characterised by undulating to steep hills and ridge-lines with an elevation of approximately 454 m (BOM, 2023a). The character of the landscape has been altered considerably since European settlement due to vegetation clearing for agricultural use. The climate at Mudgee is fairly even all year round, with moderate rainfall that slightly increases in summer. The summer months experience warm temperatures of up to 35.5°C, on average, and winters cool to lows of -2.2°C, on average (BOM, 2023b).

2.1.1 Land Use

The majority of the landscape is currently used for agricultural and farming practices including fodder cropping, viticulture, and grazing (Kass, 2003). The land within the Project Site is primarily used for wool production and cattle grazing.

2.1.2 Meteorology

The nearest operational meteorological station for rainfall data is located 40 km north at Mudgee (station no. 062021) and for temperature data is located 62 km north at Mudgee Airport (station no. 062101). The meteorological data of 2022 is summarised in Table 3.

Table 3 Climate data for the Project Site (BOM, 2023b)

Average Weather Conditions	Measurements
Annual total rainfall	1174.4 mm (2022)
Highest average monthly rainfall	68.1 mm (January)
Lowest average monthly rainfall	44.5 mm (April)
Annual minimum / maximum temperature	8.9°C / 21.3°C (2022)
Highest mean monthly temperature range	16.5°C (June) to 35.5°C (January)
Lowest mean monthly temperature range	-2.2°C (July) to 12.8°C (January)

2.1.3 Geology and Soils

The Project Site is located within the Hill End – Ngunnawal geological province, which comprises the Hill End and Capertee sub provinces. The Hill End sub province is characterised by steep rolling hills and undulating low hills, with exposed bedrock occurring on all slopes. Soliths and yellow solodic soils occur on the foot slopes, while red podzolic soils and shallow soils are found on the upper slopes. The Capertee sub province is characterised by strongly folded and steeply dipping terrain, which varies from rugged to undulating or rolling terrain. Non-calcic brown soils occur on the mid-slopes, while deeper, medium textured, moderate to highly fertile soils are found on the undulating terrain (GeoscienceAustralia, 2011).

2.1.4 Hydrology

The Project Site is located within the upland reaches of the Macquarie-Boan catchment which spans 74,800 km² originating south of Bathurst in the Great Dividing Range and travelling north-westerly to join the Barwon River (DPE, 2023)

The Project Site contains small ephemeral creeks and gullies including Stinking Water Creek, Tunnabidgee Creek, Long Gully Creek and Salters Creek, which flow into a southern Macquarie River tributary, Pyramul Creek (CWP, 2012).

2.2 Vegetation

The Development Footprint is characterised by a mix of native woodland and open-forest, native pasture, exotic pasture and cleared land. Each vegetation type present has been impacted to varying degrees by weed invasion, grazing, minor cropping, and soil disturbance depending on the land use practices on each property.

Four Biometric Vegetation Types (BVT) were identified within the Development Footprint (Table 4) during completion of the Ecological Assessments (ELA, 2012); (ELA, 2018); (ELA, 2019).

Table 4 BVTs and EEC/CEEC Equivalent

Biometric Vegetation Type	BC Act	EPBC Act
CW117 - Broad-leaved Peppermint - Brittle Gum - Red Stringybark dry open forest on the South Eastern Highlands	-	-
CW176 - Red Stringybark - Scribbly Gum - Red Box - Long-leaved Box shrub - tussock grass open forest of the NSW South Western Slopes Bioregion (Benson 290)	-	-
CW206 - Wet tussock grasslands of cold air drainage areas of the tablelands	-	-
CW209 - White Box – Blakely’s Red Gum - Yellow Box grassy woodland of the NSW South Western Slopes Bioregion (Benson 282)	<i>White Box Yellow Box Blakely’s Red Gum Woodland (EEC)</i>	<i>White Box-Yellow Box-Blakely’s Red Gum Grassy Woodland and Derived Native Grassland (CEEC)</i>

Vegetation along APR was subject to further assessment in 2018 for Modification 1, in accordance with the biodiversity assessment methods prescribed by the BC Act. Vegetation was mapped to Plant Community Type (PCT) as required by the BC Act, and comprised two PCTs which correspond directly to the now superseded BVTs:

- PCT 277 - Blakely’s Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion (corresponds to BVT CW209)
- PCT 290 - Red Stringybark – Red Box – Long-leaved Box – Inland Scribbly Gum tussock grass shrub low open forest on hills in the southern part of the NSW South Western Slopes Bioregion (corresponds to BVT CW176).

2.2.1 Threatened Ecological Communities

One threatened ecological community (TEC) was identified in the Project Site (ELA, 2012), associated with CW209 - White Box – Blakely’s Red Gum - Yellow Box grassy woodland (WBBRGYB) of the NSW South Western Slopes Bioregion (mapped as PCT 277 on APR). This vegetation type is listed as:

- *White Box Yellow Box Blakely’s Red Gum Woodland* listed as an Endangered Ecological Community (EEC) under the BC Act; and
- *White Box-Yellow Box-Blakely’s Red Gum Grassy Woodland and Derived Native Grassland* listed as a Critically Endangered Ecological Community (CEEC) under the EPBC Act.

Areas of the EEC White Box - Yellow Box - Blakely's Red Gum Woodland listed under the BC Act and the CEEC White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland listed under the EPBC Act (both more commonly known as Box Gum Woodland (BGW)), are present primarily in the north of the Project Site along the APR corridor and in a discrete section of the transmission line. Figure 2 and Figure 3 shows the location of the EEC/CEECs within the Project Site.

Vegetation clearance within this community has been restricted within the Conditions of Approval (Section 1.5). Condition 19 a) of Schedule 3 of SSD-6697 Mod 3 has restricted clearing to 5.7 ha of the BC Act listed EEC, while Condition 2 of the EPBC 2011/6206 restricts clearing to 3.28 ha of the EPBC Act listed CEEC.

Areas of Low condition WBBRGYB are characteristic of the BC Act defined community. However, areas mapped as Moderate/Good condition only reflect the EPBC Act listed BGW community. Low condition areas do not retain sufficient integrity to be considered the CEEC under the EPBC Act. Furthermore, none of the derived grassland / pasture areas that met the EPBC Act criteria fall within the impact area of the Development Footprint.

Within the Project Site, WBBRGYB is present in lower lying, gently sloping and undulating land below 900 m elevation. It occurs in both the Sally's Flat and Pyramul clusters but is most common in the eastern arm of the Project Site where external overhead lines are located, mainly on clastic (siltstone), volcanoclastic, and felsic rock (rhyolite), but also to a lesser extent on metamorphic rock (siltstone). The structure of the community is open grassy woodland, grassland and pasture.

All other areas where this community is present within the Project Site had been previously cleared. In the majority of grassland areas, the groundcover is in moderate to good condition, with native species comprising greater than 50 % cover at the time of assessment. However, in some areas near the eastern extremity of the Project Site, the groundcover is dominated by exotic species, with native species comprising less than 50 % cover, especially where pastures have been over sown with *Phalaris* spp.

The Wet Tussock grasslands of cold air drainage areas of the tablelands (CW206) has been listed as an EEC under the BC Act post approval of the Project. This community has been impacted by 0.18 ha of permanent removal and 0.06 ha of temporary removal.

2.2.2 Threatened Flora

Several threatened flora species are known to occur or have the potential to occur within the Project Site. Of these, *Swainsona recta* (Small Purple-pea), was recorded in the powerline easement. *Acacia meiantha* and *Pomaderris cotoneaster* were recorded at several locations along APR during Modification 1. Figure 2 to Figure 6 shows the locations of these threatened species where potential impacts have been approved.

Potential habitat was identified for six other threatened flora species in the Project Site as detailed in Table 4.

Table 5 Threatened flora with potential habitat in the Project Site

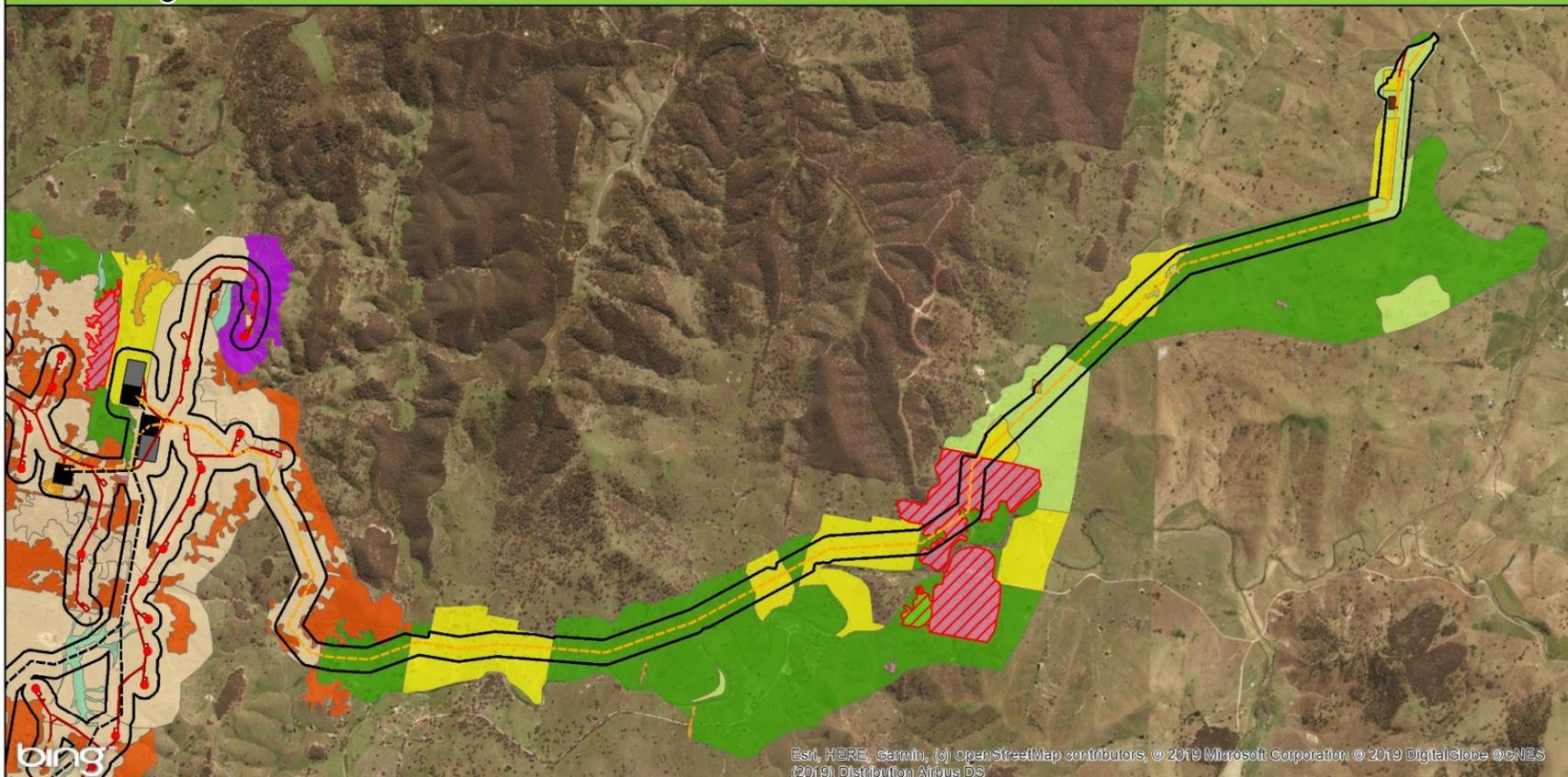
Scientific name	Common name	BC Act	EPBC Act
<i>Bothriochloa biloba</i>	Lobed Blue Grass	Delisted	Delisted
<i>Eucalyptus cannonii</i>	Capertee Stringybark	V	-
<i>Eucalyptus robertsonii</i> subsp. <i>Hemisphaerica</i>	Robertson's Peppermint	V	V
<i>Prasophyllum</i> sp. <i>Wybong</i>	A Leek Orchid	-	CE
<i>Swainsona recta</i>	Small Purple-pea	E	E
<i>Swainsona sericea</i>	Silky Swainson-pea	V	-
<i>Thesium australe</i>	Austral Toadflax	V	V
<i>Acacia meiantha</i>	-	E	-
<i>Pomaderris cotoneaster</i>	-	E	E

2.2.3 Construction Clearing summary

Condition number and Requirement	Summary of construction clearing
<p>Condition 19, Schedule 3 states that no more than:</p> <ul style="list-style-type: none"> 5.7 hectares of Box Gum Woodland EEC is cleared for the development including the 0.95 hectares that would be cleared for Aarons Pass Road upgrades; and 5.64 hectares of Red Stringybark - Red Box - Long-leaved Box – Inland Scribbly Gum is cleared for the Aarons Pass Road upgrades 	<p>Total ARP Vegetation Clearing is:</p> <ul style="list-style-type: none"> 0.56 ha of Box Gum Woodland and 4.86 ha of Red Stringybark were cleared during the civil works <p>Upgrades to APR have been completed and the management of APR is with Crown Lands.</p>

Condition number and Requirement	Summary of construction clearing
<p>EPBC 2011/6206 Condition 3 The person taking the action must not clear more than 3.28 hectares of White Box Yellow Box Blakely's Red Gum Grassy Woodland and Derived Native Grassland ecological community, for the development of the proposed action</p>	<p>A cumulative total of 2.48 ha of White Box Yellow Box Blakely's Red Gum Grassy Woodland and Derived Native Grassland ecological community was cleared by the development of the proposed action. The CRWF is now operational, and no additional clearing is required.</p>
<p>EPBC 2011/6206 Condition 4 The person undertaking the action must not clear known locations of Small Purple Pea (<i>Swainsona recta</i>) within the Project Area (identified within the Environmental Assessment). The person taking the action must not clear any additional populations of Small Purple Pea (not identified in the Environmental Assessment), without the approval of the Minister.</p>	<p>All known locations of Small Purple Pea (<i>Swainsona recta</i>) within the project area (identified within the Environmental Assessment) were marked during construction as no go zones in the field and have not been cleared. All works have been completed within known locations of Small Purple Pea (<i>Swainsona recta</i>) and no known individuals were harmed. The CRWF is now operational, and no additional clearing is required.</p>

Crudine Ridge Wind Farm



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Development corridor	Turbine locations
EPBC listed vegetation communities	Internal Overhead Transmission Line
Broad-leaved Peppermint-Brittle Gum - Red Stringybark dry open forest on the southeastern highlands, Moderate to Good	External Overhead Transmission Line
Disturbed terrain, Low	Approved Layout - Internal Roads
Exotic pasture, Low	Site Compound Options
Red Stringybark-Scribbly Gum-Red Box-Long-leaved Box shrub-tussock grass open forest, Moderate to Good, Pasture	Switching Station Options
Red Stringybark-Scribbly Gum-Red Box-Long-leaved Box shrub-tussock grass open forest, Moderate to Good, Trees	Collector Substation Options
Wet tussock grasslands of cold air drainage areas of the tablelands, Moderate to Good	
White Box-Blakelys Red Gum-Yellow Box grassy woodland (Transitional), Moderate to Good	
White Box-Blakelys Red Gum-Yellow Box grassy woodland, Low	
White Box-Blakelys Red Gum-Yellow Box grassy woodland, Moderate to Good	

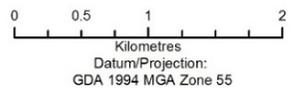
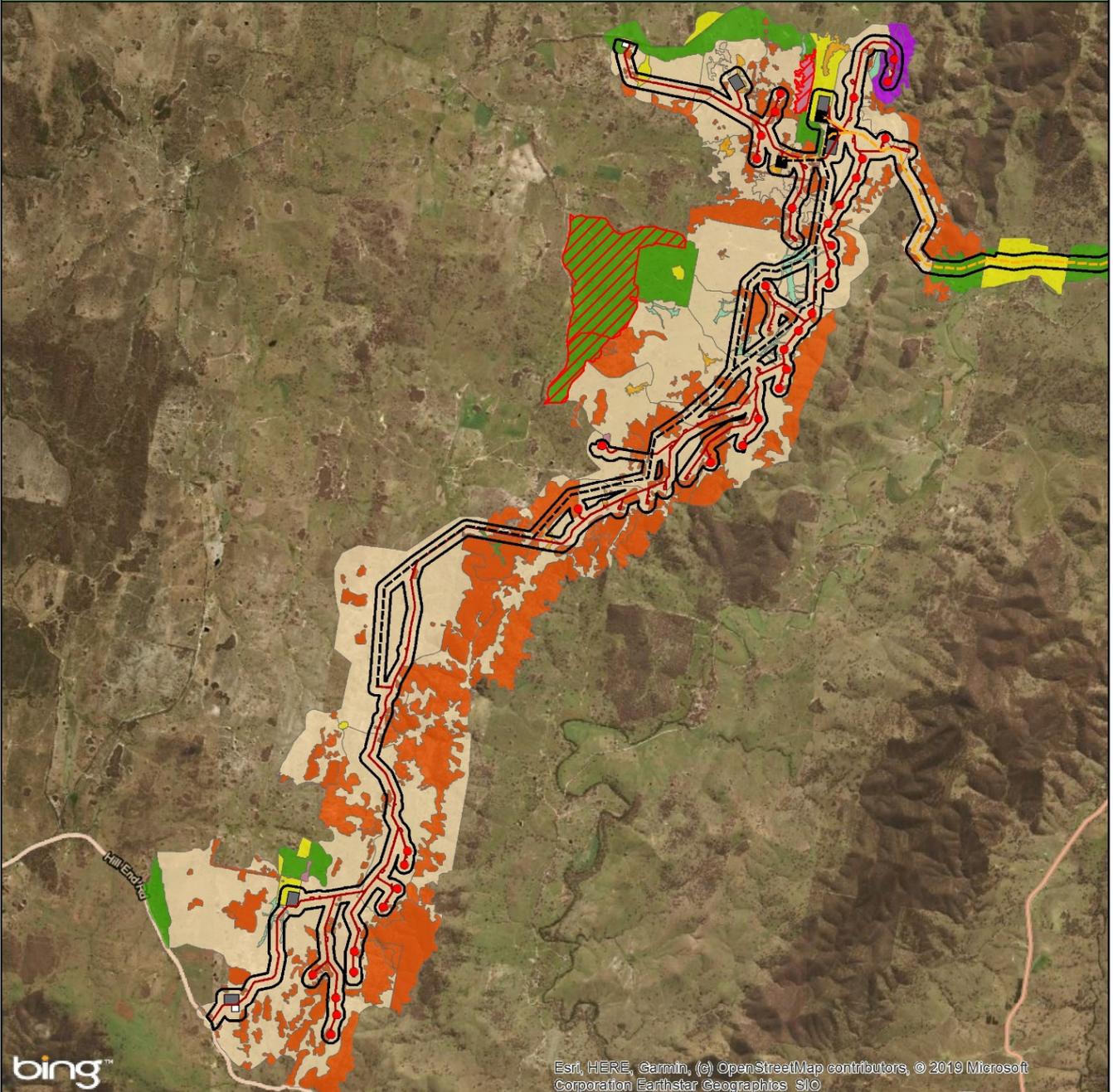


Figure 2 Vegetation types and EEC / CEEC locations – Part A

Crudine Ridge Wind Farm



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Development corridor	Turbine locations
EPBC listed vegetation communities	Internal Overhead Transmission Line
Broad-leaved Peppermint-Brittle Gum - Red Stringybark dry open forest on the southeastern highlands, Moderate to Good	External Overhead Transmission Line
Disturbed terrain, Low	Approved Layout - Internal Roads
Exotic pasture, Low	Rock Crushing & Batching Plant
Red Stringybark-Scribbly Gum-Red Box-Long-leaved Box shrub-tussock grass open forest, Moderate to Good, Pasture	CRU_SecondarySub_v1
Red Stringybark-Scribbly Gum-Red Box-Long-leaved Box shrub-tussock grass open forest, Moderate to Good, Trees	Site Compound Options
Wet tussock grasslands of cold air drainage areas of the tablelands, Moderate to Good	Switching Station Options
White Box-Blakelys Red Gum-Yellow Box grassy woodland (Transitional), Moderate to Good	Collector Substation Options
White Box-Blakelys Red Gum-Yellow Box grassy woodland, Low	
White Box-Blakelys Red Gum-Yellow Box grassy woodland, Moderate to Good	

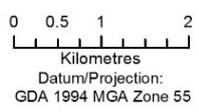


Figure 3 Vegetation types and EEC / CEEC – Part B

Swainsona recta records

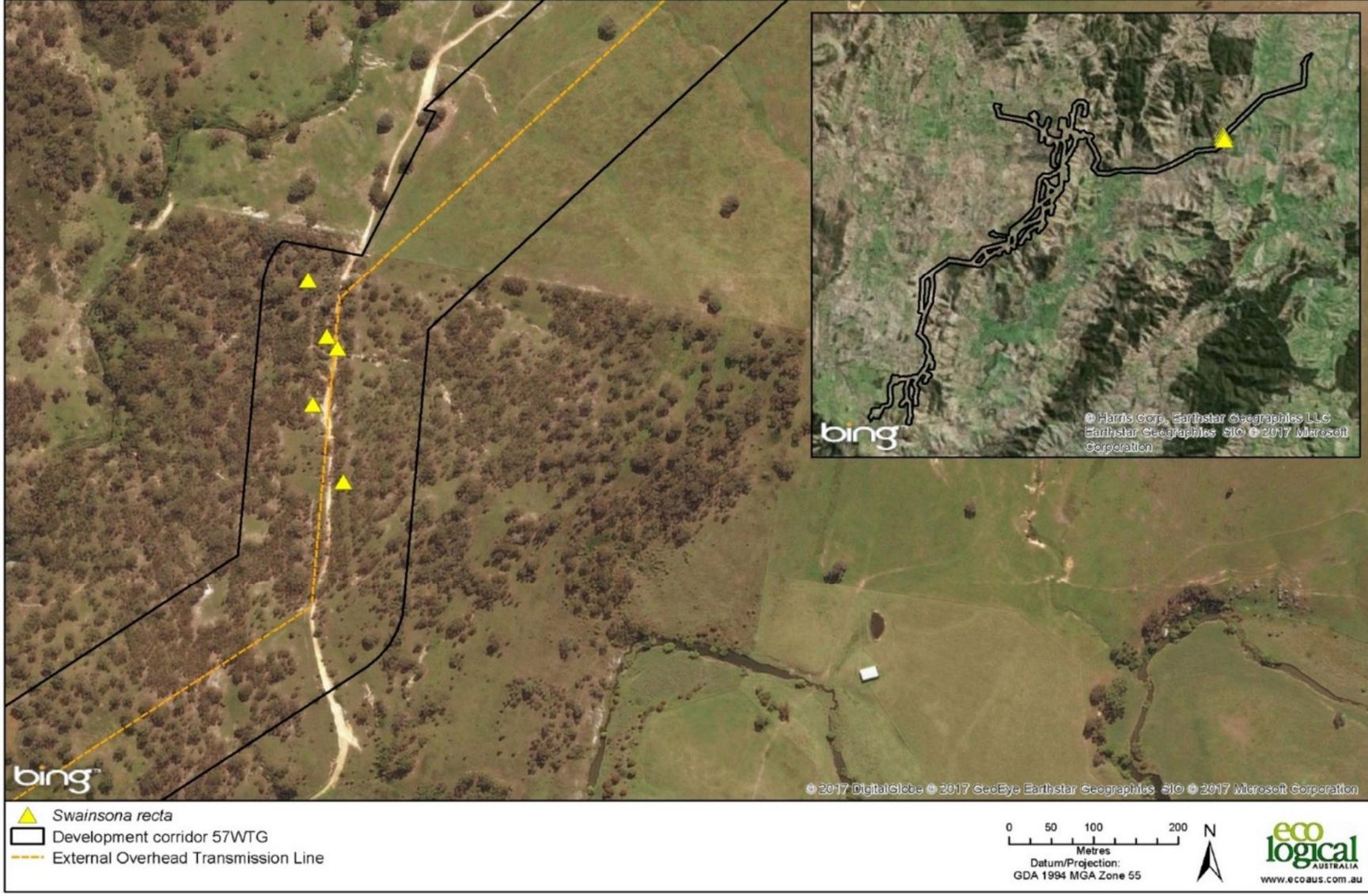


Figure 4: Swainsona recta within the overhead powerline easement

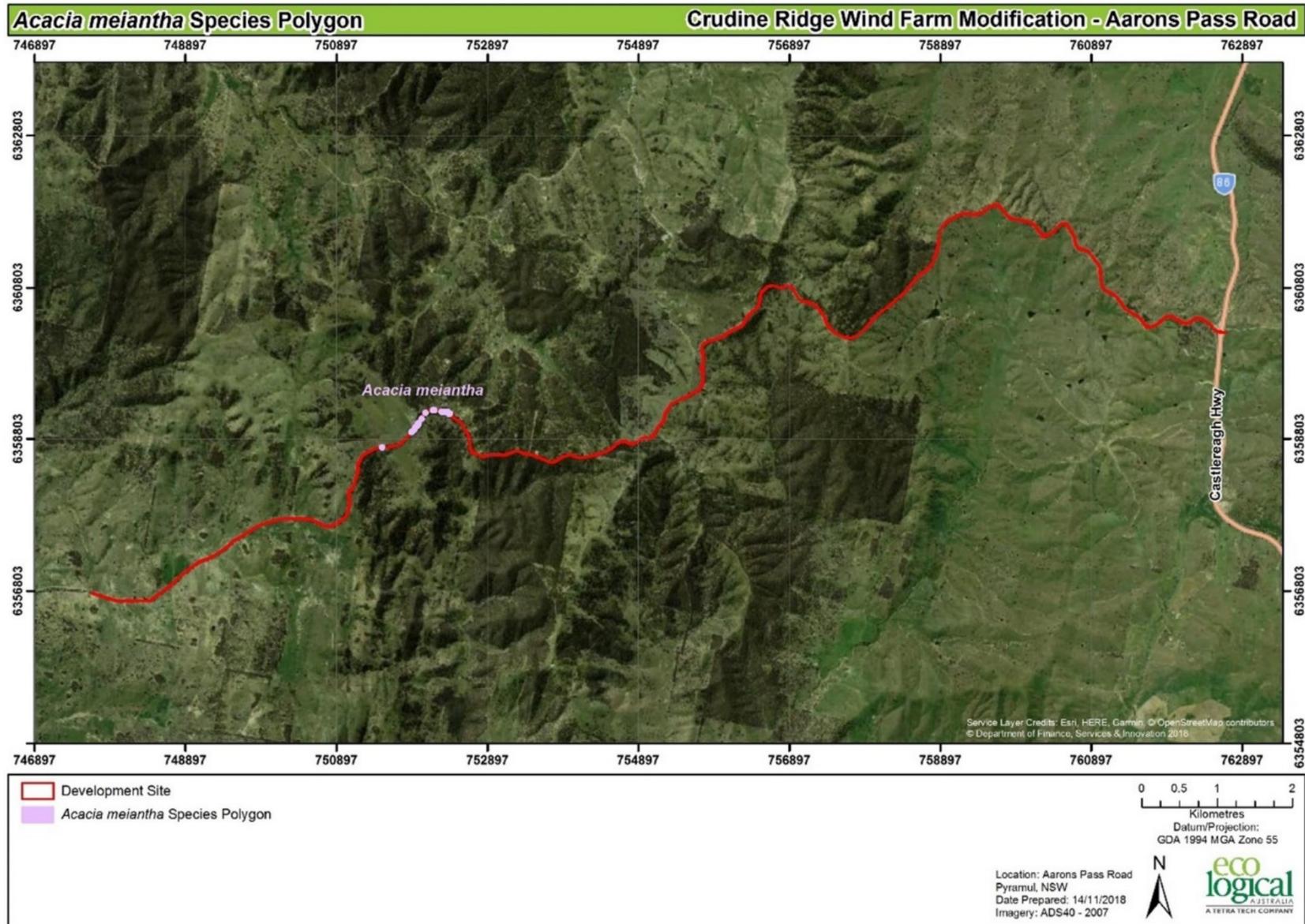


Figure 5: *Acacia meiantha* within Aarons Pass Road easement

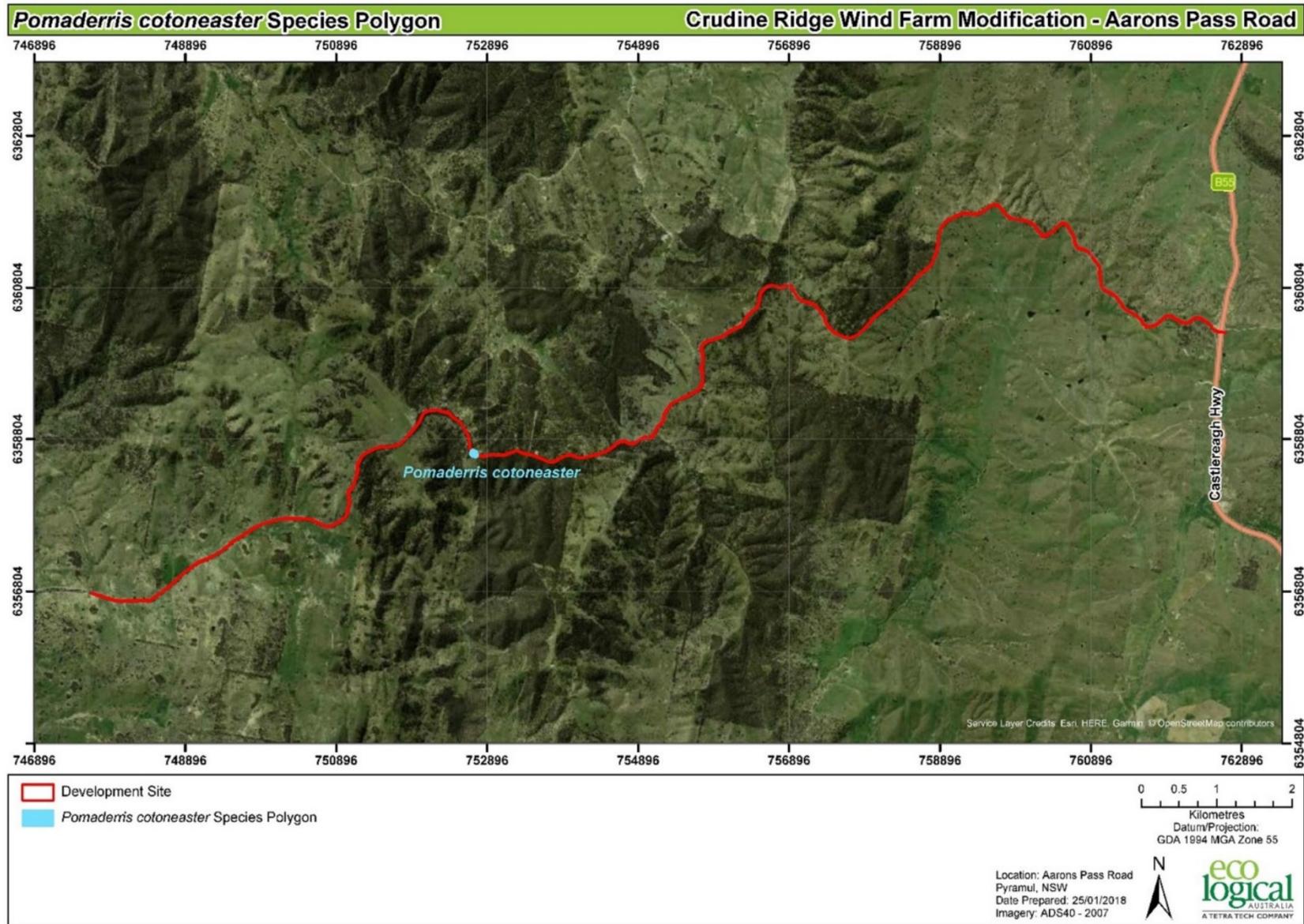


Figure 6: Pomaderris cotoneaster within Aarons Pass Road easement

2.2.4 State and Regional Priority Weeds

The *Noxious Weeds Act 1993* was repealed on 1 July 2017 with the inception of the *Biosecurity Act 2015*. There are five state and/or regional priority weeds (formerly “noxious” weeds) located within the Development Corridor. Three Weeds of National Significance (WONS) have been recorded within the Project Site. Table 6 lists the species recorded in the Project Site.

Table 6 Priority weeds recorded within the Project Site

Common Name	Scientific Name	NW Act Class	WONS	State Priority Weed	Regional Priority Weed
Blackberry	<i>Rubus fruticosus</i> aggregate species	4	x	x	x
Serrated Tussock	<i>Nassella trichotoma</i>	4	x	x	x
St. John's Wort	<i>Hypericum perforatum</i>	4	-	-	x
Sweet Briar	<i>Rosa rubiginosa</i>	4	-	-	x
Willow species	<i>Salix</i> sp.	5	x	-	x

Note: Class 4: the growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority. Class 5: the requirements in the *Noxious Weeds Act 1993* for a notifiable weed must be complied with.

2.3 Fauna and Habitat

A range of fauna species (including six introduced species) were recorded throughout the Project Site during the field surveys. Fauna recorded included reptile, frog, bird (including one introduced bird species) and mammal species (non-bat) (of which five are introduced) and microbat species.

Potential habitat for hollow-dependent species is abundant in the form of tree hollows in remnant woodland and scattered trees and hollow-bearing logs across the landscape. Table 7 lists the key fauna habitat features present across the Development Corridor.

Table 7 Key fauna habitat features present across the Development Corridor

Habitat Features	Species
Hollow-bearing trees	Arboreal mammals, microchiropteran bats, hollow-dependent birds (including owls), and reptiles
Stags	Birds and reptiles
Rocky outcrops	Small ground dwelling mammals, reptiles
Dams, watercourses and ephemeral drainages	Amphibians, birds, reptiles, mammals, microchiropteran bats
Autumn / winter-flowering eucalypts <i>Eucalyptus blakelyi</i> (Blakely's Red Gum), <i>E. albens</i> (White Box), <i>E. gonicalyx</i> (Long-leaved Box), <i>E. macrorhyncha</i>	Nectivorous birds and microchiropteran bats
Tussock grasses	Birds, frogs, reptiles and bats
Fallen timber	Reptiles, small mammals, frogs and birds
Leaf litter	Reptiles, small mammals and birds
Defoliating bark	Small mammals and reptiles
Koala Feed Trees <i>E. macrorhyncha</i> , <i>E. rossii</i> (Inland Scribbly Gum), <i>E.</i>	Koala

Habitat Features	Species
<i>goniocalyx</i> (Long-leaved Box / Bundy), and <i>E. polyanthemus</i> (Red Box)	

2.3.1 Threatened and Migratory Fauna

Threatened fauna species identified as known, likely or have the potential to occur in the Project Site, are listed in Table 8. Of these species, 14 were recorded across the Development Corridor during surveys undertaken for the original Project EA.

Table 8 Threatened fauna species known, likely or have the potential to occur

Scientific name	Common name	BC Act	EPBC Act	Identified in Development Corridor
Birds				
<i>Anthochaera phrygia</i>	Regent Honeyeater	CE	CE	N
<i>Burhinus grallarius</i>	Bush Stone-curlew	E	-	N
<i>Callocephalon fimbriatum</i>	Gang Gang Cockatoo	V	-	N
<i>Calyptorhynchus lathamii</i>	Glossy Black-Cockatoo	V	-	N
<i>Circus assimilis</i>	Spotted Harrier	V	-	N
<i>Climacteris picumnus victoriae</i>	Brown Treecreeper	V	-	Y
<i>Daphoenositta chrysoptera</i>	Varied Sittella	V	-	N
<i>Glossopsitta pusilla</i>	Little Lorikeet	V	-	Y
<i>Hieraetus morphnoides</i>	Little Eagle	V	-	N
<i>Lathamus discolor</i>	Swift Parrot	E	CE	N
<i>Melanodryas cucullata cucullata</i>	Hooded Robin	V	-	Y
<i>Melithreptus gularis gularis</i>	Black-chinned Honeyeater	V	-	N
<i>Ninox connivens</i>	Barking Owl	V	-	N
<i>Ninox strenua</i>	Powerful Owl	V	-	N
<i>Tyto novaehollandiae</i>	Masked Owl	V	-	N
<i>Petroica boodang</i>	Scarlet Robin	V	-	Y
<i>Petroica phoenicea</i>	Flame Robin	V	-	N
<i>Polytelis swainsonii</i>	Superb Parrot	V	V	N
<i>Chthonicola sagittata</i>	Speckled Warbler	V	-	Y
<i>Stagonopleura guttata</i>	Diamond Firetail	V	-	Y
Frogs				

Scientific name	Common name	BC Act	EPBC Act	Identified in Development Corridor
<i>Litoria booroolongensis</i>	Booroolong Frog	E	E	N
Reptiles				
<i>Aprasia parapulchella</i>	Pink-tailed Legless Lizard	V	V	N
Mammals				
<i>Dasyurus maculatus</i>	Spotted-tailed Quoll	V	E	N
<i>Petaurus norfolcensis</i>	Squirrel Glider	V	-	N
<i>Phascogale tapoatafa</i>	Brush-tailed Phascogale	V	-	N
<i>Phascolarctos cinereus</i>	Koala	V	Y	Y
Mammals (Bats)				
<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat	V	V	Y
<i>Chalinolobus picatus</i>	Little Pied Bat	V	-	Y
<i>Miniopterus schreibersii oceanensis</i>	Eastern Bentwing-bat	V	-	Y
<i>Nyctophilus corbeni</i>	Greater (Eastern) Long-eared Bat	V	V	Y
<i>Pteropus poliocephalus</i>	Grey-headed Flying Fox	V	V	N
<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheath-tail-bat	V	-	Y
<i>Vespadelus troughtoni</i>	Eastern Cave Bat	V	-	Y
Migratory Species				
<i>Ardea modesta</i>	Great Egret		Ma	N
<i>Ardea ibis</i>	Cattle Egret		Ma	N
<i>Hirundapus caudacutus</i>	White-throated Needletail	-	M, Ma	N
<i>Merops ornatus</i>	Rainbow Bee-eater	-	Ma	Y
<i>Myiagra cyanoleuca</i>	Satin Flycatcher		M, Ma	N

Note: CE = Critically Endangered, E = Endangered, V = Vulnerable, M = Migratory, Ma = Marine

2.3.2 Pest Fauna Species

Pest fauna species are commonly found across the Project Site, these include foxes, goats and wild dogs. Feral animal control programs to control the populations and impacts from these species are undertaken by the landholders of the Project. The Project will cooperate with landowners to facilitate ongoing vertebrate pest control programs being undertaken by the landowners on their land.

Any vertebrate pest control activities undertaken at CRWF will be done in accordance with the requirements of the Local Land Services. Measures for control and monitoring are presented in Appendix A.

2.4 Construction and post - construction remediation activities

2.4.1 Revegetated and rehabilitated areas

Revegetation and rehabilitation of disturbed areas along APR and the CRWF was undertaken progressively as construction was completed. As such these works have now all been completed since operations commenced in December 2021.

Monitoring of rehabilitation during construction was undertaken monthly by the EPC contractor. All disturbed areas of the site have been fully rehabilitated and well vegetated.

Monitoring of rehabilitated areas during the operational phase is undertaken every 6 months by the project environment officer, with a focus on weed management and monitoring the effectiveness of installed erosion sediment control structures. Performance criteria are detailed in Appendix A.

If operational maintenance activities within the operational footprint of the CRWF (see Figure 7) result with any new vegetation/ground disturbance, then the measures in Section 3 will be implemented.

It is noted that APR is Crown Land, administered by the Department of Planning and Environment – Crown Lands. Upgrade works to APR, during construction, were carried out under a licence agreement with the Crown. Upon expiry of the Licence in April 2022, the Crown Lands inspected the site and determined the upgrade and rehabilitation works were compliant with the conditions of the Licence. The Crown Lands noted that no further action is required and the administration and management of APR has reverted to the Crown Lands. The Project would not be required to undertake any works on APR during the operation of the Project.

2.4.2 Translocation of *Acacia meiantha*

Eco Logical Australia (ELA) was engaged by the Proponent to monitor and manage the translocation of the NSW and Commonwealth listed *Acacia meiantha* plants identified within the designated impact area for the upgrade to APR.

59 individuals were identified within the impact area along APR and rather than let these individuals be destroyed, an opportunity was taken to increase knowledge and potentially reduce the loss of individuals through the implementation of a translocation plan, thereby directly supporting the conservation of the species.

In July 2019, 47 of the 59 individuals within the designated impact area were removed from the roadside, potted and transferred to the Landcare Watershed Nursery in Mudgee. Due to *A. meiantha*'s ability to sucker, an additional 79 propagules were potted and cared for in the Landcare nursery. Additionally, 106 cuttings were taken and propagated in pots with sand/coir/vermiculite or sand/coir/perlite mix.

By early 2020, approximately 13 individual plants had survived, indicating a 16% success rate. None of the cuttings had survived, possibly due to dry seasonal field conditions resulting in poor quality of plant material when collecting rather than inability to grow from cuttings.

On 26 May 2020, the 13 surviving plants were translocated near to where the current population of *A. meiantha* is located on APR. This ensured that all biotic and abiotic requirements would be similar to the original site. An area near the corner of Perke Rd was selected as some of the individuals were collected nearby and there are currently individuals still within this area of the road reserve.

GPS locations for each plant is shown in Table 9. All plants were healthy with abundant new growth. The 13 individuals were monitored weekly for two months, and then monthly for 10 months taking note of health, flowering, presence of buds, as well as any potential threats. In August 2022, the BCD inspected the translocation site with the ELA ecologist. The Translocated plants appeared to be in good condition and were in flower, as shown in Picture 1.

On 28 February 2024, the Environmental Advisor for CRWF inspected the translocated site. Five tagged translocated plants were identified. Three of these appeared dead, one appeared to be recovering with new growth, and the other was mature with buds. All other living *Acacia meiantha* did not have tags or had lost their tags. As such it was not possible to distinguish the translocated individuals from the original population. The condition of the living *Acacia meiantha* ranged from moderate to good. Some individuals had healthy green foliage and buds, whilst others appeared to be recovering and growing new shoots. New recruits from seeds were also observed. The translocation site included other native shrubs and grasses, as well as non native grasses, which appeared to be competing with the smaller *Acacia meiantha*. Other disturbances to the site included evidence of vehicles reversing into the area and crushing this variety of vegetation.

A final survey by a suitably qualified expert will be undertake in the next flowering season to ascertain if the translocated plants are well established, in good health and self-sustaining, or that the translocation is deemed unsuccessful. No additional subsequent surveys will be carried out.

Table 9 GPS Co-ordinates for each of the replanted *A. meiantha* (GDA 94 Zone 55)

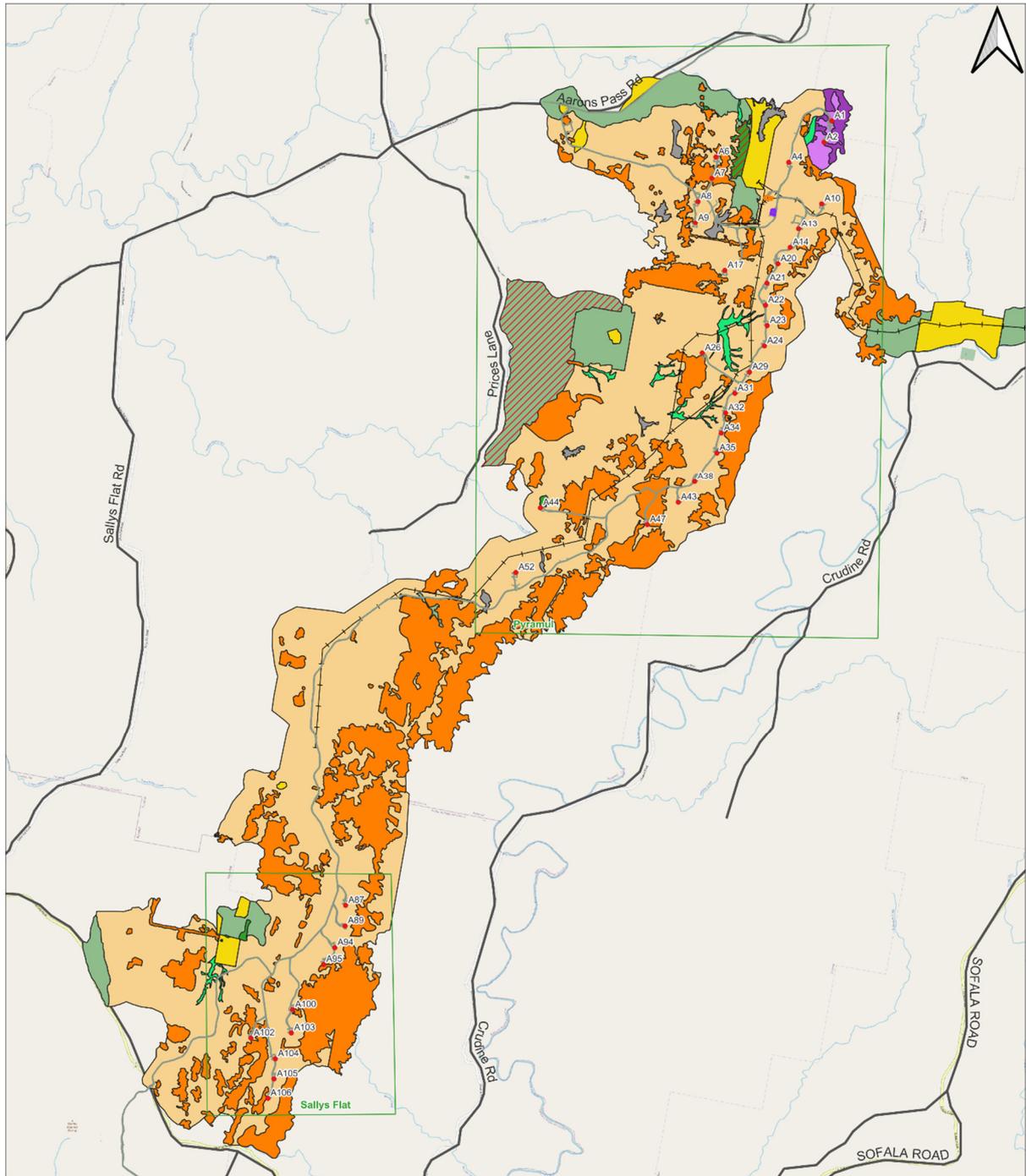
Label	Northing	Easting	Label	Northing	Easting
AP2	6359151	752350.4	AP45D	6359167	752373.3
AP11	6359165	752386.9	AP45F	6359169	752370.9
AP13	6359171	752368.9	AP45g	6359162	752378.3
AP20	6359162	752384	AP45M	6359159	752381.5
AP24F	6359162	752385.3	AP45N	6359168	752378.2
AP43A	6359164	752380.4	AP45O	6359169	752369.7
AP45B	6359170	752373.7			



Picture 1 *A. meiantha* post translocation pictures, August 2022



Picture 2 *A. meiantha* post translocation pictures, Febraury 2024



<ul style="list-style-type: none"> • WTG — O&M — Substation — OH Transmission — Roads 	Vegetation Type <ul style="list-style-type: none"> ■ Broad-leaved Peppermint-Brittle Gum - Pasture ■ Broad-leaved Peppermint-Brittle Gum - Trees ■ Disturbed terrain ■ Exotic pasture ■ Red Stringybark-Scribbly Gum- Pasture ■ Red Stringybark-Scribbly Gum- Trees ■ Wet tussock grasslands ■ White Box-Blakelys Red Gum- Pasture ■ White Box-Blakelys Red Gum- Trees ■ EPBC — Access Track 	Company		SQUADRON ENERGY	
		Crudine Ridge Wind Farm			
Title					
Operational footprint and vegetation types					
Date	Projection	Dwg No	Rev	Ver	
05/01/2024	GDA 94 Zone 55	001	001	001	
Drawn By	Checked By	Sheet	Proj Code	Size	
ZMJ		001	CRU	A3	



Figure 7 CRWF Operational Footprint and Vegetation types

3 Biodiversity Management Measures

This section defines the management measures that will be implemented during the Project’s operational phase to manage potential environmental risks and impacts to biodiversity values. The key environmental risks include:

- Vegetation clearing (if required for maintenance along the cable trenches)
- Feral pests
- Weeds
- Erosion (including roads which may require sedimentation and erosion control structures)
- Bushfire

The roles and responsibilities of the Site Manager, Environmental Officer, FSA manager and other contractors shown in the following tables are described in detail in the Environmental Management Strategy for CRWF.

Table 10 Fauna and flora management measures

Potential risks	Management measure	Responsibility
Protect fauna	<ul style="list-style-type: none"> • Project Induction Package will cover that all native fauna are protected and that no person is to interact, destroy, take, kill or unnecessarily disturb any plant or animal, reinforcing minimisation of flora and fauna disturbance. • Only appropriately trained and qualified persons will attempt to handle or relocate any fauna if required. 	Site Manager FSA Manager All personnel
Fauna habitat enhancement	<ul style="list-style-type: none"> • Implement weed and pest management measures as outlined in Table 11 • Fallen trees, tree trunks or major branches should be retained within the Wind Farm site to provide fauna habitat • Where vegetation is cleared, large fallen logs and woody debris will be salvaged where it is considered appropriate for use in revegetation or habitat enhancement activities. • Where soil is cleared for excavations or cuttings, it will be used for fill or habitat enhancement activities within the Project site. 	
Sick or injured fauna	Where sick or injured native animals are identified, notify the Site Manager immediately and advise location. Contact local wildlife recovery Wildlife Rescue NSW Sth Coast 0418 427 214 or NSW - WIRES: 1300 094 737	All personnel Site Manager
Vegetation disturbance	Vehicles are not permitted off the permanent access tracks. BGW communities are located near the O&M, WTG A44 and at the entrance to the site. Any maintenance works undertaken at these locations will be restricted to the approved development footprint, and no go zones will be established to prevent direct impact to BGW habitat that is located outside the approved development footprint. Maintenance works, within areas identified as having threatened species and communities, will be carried out to ensure that the cumulative clearing impact (from construction and operation) does not exceed the following: The provisions of Condition 19 (a) Schedule 3 of SSD-6697 which states: <ul style="list-style-type: none"> • <i>The Applicant shall:</i> <ol style="list-style-type: none"> a. ensure, unless the Secretary agrees otherwise, that no more than: 	All personnel Site Manager Vegetation clearing contractor Site Manager Environmental Officer

Potential risks	Management measure	Responsibility
	<ul style="list-style-type: none"> – 5.7 hectares of Box Gum Woodland is cleared for the development, including the 0.95 hectares that would be cleared for the Aarons Pass Road upgrades; – 5.64 hectares of Red Stringybark - Red Box - Long-leaved Box – Inland Scribbly Gum is cleared for the Aarons Pass Road upgrades; and <p>And the Commonwealth approval EPBC 2011/6206 which states: <i>The person taking the action must not clear more than 3.28 hectares of White Box Yellow Box Blakely's Red Gum Grassy Woodland and Derived Native Grassland ecological community, for the development of the proposed action, as defined in Schedule 1 of this approval.</i></p>	
Fauna vehicle strikes	<ul style="list-style-type: none"> • Restrict vehicles speeds to 40km/hr on the access track • In the case of a strike with a fauna species, call the Site Manager and then notify local wildlife recovery / landowner (if grazing animals) <p>Wildlife Rescue NSW Sth Coast 0418 427 214 or NSW - WIRES: 1300 094 737</p>	All personnel, Site Manager

Table 11 Weed and pest management measures

Potential risks	Management measure	Responsibility
Introduction of weeds	<ul style="list-style-type: none"> • Inspect new transport/haulage plant and vehicles accessing the Project for weeds and seeds and clean if required prior to entering site. • Vehicles will remain on constructed roads and hardstands at all times. • Travel through noxious weeds is prohibited, where possible. • Keep vehicles and machinery clean of soils, vegetation and seeds prior to entering the Project site. 	Site Manager
Maintenance spraying	<ul style="list-style-type: none"> • Annual maintenance spraying as advised by weed spraying contractor in areas known to have high concentrations of weeds and to align with a species life cycle to ensure effective removal • Manage weeds in accordance with the requirements of the Central Tablelands Regional Strategic Weed Management Plan (Local Land Services, 2017) • Record weed spraying activities in the Maintenance records 	Site Manager
Ground disturbance from maintenance activities	<ul style="list-style-type: none"> • Undertake a pre-maintenance assessment of weeds in each work area, prior to ground disturbance • Implement the most suitable treatment method (mechanical removal, application of herbicides or slashing), prior to undertaking the maintenance activity • Monitor the work area to assess the effectiveness of the weed management measure, and determine the need for additional control activities if required. • Maintenance contractor will prepare a Weed Management Plan, as detailed in Appendix C 	Site Manager
Feral pest	<ul style="list-style-type: none"> • Inspect Project Site and O&M to identify presence of feral pest activities (burrows, droppings, sighting). • Install bait/traps around building assets to control rat/mice • Coordinate baiting/shooting programs with the LLS for feral pests, such as rabbits, foxes, goats and pigs. • Notify landowners of pest are observed on their properties 	Site Manager
	<ul style="list-style-type: none"> • Manage waste at the O&M to prevent scavenging opportunities by pests, refer to the EMS for Waste control measures. 	FSA Contractor

Table 12 Soil and erosion management measures

Potential risks	Management measure	Responsibility
Erosion and sediment destabilisation	<ul style="list-style-type: none"> • Complete repairs and maintenance as soon as practicable. • Clean out sediment traps after significant rainfall events >30mm per hour as required. 	Site Manager
Rehabilitation / revegetation not meeting requirements	<ul style="list-style-type: none"> • Maintain rehabilitated areas to ensure the effectiveness of the rehabilitation. Maintenance will be undertaken until such time that the plantings have been verified by an independent and suitably qualified expert as being well established, in good health and self-sustaining. • Arrange further reseeded in rehabilitated areas, if required. 	Site Manager

Table 13 Bushfire management measures

Potential risks	Management measure	Responsibility
Bushfire spread	<ul style="list-style-type: none"> • Maintain Asset Protection Zone around all assets (O&M, WTG hardstand): <ul style="list-style-type: none"> – Grass height within the APZ to be kept as low as possible – No shrubs or trees within the APZ – Treat weeds in the APZ • Access track to be clear of any vegetation, weed incursion • Maintain access track width as per design to ensure Emergency vehicles can access the site. 	Site Manager
Storage and maintenance of flammable materials	<ul style="list-style-type: none"> • All flammable and hazardous materials will be appropriately stored on Site to the specifications of the manufacturers' requirements and a hazardous chemical register maintained at the O&M. 	FSA Manager

4 Monitoring and Reporting

4.1 Biodiversity Monitoring and Reporting

Environmental monitoring will be used to measure performance of the BMP, compliance with the Development Consent, and inform adaptive management of the BMP.

Generally, the Site Manager will undertake the range of monitoring and inspections, unless indicated otherwise.

Refer to Appendix A for monitoring and reporting schedule during the operational phase.

4.2 Monitoring Records

Results of monitoring will be recorded by the Site Manager as part of the monthly inspection checklists that will include as a minimum:

- Date of inspection
- Personnel undertaking the inspection
- Features to be inspected/monitored
- Outcomes of the inspection and details of compliance with objectives
- Requirement for any corrective actions; and
- Details of any photographic records (file name and saved location) detailing evidence of monitoring.

Results of all monitoring will be maintained at the Project office and on the project EMS SharePoint, for supply to relevant agencies upon request.

4.3 Incident Notification and Reporting

Pursuant to Condition 6, Schedule 5, if the Proponent becomes aware of an incident, the Department will be notified via the Major Projects portal within 7 days after becoming aware of the Incident. The notification will include the development identity (SSD-6697, Crudine Ridge Wind Farm) and the details of the location and nature of the incident.

In accordance with the Development Consent, an Incident is defined as:

'A set of circumstances that:

- *causes or threatens to cause material harm to the environment; and/or*
- *breaches or exceeds the limits or performance measures/criteria in this consent.*

4.4 Non-compliance Notification and Reporting

Pursuant to condition 6A, Schedule 5, if the Proponent becomes aware of a non-compliance, the Department will be notified via the Major Projects portal within 7 days after becoming aware of the non-compliance. The notification will include the development identity (SSD-6697, Crudine Ridge Wind Farm), the condition of approval that the development is non-compliant with, details of why the development is non-compliant with the condition and what actions have been or will be undertaken to address the non-compliance.

5 Review

The Environment Officer will be responsible for reviewing this plan every five years post-commencement of construction. If any revisions to the BMP are required, these will be undertaken by the Environment Officer, to the satisfaction of the Secretary of the DPE.

The BMP may also be required to be reviewed in response to the occurrence of an incident, the submission of an audit report, or modification to the conditions of the NSW Development Consent, in accordance with Condition 4 of Schedule 5 of the NSW Development Consent. Revision of the plan will be undertaken to the satisfaction of the Secretary of the DPE. Updates to the plan will be made available on the Project website.

6 References

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Appendix A Monitoring and Reporting Schedule

Appendix A.1 Monitoring and Reporting Schedule

BMP reference	Impact minimisation measures	Monitoring method / type	Timing / frequency	Reporting output	Responsibility	Performance criteria / measure of success	Corrective action if performance criteria not met
Minimising impacts to fauna on site Table 10	Handling and protection of fauna	Visually verify that appropriately trained persons handle fauna.	For each event	Recorded in the Monthly inspection report	Site Manager	Fauna rescues are conducted by the appropriate person, in a timely manner to ensure the fauna receives suitable care and treatment	If fauna rescues undertaken by an untrained person, or the fauna is not provided adequate care, corrective actions may include reviewing the induction package for adequacy and undertaking further training of staff as required
	Fauna habitat enhancement	Visually verify that vegetation and woody debris is retained on site	For each event	Recorded in the Monthly inspection report	Site Manager	Monthly report documents when and where habitat enhancement has been undertaken	Amend maintenance procedures and methods to track retention of vegetation and woody debris. Update toolbox training to increase awareness of measures to enhance fauna habitat.
	Vehicle speed limits within the Project Site to reduce risk of fauna strike	Visual monitoring by all personnel	Daily	Reporting of non-conformances only Verbal report to Site Manager if speeding is observed	FSA Contractor / Site Manager / all personnel	Vehicles remain below speed limit, fauna strikes are avoided	If fauna strike occurs, investigate whether speed was a contributing factor. Corrective actions may include providing toolbox training / awareness training on vehicle speeds, providing speed signage, or revoking site driving rights for repeat offenders.
	Vehicles remain on designated roads and tracks	Visual monitoring by all personnel	Daily	Reporting of non-conformances only	FSA Contractor / Site Manager / all personnel	Vehicles remain within the constructed roads	If vehicles leave the designated roads, actions may include: <ul style="list-style-type: none"> Non-conformance reporting in accordance with the EMS

BMP reference	Impact minimisation measures	Monitoring method / type	Timing / frequency	Reporting output	Responsibility	Performance criteria / measure of success	Corrective action if performance criteria not met
				Verbal report to Site Manager if speeding is observed			<ul style="list-style-type: none"> Incident investigation Development of corrective actions to address contributing factors
Minimise vegetation disturbance. Table 10	NSW Condition 10, Schedule 3 and EPBC Approval	Desktop / GIS review of each new work area and completed area of clearing against threatened ecological communities mapping to calculate area of clearing.	For Maintenance activities, in previously uncleared areas: Prior to and on completion of each clearing event.	Cumulative vegetation clearing register	Site Manager Clearing contractor	Not exceed consent clearing limits as defined in the Conditions of Consent	<ul style="list-style-type: none"> Stop works Incident / Non-compliance reporting to DPE Undertake remediation/rehabilitation in consultation with the relevant authority Amend maintenance procedures and methods to track vegetation clearing activities
Controlling weeds Table 11	Ensure incoming plant, vehicles and equipment are weed free.	Inspect incoming oversize vehicles and plants	When new plant/large delivery vehicles arrive to site	Verbal report to Site Manager if weeds are observed on a vehicle	Site Manager	<p>Incoming plant, machinery and vehicles are being inspected and only gain access once weed free.</p> <p>Inspection records demonstrate no weeds observed.</p> <p>There are no new weed infestations which could be attributed to importation on Project related vehicles, plant or equipment.</p>	If it is found that weeds have been introduced on a machine, vehicle or plant, review the adequacy and effectiveness of weed inspections.
	Ground disturbance	Inspect the maintenance area prior to works commencing and during works	Prior to works starting and fortnightly during maintenance	Recorded in the Monthly inspection report	Site Manager	Weed control methods are successful	If weed control methods are not successful, review and revise the weed control methods and program. Advice from a qualified weed management contractor may be required.
	Implementation of weed controls	Visual monitor to identify any new	Monthly	Recorded in the Monthly	Site Manager	Weed control methods are successful.	If weed control methods are not successful, review and revise

BMP reference	Impact minimisation measures	Monitoring method / type	Timing / frequency	Reporting output	Responsibility	Performance criteria / measure of success	Corrective action if performance criteria not met
		infestations and monitor success of spraying efforts, and maintain records Audit of weed conditions	Six monthly	inspection report Site inspection report	Environmental Officer		the weed control methods and program. Advice from a qualified weed management contractor may be required.
Feral Pest Table 11	Implement waste management measures to reduce opportunities for scavenging feral pests	Visual monitor adequate waste management	Weekly	Site Manager Verbal notification to FSA Manager	Site Manager	Wastes are being managed appropriately and there are no signs of feral pests scavenging in and around areas such as the O&M facility	If pests become an issue on site due to waste management practices, review waste management facilities for adequacy. Corrective actions may include increasing the frequency of waste removal, securing waste receptacles, or improving waste management awareness among the workforce.
Controlling erosion Table 12	Implement Erosion and Sediment Control Plan, in accordance with the requirements of Managing Urban Stormwater: Soils and Construction (Landcom, 2004)	Visual monitoring of effectiveness of installed ESC measures	After significant rainfall	Recorded in the Monthly inspection report	Site Manager	There are no areas of uncontrolled erosion occurring at rehabilitated areas. There are no areas of erosion which are causing impacts to Sensitive Vegetation or key fauna habitats.	If erosion is identified which is unmanaged or uncontrolled, implement follow-up management activities which may include additional seeding, erosion measures, stabilisation techniques and / or sediment control devices

BMP reference	Impact minimisation measures	Monitoring method / type	Timing / frequency	Reporting output	Responsibility	Performance criteria / measure of success	Corrective action if performance criteria not met
Rehabilitation and revegetation of disturbed areas Table 12	Maintain rehabilitated areas until disturbed areas are adequately stabilised	Monitor for dieback, weed incursions, erosion / landform stability, watering requirements, Groundcover in newly disturbed/rehabilitated areas	Monthly	Monthly inspection report Photographs at set locations to allow for comparability	Site Manager	Vegetation is healthy and self sustaining. Vegetation is providing ground stabilisation and erosion prevention No evidence that weeds or vertebrate pests are negatively impacting the regrowth	Weed incursion: Arrange for additional weed management if required Erosion/vegetation die back: Arrange further reseeding or topsoil as required. Continue to monitor until area is indistinguishable from surrounding vegetation verified
			Six Monthly	Site Inspection report Photographs at set locations to allow for comparability	Environmental Officer	In addition to the above: Where and when relevant, in newly revegetated/rehabilitated areas, the groundcover of native and exotic species is dominant (>70%), and ground cover of listed weed species is <30%.	Weed incursion: Arrange for additional weed management is required. Arrange further reseeding or topsoil as required. Continue to report on groundcover until the coverage of native and exotic species is dominant (>70%)
Bushfire Management Table 13	Maintain APZ and weed control	Fire Danger Ratings Visual vegetation growth for bushfire risk	Daily during bushfire season	Daily Induction	Site Manager	No unplanned fires are ignited at the Project Site.	If there is an unplanned fire, review procedures in the ERP for adequacy and effectiveness.
			Monthly	Monthly inspection report			

Appendix A.2 Reporting Output

Type of report	Responsibility	Frequency	Content
Monthly Inspection report	Site Manager	Monthly	Fauna handling event, habitat enhancement event, controlling/treating weeds, erosion checks, rehabilitation/revegetation checks, bushfire events
Non-conformance register	Site Manager, Environmental Officer	By occurrence	Vehicle speeds and staying on designated access roads
Vegetation clearing register	Site Manager	By occurrence	For maintenance activities, in previously uncleared areas. Record area of threatened ecological communities pre- and post clearing.
Site Inspection report	Environmental Officer	Six monthly	Inspection of weed and rehabilitation checks

Appendix B Threatened flora locations

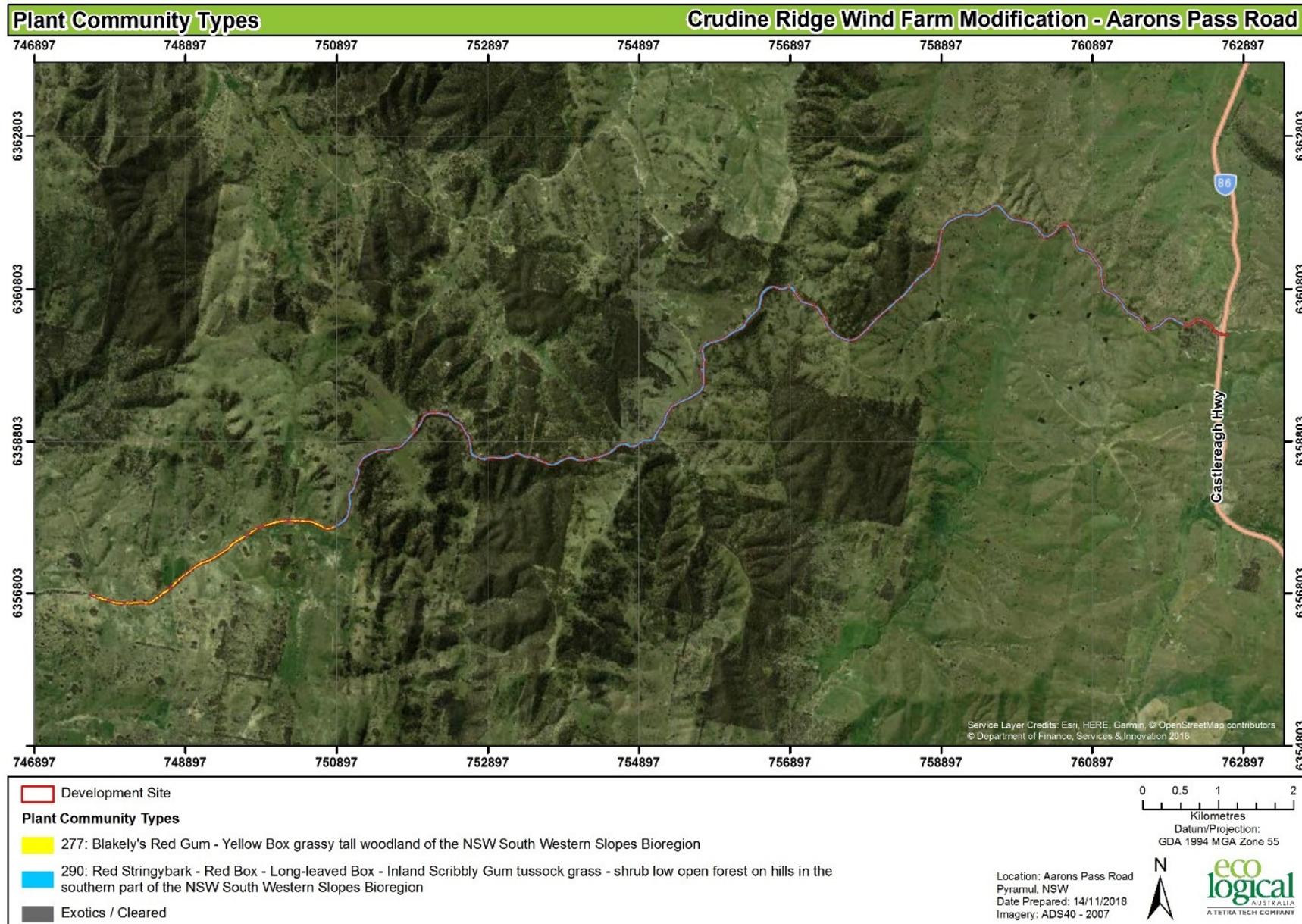


Figure 8 Vegetation types and EEC / CEEC locations – Aarons Pass Road

Swainsona recta records

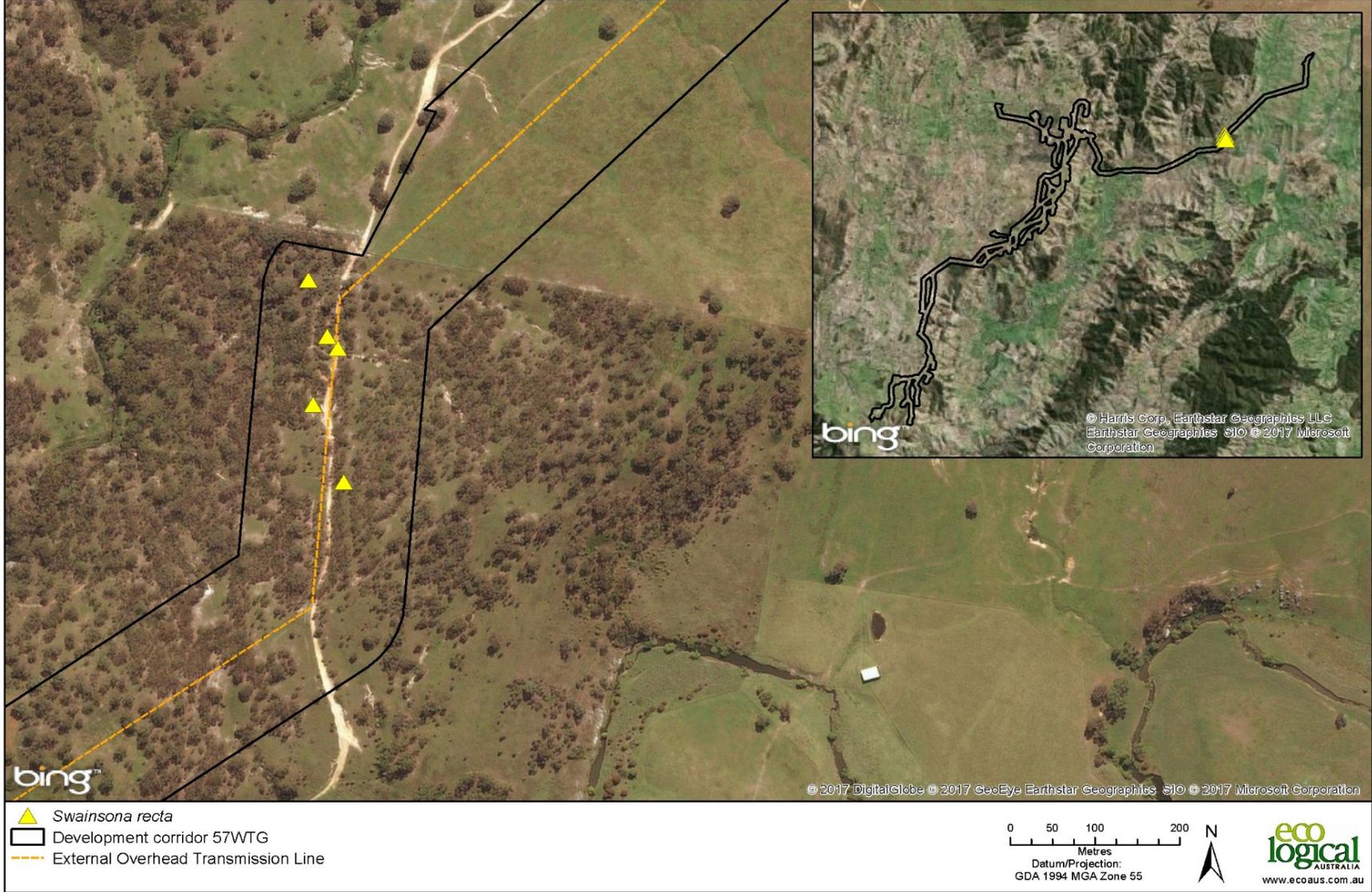


Figure 9 Known locations of *Swainsona recta*

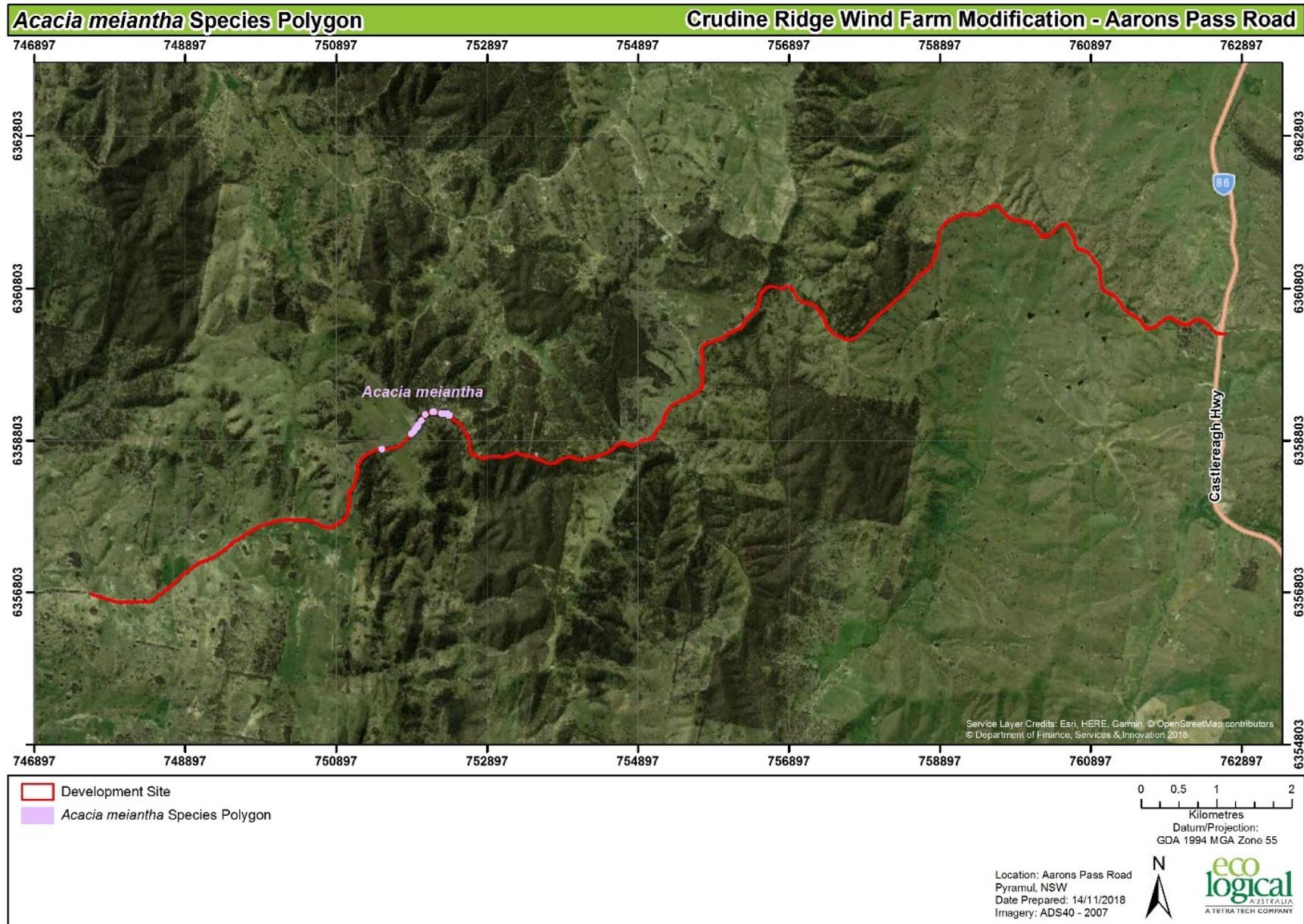


Figure 10 Location of *Acacia meiantha* along Aarons Pass Road

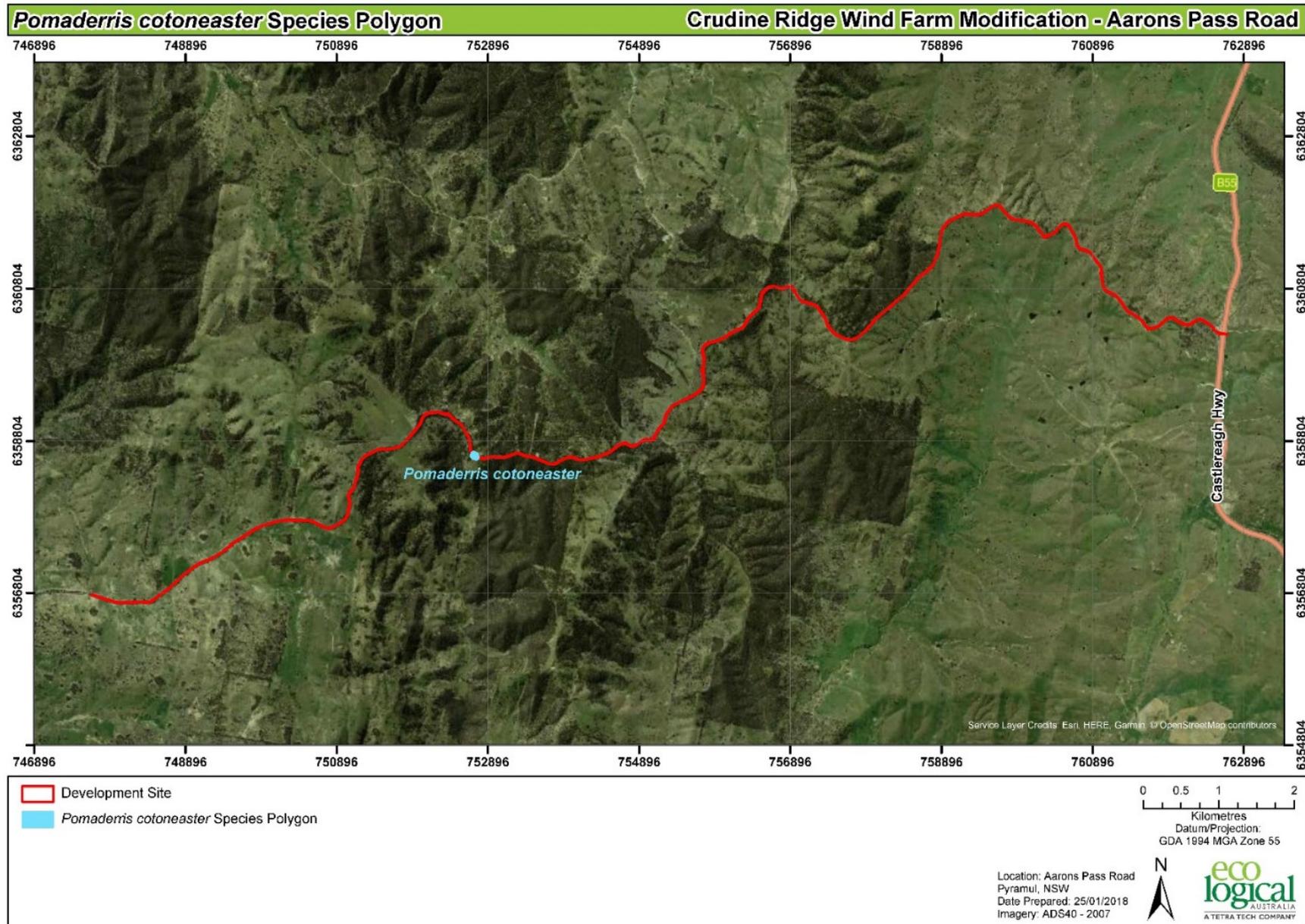


Figure 11 Location of *Pomaderris cotoneaster* along Aarons Pass Road

Appendix C Weed Management Plan

The Weed Management Program will include requirements for:

- Regular inspections of work areas and soil stockpiles identifying weeds present and implementing required management actions
- Implementation of weed management actions which may include mechanical removal, slashing, application of approved herbicides or biological control
- Management of weeds in accordance with the requirements of the Central Tablelands Regional Strategic Weed Management Plan (Local Land Services, 2017).
- Minimising the potential for establishment of new weeds by minimising the transport of weed species to and from the maintenance works area (mitigations may include restrictions on vehicle access, and requirements to wash-down of vehicles, machinery and boots)
- Routine inspection of vehicles, machinery and plant for weed and weed seed
- Monitoring to assess the effectiveness of the weed management measures implemented and the requirement for any additional weed control activities, including where soil from stockpiles with known weed infestations is respread over previously clean areas.

Weed control activities will be documented by the maintenance contractor with the following information being recorded:

- Date, time and location of areas that have undergone weed control activities
- Methods used for weed control including where used, the types of chemicals used
- Issues encountered
- Recommended frequency and methods for follow-up weed control.

Where it has been identified that weed control activities have not been effective, the method of control implemented will be reviewed prior to further control activities occurring.

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We develop, operate and own renewable energy assets in Australia, with 1.1 gigawatts (GW) of renewable energy in operation and a development pipeline of 20GW.

With proven experience and expertise across the project lifecycle, we work with local communities and our customers to lead the transition to Australia's clean energy future.

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