HumeLink Orchid Management Plan

HumeLink EPBC approval Number 2021/9121

Prepared for Transgrid

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Cover Page

EPBC number: (EPBC 2021/9121)

Project name: Humelink, NSW

Approval holder: NSW Electricity Networks Operations Pty Limited

ACN: 609 169 959

Approved action: New transmission infrastructure

Location of the action: 360 km linear infrastructure between Wagga Wagga, Bannaby and Maragle New South Wales (NSW).

Date of preparation of the environmental management plan: 24 September 2025

Cover Image: McPhersons Plain view north-northwest (Source: Brian Towle)

Declaration of accuracy

In making this declaration, I am aware that section 491 of the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) makes it an offence in certain circumstances to knowingly provide false or misleading information or documents to specified persons who are known to be performing a duty or carrying out a function under the EPBC Act or the Environment Protection and Biodiversity Conservation Regulations 2000 (Cth). The offence is punishable on conviction by imprisonment or a fine, or both. 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 by:

Full name: Jessica O'Leary

Organisation: Niche Environment and Heritage

Date: 24 September 2025

Document control

Project number	Client	Project manager
8758	Transgrid	Jessica O'Leary

Version	Author	Review	Status	Comments	Date
D1	Jessica O'Leary Thea Kane Kayla Le Gros Brian Towle Rob Humphries	Chani Wheeler Brian Towle	Draft 1	Working draft issued to Transgrid	13 June 2025
D2	Jessica O'Leary Cara Parsons Sam Dreux Brian Towle Rob Humphries	Jessica O'Leary Brian Towle	Draft 2	Working draft issued to Transgrid	4 July 2025
D3	Jessica O'Leary Brian Towle	Jessica O'Leary Brian Towle	Draft 3	Working draft issued to Transgrid	17 July 2025
D4	Jessica O'Leary Brian Towle	Jessica O'Leary Brian Towle	Draft 4	Working draft issued to Transgrid/ Commonwealth DCCEEW	23 July 2025
R1	Jessica O'Leary Brian Towle	Jessica O'Leary Brian Towle	Final 1	Final version issued to Transgrid	22 August 2025
R2	Jessica O'Leary Brian Towle	Jessica O'Leary Brian Towle	Final 2	Final version issued to Transgrid	24 September 2025

Abbreviations

Term or abbreviation	Definition
AMT	Transgrid Asset Management Team
BAM	Biodiversity Assessment Method
BAVR	Biodiversity Assessment Verification Report
BCS	Biodiversity, Conservation & Science Division (currently recognised as Conservation Programs, Heritage and Regulation Division [CPHR])
BC Act	NSW Biodiversity Conservation Act 2016
BDAR	Biodiversity Development Assessment Report
BMP	Biodiversity Management Plan
CEMP	HumeLink Construction Environmental Management Plan
Commonwealth DCCEEW	Commonwealth Department of Climate Change, Energy the Environment and Water
CoA	Condition of Approval (relating to Commonwealth Approval 2021/9121)
CPESC	Certified Professional in Erosion and Sediment Control
CPHR	Conservation Programs, Heritage and Regulation Division of NSW DCCEEW. Formerly Biodiversity, Conservation & Science Division (BCS)
DPIE	NSW Department of Planning, Infrastructure and Environment (now the NSW Department of Climate Change, Energy, the Environment and Water (NSW DCCEEW); and NSW Department of Planning, Housing and Infrastructure (NSW DPHI))
ECZ	Easement Clearing Zone (ECZ).
ECM	Environmental Control Map
EPBC Act	Commonwealth Environment Protection and Biodiversity Conservation Act 1999
EIS	Environmental Impact Statement
ELA	Ecological Australia
ERSED	Erosion and sediment
HLW DP	HumeLink West Delivery Partner (UGL CPB Contractors Joint Venture)
HTZ	Hazard Tree Zone (HTZ)
OHEZ	Orchid Habitat Exclusion Zone, is the total extent of Subject Orchid Habitat, excluding the OMP Total Clearance Zone. The OHEZ does not restrict access to landowners or public access via public roads.
OMP	Orchid Management Plan (this plan)
OMP MZ	Orchid Management Plan Management Zone includes a 100 m around Subject Orchid habitat. This is the area to which this OMP applies.
NSW DCCEEW	NSW Department of Climate Change, Energy, the Environment and Water
SEARs	Secretary Environmental Assessment Requirements

Term or abbreviation	Definition
SoS	Saving our Species, NSW Environment and Heritage conservation program
TBDC	Threatened Biodiversity Data Collection
TCZ	Total Clearing Zone (TCZ)
UMM	Updated Mitigation Measures from Appendix B.1 of the Revised Biodiversity Development Assessment Report.
VCR	Vegetation Clearance Requirement

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1. Introduction

This Orchid Management Plan (OMP) has been prepared to address the Commonwealth Conditions of Approval 2, 3, 4 and 5 (EPBC 2021/9121) for the HumeLink (the Project). These conditions require Transgrid to submit an OMP to the Commonwealth Minister administering the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) for approval prior to carrying out any activity that could harm habitat for Bago Leek-orchid (*Prasophyllum bagoense*), habitat for Brandy Marys Leek Orchid (*Prasophyllum innubum*), habitat for Kelton's Leek-orchid (*Prasophyllum keltonii*) and habitat for Blue-tongued Orchid (*Pterostylis oreophila*) (collectively referred to as the Subject Orchids).

1.1 Project Background and Context

Transgrid propose to construct around 360 kilometres (km) of new 500 kilovolt (kV) high-voltage transmission lines and associated infrastructure between Wagga Wagga, Bannaby and Maragle New South Wales (NSW). This Project is collectively referred to as HumeLink.

A Biodiversity Development Assessment Report (BDAR) was prepared in June 2023 addressing the Project requirements under the *NSW Environmental Planning and Assessment Act 1979* (EP&A Act), NSW *Biodiversity Conservation Act 2016* (BC Act) and Commonwealth EPBC Act. A revised BDAR was subsequently prepared in May 2024 addressing Project submissions and proposed design amendments.

Transgrid received NSW Infrastructure Approval (SSI 36656827) in November 2024 for the Project under Part 5, Division 5.2 of the *NSW Environmental Planning and Assessment Act 1979* (EP&A Act), designating it as Critical State Significant Infrastructure (CSSI). The Project was also declared a controlled action by the Commonwealth Department of Climate Change, Energy, the Environment and Water (Commonwealth DCCEEW) and requires separate approval under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), which was issued in December 2024.

1.2 Scope of the OMP

This Orchid Management Plan (OMP) applies to all activities related to the construction and operation of the HumeLink Project that may harm habitat for the Subject Orchids.

The OMP outlines:

- Environmental requirements applicable to this OMP (Section 2)
- Species information including the distribution of their habitats in relation to HumeLink which this OMP applies to (Section 3)
- Key risks to the habitat of the Subject Orchids associated with construction and operational activities (Section 4)
- Mitigation measures to avoid or minimise those risks (Section 5)
- An incidental finds procedure for the Subject Orchids (Section 6)
- Compliance Management including roles and responsibilities, training, monitoring and inspection, reporting and adaptive management requirements (Section 7)
- Incident notification and emergency response procedure (Section 9)

Implementation responsibilities for the OMP are divided as follows:

- HumeLink West will implement the Plan during the Construction phase.

The Transgrid Asset Management Team will be responsible during the Operational phase. The OMP will be reviewed prior to the commencement to operation to confirm integration into the TransGrid Asset Management System at that time.

Transgrid or their Delivery Partners must not harm any habitat for the Subject Orchids unless the Commonwealth Minister for Environment and Water, or their delegate, has approved the OMP. As defined in Section C of the Commonwealth approval, 'harm' means to cause any measurable direct or indirect disturbance or deleterious change as a result of any activity associated with the Action.

This Plan has been prepared in accordance with the Environmental Management Plan Guidelines (2024) issued by the Commonwealth DCCEEW, and meets the requirements of EPBC Approval 2021/9121.

1.3 Aims and Objective of the OMP

The objective of this OMP is to avoid and minimise harm to the Subject Orchid's and their habitat resulting from the Construction and Operation of the HumeLink Project.

To achieve this objective, the OMP aims to:

- Provide a mechanism for compliance with EPBC Approval Conditions 2, 3, 4 and 5, including reporting, review, and plan updates in response to monitoring outcomes or changes in Project design.
- Identify and describe the current distribution, habitat, and conservation status of the following orchid species within the Project Footprint:
  - *Prasophyllum bagoense* (Bago Leek-orchid)
  - *Prasophyllum innubum* (Brandy Marys Leek Orchid)
  - *Prasophyllum keltonii* (Kelton's Leek-orchid)
  - *Pterostylis oreophila* (Blue-tongued Orchid)
- Identify and assess risks to the achievement of environmental outcomes and apply appropriate risk mitigation and adaptive management strategies.
- Define SMART environmental outcomes for the Subject Orchids with clear performance indicators and trigger values for corrective action.
- Recommend mitigation measures to avoid and reduce direct and indirect impacts on orchid individuals and habitat, including:
  - Habitat avoidance during construction
  - Ground disturbance minimisation
- Monitor the condition and response of Subject Orchid's and their habitat during construction and operation of the HumeLink Project.

The Commonwealth requirement for an OMP provides a further mechanism for greater avoidance and minimisation and requires consideration of impacts to orchid habitat, rather than the interaction of the disturbance area with a species polygon as required by the NSW Biodiversity Assessment Method (BAM).

1.4 Stakeholder Consultation

Formal consultation via workshops and or meetings was undertaken between Transgrid, HLW, AMT and EcoPlanning to prepare the OMP, details of stakeholder consultation undertaken is provided in Table 1.

Table 1: Consultation with stakeholders

Meeting Date	Attendees	Objectives
Workshop with Niche/ EcoPlanning 6 May 2025	Thea Kane (Niche) Jessica O'Leary (Niche) Chani Wheeler (Niche) Brian Towle (EcoPlanning) Robert Humphries (EcoPlanning)	To discuss approach and scope responsibilities to inform preparation of the OMP and technical requirements from EcoPlanning.
Workshop 1 (HumeLink West) – 30 May 2025	Thea Kane (Niche) Jessica O'Leary (Niche) Kayla Le Gros (Niche) Tuesday Heather (Transgrid) Peter Monsted (Transgrid) Chris Millar, (HLW) Vincent Newton (HLW) Ryan Perez (HLW) Sean-Paul Smith (HLW), Brian Towle (EcoPlanning)	To review and refine the draft mitigation measures and performance measures/ corrective actions provided to Transgrid and HLW proposed during the pre-construction and construction phases of the Project.
Workshop 1 (Transgrid Asset Management Team) – 30 May 2025	Thea Kane (Niche) Jessica O'Leary (Niche) Kayla Le Gros (Niche) Tuesday Heather (Transgrid) Peter Monsted (Transgrid) Adam Wethered (AMT)	Discuss, review and refine draft avoidance and mitigation measures and performance measures/ corrective actions proposed during the operational phase of the Project.
Meeting with Transgrid and DCCEEW 3 July 2025	Sidney Dwyer (DCCEEW) Martin Paull (DCCEEW) Mark Jenkins (DCCEEW) Petrea Harrison (DCCEEW) Peter Monsted (Transgrid) Tuesday Heather (Transgrid)	Provide an update on OMP progress to DCCEEW Discuss any questions arising regarding preparation of the OMP
Consultation with Commonwealth Department of Climate Change, Energy the Environment and Water (DCCEEW). 25 July 2025 to 17 September 2025	Sidney Dwyer (DCCEEW) Mark Jenkins (DCCEEW) Susan Clowser (DCCEEW) Angela Drew (DCCEEW) Petrea Harrison(DCCEEW)	Commonwealth review of OMP and refinement of orchid translocation plan (if required) in response to review comments.

1.5 OMP preparation and approval

Niche engaged Orchid Specialists Brian Towle and Rob Humphries (EcoPlanning) to assist with the preparation of this OMP in accordance with the Commonwealth Approval 2021/9121, Condition of Approval (CoA) #3. A copy of the Orchid Specialist's CVs are provided in Appendix 1.

The Orchid Specialist's recommendations, key mitigation measures, trigger values, and corrective actions have been incorporated into the applicable sections of this OMP. The Orchid Specialists were also present at the relevant stakeholder consultation events (refer to Section 1.4) and have been involved in the review of draft documentation.

The OMP must be submitted to the Commonwealth DEECCW and approved by the Minster for Environment and Water or their delegate prior to carrying out any activity that could harm habitat for the Subject Orchids.

2. Environmental Requirements

2.1 Commonwealth Approval (2021/9121)

An EPBC Act referral for HumeLink was submitted in December 2021 (EPBC referral number 2021/9121) in accordance with the EPBC Act to the Commonwealth DCCEEW. On 13 April 2022, the Project was determined to be a controlled action and as such would require approval from the Commonwealth Minister for the Environment and Water under Part 9 of the EPBC Act. In May 2022, Supplementary Secretary Environmental Assessment Requirements (SEARs) were issued confirming the action would be subject to the Assessment Bilateral Agreement between the Commonwealth of Australia and the State of NSW. The Commonwealth DCCEEW notification of approval decision for HumeLink was issued on 18 December 2024.

The OMP has been developed to satisfy the Commonwealth Approval CoA #2, 3, 4 and 5. Table 2 documents these requirements and where these matters have been addressed within the OMP.

Table 2: Requirements of EPBC Approval

Condition Number	Conditions of Approval	Where addressed in OMP
3	Prior to carrying out any activity that could harm habitat for Bago Leek-orchid, habitat for Brandy Marys Leek Orchid, habitat for Kelton's Leek-orchid and habitat for Blue-tongued Orchid, the approval holder must submit an Orchid Management Plan to the department for the Minister's approval.	Section 1.5
4	The approval holder must not harm any Habitat for Bago Leek-orchid, Habitat for Brandy Marys Leek Orchid, Habitat for Kelton's Leek-orchid and Habitat for Blue-tongued Orchid unless the Minister has approved the Orchid Management Plan in writing. The approval holder must implement the Orchid Management Plan approved by the Minister during construction and operation until the expiry of this approval.	Section 1.2
5	The Orchid Management Plan must be prepared by a suitably qualified orchid specialist. All commitments, including environmental outcomes, management measures, corrective measures, trigger values and performance indicators in the Orchid Management Plan must be SMART and based on referenced or included evidence of effectiveness.	Section 1.5
	The OMP must be consistent with the Environmental Management Plan Guidelines, and must include:	Section 1.5
	a) clear environmental outcomes for the implementation of the plan,	Section 1.3
	b) details of the Bago Leek-orchid, Brandy Marys Leek Orchid, Kelton's Leek-orchid and the Blue-tongued Orchid and a reference to the EPBC Act approval conditions to which the plan refers,	Details of Subject Orchids are in Section 3 EPBC Approval Conditions are provided in 2.1
	c) a table of commitments made in the plan to achieve the environmental outcomes, and a reference to exactly where these commitments are detailed in the plan,	Table 2 (this table)
	d) commitments capable of ensuring that the environmental outcomes are achieved,	Section 5 Table 16 and Table 17

Condition Number	Conditions of Approval	Where addressed in OMP
	e) reporting and review mechanisms to demonstrate compliance with the commitments made in the plan,	Section 7
	f) an assessment of risks relating to achieving the environmental outcomes and risk management strategies and/or mitigation measures that will be applied to address identified risks,	Section 4 (Risk assessment) Section 5 (Risk management strategies and/or mitigation measures)
	g) impact avoidance, mitigation and/or repair/compensation measures, and the timing of those measures,	Section 5 Section 6
	h) a monitoring program, which must include: i) performance indicators, ii) trigger values for corrective measures, iii) the timing and frequency of monitoring, ensuring monitoring is capable of detecting trigger values and changes in the performance indicators, and iv) proposed corrective measures if trigger values are reached,	Section 7.4
	i) links to other relevant plans or conditions of approval (including state or territory approval conditions),	Section 2.3 (other plans) Section 2.2
	j) consistency with species specific guidelines/conservation advices for the Bago Leek-orchid, Brandy Marys Leek Orchid, Kelton's Leek-orchid and the Blue-tongued Orchid.	Section 3.5

2.2 NSW Infrastructure Approval (SSI 36656827)

Transgrid received NSW Infrastructure Approval (SSI 36656827) in November 2024 for the HumeLink Project under Part 5, Division 5.2 of the Environmental Planning and Assessment Act 1979 (EP&A Act), designating the Project as Critical State Significant Infrastructure (CSSI).

While this Orchid Management Plan (OMP) has been prepared primarily to address the Commonwealth Conditions of Approval, it also relates to relevant conditions of the NSW Infrastructure Approval. These applicable conditions are documented in Table 3.

It is important to note that while the NSW Approval provides a clearing limit for orchid habitat of the Subject Orchids (endorsed by Condition 1 of the EPBC Approval), this OMP constitutes an additional measure to guide the avoidance and mitigation opportunities to further prevent harm to individual orchids, their populations and habitat.

Table 3: NSW Infrastructure Approval relevant to the OMP

Condition Number	Conditions of Approval	Relevance to OMP
B25	Unless otherwise agreed with the Planning Secretary, the Proponent must:	-
	(a) ensure that the vegetation and habitat clearing limits specified in Table 2-1, Table 2-2 and Table 2-3 of Appendix 2 are not exceeded; and	Table 2-2 provides Project clearing limits for habitat of the Subject Orchids
	(b) minimise: (i) the impacts of the development on hollow-bearing trees; (ii) the impacts of the development on threatened species; and (iii) the clearing of native vegetation and key habitat; and	This OMP outlines specific mitigation measures to minimise impact to the Subject Orchids
	(c) not undertake any works that result in ground disturbance within a minimum setback distance of 50 metres from PCT 637 – Alpine and sub-alpine peatlands, damp herbfields and fens, South Eastern Highlands Bioregion and Australian Alps Bioregion and 30 metres from known locations of *Prasophyllum bagoense, Prasophyllum keltonni* and *Pterostylis oreophila* as mapped in the BDAR.	This plan has been prepared to be consistent with the requirement to not undertake any works that would result in ground disturbance within the minimum setback distances from PCT 637 and the Subject Orchids. Field surveys completed by the Orchid Specialists to inform this OMP have been used to accurately defined these areas.
B26	Prior to carrying out any development that would impact on biodiversity values requiring offset or within 3 months of the date of the Project Approval whichever is sooner, the Proponent must update the Biodiversity Offset Package (Package) that is consistent with the EIS, in consultation with BCS and BCT and to the satisfaction of the Planning Secretary in writing. The Package must include, but not necessarily be limited to: a. details of the specific biodiversity offset measures to be implemented and delivered in accordance with the EIS; b. the cost for each specific biodiversity offset measure, as determined in accordance with a BCF Charge Statement indexed on a monthly basis in accordance with the Biodiversity Offsets Payment Calculator Order 2022; c. the timing and responsibilities for the implementation and delivery of the measures required in the Package; d. a report to be provided every 6 months from the approval of the updated Package to the Planning Secretary, BCS and the BCT setting out the progress towards delivering each specific biodiversity offset measure; and	The HumeLink Biodiversity Offset Package (Ver 5, 19 May 2025) was approved by the NSW Planning Secretary on the 21 May 2025. The Biodiversity Offset Package outlines the species offset requirements for the Subject Orchids. Humelink is subject to the bilateral assessment process that has been established between the Commonwealth and NSW governments and the Amending Agreement No. 1 that endorses the BOS as the primary mechanism for meeting biodiversity offset obligations in NSW.

Condition Number	Conditions of Approval	Relevance to OMP
	e. confirmation that the biodiversity offset measures will have been implemented and delivered no later than 13 November 2026, unless otherwise agreed with the Planning Secretary. Following the Planning Secretary's approval, the Proponent must implement and deliver the Biodiversity Offset Package.	
B27	Prior to carrying out any development that could impact the biodiversity values requiring offset, the Proponent must lodge bank guarantee(s) with a total value of $502,332,107, in accordance with the Deed of Agreement with the Planning Secretary (or delegate) executed on 10 October 2024. The Proponent must comply with the terms of the Deed.	Transgrid lodged the bank guarantee(s) with the NSW Department of Planning in December 2024.
B28	Prior to carrying out any development that would impact on the relevant biodiversity values (excluding Enabling Works, if the relevant requirements of this condition are adequately addressed in the Enabling Works Management Plan of condition B64), the Proponent must prepare a Supplementary Biodiversity Strategy as committed to in the EIS, in consultation with BCS and to the satisfaction of the Planning Secretary. Unless otherwise agreed by the Planning Secretary, the Strategy must:	The Supplementary Biodiversity Strategy has been prepared and was approved by the NSW Planning Secretary on the 6 June 2025.
	a. be peer reviewed by a suitably qualified, experienced and independent biodiversity consultant with Biodiversity Assessment Method (2020) (BAM) Accreditation whose appointment has been endorsed by the Planning Secretary;	The Supplementary Biodiversity Strategy was peer reviewed by Adam Cavallaro, Principle Ecologist from Umwelt.
	b. detail survey methods for all entities to be targeted by the Strategy, in accordance with the Biodiversity Assessment Method (2020) and any other guidance document that is relevant and applicable at the time surveys were undertaken or the BDAR was prepared, including but not limited to: i. surveys within unsurveyed areas of the development area identified in the EIS where a reduction in credit liability for the relevant biodiversity value assumed present is being sought; ii. surveys for the following serious and irreversible impact (SAII) entities: – *Prasophyllum bagoense* – *Pterostylis oreophila* – *Caladenia concolor*	The Supplementary Biodiversity Strategy has identified the Subject Orchids as target species for supplementary biodiversity surveys.

Condition Number	Conditions of Approval	Relevance to OMP
	– *Genoplesium superburn* – *Pomaderris delicatat* – *Litoria castanea* – ***Prasophyllum innubum*** – *Solanum armourense* – *Calotis glandulosa* – *Pseudomy fumeus* – *Pimelea bracteata* – *Grevillea iaspicula* – *Pomaderris pallida* – *Mixophyes balbus* – ***Prasophyllum keltonii*** – *Bossiae fragrans* – *Eucalyptus robertsonii subsp, hemisphaerica* – *Grevillea wilkinsonii* – *Chalinolobus dwyeri* – *Tyto tenebricosa*	
B29	Unless otherwise agreed by the Planning Secretary, prior to carrying out any development that would impact on the relevant biodiversity values subject to survey in the Supplementary Biodiversity Strategy in condition B28 (excluding Enabling Works, if the relevant requirements of this condition are adequately addressed in the Enabling Works Management Plan of condition B64), the Proponent must prepare a Biodiversity Assessment Verification Report in consultation with BCS and to the satisfaction of the Planning Secretary. The Report must: c. be prepared by a suitably qualified, experienced and independent biodiversity consultant with Biodiversity Assessment Method (2020) (BAM) Accreditation whose appointment has been endorsed by the Planning Secretary d. be prepared in accordance with the Biodiversity Assessment Method (2020) and any other guidance document that is relevant and applicable at the time surveys were undertaken or the BDAR was prepared e. be prepared with regard to the final layout plans for the development required under condition C8, including the location of final access routes within each clearing zone and stockpile locations f. include:	At the time of preparation of this OMP, supplementary biodiversity surveys for target species including the Subject Orchids have been completed and the Biodiversity Assessment Verification Report in in preparation. Surveys of the Subject Orchids completed by the Orchid Specialists (Section 3.5) were used to inform this OMP and the Biodiversity Assessment Verification Report.

Condition Number	Conditions of Approval	Relevance to OMP
	g. detail of the outcomes of surveys undertaken in accordance with condition B28 h. where species are found to be present following the surveys undertaken under condition B28 or that are assumed to be present, identify measures to avoid and / or mitigate the impact to those entities for inclusion in a revised version of the Biodiversity Management Plan required under condition B30 i. provide findings and recommendations relating to the matters in (d), including, but not limited to, reducing the relevant credit obligations and calculating credit obligations for incidental finds. Any required changes to biodiversity offset or mitigation measures arising from the Biodiversity Assessment Verification Report must be incorporated into an updated version of the Biodiversity Offset Package under condition B26 in consultation with BCS and BCT and addressed in a revised version of the Biodiversity Management Plan required under condition B30, in consultation with BCS and FCNSW, to the satisfaction of the Planning Secretary.	
B30	Prior to carrying out any development (excluding Enabling Works, if the relevant requirements of this condition are adequately addressed in the Enabling Works Management Plan of condition B64) that could impact biodiversity values that require offsetting, the Proponent must prepare a Biodiversity Management Plan for the development to the satisfaction of the Planning Secretary. This plan must:	Commonwealth CoA #7 requires Transgrid to comply with condition B30.
	a. be prepared by a suitably qualified and experienced biodiversity expert/s;	The HumeLink West BMP has been prepared by Polina Irwing, Principal Ecologist from RPS.
	b. be prepared in consultation with BCS and FCNSW;	The BMP is being prepared in consultation with Conservation Program, Heritage and Regulation (CPHR, formerly BCS) and FCNSW.
	c. be prepared generally in accordance with the *Revised Biodiversity Development Assessment Report* (Revision 0, dated 21 June 2024);	Not relevant to the OMP
	d. include a description of the measures that would be implemented for:	Not relevant to the OMP
	i. meeting the biodiversity mitigation requirements in condition B25 and as required by condition B29;	Not relevant to the OMP

Condition Number	Conditions of Approval	Relevance to OMP
	ii. minimising: – the amount of vegetation clearing on site – the loss of key fauna habitat (including tree hollows) – the impacts of fauna on site, including undertaking pre-clearance surveys; and – potential indirect impacts on threatened flora and fauna species;	The BMP include control measures to ensure development
	iii. ensuring the development does not adversely affect the native vegetation and habitat outside the disturbance footprint;	Both the OM and BMP include control measures to ensure development does not adversely affect the native vegetation and habitat outside the disturbance footprint
	iv. protocols for incidental finds of threatened species and threatened ecological communities within the disturbance footprint including the requirements for: – all work in the associated location to stop to prevent further impact, and – notification to the Planning Secretary and BCS (and AG DCCEEW where relevant) in writing on any – additional mitigation measures to be implemented; and – relevant agencies to be consulted and the Planning Secretary to endorse recommencement of work;	The OMP has included an incidental finds procedure with specific requirements for the Subject Orchids Section 6). In the event of an incidental find of the Subject Orchids, both incidental find procedures would be implemented.
	v. connectivity strategy for the potentially impacted species identified in the *Revised Biodiversity Development Assessment Report* (Revision 0, dated 21 June 2024) and a Supplementary Hollow and Nest Strategy;	Not relevant to the OMP
	vi. protecting the conservation values of McPhersons Plain and avoiding impacts to *Prasophyllum bagoensis, Prasophyllum keltonni* and *Pterostylis oreophila;*	The BMP includes measures to protect the conservation values of McPhersons Plain and avoiding impacts to *Prasophyllum bagoensis, Prasophyllum keltonni* and *Pterostylis oreophila.* This OMP provides additional measures to define habitat for the Subject Orchids in accordance with EPBC Act definitions.
	vii. rehabilitating temporary disturbance areas to facilitate natural regeneration of suitable native species;	Not relevant to the OMP. Temporary disturbance will be avoided within the habitat of the Subject Orchids.
	viii. progressively monitoring the areas of partial clearance following the commencement of construction and	The progressive monitoring of areas of partial clearing, and total clearing, will including routine

Condition Number	Conditions of Approval	Relevance to OMP
	provision of a verification report every three months during construction to confirm the assumptions made in the BDAR regarding partial clearance within the Easement Clearing Zone and whether any changes are required to this plan;	monitoring compliance with the clearing limits for habitat of the Subject Orchids.
	ix. maximising the salvage of resources within the approved disturbance area – including vegetative and soil resources – for beneficial reuse (such as fauna habitat enhancement) during the rehabilitation and revegetation of the site;	The OMP has included a Translocation protocol to salvage any incidental individuals of the Subject Orchids if they are found in the total clearing zone (Section 6).
	x. collecting and propagating seed (where relevant);	Not relevant to the OMP
	xi. controlling erosion, weeds and feral pests;	The OMP has provided specific measures to controlling erosion, weeds and feral pests within habitat of the Subject Orchids
	xii. bushfire management;	Not relevant to the OMP
	xiii. minimising impacts on entities at risk of a serious and irreversible impact (SAII), including for Box Gum Woodland, Rice Flower (*Pimelea bracteata*) and Sooty Owl (*Tyto tenebricosa*) and other entities that are identified as requiring mitigation measures in the Biodiversity Assessment Verification Report required by condition B29 and the additional mitigation measures outlined in the additional information (Transgrid proposal dated 2 September 2024) within three years of the date of the Project Approval (over and above the relevant credit obligations); and	Not relevant to the OMP
	e. include a program to monitor, evaluate and publicly report on the effectiveness of these measures.	The OMP has provided a specific program to monitor and evaluate the potential harm to the Subject Orchids and their habitat.
	Following the Planning Secretary's approval, the Proponent must implement the Biodiversity Management Plan. Note: The Biodiversity Management Plan must incorporate all relevant aspects of the development, including Enabling Works consistent with the requirements of condition B67.	Not relevant to the OMP

2.3 Documentation Relevant to the OMP

Relevant sections of this OMP have been developed in accordance with HumeLink Project documentation and assessments associated with the Project. These documents and a brief description of the content relevant to this plan is provided in Table 4.

Table 4: Documentation relevant to the OMP

Document title	Summary of content relevant to the OMP
HumeLink Environmental Impact Statement (EIS) (Aurecon, 2023)	Contains overarching impact assessment for the Project and includes general construction methodology within Chapter 4.
HumeLink Revised Biodiversity Development Assessment Report (BDAR) (Niche, 2024)	Contains detailed impact assessment for biodiversity affected by the Project, including the Subject Orchids.
HumeLink West Construction Environmental Management Plan (CEMP) (UGL CPB Contractors Joint Venture, 2025)	The CEMP and associated sub-plans outline how construction works will be managed and provides environmental planning and controls for construction including environmental risk and protection measures.
HumeLink West Biodiversity Management Plan (BMP) and associated sub-plans (Draft) (UGL CPB Contractors Joint Venture, 2025)	The BMP is a requirement of the NSW Approval. Condition 7 of the EPBC approval requires the BMP to be implemented.
HumeLink Vegetation Clearing Method and Management Memorandum (TransGrid, 2023)	Describes the vegetation clearing methodology proposed for the construction and operational phases of the Project.
HumeLink Environmental Management Strategy (TransGrid, 2025) (Draft)	Presents the framework for environmental management for construction works carried out by Transgrid and the DPs.

2.4 OMP Definitions

Table 5 provides critical definitions relevant to the implementation and interpretation of this OMP. These terms have been developed to ensure consistent application of the plan's requirements and are used throughout this OMP.

Table 5: Summary of critical definitions

Term	Definition
Active construction period	The period during which approved construction works are actively occurring, as are illustrated in Plate 9 outlined in Section 4.1. Each OMP MZ will experience periods of active construction interspersed with periods when no construction related activities are taking place, shown as breaks in Plate 9.
Disturbance Zones	The total extent of all approved Clearance Zones. The vegetation clearing requirements are defined in Table 4-2 of the EIS, and summarised below: – TCZ - Total Clearing Zone: Areas of the Project Footprint subject to total vegetation clearing for the establishment of construction benches, brake and winch sites, and construction of access tracks, substations and construction ancillary facilities. – ECZ - Easement Clearing Zone: Vegetation clearing including the removal of tall-growing vegetation that exceeds the clearance requirements for the transmission line. – HTZ - Hazard Tree Zone: Removal of high-risk trees outside the easement which pose a risk of falling on a tower or a line. Where these zones intersect with the Subject Orchid Habitat, these are defined as the Partial Clearance Zone and Total Clearance Zone (defined below).

Term	Definition
Harm	As defined within the EPBC approval, harm arm means to cause any measurable direct or indirect disturbance or deleterious change as a result of any activity associated with the Action.
Hazard Tree Zone (HTZ)	Includes lands within and immediately adjacent to the transmission line easement where selective tree removal, trimming or lopping would be undertaken to manage any risk of damage to transmission lines and structures in the event of tree fall. Earthwork is not required within this zone.
Incident	Incidents, as defined by the Commonwealth Approval 2021/9121, include: – Any event which has the potential to, or does harm any protected matter, – Potential non-compliance with these conditions, including the administrative requirements, – Actual non-compliance with these conditions, including the administrative requirements, – Potential non-compliance with one or more commitment made in a plan, and/or, – Actual non-compliance with one or more commitment made in a plan – Reference to a plan in this definition includes this OMP.
Incident and Emergency Response Plan	The environmental incident response plan prepared for the Project, as summarised in Section 3.8 of the CEMP, and the procedure provided in Appendix A7 of the CEMP.
OMP Management Zones (OMP MZs)	The total extent of Subject Orchid Habitat within the Project Footprint plus a 100m buffer (Figure 1 to Figure 6), numbered by discrete areas of habitat from south to north. This is the area to which this OMP applies.
Orchid Habitat Exclusion Zone (OHEZ)	The total extent of Subject Orchid Habitat, excluding the Total Clearance Zone. The OHEZ does not restrict access to landowners or public access via public roads. Activities permitted within the OHEZ are described in Section 5.1.
Orchid Specialist	Defined under the Commonwealth Approval 2021/9121 as "*Suitably qualified Orchid Specialist means a person who has at least seven years demonstrated experience designing and providing advice on the implementation of conservation land management for orchids in the Inland Slopes IBRA Region, Bondo IBRA Region or Snowy Mountains IBRA Region*".
Partial Clearance Zone (PCZ)	Area of the Subject Orchid Habitat that intersects with the HTZ and ECZ areas of the OMP Disturbance Zone. Only clearing of vegetation that encroaches in the VCR will be undertaken – shrub and groundcovers are to remain undisturbed.
Project footprint	The total extent of the HumeLink approved Project footprint (Figure 1 to Figure 6).
Subject Land	The collective extent of all OMP Management Zones. This area comprises a combination of private landholdings and Forestry Corporation NSW land.
Subject Orchids	The EPBC listed threatened orchid species that are subject to the requirements of this document: – *Prasophyllum bagoense* (Bago Leek-orchid), – *Prasophyllum innubum* (Brandy Marys Leek-orchid), – *Prasophyllum keltonii* (Kelton's Leek-orchid), and – *Pterostylis oreophila* (Blue-tongued Orchid).
Subject Orchid Habitat	Suitable habitat for the Subject Orchids, shown in Figure 7 to Figure 11.
Total Clearance Zone (TCZ)	Lands subject to total clearing and ground disturbance. Permanent structures such as transmission line structures, access tracks and substations would be situated within these lands as well as temporary brake and winch sites and construction compounds.
Translocation	Defined under the Guidelines for the Translocation of Threatened Plants in Australia as "*the deliberate transfer of plants or regenerative plant material from an ex situ collection*

Term	Definition
	or natural population to a new location, usually in the wild. It includes reintroduction, introduction, reinforcement, assisted migration and assisted colonisation. Translocations involve a diverse range of methods including: seed collection and propagation; propagation via cuttings or tissue culture; planting of containerised plants; direct seeding; transplantation of whole plants from one site to another, and the transfer of soil, leaf litter, brush or pollen."
Unanticipated impacts	Unanticipated impacts are those which may result from unforeseen events e.g. tree fall due to weather events or impacts from fire

3. Species Information

3.1 Subject Orchid Species Descriptions, Habitat and Ecology

3.1.1 *Prasophyllum bagoense* (Bago Leek Orchid)

3.1.1.1 Description

Prasophyllum bagoense is a slender, tuberous, terrestrial herb which grows as isolated individuals or in loose groups, with an erect leaf 20–35 cm long and 3-4 mm wide, and 15–30 pale tawny-green scented flowers 8 – 11 mm wide, in a moderately dense spike (Jones 2000; Plate 1).

Plate 1: *Prasophyllum bagoense* at McPhersons Plain (B. Towle)

3.1.1.2 Life-cycle

Prasophyllum bagoense is a perennial, deciduous, tuberous herb which persists as a dormant, fleshy underground tuber for much of the year, during which it can escape periods of extreme cold and snow/frost cover. Flowering of *P. bagoense* typically occurs from December to January (Jones 2000; 2024). This species, like others in its genus, may lie dormant for several years if conditions are not right for it to emerge (Bishop 2000;

NSW Scientific Committee 2004; TSSC 2012). Flowering of *P. bagoense* occurs freely in the absence of fire (Beretta 2012; Pers. Obs Brian Towle).

Pollination occurs via pollen transfer from another plant or pollen transfer from another flower on the same plant, mediated by generalised nectar-seeking insects (Bower 2001). Significant pollinators observed on *Prasophyllum* species have included wasps, bees and syrphid wasps (Bower 2001). Once pollinated, fruit development on *P. bagoense* occurs over approximately an eight to twelve week period, after which capsules dehisce and minute dust like seed is released (Jones 2001). Based upon what is known about orchid seed in general and the morphology and habitat preferences of *P. bagoense*, only a very small proportion of the seed produced would be likely to disperse any large distance beyond the parent plant and the surrounding dense cover of grasses and other understorey species.

Most *Prasophyllum* species, including *P. bagoense*, are reliant upon seed germination for population growth with daughter tubers not produced (Jones 2001; Clements and Jones 2019). Like all other orchids, germination of *P. bagoense* seed is reliant on invasion of the seed by the hyphae of a specific fungal associate (Bates and Weber 1990), which in the case of the genus *Prasophyllum* includes *Ceratobasidium* species (Warcup 1981; Freestone et al. 2021). Unlike fungal associations in other families, the mycorrhizal fungi associated with species of the Orchidaceae occur within the roots or absorbing organs forming hyphal coils within cortical cells (Warcup 1990). The mycorrhizal fungi deliver sugars and inorganic substances to the orchid (Rasmussen 1995, Warcup 1990).

3.1.1.3 Distribution and abundance

Recent records of this species occur across three separate subalpine plains separated by up to 5 km (Modders Plain, McPhersons Plain and Tomneys Plain; Plate 2). It is noted that Copeland and Backhouse (2022) recognised the distribution of the species incorporating more recent records as "…several small populations in a very small area".

Population estimates for the species have varied through time and in some cases appear to confuse population size with the number of above ground plants observed in a single season, which may be very different given that only a proportion of the total population are likely to flower and are therefore detectable in any given season. As part of the NSW Government's Saving our Species (SoS) program a comprehensive survey was conducted in 2016 and 2020 of the treeless plains near historic records of the species. Approximately 600 individuals were located as part of these surveys in 2016 and 2,300 individuals in 2020 (DPIE 2021).

3.1.1.4 Habitat requirements

Habitat for *P. bagoense* has generally been described as 'sub-alpine treeless plains' (DPIE 2021) and extending into adjacent woodlands (Jones 2000; TSSC 2012a; Copeland and Backhouse 2022; Jones 2024). Although not widely reported, *P. bagoense* generally occupies a specific micro-habitat within the treeless plains which is characterised by being slightly elevated and drier (Pers. Obs. Brian Towle). Records of *P. bagoense*, and observations by field surveyors, indicate that the species is actually restricted to the drier portions of the treeless plains (typically grasslands or open heathlands), or at least is absent from the wettest portions of the plains. Similarly, despite the common reference to occurrences of the species within adjacent woodlands, this is not supported by the spatial data associated with records of the species (Plate 2) or personal observations (Brian Towle and Robert Humphries). A number of records are close to the boundary between the treeless plains/bog areas and woodland areas (as shown in Figure 3) but are associated with open areas within the woodland or areas with no or sparse canopies only.

Plate 2: *Prasophyllum bagoense* records within the McPhersons Palin and Bago State Forest regionReview replaced Section Break

3.1.2 *Prasophyllum keltonii* (Kelton's Leek-orchid)

3.1.2.1 Description

Prasophyllum keltonii is a slender, tuberous, terrestrial herb, with an erect leaf 20–35 cm long and 3-5 mm wide, and 12-22 green, brownish red or purplish, fragrant flowers 7 – 9 mm wide, in a crowded dense spike 5 – 9 cm long (Jones 2007; Plate 3).

P. keltonii is morphologically similar to *Prasophyllum canaliculatum*, and the undescribed entity known as *Prasophyllum* sp. aff. *keltonii* (Long Plain) (Plate 3). These similarities resulting in some conflicting interpretations of the species distribution and abundance as discussed below.

The two species, *P. keltonii* and *P. canaliculatum,* have previously been separated by flower density, flower colour, and subtle differences in the labellum shape, including labellum callus (Jones 2007). These subtle differences have resulted in differing opinions on the identity of specimens from Namadgi National Park. However, the determination of specimens held by the Australian National Herbarium, the current Australian Plant Census concept of the species' distribution (CHAH 2018), and conservation assessments for *P. canaliculatum* (NSW DCCEEW 2024b), all recognise specimens from Namadgi National Park as *P. canaliculatum*. Thus, the distribution of *P. keltonii* as being restricted to McPhersons Plain remains the current understanding of the species range, as discussed in Section 3.1.2.3. NSW (DCCEEW 2024b) notes that there is ongoing research to better understand species delimitation and genetic diversity in this group.

3.1.2.2 Life-cycle

The life-cycle of *P. keltonii* is very similar to that outlined for *P. bagoense*. These similarities extend across most aspects of the species life-cycle including dormancy periods, flowering periods, reproductive ecology, seed ecology, mycorrhizal associations, and fire response (DPIE 2020b).

3.1.2.3 Distribution and abundance

P. keltonii was described in 2007 (Jones 2007) from specimens collected at 'McPhersons Plain'. At this time the species was recognised as being "…known only from McPhersons Plain in the Bago State Forest". Most subsequent descriptions of the species have identified it as being restricted to a single population (NSW Scientific Committee 2008a; TSSC 2014; Jones 2024). NSW BioNet records of the species are currently limited to the McPhersons Plains and specifically two treeless plains, Modders Plain and McPhersons Plain (Plate 4).

Population estimates for the species have varied through time and as discussed for *P. bagoense*, in some cases there appears to be confusion between population size and the number of above ground plants observed in a single season. In 2008, the NSW Scientific Committee (2008) reported that the known population consisted of approximately 400 plants (380 occur on the Brandy Marys State Forest Crown Leases and about 20 on adjacent private property). Most recently, as part of the NSW Government's SoS program a comprehensive survey was conducted in 2016 and 2020 of the treeless plains near historic records of the species. Approximately 300 individuals were located as part of these surveys in 2016 and 1,000 individuals in 2020 (DPIE 2021).

3.1.2.4 Habitat requirements

Habitat for *P. keltonii* is generally similar to that for *P. bagoense* with the two species occurring sympatrically. Habitat for the species has generally been described as 'sub-alpine treeless plains' (DPIE 2021), tussock grasslands (Jones 2007; TSSC 2014), moist grasslands (Copeland and Backhouse 2022), and moderately boggy ground, though not sphagnum-dominated areas, and some drier patches within a treeless plain (NSW Scientific Committee 2008a). Of note, there are no descriptions of *P. keltonii* habitat extending into adjacent woodlands, as there is for *P. bagoense* and *P. innubum*, and similar to *P. bagoense*, the species appears to be restricted to

the drier portions of the treeless plains (typically grasslands or open heathlands) or at least is absent from the wettest portions of the plains.

Plate 3: *Prasophyllum keltonii* withi[redacted] (left - B. Towle), *Prasophyllum* sp aff. *keltonii* (Long Plain; middle - B. Towle) and *Prasophyllum keltonii/canaliculatum* within [redacted] (right – L. Copeland) illustrating the similarity between these closely related species.

Plate 4: *Prasophyllum keltonii* records within the McPhersons Plain and Bago State Forest region

3.1.3 *Prasophyllum innubum* (Brandy Marys Leek Orchid)

3.1.3.1 Description

Prasophyllum innubum is a slender, tuberous, terrestrial herb, with an erect leaf 20–50 cm long and 3-5 mm wide, and 6-20 brownish, green, white and purplish flowers 6 – 9 mm wide, in a loose spike 5 – 8 cm long (Jones 2007; Plate 5).

There remains confusion regarding the taxonomic boundaries between *P. innubum* and morphologically similar species (including *Prasophyllum alpestre* and the not formally described entity known as *Prasophyllum* sp. aff. *alpestre* [Mountain Bogs]; Plate 5), with the SoS conservation strategy for the species (NSW Government 2025) listing research to confirm whether morphologically similar species are actually distinct species, as a priority action. This uncertainty has produced conflicting interpretations of the species distribution and abundance as discussed below.

3.1.3.2 Life-cycle

P. innubum has a very similar life-cycle to that detailed for *P. bagoense* and *P. keltonii*. These similarities extend across most aspects of the species life-cycle including dormancy periods, seed ecology and mycorrhizal associations, although the species has a slightly later flowering period and a distinct pollination strategy. Flowering of *P. innubum* typically occurs from late January to early March (Jones 2007), generally after the peak flowering periods of the two co-occurring *P. bagoense* and *P. keltonii*. Flowering of *P. innubum* occurs freely in the absence of fire (Pers. Obs. Brian Towle), unlike some other *Prasophyllum* species which are dependent upon fire for flowering (Jones 2001). While there is no published information on the response of the species to fire, the large number of individuals of the species detected within burnt areas in the seasons shortly after fire (Hayashi et al. 2024), suggest the species is either fire stimulated, or fire neutral.

When *P. innubum* was first described, the small self-pollinating flowers were identified as characteristics which assisted in recognising the species compared to the morphologically similar *P. alpestre* (Jones 2007). However, multiple species of bees and a sphecid wasp have since been confirmed as pollinators for the species and only a very small proportion of flowers set fruit via self-pollination when insects were excluded (TSSC 2014; Hayashi et al. 2024).

3.1.3.3 Distribution and abundance

When first described *P. innubum* was identified as being known from only seven small colonies in Bago State Forest and the Brandy Marys Crown Lease, although the existence of morphologically similar plants from Victoria was noted (Jones 2007). Despite the various interpretation of colonies, populations (EcoPlanning, 2025) and sub-populations, both conservation assessments (NSW Scientific Committee 2008b; TSSC 2014) interpreted the species as having a very narrow distribution limited to the McPhersons Plains (Plate 6). This interpretation is supported by available spatial data associated with confirmed records of the species (BioNet (2025) and Australasian Virtual Herbarium (2025); Plate 6).

Population estimates for the species have varied through time and as discussed for other *Prasophyllum* species there is confusion between population size and the number of above ground plants observed in a single season. When first described the known population was estimated to be 400 individuals (Jones 2007; NSW Scientific Committee 2008b). In 2014 the TSSC (2014) reported that its population size had declined from 400 individuals and fluctuated between 0 and 200 visible plants. In 2021, following surveys completed as part of the 'Preventing Extinction in Bushfire Affected Orchids' Project (funded by the Australian Government's Wildlife and Habitat Bushfire Recovery Program) the population was estimated to be 4,132 mature individuals (Phillips et al. 2021 in

Hayashi et al. 2024). It is noted that these population estimates are all based upon the interpretation of the species as being restricted to the Bago State Forest area, including adjacent private properties.

3.1.3.4 Habitat requirements

Although occurring within the broadly similar area as *P. bagoense* and *P. keltonii*, *P. innubum* is recognised as occupying wetter portions of the treeless plains than other co-occurring *Prasophyllum* species. The habitat for the species is consistently described as being 'beside small streams in hummocks of sphagnum and on moist to wet grassy flats on boggy or peaty soil' (Jones 2007; 2024; NSW Scientific Committee 2008b; TSSC 2014; Copeland and Backhouse 2022; Hayashi et al. 2024). The occurrence of the species within adjacent woodlands is not supported by the spatial data accompanying accurate records of the species, although there are numerous records on the interface between the wetter portions of the treeless plain and adjacent woodlands (Plate 6).

Plate 5: *Prasophyllum innubum* within [redacted] (left), *Prasophyllum* sp. aff. *alpestre* (Mountain Bogs) within [redacted] (middle) and *Prasophyllum alpestre* within [redacted] (right) illustrating the similarity between these closely related species – B. Towle

Plate 6: *Prasophyllum innubum* records within the McPhersons Plain and Bago State Forest region

3.1.4 *Pterostylis oreophila* (Blue-tongued Orchid)

3.1.4.1 Description

Pterostylis oreophila is a tuberous, terrestrial herb, with a loose, scattered rosette leaves on the basal part of the flowering stem, and a scape to 15 cm tall with cauline leaves and a single green and white flower with a dark blue-green labellum (Jones 2006; Jones 2024; PlantNet 2025) (Plate 7). *P. oreophila* is a tuberous, terrestrial herb, with a loose, scattered rosette leaves on the basal part of the flowering stem, and a scape to 15 cm tall with cauline leaves and a single green and white flower with a dark blue-green labellum (Jones 2006; Jones 2024; PlantNet 2025).

3.1.4.2 Life-cycle

P. oreophila is a perennial, deciduous, tuberous herb which persists as a dormant, fleshy underground tuber for much of the year, during which it can escape periods of extreme cold and snow/frost cover. Flowering of *P. oreophila* typically occurs from November to January (Jones 2024). This species, like others in its genus, may have prolonged dormancy where individuals lie dormant for multiple seasons if conditions are not right for it to emerge (Bell and Hillier 2020). Flowering of *P. oreophila* occurs freely in the absence of fire, and the genus is generally considered to be sensitive to fire (Jones and Clements 2002).

In *Pterostylis* pollination via sexual deception typically involves only males of a single species of fungus gnat being attracted to the orchid flowers with pollination occurring as males attempt copulation with the labellum (Hayashi *et al*. 2025). Where pollination of *P. oreophila* occurs, fruit development occurs over approximately a six-to-eight-week period after which capsules dehisce and minute dust like seed are released (Jones 2024). Similarly to the above described *Prasophyllum* species, only a very small proportion of the seed produced by inflorescences would be likely to disperse any large distance beyond the parent plant and the surrounding vegetation (Jones and Clements 2002).

Many *Pterostylis* species, including *P. oreophila*, are capable of vegetative growth with one or more daughter tubers produced in a season on the end of lateral roots, in addition to replacement tubers (Jones 2024). This can result in small to large vegetative colonies including multiple genetically identical individuals. However, field observations of *P. oreophila* suggest that vegetative reproduction is limited to 'good seasons' and the species does not form large clonal colonies in the same way as other members of this genus (P. Branwhite pers. comm. 2010 in TSSC 2012b). Like all other orchids, germination of *P. oreophila* seed is reliant on invasion of the seed by the hyphae of a specific fungal associate (Bates and Weber 1990), which in the case of the genus *Pterostylis* includes *Ceratobasidium* species (Warcup, 1981; Weston *et al*. 2005).

3.1.4.3 Distribution and abundance

P. oreophila was first described in 1974 from plants collected at Kiandra, NSW. However, Jones (Jones 1998; Jones *et al.* 2002) recognises *P. oreophila* as occurring within a small number of montane areas across the ACT, NSW and Victoria. This forms the current understanding of the species range with all subsequent descriptions (e.g. Jones 2008; Copeland and Backhouse 2022; Jones 2024) and conservations assessments (NSW Scientific Committee 2007; TSSC 2012b) identifying the species as occurring in four broad regions: Brindabella ranges (ACT), Kiandra and Bago in NSW (Plate 8), and North-east Victoria.

The most recent and detailed estimate of the total population size for the species comes from the TSSC (2012b) which estimated a total population size of 240 individuals comprising the following:

- An estimated 100 individuals across 13 sub-populations in Victoria.
- An estimated 50 individuals in the Kiandra area of NSW.

- An estimated 30 individuals across two subpopulations in the Bago State Forest (one considered to be extinct) and one subpopulation in Brandy Marys Bago State Forest Crown leases.
- An estimated 60 individuals in the ACT across three subpopulations.

3.1.4.4 Habitat requirements

At the time of its description by Clemesha (1974), *P. oreophila* habitat was described as '*occurring along small creeks, light shade to full sun in saturated soft black mud, approximately 30 cm from running water'* (Clemesha 1974). Numerous subsequent authors associate the species with a similar restricted habitat type variously described as 'along sub-alpine water courses, in peaty soils, and less commonly sphagnum moss, which are wet throughout the year and frequently in association with thickets of *Leptospermum grandifolium* (Mountain Tea-tree'); Backhouse & Jeanes 1995; Jones 2006; 2008; Copeland and Backhouse 2022; Jones 2024; Hayashi *et al*. 2025).

Plate 7: Pterostylis oreophila flower – R. Lindhe (source: facebook.com/groups/561617280589781)

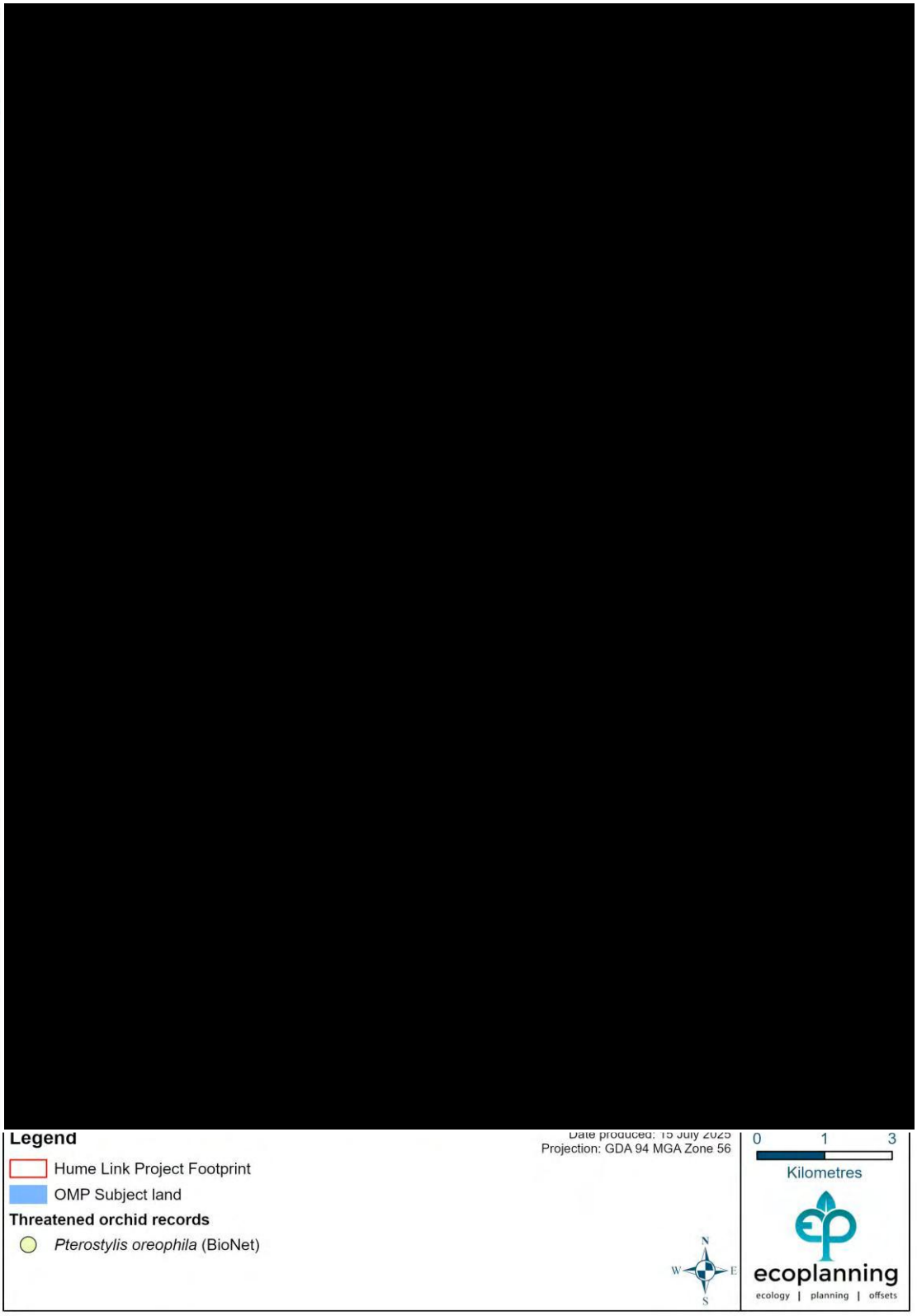

Plate 8: *Pterostylis oreophila* records (BioNet) within the McPhersons Plain and Bago State Forest region

3.2 Site Locality and Description

Lands subject to this OMP are shown as five discreet locations (OMP Management Zones) in Figure 1. These areas, located within the Snowy Mountains IBRA subregion, comprise a mix of dry sclerophyll forests, grassy woodlands, grasslands and freshwater wetlands within a sub-alpine environment.

Habitat of the Subject Orchid Species (refer to Table 6) is located within the 'sub-alpine treeless plains' with *Prasophyllum* species occurring in slightly higher, drier parts of the plains dominated by native grasslands or open heathlands. *Pterostylis oreophila* occurs within lower lying moist habitat associated with sub-alpine watercourses and peaty soils frequently in association with Mountain Tea Tree (*Leptospermum grandifolium*).

The five OMP Management Zones (OMP MZs) within the HumeLink Project Footprint are named and located as follows:

- OMP MZ1 - located between Tower 5C3/5C1-14 and Tower 5C3/5C1-15– within McPherson's Plain (Figure 2)
- OMP MZ2 - located between Tower 5C3/5C1-31 and Tower 5C3/5C1-32 (Figure 3)
- OMP MZ3 - located between Tower 5C3/5C1-39 and Tower 5C3/5C1-41 (Figure 4)
- OMP MZ4 - located between Tower 5C3/5C1-42 and Tower 5C3/5C1-43 (Figure 5)
- OMP MZ5 - located between Tower 5C3/5C1-51 and Tower 5C3/5C1-52 (Figure 6).

The Subject Land tenure is owned privately or by Forestry Corporation NSW.

3.2.1 McPherson's Plain

McPherson's Plain is a temperate montane grassland located proximate to Bago State Forest on private land. A landholding across part of the Plain is subject to a Conservation Agreement under the *National Parks and Wildlife Act 1974*. Additionally, a wildlife fence protects a number of biodiversity values across the treeless plain (Figure 2) including the PCT 637 – Alpine and sub-alpine peatlands, damp herb fields and fens and significant populations of the Subject Orchids. It is noted, however, that many individuals of the Subject Orchids and their habitat extend beyond the fence line.

Niche, ELA and all other external detected Subject Orchid records, which occur beyond the Project Footprint and McPhersons Plain are shown in Plate 2, Plate 4, Plate 6 and Plate 8 in Section 3.1.

Niche 2025 collated records shown in the aforementioned Plates also include ELA records collected 2018/2019 and Niche collected records up to 2025. BioNet Records shown also capture BioNet records, Canberra Orchid Society, Saving Our Species (2020) and Biodiversity Conservation Division (2023).

Figure 1

Site Locality and OMP Management Zones

HumeLink Orchid Management Plan

Niche PM: Jessica O'Leary
Niche Proj. #: 8758
Client: TransGrid

0 1.5
km
GDA2020 MGA Zone 55

Figure 2

Orchid Management Zones - MZ1

HumeLink Orchid Management Plan

Niche PM: Jessica O'Leary
Niche Proj. #: 8758
Client: TransGrid

0 90
m
GDA2020 MGA Zone 55

Local Government Area: / HumeLink CL V4-0 - Towers: / Lot: / Hillshade: Esri, Geoscience Australia, NASA, NGA, USGS/ HS: Airbus,USGS,NGA,NASA,CGIAR,NCEAS,NLS,OS,NMA,Geodatastyrelsen,GSA,GSI and the GIS User Community/ Hillshade: Esri, USGS/ Transparency Mask: / Road: / World_Ocean_Base: Esri, GEBCO, Garmin, NaturalVue/ Rail: / OMP Disturbance footprint: / NPWS Reserve: / State Forest: / World Imagery: Maxar/ Waterbody: / public/NSW_Imagery: © Department of Customer Service 2020/ Project footprint: / elevation mist: Airbus,USGS,NGA,NASA,CGIAR,NCEAS,NLS,OS,NMA,Geodatastyrelsen,GSA,GSI and the GIS User Community | Watercourses, Waterbodies, Road and Rail alignments, Protected areas of NSW © Spatial Services 2021. | Niche uses GDA2020 as standard for all project-related data. In order to ensure that data from numerous sources and coordinate systems is aligned, on-the-fly transformation to GDA2020 MGA Zone 55 is used in the map above. For ease of reference, the grid tick marks and labels shown around the border of the map are presented in GDA2020 MGA Zone 55.

Figure 3

Orchid Management Zones - MZ2

HumeLink Orchid Management Plan

Niche PM: Jessica O'Leary
Niche Proj. #: 8758
Client: TransGrid

0 60
m

GDA2020 MGA Zone 55

Figure 4

Orchid Management Zones - MZ3

HumeLink Orchid Management Plan

Niche PM: Jessica O'Leary
Niche Proj. #: 8758
Client: TransGrid

0 40
m

GDA2020 MGA Zone 55

Local Government Area: / HumeLink CL V4-0 - Towers: / Lot: / HS: Airbus,USGS,NGA,NASA,CGIAR,NCEAS,NLS,OS,NMA,Geodatastyrelsen,GSA,GSI and the GIS User Community/ Hillshade: Esri, USGS/ Transparency Mask: / Road: / Hillshade: Sources: Esri, Maxar, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap, and the GIS user community/ World_Ocean_Base: Esri, GEBCO, Garmin, NaturalVue/ Rail: / OMP Disturbance footprint: / NPWS Reserve: / State Forest: / World Imagery: Maxar/ Waterbody: / public/NSW_Imagery: © Department of Customer Service 2020/ Project footprint: / elevation mist: Airbus,USGS,NGA,NASA,CGIAR,NCEAS,NLS,OS,NMA,Geodatastyrelsen,GSA,GSI and the GIS User Community | Watercourses, Waterbodies, Road and Rail alignments, Protected areas of NSW © Spatial Services 2021. | Niche uses GDA2020 as standard for all project-related data. In order to ensure that data from numerous sources and coordinate systems is aligned, on-the-fly transformation to GDA2020 MGA Zone 55 is used in the map above. For ease of reference, the grid tick marks and labels shown around the border of the map are presented in GDA2020 MGA Zone 55.

Figure 5

Orchid Management Zones - MZ4

HumeLink Orchid Management Plan

Niche PM: Jessica O'Leary
Niche Proj. #: 8758
Client: TransGrid

0 30
m
GDA2020 MGA Zone 55

Figure 6

Orchid Management Zones - MZ5

HumeLink Orchid Management Plan

Niche PM: Jessica O'Leary
Niche Proj. #: 8758
Client: TransGrid

0 30
m

GDA2020 MGA Zone 55

3.3 Threats to conservation

Each of the Subject Orchids are recognised as being threatened by environmental and demographic stochasticity, including in association with anthropogenic climate change, due to small population sizes and restricted distributions (NSW Scientific Committee 2004; 2008a; 2008b; 2014).

More site-specific threats to the species habitat include altered hydrology, including increased channelisation of flow due to adjacent land uses and construction of large farm dams (NSW Scientific Committee 2004; 2008a; 2008b; 2014; TSSC 2012; 2014a; 2014b). These and other changes to hydrology may result in modification and contraction of the specific microhabitats with which the individual subject species are associated as discussed in following sections.

Additionally, grazing, trampling, and drainage disturbance of habitat by feral pigs and horses, as well as domestic stock has been recognised as a threat to the subject species (NSW Scientific Committee 2004; 2008a; 2008b; 2014; TSSC 2012; 2014a; 2014b). In recent years horse-proof fences were erected to enclose approximately 138 hectares of habitat across the McPhersons Plains (DPIE 2021) which has reduced these threats within portions of the McPhersons Plains including portions of the OHEZ. However, individuals of the Subject Orchids have been observed outside this fencing and ongoing evidence of pig disturbance within fenced habitat was observed in 2024 (Pers. Obs. Brian Towle).

Weed species, including *Holcus lanatus* (Yorkshire fog), have been recognised as invading habitat for the Subject Orchid species within the study area and competition from exotic species remains an ongoing threat to the subject species (NSW Scientific Committee 2014; TSSC 2012a; 2012b, 2014a; 2014b).

Other possible threats to the species recognised within the study area have included illegal collection of orchids, off-road vehicle activities, horse trail-riding, mineral fossicking (NSW Scientific Committee 2008a; 2008b; TSSC 2012) and logging (TSSC 2014a; 2014b).

While the TSSC (2014a; 2014b) lists logging as a main threat, the subject species as largely absent from timbered areas, and the few species and individuals that are said to extend into adjacent woodland occur in association with small *Eucalyptus pauciflora* (Snow Gum) and *Eucalyptus stellulata* (Black Sally) which are of little commercial value from a forestry perspective. Therefore, the actual threat associated with logging may be minimal.

3.4 Delineation of suitable habitat

The Subject Orchid Habitat extents have been developed and refined during both the BDAR (Niche 2024) and post-BDAR survey stages. The process applied to produce the Subject Orchid polygons during the BDAR largely comprised habitat constraints mapping, review of targeted survey effort and results (in accordance with Section 4.4.3 of the BAM 2020), as detailed in Section 2.4 of Attachment 1 of the BDAR (Niche 2024).

Following approval of the BDAR, post-approval field surveys were undertaken by Orchid Specialists and further refinement of the habitat extents were undertaken. These habitat refinements were informed by:

- A review of conservation and listing advice relating to the known habitat preferences for each species (as provided in Section 2.3).
- Ground-truthing of potential habitats by Orchid Specialists to confirm the presence/ absence of specific habitat features as noted within the conservation and listing advice.
- Presence of orchid species

Further information in relation to the outcomes of these assessments is provided in Section 2.7 and Section 4.3 of the Biodiversity Assessment Verification Report (BVAR) (Niche, 2025)).

The Subject Orchid habitat requirement and location within the project footprint is provided in Table 6.

Table 6: Orchid species and summary of habitat requirements

Common Name	Scientific Name	Suitable habitat & presence of species	Habitat Requirements	Location of Habitat within the project footprint
Bago Leek-orchid	*Prasophyllum bagoense*	Present	Sub-alpine treeless grassy plains within tussock or moist grasslands, not within boggy soils	Figure 7
Brandy Marys Leek Orchid	*Prasophyllum innubum*	Present	Beside small streams in hummocks of sphagnum and on moist to wet grassy flats on boggy or peaty soil within sub-alpine treeless plains	Figure 7
Kelton's Leek-orchid	*Prasophyllum keltonii*	Present	Sub-alpine treeless grassy plains within tussock or moist grasslands, not within boggy soils	Figure 7
Blue-tongued Orchid	*Pterostylis oreophila*	Present (no records of the species)	Beside small montane and subalpine streams under mountain tea tree thickets, in black oozing muds or peaty soils and sphagnum mounds	Figure 7 to Figure 11

Figure 7

OMP Subject Orchid Habitat and Records - MZ 1

HumeLink Orchid Management Plan

Niche PM: Jessica O'Leary
Niche Proj. #: 8758
Client: TransGrid

0 90
m
GDA2020 MGA Zone 55

Local Government Area: / HumeLink CL V4-0 - Towers: / Contour (10m): / Orchid detections (Niche, 2022): / OMP Disturbance Zones: / HS: Airbus,USGS,NGA,NASA,CGIAR,NCEAS,NLS,OS,NMA,Geodatastyrelsen,GSA,GSI and the GIS User Community/ Hillshade: Esri, USGS/ World Imagery: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community/ Transparency Mask: / Road: / Hillshade: Sources: Esri, Maxar, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap, and the GIS user community/ World_Ocean_Base: Esri, GEBCO, Garmin, NaturalVue/ Rail: / Humelink incidental flora: / OMP Disturbance footprint: / NPWS Reserve: / State Forest: / World Imagery: Maxar/ Waterbody: / public/NSW_Imagery: © Department of Customer Service 2020/ Project footprint: / elevation mist: Airbus,USGS,NGA,NASA,CGIAR,NCEAS,NLS,OS,NMA,Geodatastyrelsen,GSA,GSI and the GIS User Community | Watercourses, Waterbodies, Road and Rail alignments, Protected areas of NSW © Spatial Services 2021. | Niche uses GDA2020 as standard for all project-related data. In order to ensure that data from numerous sources and coordinate systems is aligned, on-the-fly transformation to GDA2020 MGA Zone 55 is used in the map above. For ease of reference, the grid tick marks and labels shown around the border of the map are presented in GDA2020 MGA Zone 55.

Figure 8

OMP Subject Orchid Habitat and Records - MZ2

HumeLink Orchid Management Plan

Niche PM: Jessica O'Leary
Niche Proj. #: 8758
Client: TransGrid

0 60
m

GDA2020 MGA Zone 55

Local Government Area: / HumeLink CL V4-0 - Towers: / Contour (10m): / Orchid detections (Niche, 2022): / HS: Airbus,USGS,NGA,NASA,CGIAR,NCEAS,NLS,OS,NMA,Geodatastyrelsen,GSA,GSI and the GIS User Community/ Hillshade: Esri, USGS/ World Imagery: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community/ Transparency Mask: / Road: / Hillshade: Sources: Esri, Maxar, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap, and the GIS user community/ World_Ocean_Base: Esri, GEBCO, Garmin, NaturalVue/ Rail: / OMP Disturbance footprint: / NPWS Reserve: / State Forest: / Waterbody: / public/NSW_Imagery: © Department of Customer Service 2020/ Project footprint: / elevation mist: Airbus,USGS,NGA,NASA,CGIAR,NCEAS,NLS,OS,NMA,Geodatastyrelsen,GSA,GSI and the GIS User Community | Watercourses, Waterbodies, Road and Rail alignments, Protected areas of NSW © Spatial Services 2021. | Niche uses GDA2020 as standard for all project-related data. In order to ensure that data from numerous sources and coordinate systems is aligned, on-the-fly transformation to GDA2020 MGA Zone 55 is used in the map above. For ease of reference, the grid tick marks and labels shown around the border of the map are presented in GDA2020 MGA Zone 55.

Figure 9

OMP Subject Orchid Habitat and Records - MZ3

HumeLink Orchid Management Plan

Niche PM: Jessica O'Leary
Niche Proj. #: 8758
Client: TransGrid

0 40
m
GDA2020 MGA Zone 55

Figure 10

OMP Subject Orchid Habitat and Records - MZ4

HumeLink Orchid Management Plan

Niche PM: Jessica O'Leary
Niche Proj. #: 8758
Client: TransGrid

0 30
m
GDA2020 MGA Zone 55

Figure 11

OMP Subject Orchid Habitat and Records - MZ5

HumeLink Orchid Management Plan

Niche PM: Jessica O'Leary
Niche Proj. #: 8758
Client: TransGrid

0 30
m

GDA2020 MGA Zone 55

3.5 Summary of Field Survey Effort and Results

Targeted surveys for the Subject Orchid species were undertaken between 2018 and 2025. Survey timing was based on confirmed flowering of the species at nearby reference populations by the Orchid Specialists and (CPHR to ensure alignment with peak detectability periods. Surveys were undertaken in accordance with methods outlined in Surveying Threatened Plants and their Habitats – NSW Survey Guide for the Biodiversity Assessment Method (DPIE, 2020b), Section 4.1 (parallel field traverses) and Section 4.4.1 (two-phase grid systematic survey approach for large areas). A summary of total survey effort is provided in Table 7, and survey results summarised in Table 8.

3.5.1 Summary of survey effort

Table 7 provides a detailed summary of the survey effort undertaken for the Subject Orchids.

Table 7: Summary of Subject Orchid survey effort

Species	BAM survey methodology applied	Survey timing
Pre-BDAR (ELA)		
Prasophyllum keltonii	Parallel field traverse in suitable orchid habitat (DPIE 2020b).	– December 2018 – December 2019
Prasophyllum bagoense	Parallel field traverse in suitable orchid habitat (DPIE 2020b).	– December 2018 – December 2019
BDAR (Niche 2024)		
Prasophyllum bagoense	Two-phase grid-based systematic surveys (DPIE 2020b) in suitable orchid habitat during the required survey period, as per the TBDC.	30 November 2023 to 14 December 2023 - within two weeks of confirmed flowering: – Flowering confirmed by CPHR (formerly BCS) on 11 December 2023 at the McPhersons Plain Conservation area that intersects with the amended Project Footprint. – Recorded by CPHR within the amended Project Footprint at McPherson's Plain on 12 December 2023.
Prasophyllum innubum	BioNet records within 80 m of the amended Project Footprint as such the species was assumed present on site and no targeted surveys were completed during the BDAR. Attachment 1 of the Revised BDAR - CPHR surveyed for *Prasophyllum innubum* on 1 and 2 February 2024 and found hundreds of plants in the McPhersons Plain area, and then an extensive population of well over 100 plants in Bago State Forest (CPHR advice). Details of survey methods undertaken by CPHR not described in Attachment 1.	Species was assumed present on site and no targeted surveys were completed in December 2023. Confirmed flowering by CPHR on 1 and 2 February 2024.

Species	BAM survey methodology applied	Survey timing
Prasophyllum keltonii	Two-phase grid-based systematic surveys (DPIE 2020b) in suitable orchid habitat during the required survey period, as per the TBDC	1 December to 14 December 2023 - within two weeks of confirmed flowering: – Flowering confirmed by CPHR on 11 December 2023 at the McPhersons Plain Conservation area that intersects with the amended Project Footprint. – Species recorded within the amended Project Footprint by CPHR on 12 December 2023.
Pterostylis oreophila	Two-phase grid-based systematic surveys (DPIE 2020b) in suitable orchid habitat during the required survey period, as per the TBDC.	11 to 14 December 2023 (within range of historical known flowering period) and 12 to13 January 2022 (within two weeks of confirmed flowering by CPHR): – Species recorded 1 January 2022 (CPHR advice).
BAVR (Niche 2025)		
Prasophyllum bagoense	Suitable habitat determination - Parallel field traverse through adjacent woodland to identify suitable habitats. Species detection - Parallel field traverse in suitable orchid habitat (DPIE 2020b).	15 December 2024 to 15 January 2025. Survey timing determined by the TBDC (December) and extended into mid-January based on reference population checks and advice from specialist orchid panel.
Prasophyllum innubum	Suitable habitat determination - Parallel field traverse through adjacent woodland to identify suitable habitats. Species detection - Parallel field traverse in suitable orchid habitat (DPIE 2020b).	12 to 15 January 2025. Specific survey dates selected based on reference population checks and advice from specialist orchid panel.
Prasophyllum ketonii	Suitable habitat determination - Parallel field traverse through adjacent woodland to identify suitable habitats. Species detection - Parallel field traverse in suitable orchid habitat (DPIE 2020b).	15 December 2024 to 15 January 2025. Specific survey dates selected based on reference population checks and advice from specialist orchid panel.
Pterostylis oreophila	Suitable habitat determination - Parallel field traverse through adjacent woodland to identify suitable habitats. Species detection - Parallel field traverse in suitable orchid habitat (DPIE 2020b).	15 December 2024 to 15 January 2025 Specific survey dates selected based on reference population checks and advice from specialist orchid panel.

3.5.2 Summary of survey results

A summary of the results of the targeted surveys (Section 3.5.1) is provided below in Table 8. It should be noted that the ELA surveys completed during 2018/2019 detected a number of Subject Orchid records however these were detected outside the Project footprint.

Table 8: Targeted survey results

Species	Total number of individuals recorded	Details
Prasophyllum bagoense	22	– Recorded by NSW DCCEEW in December 2023, in the McPherson's Plain area (OMP MZ 1). – Recorded by Niche (Orchid Specialists) in December 2024 and January 2025 in the [redacted] area (OMP MZ1)
Prasophyllum innubum	4	– Recorded by Niche (Orchid Specialists) in December 2024 and January 2025 in the [redacted] area (OMP MZ1)
Prasophyllum keltonii	2	– Recorded by NSW DCCEEW on 12 December 2023 – Recorded by Niche (Orchid Specialists) in December 2024 and January 2025 in the McPherson's Plain area (OMP MZ1)
Pterostylis oreophila	Nil	– Not recorded within areas of suitable habitat within the Project Footprint

Habitat suitability surveys were conducted to determine the total area of suitable habitat for each species, Species polygons were then prepared using current and historical records, and refined by orchid specialists to areas containing suitable habitat, especially for *Prasphyllum spp* where extension of habitat into the adjacent woodland is listed in the conservation advice for the species.

4. Project impacts and risks

4.1 Project activities and schedule

The approved works associated with each stage of the HumeLink Project to be undertaken within the OMP Management Zones (MZs) are detailed in Table 9, as described in Chapter 3 and Chapter 4 of the EIS as amended in the Humelink Amendment Report.

Table 9: Approved works description

Stage	Approved Works
Pre-construction	– Finalise the concept design – Prepare relevant management plans and procedures and environmental work methods statements – Prepare site inductions and training – Pre-construction minor works as defined in the NSW Approval – Enabling Works in accordance with the NSW Condition B64 Enabling Works Management Plan.
Construction	Site establishment would include: – Orchid Habitat Exclusion Zone delineation – Establishment of environmental management measures and security fencing – Access track establishment and/ or upgrades – Vegetation clearing – Establishment of ancillary facilities and support sites comprising minor storage and material laydown areas, worker crib room, toilets and vehicle parking Main transmission line construction work would include: – Earthwork and establishment of construction benches and brake and winch sites for each transmission line structure – Construction of footings and foundation work for the new transmission line structures including either concrete or steel piles (driven and/or screw), boring and/or excavation, steel fabrication work and concrete pours – Erection of the transmission line structures – Installation of earthing conductors – Stringing of the conductors and overhead earth wire (OHEW) and optical fibre ground wire (OPGW) – Earthing of fences and gates (as required). Demobilisation and site rehabilitation would be undertaken progressively and include the following activities: – Demobilisation of temporary ancillary facilities and support sites – Removal of materials, waste and redundant structures not required during operation of the Project – Removal of temporary fencing and environmental controls – Rehabilitation of temporary disturbance areas.
Operation	– Vegetation management within the Easement Clearing Zone and Hazard Tree Zone – Routine maintenance of maintenance related infrastructure including access tracks

Construction is anticipated to commence in August 2025. Whilst the estimated duration of construction is 18 to 24 months, construction activities would not occur at each structure location for the full duration of the construction period. The general sequencing and timelines associated with construction of each individual transmission line structure is presented in Plate 9. Following construction of the required foundations, each transmission line structure is typically erected over a 1-3 week period. Plate 9 presents an indicative duration of construction activities associated with an individual transmission line structure.

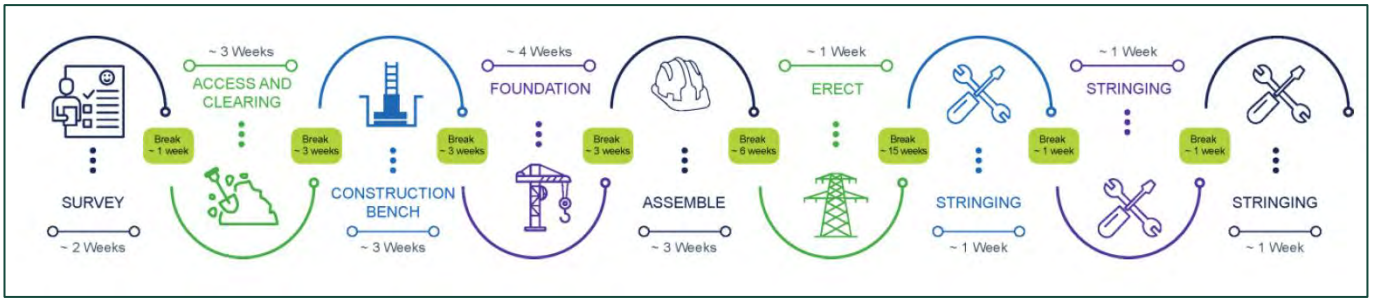

Plate 9: Indicative duration and sequence of transmission line structure construction (Source: Figure 4-12 of the EIS (Transgrid, 2024).

4.2 Impacts

The NSW Approval provides a clearing limit for impacts for each of the Subject Orchids. This clearing limit is within areas of assumed presence (*P. oreophila*) or habitat buffers (*Prasophyllum spp.*). No known locations/individuals are proposed to be impacted under the NSW Approval. The Commonwealth approval endorses the NSW approval at Condition 1 and requires this OMP to be prepared prior to carrying out any activity that could harm the habitat for the Subject Orchids (Condition 3). The Commonwealth requirement for an OMP provides a further mechanism for greater avoidance and minimisation and requires consideration of impacts to orchid habitat, rather than the interaction of the disturbance area with a species polygon as required by the NSW Biodiversity Assessment Method (BAM).

Table 10 provides results of supplementary survey conducted as part of the OMP in comparison to the NSW approved clearing limit (Condition B25, Table 2-2). The OMP required that orchid habitat be the focus of the Plan, rather than approved clearing limit areas as required by the NSW Approval. The remaining species polygons within the approved disturbance zone are mapped as very high constraint areas and are subject to final design changes with avoidance of orchid habitat a key priority.

Table 10: Summary of impact area

Species	NSW approved clearing limit (ha)	Revised suitable habitat within the clearing limit (ha)
Prasophyllum bagoense	0.04	0.02
Prasophyllum keltonii	0.03	0.02
Parasophyllum innubum	0.02	0.02
Pterostylis orephila	0.65	0.14

The Final Layout Plans will illustrate where final impacts are to occur and are to be submitted prior to construction (Condition C8 of NSW Approval). Section 8.2 outlines how the OMP will be updated to include the Final Layout Plans.

4.3 Risk assessment

A risk assessment has been completed in accordance with the AS ISO 31000:2018 Risk Management – Guidelines (AS ISO 31000:2018) to address potential risks associated with the Project to the Subject Orchids. The risk assessment has been applied to ensure appropriate mitigation measures are developed (Section 5) to effectively reduce or eliminate risks where possible.

4.3.1 Risks identified

Ecological risks to the Subject Orchids associated with known or potential impacts resulting from construction and operation of the Project have been identified in Table 11.

Despite extensive survey effort and impact assessment, limitations to knowledge and potential unknown impacts associated with extreme weather remain, given complexity and uncertainty around the severity of this risk. A precautionary approach has been adopted, supported by adaptive management measures to respond to unforeseen impacts.

Table 11: Risks to Subject Orchids resulting from Construction and Operation of HumeLink

Environmental risk	Impact type (direct/indirect)	Project phase associated with risk
Impacts to Subject Orchids and/or their habitat as a result of physical disturbance and/or unauthorised access to the OHEZ. Which may occur as a result of: – Unauthorised entry of vehicles, plant or personnel into the OHEZ. – Entry required into the OHEZ for any non-construction related activity. – Entry into the OHEZ to perform maintenance on powerline infrastructure.	Direct	Construction/ Operation
Reduced photosynthetic efficiency of Subject Orchids as a result of dust deposition within the OHEZ.	Indirect	Construction
Changes to local surface water flow leading to drying, waterlogging or sedimentation of Subject Orchid Habitat as a result of altered hydrology, erosion and sedimentation	Direct/Indirect	Construction/ Operation
Import of exotic flora seeds or material via construction machinery and vehicles.	Indirect	Construction
Reduced viability of adjacent habitat due to potential soil compaction/ vibration from construction activities in areas adjacent to Subject Orchid Habitat.	Indirect	Construction
Reduced viability of adjacent habitat due incorrect management of waste, spills, concrete wash and fuels.	Indirect	Construction
Impact to Orchids or their habitat as a result of unintentional herbicide drift during weed/ vegetation treatment or chemical and fuel spills (including concrete washout).	Indirect	Construction/ Operation

Environmental risk	Impact type (direct/indirect)	Project phase associated with risk
Detection of Subject Orchids within the disturbance footprint and subsequent translocation failure/unsuccessful and death of individuals	Direct	Construction

4.3.2 Risk rating

4.3.2.1 Likelihood and consequence

Table 12 outlines the likelihood categories used in this risk assessment and provides a description for each. These categories have been adopted in accordance with AS ISO 31000:2018 principles to reflect the probability of an event occurring after control measures are in place.

Table 12: Likelihood categories applied to risk assessment

Qualitative measure of likelihood	How likely is it that this event/issue will occur after control strategies have been put in place
Highly likely	Is expected to occur in most circumstances
Likely	Will probably occur during the life of the Project
Possible	Might occur during the life of the Project
Unlikely	Could occur but considered unlikely or doubtful
Rare	May occur in exceptional circumstances

Table 13 outlines the consequence category used in this risk assessment and provides a description for each. These categories have been adopted in accordance with AS ISO 31000:2018 principles to reflect the consequence of an event after control measures are in place.

Table 13: Consequence categories applied to risk assessment

Qualitative measure of consequences	Description of consequence category
Minor	Minor incident of environmental damage that can be reversed
Moderate	Isolated but substantial instances of environmental damage that could be reversed with intensive efforts
High	Substantial instances of environmental damage that could be reversed with intensive efforts
Major	Major loss of environmental biodiversity values and real danger of continuing
Critical	Severe widespread loss of environmental amenity and irrecoverable environmental damage

4.3.2.2 Risk matrix

Each identified environmental risk has been assigned a likelihood rating (in accordance with Table 12) and a consequence rating (in accordance with Table 13) which is then combined to determine an overall risk rating in accordance with Table 14.

Table 14: Risk matrix

Likelihood	Consequence				
	Minor	**Moderate**	**High**	**Major**	**Critical**
Highly likely	Medium	High	High	Severe	Severe
Likely	Low	Medium	High	High	Severe
Possible	Low	Medium	Medium	High	Severe
Unlikely	Low	Low	Medium	High	High
Rare	Low	Low	Low	Medium	High

4.3.3 Risk assessment

The risk assessment is provided in Table 15:, which identifies and evaluates the potential impacts of the Project on the Subject Orchids and their habitat. Each risk group (Table 11) has been assessed based on the likelihood categories provided in Table 12, consequence categories provided in Table 13, and the subsequent risk level applied as a result of the risk matrix, provided in Table 15:. This assessment has been undertaken to inform the appropriate application of mitigation measures, provided in Section 4, with mitigation measures applied proportionately according to the risk level identified within Table 15:.

Table 15: Risk assessment

Risk group	Likelihood	Consequences	Risk Rating prior to implementation of mitigation measures	Risk Rating after implementation of mitigation measures
Impacts to Subject Orchids and/or their habitat as a result of physical disturbance and/or unauthorised access to the OHEZ. Which may occur as a result of: – Unauthorised entry of vehicles, plant or personnel into the OHEZ. – Entry required into the OHEZ for any HumeLink related activity (refer to Section 5.1). – Entry into the Orchid Habitat to perform maintenance on powerline infrastructure during operation.	Possible	Major	High	Low
Reduced photosynthetic efficiency of Subject Orchids and associated habitat as a result of dust deposition within the OHEZ.	Possible	Moderate	Medium	Low
Changes to local surface water flow leading to altered hydrology, erosion and sedimentation.	Possible	High	Medium	Low
Impact to Subject Orchids or their habitat because of during operational vegetation management	Likely	Major	High	Low
Impact to Subject Orchids or their habitat because of herbicide drift during weed/ vegetation treatment or chemical and fuel spills (including concrete washout).	Possible	Critical	Severe	Medium
Reduced viability of adjacent habitat due to potential soil compaction/ vibration from construction activities in areas adjacent to Subject Orchid Habitat	Unlikely	Minor	Low	Low
Import of exotic flora seeds or material via construction machinery and vehicles.	Likely	Moderate	Medium	Low
Unsuccessful translocation of Subject Orchids incidentally found within the disturbance footprint	Possible	High	Medium	Low

5. Mitigation and performance measures

5.1 Orchid Habitat Exclusion Zones

The Orchid Habitat Exclusion Zone (OHEZ) comprises areas of Subject Orchid Habitat that lie outside the TCZ. The purpose of the OHEZ is to avoid and minimise harm to the Subject Orchids and their habitat during the delivery of the HumeLink Project. The OHEZ applies only to HumeLink personnel. It does not restrict access for landowners or the public via existing public roads.

The OHEZ has been established to define and control HumeLink related activities that may occur within Subject Orchid Habitat. These activities do not involve direct physical disturbance for transmission line infrastructure and may include:

- Installation of temporary fencing to demarcate the OHEZ
- Hand felling of trees within the ECZ or HTZ
- Orchid surveys or monitoring by the Project Ecologist or Orchid Specialist
- Targeted weed control
- Emergency or incident response, where access is required to address urgent safety, infrastructure, or environmental risks.

Any HumeLink related works within the OHEZ are subject to the following conditions:

- A Permit to Enter must be obtained, except in the case of an emergency where serious and immediate risks exist. During construction, the from the HumeLink West Environmental Manager (or delegate) will be the permit issuer. During Operations, the Transgrid Environment Manager will be the permit issuer.
- Disturbance to orchid habitat must be minimised. Access must be by foot only; no vehicles or machinery are permitted unless explicitly authorised for emergency purposes.
- The least-impact access route must be used, minimising trampling or vegetation disturbance.
- The Project Ecologist or Orchid Specialist must supervise all access (except emergency situations) to ensure disturbance is avoided or kept to a minimum.

5.2 Supervision of works

A pre-clearing or pre-works inspection must be conducted by the Project Ecologist within one week prior to the commencement of any construction or operational works within the OMP MZ. The purpose of this inspection is to identify the presence of emergent Subject Orchids. During the general flowering period of the Subject Orchids (mid-November to March), inspections must be repeated at least weekly by the Project Ecologist.

The Project Ecologist must have demonstrated experience in botanical identification. Any Subject Orchids observed within the OMP MZ must be recorded with a GPS, and their identification verified by the Approved Orchid Specialist.

The Project Ecologist must be on-site to supervise all works within the OMP MZ that involve vegetation clearing or maintenance (including weed control), or any activities that disturb topsoil – such as the installation of erosion and sediment controls or topsoil stripping within the Total Clearance Zone (TCZ). This excludes orchid monitoring activities undertaken by the Approved Orchid Specialist as part of the OMP.

All activities involving the translocation of Subject Orchids must be conducted or supervised by the Approved Orchid Specialist (refer to Section 6).

5.3 Vegetation clearing protocols

In areas of the OHEZ where vegetation clearing is approved within the ECZ or HTZ, clearing must be carried out using low-impact methods to avoid disturbance to soils and ground-layer vegetation. The following requirements and permitted methods apply:

- General Restrictions:
  - No machinery or mobile plant is permitted to enter the OHEZ.
  - Clearing methods that cause trampling or tree fall impacts to understorey vegetation are strictly prohibited.
- Permitted Vegetation Clearing Methods:
  - Cut and Crane/Lift Removal: Woody vegetation must be cut and lifted out (not felled to the ground) to protect mid-storey and ground-layer vegetation and prevent disturbance to orchid habitat.
  - Manual (Hand) Clearing: All manual clearing must be undertaken on foot, without the use of machinery. To mitigate trampling impacts by arborists or personnel, works should be preceded by inspections by the Project Ecologist or Orchid Specialist to identify and protect individual orchids.
- Careful Handling of Debris:
  - No limbs or vegetation debris may be dropped during clearing—all debris must be gently lowered to the ground.
  - Any debris not removed by crane must be manually collected and carried out—dragging is not permitted.
  - Mulching or tub grinding of vegetation is not to occur within the OHEZ. Any mulch must be disposed of offsite, or placed outside the OHEZ and away from areas where it could be transported into the OHEZ.
- Root Ball Retention: Root balls must be retained in place to prevent soil disturbance. Where necessary, they should be treated with an approved herbicide to prevent regrowth.
- Fauna Habitat Relocation: Any relocation of habitat materials (e.g. logs, hollows) must occur outside the OHEZ.
- Post-Clearing Requirements: A post-clearing inspection must be conducted by the Project Ecologist or Orchid Specialist to identify any areas of unintended ground disturbance.

5.4 Mitigation Measures

Detailed mitigation measures to address the risks identified in Section 4 are provided in Table 16 for Construction and Table 17 for Operation. Performance indicators and trigger values are detailed for each mitigation measure to assess compliance with the aims and objectives of this OMP. Where trigger values are exceeded, corrective actions will be implemented in accordance with timeframe as specified.

Table 16: Construction Mitigation Measures, Performance Indicators, Trigger Values and Corrective Actions

Action reference	Risk Group	Mitigation Measure	Timing	Responsibility	Performance Indicator	Trigger Value	Corrective Action/ timing	Reporting
C- 1	Impacts to Subject Orchids and/or their habitat as a result of physical disturbance and/or unauthorised access to the OHEZ.	Design and location of the following infrastructure would be sited outside of the OHEZ. Construction access Ancillary facilities (e.g. crib sheds and vehicle parking) Material laydown and stockpile areas Construction benches Brake and winch sites	During the design phase and prior to commencement of construction in the OMP MZ	HumeLink West DP Design Manager	No temporary construction infrastructure is located within the OHEZ	Construction related impacts (infrastructure) are located within the OHEZ.	Redesign to ensure all temporary construction infrastructure is located outside of the OHEZ.	– Design plans
C- 2	Impacts to Subject Orchids and/or their habitat because of physical disturbance and/or unauthorised access to the OHEZ.	A Site Induction will be prepared to provide awareness training to all personnel working within the Orchid Management Zones.	Prior to commencement of construction	HumeLink West DP Environmental Manager	All personnel required to work within OMP MZs are inducted and aware of OMP MZs and associated mitigation measures.	Non-compliance with the requirements of the OMP	Re-induct works crews associated with non-compliance with OMP Disciplinary actions for repeat offenders.	– Training records
C- 3	Impacts to Subject Orchids and/or their habitat because of physical disturbance and/or unauthorised access to the OHEZ.	Preparation of an Environment Work Method Statement for works within the OMP MZs would be prepared and include the requirements of the OMP	Prior to commencement of construction	HumeLink West DP Environmental Manager	Preparation of EWMS Works undertaken in accordance with the EWMS	No EWMS prepared before commencement of works not completed in accordance with the EWMS	Stop works until EWMS are prepared and approved Review content of EWMS Re-induct personnel failing to comply with EWMS.	– EWMS
C- 4	Impacts to Subject Orchids and/or their habitat because of physical disturbance and/or unauthorised access to the OHEZ.	Environmental Control Map (ECM) will be developed which includes the following key constraints as per Figure 1b to 1f of the OMP: OMP Management Zones Orchid Habitat Exclusion Zones No spray zone (for herbicides) within the OHEZ.	Prior to commencement of construction	HumeLink West DP Environmental Manager	ECM are provided as part of site induction and for use by construction personnel OMP MZs, OHEZs and no spray zone is included in the ECM	ECM not prepared or circulated Key constraints are not shown on the ECM	Stop works until ECMs are prepared and approved	– ECMs
C- 5	Impacts to Subject Orchids and/or their habitat because of physical disturbance and/or unauthorised access to the OHEZ.	A permit to enter the OMP MZ and/ or OHEZ would be required, with the permit to be sign-ed off by the Environmental Manager or their delegate.	Prior to entry of the OMP MZ and/ or OHEZ	HumeLink West DP Environmental Manager	Permit to enter prepared for Construction activities in the OMP MZ and/ or OHEZ	Construction activities occurring in the OMP MZ and/ or OHEZ without a current permit.	Stop works in the OMP MZ and/ or OHEZ until permit to enter is issued.	– Permit to Enter
C- 6	Impacts to Subject Orchids and/or their habitat as a result of physical disturbance and/or unauthorised access to the OHEZ.	The OHEZ will be surveyed and pegged by a registered surveyor and clearly delineated with hi-vis flagging, mounted on star pickets and 'Orchid Habitat Exclusion Zone' signage. OHEZ delineation fencing to the maintained and inspected throughout Construction.	Prior to site establishment and commencement of construction.	HumeLink West DP Registered Surveyor	OHEZ surveyed, pegged and fence installed prior to the commencement of any Construction works No unauthorised entry to the OHEZ No construction related activities within the OHEZ	Unauthorised entry to the OHEZ Unauthorised construction related activities within the OHEZ	Stop works until OHEZ is surveyed and delineation fence and signage are installed Re-induct unauthorised personnel entering the OHEZ.	– Survey report – Environmental site inspection reports
C- 7	Import of exotic flora seeds via construction machinery and vehicles.	Hygiene protocol (relevant to weeds) to be implemented to ensure plant, vehicles and equipment are free from weed, seed and soil material. Wash down prior to entry into OMP MZ condition of permit to enter the OMP MZ and/ or OHEZ.	Prior to entry into OMP MZ and/ or OHEZ.	HumeLink West DP Plant Manager or Site Supervisor	All plant entering OMP MZ and/ or OHEZ are clean upon entry.	Plant and equipment entering OMP MZ and/ or OHEZ that have not been cleaned.	– Do not allow entry into the OMP MZ and/ or OHEZ until wash down completed. Remove unclean plant or equipment from the OMP MZ and/ or OHEZ for washdown.	– Permit to enter the OMP MZ and/ or OHEZ Plant pre-start checks
C- 8	Import of exotic flora seeds or material via	Weed management would be undertaken outside of the Subject Orchid species flowering season.	During construction	HumeLink West DP Plant Manager or Site Supervisor	Weed species diversity and cover in proximity to OMP MZs remains comparable to that	>10% increase in weed cover compared to baseline weed monitoring	Implement targeted weed suppression with advice from Orchid Specialist	– Environmental site inspection reports

Action reference	Risk Group	Mitigation Measure	Timing	Responsibility	Performance Indicator	Trigger Value	Corrective Action/ timing	Reporting
	construction machinery and vehicles.				observed during baseline weed monitoring pre-construction.	within one year of construction	including weed treatment timing.	
C- 9	Changes to local surface water flow leading to drying, waterlogging or sedimentation of Subject Orchid Habitat because of altered hydrology, erosion and sedimentation.	Site specific and progressive erosion and sediment (ERSED) control plan (ESCP) to be prepared by a Certified Professional in Erosion and Sediment Control (CPESC). Erosion and sediment controls would be designed to maintain surface hydrology similar to pre-construction conditions and minimise potential for erosion or sediment deposition within the OHEZ.	Plans to be prepared prior to commencement of construction.	HumeLink West DP Environment Manager and CPESC	Site specific ESCP prepared by CPESC.	No ESCP prepared by CPESC. ESCs not implemented in accordance with the approved ESCP.	Stop works on ESCs until ESCP is prepared by CPESC.	– ESCP signed off by CPESC.
C- 10	Changes to local surface water flow leading to drying, waterlogging or sedimentation of Subject Orchid Habitat because of altered hydrology, erosion and sedimentation.	Installation of site-specific erosion and sedimentation controls as per the progressive ESCP. If ERSED controls are installed during flowering periods, the Project Ecologist or Orchid Specialist will supervise installation of controls during initial topsoil disturbance.	ERSED controls to be installed and progressively updated during construction. Inspect controls as part of weekly or post-rainfall inspections during active construction periods	HumeLink West DP Project Ecologist or Orchid Specialist to supervise soil disturbance	ERSED controls are installed and comply with the ESCP. Soil disturbance supervised by Project Ecologist or Orchid Specialist, if required Surface hydrology is maintained similar to pre-construction conditions and erosion and sediment deposition within the OHEZ is avoided or minimised.	No ERSED controls installed prior to ground disturbance in the TCZ in the OMP MZ. Controls are not progressively installed or maintained in accordance with the ESCP Monitoring program indicate impacts to Subject Orchid Habitat including changes to local hydrology	Stop works and ensure ERSED controls are installed as per the ESCP Rectify ESCs in accordance with ESCP prepared by CPESC.	– Environmental site inspection reports
C- 11	Impacts to Subject Orchids and/or their habitat because of physical disturbance and/or unauthorised access to the OHEZ.	Vegetation removal (clearing and grubbing) within the OMP TCZ will be undertaken in accordance with the Project Vegetation Clearing Method and Management Memorandum Rev1 (HumeLink West, 2023). Orchid Specialist to complete inspection prior to vegetation removal in the OMZ MZ. If Subject Orchids are detected, works are only to occur following implementation of the Incidental Finds and Translocation Procedure and consultation with DEECCW.	During construction after establishment of the OHEZ and installation of delineation fence	HumeLink West DP Vegetation Clearing Contractor Environmental Manager and Orchid Specialist	Clearing and grubbing to occur within the OMP TCZ Zone in accordance with the Vegetation Clearing Memo (HumeLink, 2023). Vegetation removal within flowering season is supervised by Orchid Specialist, as required.	– Clearing methods not implemented as per Vegetation Clearing Memo Rev 1 (HumeLink West, 2023). – Vegetation clearing occurs outside of the Total Clearance Zone (within the OHEZ)	– Stop Works. Conduct review of clearing methods. – Re-induct personnel involved in non-compliant the works.	– EWMS for Vegetation Clearing in the OMP MZ – Permit to enter the OMP MZ and/ or OHEZ – Pre-works inspection report by the Project Ecologist or Orchid Specialist
C- 12	Impacts to Subject Orchids and/or their habitat as a result of physical disturbance and/or unauthorised access to the OHEZ.	Vegetation removal (partial clearing) within the OMP ECZ within OHEZ will be undertaken in accordance with Section 5.3 of the OMP.	During construction after establishment of the OHEZ and installation of delineation fence.	HumeLink West DP Vegetation Clearing Contractor Project Ecologist or Orchid Specialist to supervise vegetation removal as required (Section 4.5)	Vegetation clearing methods in accordance with Section 5.3 of the OMP are implemented Clearing supervised by Project Ecologist or Orchid Specialist.	Clearing methods not implemented as per Section 4.5 of the OMP. Harm to known Subject Orchids or orchid habitat within the OHEZ occurs Clearing not supervised by Project Ecologist or Orchid Specialist.	– Stop Works. Conduct review of clearing methods. – Re-induct personnel involved in non-compliant the works.	– EWMS for Vegetation Clearing in the OMP MZ – Permit to enter the OMP MZ and/ or OHEZ – Pre-works inspection report by the Project Ecologist or Orchid Specialist – Post-works inspection report by the Project Ecologist or Orchid Specialist to advice if orchid habitat remediation is required

Action reference	Risk Group	Mitigation Measure	Timing	Responsibility	Performance Indicator	Trigger Value	Corrective Action/ timing	Reporting
C- 13	Impact to Orchids or their habitat as a result of misuse of herbicides or unintentional herbicide drift during weed/ vegetation treatment.	Impact to Orchids or their habitat as a result of misuse of herbicides or unintentional herbicide drift during weed/ vegetation treatment.	Herbicide application should only be completed by suitable qualified contractors (ChemCert). Use of herbicides will not occur during high wind periods. The OHEZ is strictly a no (herbicide) spray zone.	During construction	HumeLink West DP	No impacts to orchids or their habitat from herbicides including spray drift	Stop weed control and review methods of herbicide use	– EWMS for weed control in the OMP MZ – Permit to enter the OMP MZ and/ or OHEZ
C- 14	Reduced viability of adjacent habitat due to the HumeLink Project. Including management of waste, spills, concrete wash and fuels.	All chemicals, fuels or other hazardous substances (including herbicides) will be stored in accordance with the supplier's instructions and relevant legislation, Australian Standards and applicable guidelines. Environmental spill kits containing spill response materials suitable for the work being undertaken will be available with extras available to be carried in vehicles. A spill response procedure will be developed and implemented. All staff will be trained in emergency spill procedures. Spills will be managed in accordance with the Project Emergency Spill Procedure (doc ref placeholder).	During Construction	HumeLink West DP	No fuel or chemical spill occurs within the OHEZs Emergency Spill Procedure is implemented Fuels and chemicals are stored correctly Spill kits are well stocked and easily available for use	A fuel or chemical spill occurs within the OMP MZs Fuels and chemicals are not stored correctly stored Spill kits are not easily available for use or not adequately stocked	Stop works and implement the Project Emergency Spill Procedure	– Environmental site inspection reports
C- 15	Reduced viability of adjacent habitat due to the HumeLink Project. Including management of waste, spills, concrete wash and fuels.	Concrete truck and equipment wash out not to occur within OMP MZs.	During Construction	HumeLink West DP	– Concrete washouts are located outside of OMP MZs – No harm to known orchid individuals or orchid habitat within the OMP MZs	– Concrete washout occurs within OMP MZ – Concrete washout enters the OHEZ	– Stop use of concrete washout and relocate outside of the OMZ. – Stop works implement the Incident Response Procedure	– Environmental site inspection reports
C- 16	Reduced viability of adjacent habitat due to the HumeLink Project. Including management of waste, spills, concrete wash and fuels.	All construction personnel to dispose of all waste into appropriate bins within the OMP MZs	During Construction	HumeLink West DP	Ancillary facilities manage waste appropriately	Ancillary facilities do not have appropriate waste disposal facilities or methods	Ensure ancillary facilities are established to contain appropriate waste disposal facilities and or methods.	– Environmental site inspection reports
C- 17	Reduced photosynthetic efficiency of Subject Orchids and associated habitat as a result of dust deposition within the OHEZ.	Mitigation measures to minimise dust generation and deposition within orchid habitat to be retained (within the OHEZ) will be considered and implemented where practicable and appropriate to manage dust: – use water sprays as required for dust suppression – protect stockpiled materials from wind erosion to minimise dust generation – position stockpiles as far as practicable away from any nearby receptors – cover the loads of potential dust producing materials	During Construction	HumeLink West DP	No known individuals of the Subject Orchids or their habitat is harmed within the OHEZ	– Visible plumes of dust are observed leaving site – Dust deposition gauge monitoring results exceeds background levels	Stop works generating visible dust leaving site	– Environmental site inspection reports

Action reference	Risk Group	Mitigation Measure	Timing	Responsibility	Performance Indicator	Trigger Value	Corrective Action/ timing	Reporting
		– minimise the extent of ground disturbance as far as practicable – stabilise disturbed areas as soon as practicable – plan and schedule vegetation clearance and grubbing activities to minimise areas of open and exposed soil.						
C- 18	Impacts to Subject Orchids and/or their habitat as a result of physical disturbance and/or unauthorised access to the OHEZ.	– Stringing of conductors will be via aerial stringing method (drones) to avoid operators or machinery requiring ground-based entry or ground disturbance in or within the OHEZ. – Laydown areas for aerial stringing would be located outside of the OHEZ. – Cables would not be laid down or dragged though the OHEZ.	During Construction	HumeLink West DP	No entry to the OHEZ is required for cable stringing	Methods for stringing (including incidents) require entry to the OHEZ.	Stop works. Consult with the Orchid Specialist to plan access to minimise impact.	– EWMS for stringing activities in the OMP MZ
C- 19	Reduced viability of adjacent habitat due to potential soil compaction/ vibration from construction activities in areas adjacent to Subject Orchid Habitat	Rehabilitation of temporary disturbance areas within the OMP MZ.	During Construction	HumeLink West DP	Disturbed areas are progressively rehabilitated.	Review of ESCP to identify when temporary disturbance areas can be revegetated. ERSED controls can be removed once stable groundcover has been achieved (refer to B18)	CPESC to review disturbed areas and provide direction on priority areas for rehabilitation.	– ECSP
C- 20	Reduced viability of adjacent habitat due to the HumeLink Project. Including management of waste, spills, concrete wash and fuels	Temporary construction materials, waste and temporary environmental controls will be removed from site prior to demobilisation (e.g. sediment fencing and temporary exclusion fencing).	During Construction and prior to demobilisation	HumeLink West DP	– Temporary construction material have been removed from site prior to demobilisation – The OMP MZs are left in a similar or better condition than previous to construction.	Post site demobilisation inspection results indicate the construction materials remain within the OMP MZs.	– Re-do site inspection and ensure actions are completed as per the Project site demobilisation procedure – Ensure all actions are closed out prior to leaving site	– Environmental site inspection reports

Table 17: Operational Mitigation Measures, Performance Indicators, Trigger Values and Corrective Actions

Action reference	Risk	Mitigation Measure	Timing	Responsibility	Performance Indicator	Trigger Value	Corrective Action/ Timing	Reporting
O- 1	Impact to Orchids or their habitat as a result of misuse of herbicides or unintentional herbicide drift during weed/ vegetation treatment.	Ensure vegetation management and routine maintenance is undertaken in accordance with internal processes and guidance notes which are consistent with protection of Subject Orchid Habitat. As per UMM LP 4, Transgrid's Biosecurity Procedure and Biosecurity Environmental Guidance Note to be implemented during operational phase, and will include development of specific controls if high biosecurity risks are identified. In the event of new infestations of notifiable weeds as a result of construction activities, the relevant control authority will be notified as per Biosecurity Act 2015 (NSW) and Biosecurity Regulation 2017.	During operation	AMT	– Processes and procedures include sufficient mitigation measures and guidance to protect OMP Subject Orchid Habitat – Notification in the event notifiable weed species are detected	Damage to Subject Orchids or their habitat occurs as a result of operational management measures and practices.	– Prior to the commencement of the operation phase, internal processes and procedures would be reviewed by the Orchid Specialist to ensure processes and procedures offer sufficient protections to Orchids and their habitat. – Processes and Procedures would be updated as required to ensure measures are effective	– TG AMT internal processes and procedures and internal reporting
O- 2	Impacts to Subject Orchids and/or their habitat because of physical disturbance and/or unauthorised access to the OHEZ.	A Site Induction will be prepared to provide awareness training to all personnel working within the Orchid Management Zones.	Prior to commencement of operational activities	Transgrid Environmental Manager	– All personnel required to work within OMP MZs are inducted and aware of OMP MZs and associated mitigation measures.	Non-compliance with the requirements of the OMP	– Re-induct works crews associated with non-compliance with OMP Disciplinary actions for repeat offenders.	– Training records
O- 3	Impacts to Subject Orchids and/or their habitat because of physical disturbance and/or unauthorised access to the OHEZ.	A Standard Works Procedure for works within the OMP MZs would be prepared in accordance with the OMP for operations activities in the OMZ MZ	Prior to commencement of operational activities	Humelink West DP Environmental Manager	– Preparation of EWMS Works undertaken in accordance with the EWMS	No EWMS prepared before commencement of works not completed in accordance with the EWMS	– Stop works until EWMS are prepared and approved Review content of EWMS Re-induct personnel failing to comply with EWMS.	– Standard Works Procedure
O- 4	Impacts to Subject Orchids and/or their habitat because of physical disturbance and/or unauthorised access to the OHEZ.	Spatial data of the Subject Orchid habitat and OHEZ will be added to Transgrid's spatial data system TSS. TSS will link the OMP and its requirements to any works proposed in the OMP MZ.	Prior to commencement of operation	Transgrid Environmental Manager	– TSS contains relevant spatial data and links to the OMP.	Failure of the TSS to notify Asset Management teams to the requirements of the OMP.	– Stop works until TSS include relevant spatial data.	– TSS
O- 5	Impacts to Subject Orchids and/or their habitat because of physical disturbance and/or unauthorised access to the OHEZ.	A permit to enter the OMP MZ and/ or OHEZ would be required, with the permit to be sign-ed off by the Environmental Manager or their delegate.	Prior to entry of the OMP MZ and/ or OHEZ	Transgrid Environmental Manager Environmental Manager	– Permit to enter prepared for Construction triggered by TSS	Construction activities occurring in the OMP MZ and/ or OHEZ without a current permit.	– Stop works in the OMP MZ and/ or OHEZ until permit to enter is issued.	– Permit to Enter
O- 6	Import of exotic flora seeds via construction machinery and vehicles.	Hygiene protocol (relevant to weeds) to be implemented to ensure plant, vehicles and equipment are free from weed, seed and soil material. Wash down prior to entry into OMP MZ condition of permit to enter the OMP MZ and/ or OHEZ.	Prior to entry into OMP MZ and/ or OHEZ.	Transgrid Assessment Management	– All plant entering OMP MZ and/ or OHEZ are clean upon entry.	Plant and equipment entering OMP MZ and/ or OHEZ that have not been cleaned.	– Do not allow entry into the OMP MZ and/ or OHEZ until wash down completed. Remove unclean plant or equipment from the OMP MZ and/ or OHEZ for washdown.	– Permit to enter the OMP MZ and/ or OHEZ Plant pre-start checks

Action reference	Risk	Mitigation Measure	Timing	Responsibility	Performance Indicator	Trigger Value	Corrective Action/ Timing	Reporting
O- 7	Impacts to Subject Orchids and/or their habitat as a result of physical disturbance and/or unauthorised access to the OHEZ.	Vegetation maintenance in the ECZ within OHEZ will be undertaken in accordance with Section 5.3 of the OMP.	During Operations	Transgrid Assessment Management	– Vegetation clearing methods in accordance with Section 5.3 of the OMP are implemented Clearing supervised by Project Ecologist or Orchid Specialist.	Clearing methods not implemented as per Section 5.3of the OMP. Harm to known Subject Orchids or orchid habitat within the OHEZ occurs Clearing not supervised by Project Ecologist or Orchid Specialist.	– Stop Works. Conduct review of clearing methods. – Re-induct personnel involved in non-compliant the works. –	Pre-works inspection report by the Project Ecologist or Orchid Specialist – –
O- 8	Impact to Orchids or their habitat as a result of misuse of herbicides or unintentional herbicide drift during weed/ vegetation treatment.	Herbicide application should only be completed by suitable qualified contractors (ChemCert). Use of herbicides will not occur during high wind periods. The OHEZ is strictly a no (herbicide) spray zone.	During Operations	Transgrid Assessment Management	– No impacts to orchids or their habitat from herbicides including spray drift	Stop weed control and review methods of herbicide use	– EWMS for weed control in the OMP MZ – Permit to enter the OMP MZ and/ or OHEZ	– Permit to enter the OMP MZ and/ or OHEZ Plant pre-start checks

6. Incidental Finds Procedure and Translocation

This orchid translocation advice has been prepared to guide decision making and processes in the unlikely event that individual/s of the subject species are detected within the ECZ, TCZ or HTZ, and that these individuals cannot be avoided as part of approved construction works.

This translocation procedure has been prepared in accordance with the 'Guidelines for the Translocation of Threatened Plants in Australia' ('the translocation guidelines'; Commander et al. 2018) and the NSW 'Translocation Operational Policy' (DPIE 2019). This plan has been prepared in consultation with representatives of the NSW Government's SoS program (Anna Murphy, Senior Threatened Species Officer, NSW DCCEEW – 18 June 2025) and Mt Annan Botanic Gardens (Zoe-Joy Newby, Scientific Officer, RGB Sydney – 16 July 2025, 4 & 5 September 2025).

The plan adopts the definition of 'translocation' as included in the third version of the 'Guidelines for the Translocation of Threatened Plants in Australia' (Commander et al. 2018), which is:

"*… the deliberate transfer of plants or regenerative plant material from an ex situ collection or natural population to a new location, usually in the wild. It includes reintroduction, introduction, reinforcement, assisted migration and assisted colonization. Translocations involve a diverse range of methods including: seed collection and propagation; propagation via cuttings or tissue culture; planting of containerised plants; direct seeding; transplantation of whole plants from one site to another; and the transfer of soil, leaf litter, brush or pollen*."

6.1 Aims

The aim of this translocation plan is to support the conservation of the Subject Orchids and more specifically to conserve any individuals, including the genetic diversity associated with those individuals within the locality of the Project, or utilise the plant material for further research where retention within the Project Area is not possible. This aim would be achieved by either:

- translocating individuals within the approved disturbance footprint into adjacent habitat within suitable habitat within the immediate vicinity, outside the disturbance footprint so that the individual(s) survive and continue flowering and contributing to the long-term survival of the population; or
- by donating individuals to an ex-situ collection where they can be managed as part of existing or newly developed conservation strategies.

6.2 Justification for plant translocations

In accordance with the best practice guidelines (Commander et al. 2018), translocations should only occur after all possible measures have been taken to avoid and minimise impacts. The Project Footprint has been located to avoid any impacts to known occurrences of the subject species at the time of assessment and Project approval. Translocations are only proposed should any previously unknown individuals of the subject species be located within the approved disturbance footprint.

The NSW 'Translocation Operational Policy' (DPIE 2019) states that translocations should only be applied where the benefits of the translocation are likely to outweigh the risks to the target species or population, and to the source and recipient ecosystem.

The NSW 'Translocation Operational Policy' (DPIE 2019) also suggests that mitigation translocations need to consider whether it is the most appropriate use of resources, given the historically low likelihood of success. Threatened plant translocations are relatively high-risk, high-cost and challenging management actions (Silcock et al. 2019.). Nonetheless, the number of plant translocations occurring continues to grow (Commander et al. 2018) and translocations are becoming a standard mitigation approach where approved development Projects have impacts on populations of rare and threatened species and are increasingly considered as part of a mitigation hierarchy (Silcock et al. 2019). In their review of translocations across Australia, Silcock et al. (2019) found that translocation performance is highly variable between plant species, lifeforms, habitats, propagule types and types of translocations. When considering only orchid translocations, Reiter et al. (2016) reports that for translocations which were monitored for a minimum of 1 year, the average survival rate (as plants still alive and actively growing) was 66 %, flowering was recorded in 52.7% of translocations, and pollination and fruit set was recorded at 25% of the translocations. Recruitment, which is critical to the objective of establishing or maintaining self-sustaining populations, was recorded in only 2.8% of the translocations (Reiter et al. 2016). This supports the conclusion that the outcomes of translocations, including orchids, are high-risk and challenging. However, Bell (2020) demonstrates that well-planned Projects within an adaptive framework can achieve success as evidenced by established translocated orchids which are flowering and fruiting at rates similar to benchmark populations. Bell (2020) concludes that translocation of terrestrial orchids is feasible, although environmental conditions and threats need to be acknowledged and managed in any assessments of success.

In summary, the implementation of this translocation plan for incidental finds after efforts to avoid and minimise impacts is considered justified based upon the following:

- The conservation status of the subject species and approval requirements to avoid harm to the subject species;
- The fate of any individuals of the subject species discovered within the approved TCZ following commencement of works;
- The chance of success, noting that orchid translocations are high risk actions.

6.3 Approval/authority

Under the EPBC Act a person must not take an action that is likely to have a significant impact on a critically endangered species. Approval of the HumeLink Project and more specifically approval of the OMP, as required under conditions 3 to 5 of the EPBC 2021/9121 approval decisions, would constitute an approval for translocation in accordance with this plan.

6.4 Incidental Finds Procedure and Translocation Strategy

This translocation strategy has been prepared based on a review of the known ecology of the species (including inferences from related species where knowledge gaps occur), scientific reviews, existing conservation strategies and actions for the subject species, best practice guidelines, and the Project approvals to maximise the chance of successfully achieving the aim of the translocation. The translocation plan would involve salvage translocations for any individuals located within the approved TCZ or ECZ, where additional avoidance measures are not feasible. All aspects of the translocation plan should be completed by an approved Orchid Specialist. The translocation procedure is outlined in Plate 10. The requirement at each numbered step is provided in Table 18n.

Plate 10: Translocation Procedure flowchart

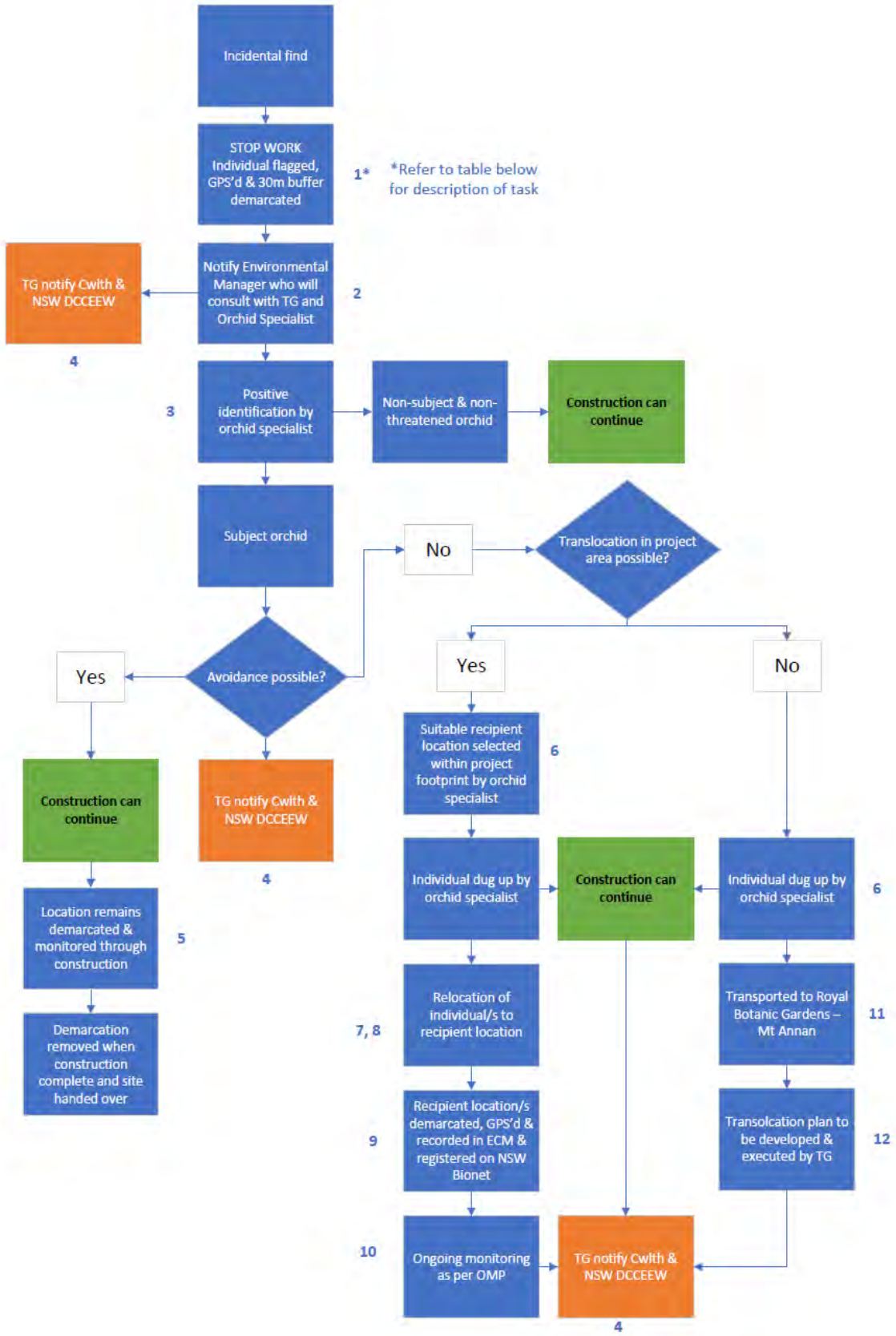

Table 18: Translocation Procedure

Step number (Plate 10)	Task requirements	Stakeholder	Timeframe
1	Stop-work immediately invoked for the area of the detected individuals and a minimum 30m buffer exclusion zone. Identified individuals are to be demarcated with metal pins/stakes to accurately demarcate the specific location of the individuals and suitably fenced to avoid these individuals being impacted by any movement of persons or machinery.	HLW	Immediately upon detection of Subject Orchid
2	Notify the Project Environmental Manager who will consult with the Orchid Specialist.	HLW/ Transgrid	Within 1 day of detection of Subject Orchid
3	Project Environmental Manager or delegate takes photos/video of individual and provides to the Orchid Specialist. Site visit by orchid specialist may be required to positively identify the orchid Orchid specialist engaged to salvage individual if unable to be avoided. Orchid specialists – Brian Towle brian.towle@ecoplanning.com.au & Rob Humphries robert.humphries@ecoplanning.com.au	Transgrid/ Orchid Specialist	Within 2 days of detection of Subject Orchid Site visit, where required, within 4 days of detection (or within negotiated timeframe between Transgrid and the Project Environmental Manager)
4	Project Environmental Manager or delegate notify Commonwealth & NSW DCCEEW of incidental find and what the next steps in the process are. Commonwealth DCCEEW: – Sidney Dwyer – sidney.dwyer@dcceew.gov.au – Commonwealth Compliance – environment.compliance@dcceew.gov.au NSW DCCEEW: – ROG Southeast – rog.southeast@environment.nsw.gov.au – Angie Jenkins - angela.jenkins@environment.nsw.gov.au – Mike Saxon – michael.saxon@environment.nsw.gov.au	Transgrid	Within 1 day of notification from Project Environmental Manager & confirmation of presence of Subject Orchid by Orchid Specialist

5	Location remains demarcated – location of no-go zone to be included on ECM's – Individuals detected & avoided to be incorporated into quantitative population monitoring as per Section 7.4.1. This would involve recording the reproductive status (e.g. number of unopened buds, open flowers and capsules) during the current and any future flowering periods during the construction period, and the following two flowering seasons.	HLW Orchid Specialist	Within 1 day of notification of Commonwealth & NSW DCCEEW Monitoring to occur during next scheduled monitoring event
6	Identified individuals are to be regularly (weekly) inspected whilst they continue to have open flowers and developing fruits (if construction program can accommodate this). Where pollination and capsule development occurs all seed from these individuals should be collected just prior to capsule dehiscence. Given the typically small distances across which seed of terrestrial orchids travel, allowing seed to disperse into the approved disturbance footprint is not desired. In consultation with the SeedBank at the NSW National Herbarium or an alternative herbarium, collected seed should be either donated to Seedbank, donated to existing ex-situ conservation programs, or immediately broadcast into suitable microhabitats for the subject species within the OMP CEZ. Should construction not be able to pause, the individual will be dug up upon positive identification. Salvage of tubers will be carried out manually using a spade, shovel or bulb planter once plants enter their dormancy phase. The plants will be removed in a block of soil without breaking the soil, if possible, which requires careful excavation. Where break-up of the soil block occurs, water may be applied to soils, or extraction of a larger block will be attempted to minimise soil breakup around the tubers. *Prasophyllum spp.* should be put into 250 mm round pots. *Pterostylis oreophila* may require a tray or larger block if clusters are encountered.	Orchid specialist	Within 2 weeks of individuals entering the dormancy phase of their annual life cycle Or Immediately following positive identification
7	Recipient site selection (within project area) would involve selecting the closest possible location for translocation of the subject species, ensuring that the selected recipient site is located: – Within the subject land for the OMP.	Orchid specialist	Prior to excavation

	– Inside the horse exclusion fence which has been constructed at McPhersons Plain (where the donor site is within OMP MZ1). – Within a microhabitat which broadly matches the donor site. – Greater than 5 m from any previous records of any of the subject species (to avoid impacts to existing individuals of the subject species).		
8	Recipient site preparation (within project area) would occur prior to excavation. Recipient site preparation would involve excavating a hole for each plant with an auger (or similar) to a depth and width slightly larger than the soil core to be excavated. The recipient hole should be watered until the soil is saturated prior to translocation. Excavated soil core/blocks are to be transported in pots or trays to the recipient site immediately upon being dug up. Works should be timed so there is as little time from digging up to replanting as possible. Soil core/blocks are then to be placed into the pre-prepared hole so that the soil level of the excavated core is slightly (~ 20 mm) below ground level creating a dish. Cover soil core by 20 mm. Water the soil core/block until soil is saturated. Where soil levels subside following watering, top up with soil from the excavated hole until water again until there is no subsidence and final ground levels match pre-translocation levels.	Orchid specialist	Within 2 weeks of individuals entering the dormancy phase of their annual life cycle Or Immediately following confirmation of translocation within project area
9	– Recipient site/s are to be demarcated with stakes/flags – Location is to be recorded with a GPS – Location to be added to the project ECM – Record uploaded to the NSW Bionet database	Orchid Specialist/ HLW	Within 24 hrs of excavation of tubers
10	Individuals translocated would be incorporated into quantitative population monitoring as per Section 7.4.1. This would involve recording the reproductive status (e.g. number of unopened buds, open flowers and capsules) during the current and any future flowering periods during the construction period, and the following two flowering seasons. Monitoring of translocated plants would also involve quarterly inspections (autumn, winter, spring) outside the flowering period for the length of the construction period and the following two years (including a minimum three flowering seasons). See details in Section 6.7.	Orchid Specialist	Quantitative Monitoring to occur during next scheduled monitoring event. Quarterly inspections to commence within 3 months of tuber excavation.
11	Where plants are proposed to be held in an ex-situ collection, , following excavation, soil blocks will be	Orchid specialist	Within 72 hrs of removal from site

	placed into 250 mm round pots (*Prasophyllum spp.*) or trays (clusters of *Pterostylis oreophila*) and soils from the excavated hole will be used to fill any gaps or air pockets around the margins of the sample. Collected tubers would be transported by the Orchid Specialist or their delegate to the Royal Botanic Gardens, Mt Annan. Samples would be transported ASAP by private vehicle, or courier if necessary, but would not be posted due to risk of disturbance. The Royal Botanic Gardens, Mt Annan is open Monday – Friday 8 am – 5 pm. Notification to ex-situ transportation and receival to be provided to NSW and Commonwealth DCCEEW. Contact - Zoe-joy.newby@botanicgardens.nsw.gov.au		
12	Commence development of translocation plan & exit strategy and consult with with Australian Botanic Gardens, NSW and Commonwealth DCCEEW.	Transgrid	Within 3 months of removal from site

6.5 Risk assessment

As detailed above, translocations should only occur where the benefits of the translocation outweigh the risks to the target species or population, and to the recipient ecosystem. The following two risks have been identified for the translocation Project:

- Translocation failure/unsuccessful and death of individuals (e.g. death of individual plants detected within the approved disturbance footprint which cannot be avoided).
- Impacts to biodiversity values at recipient sites.

Based upon outcomes for documented translocations (Reiter et al. 2016; Commander et al. 2018) there is at least a moderate likelihood that the translocation could be unsuccessful at various stages due to death of some or all salvaged plants. However, Bell (2020) identifies that a well-planned Project with an adaptive framework can increase chances of success.

The risk of unintended negative impacts to biodiversity values at recipient sites during plantings (where these occur) is considered to be low. Recipient site selection would avoid areas which support known individuals of any of the subject species, thereby avoiding potential impacts to individuals of the subject species. Where plantings occur there is a risk that these could introduce weed propagules into the recipient site. However, as recipient sites would be selected as close as possible to the source plants, any weed propagules are likely to represent species already present at the recipient site. To further minimise the risks of negative impacts such as weed and disease spread, standard hygiene protocols are to be implemented, and ongoing maintenance works, including weed removal would be required within recipient sites, where this falls under Transgrid Asset Management requirements.

6.6 Recipient site selection

Recipient site selection is discussed at Step 7 in Table 18.

6.7 Monitoring and maintenance

Where translocation occurs immediately upon an incidental detection, monitoring and maintenance is required in addition to the requirements during the flowering period as part of the orchid monitoring program (Section 7.4, Table 20). All translocated plants must be permanently tagged to enable monitoring across multiple seasons. Monitoring of translocated plants is to take place quarterly (autumn, winter and spring) outside the flowering period for the length of the construction period and the following two years (to cover two flowering seasons). Quarterly monitoring and maintenance outside the flowering period is to involve the following:

- Photo point monitoring of the recipient site to document any changes in microhabitats following translocation (photos are to be taken from a consistent position and compass bearing each quarter).
- Reviewing rainfall records for the region and watering plants to saturation where rainfall across the preceding quarter is less than 50 % of the long-term average for the region (DPIE [2020] documents reduced emergence and flowering of the subject species during 'dry season').
- Hand removal of any exotic flora species growing within one metre of the recipient site. At the discretion of the Orchid Specialist, some exotic individuals may be retained or may only be pruned, where their removal has the potential to disturb the translocated orchid(s).
- Observation of any other threats to the ongoing viability of orchids – e.g. sediment and erosion, feral animal disturbance.

6.8 Salvaged orchids – ex-situ collections

Ideally selection of a suitable recipient site would be undertaken during the stop work period and excavation and relocation of salvaged orchids would occur after recipient site selection occurs. However, delays to selecting a recipient site may be caused by a number of factors including weather, site suitability and landowner negotiations. The option of housing salvaged collections ex-situ within a suitably qualified facility would allow for additional time to consider recipient site selection and may also allow additional investigations of salvaged individuals (e.g. genetic sampling). Any salvaged orchids must be transported to the Australian Botanic Gardens as soon as possible after removal from site.

The Australian Botanic Gardens Mt Annan have agreed to receive any salvaged orchids and would house these within their collection in Sydney (see correspondence provided in Appendix 2). Where salvaged individual/s are housed at the Australian Botanic Gardens Mt Annan, maintenance of these plants would be controlled by staff at the Australian Botanic Gardens using their current best practice methods in relation to monitoring plant health and quarantine/biosecurity measures. This includes pathogen testing and a period of quarantine upon receipt of the salvaged plants. An agreement would be signed between Transgrid/Delivery Partners and the Botanic Gardens, including funding arrangements.

An adaptive approach will then be taken to the most suitable host facility and salvaged individuals may be relocated from the Australian Botanic Gardens Mt Annan to the Blue Mountains Botanic Garden Mount Tomah (or an alternative facility such as the Australian National Botanic Gardens in Canberra), if there are signs of stress or anticipated climatic challenges associated with plants emerging during summer months at lower altitudes. This decision would be made based upon observations during surveillance of the plants by Botanic Gardens staff or in consultation with the orchid specialist.

The terms and conditions of the housing and monitoring of any specimens provided to the Australian Botanic Gardens must be negotiated prior to receiving any specimens.

6.9 Translocation Plan

Where plants are housed at Australian Botanic Gardens Mt Annan, or any other facility, a translocation plan will be developed which will include an exit strategy. This plan will follow relevant guidelines and include agency consultation to select the most appropriate recipient sites and an exit strategy from the Gardens collection. Development of the translocation plan would commence within 3 months of any orchids being salvaged from the development site.

7. Compliance management

7.1 Roles and responsibilities

The roles and responsibilities of personnel involved in implementation of this plan have been defined in Table 19.

Table 19: Roles and responsibilities

Stakeholder	Planning prior to commencement of construction	Construction	Operation
Transgrid (asset owner)	– Oversight of OMP development and approval – Ensure compliance with EPBC Approval 2021/9121 – Support regulatory submissions	– Liaise with regulators, as required – Maintain oversight of OMP compliance – Facilitate Orchid Monitoring Program to be undertaken by the Orchid Specialist	– Oversight of long-term OMP obligations – Provision of data to inform internal environmental risk databases – Facilitate update of internal processes and guidance notes with relevant OMP requirements for protection of Subject Orchid Habitat – Facilitate Orchid Monitoring Program to be undertaken by the Orchid Specialist
HumeLink West Delivery Partner	– Coordinate OMP implementation planning and incorporation into relevant sub-plans – Ensure OMP training requirements are incorporated into inductions – Implement and ensure compliance with all mitigation measures assigned to HLW	– Establish OHEZ protections and site controls – Implement and ensure compliance with all mitigation measures assigned to HLW – Supervise vegetation clearing and ensure consistency with mitigation measures, clearing protocols – Maintain records and incident reporting	– Not applicable
Transgrid AMT	– Not applicable	– Not applicable	– Oversight of long-term OMP obligations relevant to AMT – Ensure vegetation management and routine maintenance is undertaken in accordance with internal processes and guidance notes
Orchid Specialist	– Provide advice to inform development of the OMP.	– Undertake the monitoring and reporting in accordance with the OMP – Monitor trigger values identified within the mitigation measures and advise on implementation of corrective actions in accordance with the measures – Lead OMP incidental finds procedure response, as required	– Undertake the monitoring and reporting in accordance with the OMP – Monitor trigger values identified within the mitigation measures and advise on implementation of corrective actions in accordance with the measures – Lead OMP incidental finds procedure response, as required
Project Ecologist	– Assist with the preparation of Construction Planning documents to comply with the OMP. – Participate in the implementation of the	– Supervise the implementation of the Construction stage mitigation measures in the OMP including but not limited to pre-clearing surveys in the OMP MZs and supervision of works nominated in Section 5.2.	–

7.2 Environmental training

To ensure effective implementation of this OMP, all personnel working within the OMP MZs must complete the OMP training specified in Table 20. This includes all Project staff, contractors, subcontractors, and site visitors during construction and operation.

A register of all completed training must be maintained in for the duration of the Project. Training records will include the following information (at a minimum):

- Name and role of the individual receiving the training
- Date the training was delivered
- Name and qualification of the trainer
- Type of training received
- Summary of content delivered

Table 20: OMP training activities

Environmental training activity	OMP information to be included	Relevant section of the OMP
Site-specific Environmental Induction	Key orchid species and habitat present within the OMP MZ	Section 3.4
	Objectives and requirements of the OMP	Section 1.3
	Roles and responsibilities in implementing environmental safeguards	Section 7.1 and Section 5
	Location and purpose of OHEZ and Subject Orchid Species Habitat	Section 5.1 and Figure 2 to Figure 6
	Procedures for environmental incidents and incident response	Section 9
	Reporting requirements	Section 7.7
	Consequences of non-compliance, including potential legal and Project impacts	Section 5.4
	Updated risks, including any orchids found (Incidental Finds)	Section 4.3 and Section 6
Toolbox talks	Key orchid species and habitat present within the OMP MZ	Section 3.4
	Location and purpose of OHEZs and sensitive habitat	Section 5.1 and Figure 2 to Figure 6 and Section 4.1.
	Updated risks, including any orchids found	Section 4.3 and Section 6
	Vegetation clearing protocols within the OMP Partial Clearance Zone. Other specific work activities as outlined in the relevant Environmental Work Method Statement	Section 5.3 Mitigation Measure C-3 within Table 16.

7.3 Environmental Inspections

Further to monitoring requirements detailed within the Monitoring Program (Section 7.4), environmental inspections are required as part of general project compliance and to monitor compliance with the OMP. Environmental inspections required include the following inspections with relevant details of their purpose, timing and reporting requirements provided in Table 16 and Table 17:

- OHEZ fence installation and fence maintenance inspections
- Plant pre-start inspections as part of hygiene protocol (weeds)
- Pre-works inspection by prior to clearing in TCZ, should works occur during the flowing season
- Pre-clearing inspection within the OMP ECZ within OHEZ by Project Ecologist or Orchid specialist
- Post-clearing inspection within the OMP ECZ within OHEZ, to advise if orchid habitat remediation is required
- Project environmental compliance inspections to ensure:
  - Erosion and sediment control are installed and regularly maintained
  - Correct storage of chemicals and fuels,
  - Appropriate management of concrete wash out and waste management
  - Dust levels are monitored and dust suppression measures are implemented
  - Rehabilitation of temporary disturbance areas within OMP MZs
  - Temporary construction materials and waste (including environmental controls) are removed prior to site demobilisation
- Post-emergency works inspection will be completed post-event to record impacts to the Subject Orchids and their habitat

7.4 Monitoring Program

This section outlines the environmental monitoring program developed to assess the effectiveness of mitigation measures (Section 5.4). It describes the methodology, frequency, and duration of monitoring activities, along with defined trigger values that will initiate corrective actions where required. Provisions for follow-up monitoring and record-keeping are also included to ensure compliance and support adaptive management (Section 7.2). Monitoring requirements are presented in Table 22 and detailed in the following sections.

7.4.1 Quantitative population monitoring

The requirements for quantitative population monitoring are detailed within Table 22. The following sections provide additional detail on the aims and justification for the methods outlined within Table 22.

Quantitative population monitoring aims to collect numerical data on key stages of the Subject Orchids annual life-cycle including:

- the number of individuals emerging within the OHEZ,
- the number of flowers of each species, and
- the proportion of those flowers which develop into mature capsules (indicating that pollination occurred).
- *Performance measure*: Reproductive success (the proportion of flowers which produce capsules and release seeds) of each of the subject species should not be 20 % lower than that within reference populations within the McPhersons Plains in the same season.

Reproductive success is considered the best performance measure to demonstrate that the Project works have not caused harm to the subject species, and that individuals within the Project Footprint continue to complete their annual life-cycle culminating in seed release. As the emergence of inflorescences of the subject species from underground tubers is variable between seasons, and between sub-populations (DPIE 2021), comparing the number of flowering individuals of each subject species in each season is not considered to be an informative performance measure (although this data would be collected as part of calculations of reproductive success).

Comparing reproductive success to a reference population, a specific area outside the OMP Subject Land in which a sub-set of the population of each of the Subject Orchid species occurs, is required to determine whether changes in reproductive success and emergence are the result of project related impacts or environmental variables. Reference populations should aim to sample a similar, or greater, number of individuals of each Subject Orchid species than are estimated to be present within the OHEZ. The exact location of reference populations are to be determined following confirmation of land access arrangements. For *Pterostylis oreophila*, which was not identified within the OMP Subject Land during targeted surveys for the BDAR or BAVR (see section 0), a reference population would only be required in the event that monitoring records the presence of the species with the OMP Subject Land.

It is noted that calculating reproductive success of the Subject Orchids that do not emerge within the subject land in an individual season would not be possible. However, monitoring for habitat disturbance (Section 7.4.2) will inform if the Project is likely to have contributed to non-emergence or non-flowering.

To capture the necessary data to calculate reproductive success, habitat within the subject land would need to be surveyed via parallel transects (as per the baseline surveys):

- during the peak flowering period and
- during periods of capsule maturation/seed release.
- During each survey, individuals of the subject species would be located, marked, and their reproductive status recorded (e.g. number of unopened buds, open flowers and capsules). This survey technique would also need to be conducted on a reference population. At the completion of the flowering period of each species, the proportion of flowers which produced seeds would be calculated and compared between the OHEZ populations and the reference populations.
- Monitoring would be undertaken annually during construction, then for a period of two flowering seasons following completion of construction.

7.4.2 Habitat condition monitoring

Habitat condition monitoring aims to identify any changes in orchid habitat within the OHEZ during the construction period, and the following two flowering seasons, and to collect additional data which may assist in explaining any trends detected in the quantitative population monitoring data. It is understood that a Weed Management Plan (WMP) including a weed monitoring program to monitor weeds as per commitments within the BMP. The habitat condition monitoring for the OMP detailed herein should include a review of results of monitoring for the WMP.

In addition to the monitoring associated with the WMP, two methods are recommended for monitoring of habitat condition, a plot-based assessment of habitat condition/structure (Which will include evaluation of weed cover) and general habitat inspections/traverses. It is noted that the plot-based assessment of habitat condition may be combined with the requirements of the WMP to avoid duplication. However, should the requirements of the WMP not sufficiently cover the OMP MZs Plot-based and general habitat inspections will record the presence and cover of weeds as part of habitat condition monitoring.

7.4.2.1 Plot based habitat condition monitoring

Vegetation condition should be recorded and monitored within fixed plots (5 x 5 m) across the OMP MZs and suitable reference sites (specific areas outside of the OMP Subject Land in which a sub-set of the population of each of the Subject Orchid species occurs). Assessment of habitat condition within these plots should include a survey at the commencement of construction (baseline) as well annual monitoring during the flowering season (although does not need to coincide with specific flowering of any one of the subject species). Plots should be replicated across the different habitat types within the OMP MZs (e.g. Pterostylis oreophila habitat within OMP MZs 2 to 5 (Figure 7 to Figure 11) and habitat for all subject species within OMP MZ 1 (Figure 7). Additional replication within MZ1 would be needed to capture the areas within and outside the existing horse-proof fencing to detect existing grazing impacts that may occur in the OHEZ but are not Project related. A suggested sampling design is shown in Table 1Table 21. Within each of the monitoring plots the following metrics would be recorded:

- Estimated native foliage cover for vegetation structural layers present within monitoring plot (e.g. Canopy, mid-storey, understorey).
- Estimated exotic foliage cover for vegetation structural layers present within monitoring plot (e.g. Canopy, mid-storey, understorey).
- Three most dominant species, based upon the greater foliage cover, within each structural layer.
- Cover of the ground layer, including the percentage cover of the following features:
  - Litter cover
  - Cryptogram cover
  - Area of bare ground
  - Area of native understorey species
  - Area of exotic understorey species
  - Area of rocks, logs or other types of ground cover

Performance Measure: associated with this monitoring would be no more than 10 % increase in the average area of bare ground or weed cover within each OMP MZ, except where equivalent changes are observed at reference sites.

Table 21: Sampling design for plot based monitoring of habitat condition

OMP MZ	Target Orchid habitat	Number of monitoring plots (within OHEZ)	Number of reference plots (outside subject land for the OMP)
1	All subject species	4 (2 within horse proof fence 2 outside horse-proof fence)	4 (2 within horse proof fence 2 outside horse-proof fence)
2 - 5	*Pterostylis oreophila*	4 (1 plot per MZ)	4*

* Due to potentially large distance between OMP Subject Land and nearest populations of *Pterostylis oreophila,* reference habitat may be used in place of a reference population. Reference habitat is suitable habitat outside the Subject Land in which the species has not been detected and does not show signs of disturbance that would prevent orchid presence/flowering/seed set).

7.4.2.2 Habitat condition inspections

In addition to the plot-based habitat condition monitoring, during the construction period habitat monitoring should include biannual (twice per year, one coinciding with the quantitative orchid population monitoring) traverses of the full extent of each OMP MZ to record the presence of any evidence of disturbances. Specifically, the presence or absence of the following disturbances should be noted:

- Any areas of vegetation dieback within the OHEZ
- Any evidence of vegetation clearing/loss within the OHEZ, excluding areas within approved partial clearance zones (ECZ and HTZ)
- Any evidence of erosion or sedimentation within the OHEZ
- Any areas of recently exposed of bare ground which appear related to any of the construction activities associated with the Project.
- Any evidence of dust deposits on ground-layer vegetation within the OMP management zone
- Any other evidence of disturbance which has potential to impact the quality and extent of habitat for orchids within the OHEZ.

Performance Measure: No evidence of any disturbance to habitat condition within the OMP MZ, excluding the approved disturbance zones, which is attributed directly or indirectly to construction activities.

7.4.2.3 Post-emergency works inspection / audit of Orchid Habitat (Operation Phase)

Understanding there are exemptions for emergency works in response to extreme weather events or fire, an inspection and audit post-event will be completed (once safe to enter) to record impacts to the Subject Orchids and their habitat.

- A report including the results of the inspection / audit and recommendations for habitat remediation or management of Orchid species will be provided to the Commonwealth DCCEEW.
- Habitat remediation recommendations would be implemented as per the audit report in consultation with Commonwealth, the Orchid Specialist and the relevant landholder.

7.4.3 Monitoring timing and frequency

The timing and frequency of quantitative population monitoring has been determined based upon the respective flowering periods of the subject species. Specifically, quantitative population monitoring would involve targeted surveys for each species across the summer flowering periods, with indicative surveys timings outlined in Table 22. Annual monitoring would be required in each summer flowering season for the entire construction period and for an additional two flowering seasons post construction.

A construction commencement survey (baseline) of these plots should also be undertaken. Assessment of the condition of orchid habitat within the plot-based habitat condition monitoring should then be undertaken annually during the summer flowering season (although does not need to coincide with specific flowering of any one of the subject species).

Habitat condition inspections should be conducted bi-annually during the construction period incorporating one survey during the summer flowering period (although survey timing does not need to coincide with the specific flowering of any one of the subject species) and an additional survey in early spring September. The aim of the September surveys is to identify disturbances prior to the commencement of the flowering period, during which some corrective actions may be implemented.

Table 22: Monitoring requirements

Monitoring type	Subject Orchid species	Locations (MZs)	Method	Indicative timing & frequency	Duration	Personnel
Quantitative population monitoring Refer to Section 7.4.1	*Prasophyllum bagoense*	MZ1	– Parallel traverses across Subject land. – Reproductive status of all individuals of the Subject Orchids within Subject Land and reference populations* would be recorded & location marked.	December (flowering) January (Fruiting)	During construction, then for a period of two flowering seasons following completion of construction	Orchid Specialist
	Prasophyllum innubum	MZ1		Jan/Feb (Flowering) Mar/Apr (Fruiting)		
	Prasophyllum keltonii	MZ1		December (flowering) January (Fruiting)		
	Pterostylis oreophila	All MZs		December (flowering) January (Fruiting)		
Habitat condition monitoring – Plot based Refer to Section 7.4.2.1	All species	All MZs	12 fixed plots (5 x 5 m) across the OMP MZs and suitable reference sites*	At commencement of construction (baseline) and annually during summer		Orchid Specialist
Habitat condition monitoring – inspections Refer to Section 7.4.2.2	All species		Traverses or meanders across the full extent of each OMP MZ to record presence/absence of disturbances.	Biannual (twice per year) in early spring and summer	Duration of the construction period	Project Ecologist / Orchid Specialist
Translocation monitoring (where required) Refer to Section 6.7	Any individuals identified as part of unexpected finds procedure, but impacts avoided (e.g. Step 5 in Plate 10 and Table 18.	All MZs	As per quantitative population monitoring.	As per quantitative population monitoring.	During construction, then for a period of two flowering seasons following completion of construction	Orchid Specialist
	Any translocated individuals (e.g. Step 11 in Table 18)	Selected recipient site	As per quantitative population monitoring.	As per quantitative population monitoring		
			– Photo point monitoring of the recipient site – Watering plants to saturation where rainfall across the preceding quarter is less than 50 % of the long-term average for the region. – Hand removal of any exotic flora species growing within one metre of the recipient site. – Observation of any other threats to the ongoing viability of orchids.	Quarterly inspections outside the flowering period (autumn, winter, spring)		
Post-emergency works Refer to Section 7.4.2.3	All species	Any affected MZs	– An inspection and audit post-event will be completed (to record impacts to the Subject Orchids and their habitat. – A report including the results of the inspection / audit and recommendations for habitat remediation or management of Orchid species will be provided to the Commonwealth DCCEEW. – Habitat remediation recommendations would be implemented as per the audit report in consultation with Commonwealth, the Orchid Specialist and the relevant landholder.	Immediately post-works once safe to enter and next flowering period (December)	During operation phase, post-emergency works	Orchid Specialist

* Reference population or reference sites refers to a specific area outside the OMP Subject Land in which a sub-set of the population of each of the Subject Orchid, or its habitat, occurs. Reference populations would need to be established at the commencement of the monitoring program and would be monitoring sites established specifically for the purpose of this monitoring program. The exact location of reference populations are to be determined following confirmation of land access arrangements.

7.5 Corrective measures

Corrective measures would be undertaken where performance measures are exceeded and would be fully justified within a non-compliance report. The corrective measures implemented would be dependent on the specifics of the performance measures exceeded, and may include:

- Remediation of any habitat disturbance, (eg weed control works, re-seeding of the affected area with native species).
- Review of methods of specific operations to reduce threats (e.g. Improved or additional dust/erosion control measures).
- Installation of mesh guards around individuals to reduce physical damage caused by construction activities.

7.6 Adaptive Management

Adaptive management strategies have been developed to address changing site conditions and uncertainties Table 23. Adaptive management cannot be specifically defined as the nature of the incident is not known for example, disturbance to orchid habitat due to unforeseen weather events (e.g. storm or fire events). Table 23 identifies the triggers for adaptive management and corresponding management responses.

Table 23: Adaptive management triggers and response

Adaptive management trigger	Adaptive management response
Environmental conditions affect orchid detectability (e.g. drought, delayed flowering)	Adjust monitoring program in consultation with Orchid Specialist. Document changes in relevant reports (Section 7.1).
Observed habitat degradation or unanticipated impacts (e.g. tree fall due to weather conditions)	Orchid Specialist to review potential/ specific impacts and recommend revised mitigation measures. Apply recommendations immediately.
Incident, trigger event, or regulatory direction (Refer to Section 8.2)	Review and update the OMP as required. Document changes and submit to DCCEEW

7.7 Reporting Requirements

A summary of the three main reporting requirements relative to the OMP are provided in Table 24. With a detailed description of the OMP reporting requirements provided in Table 25. The associated mitigation measures for each reporting requirement are identified in Table 16 and Table 17Table 24.

Reporting requirements below would be audited (in accordance with Section 8) and results of compliance with the requirements of this OMP provided in the Annual Compliance Report (Table 24).

Table 24: Summary of reporting requirements

Monitoring Report	Monitoring requirements
Orchid Monitoring Report	An annual Orchid Monitoring Report will be prepared in Autumn each year. The report must be prepared by the Orchid Specialist and document the methods and results of the orchid monitoring program (during construction and operation phases), including an analysis of performance indicators and any trigger value exceedances, including the outcomes of any periodic reviews of the OMP (Section 8.2).

Monitoring Report	Monitoring requirements
	The final monitoring report must include an analysis results of all monitoring events completed for the Project including baseline, construction and operational monitoring events (refer to Table 25).
General Reporting Requirements	General reporting requirements relative to the OMP are provided in (refer to Table 26) and include the following: – Monthly Environmental Monitoring report – Environmental Incident Report – Incidental Finds Incident Report All reports and supporting data will be stored in a secure and accessible Project database, maintained by the HumeLink West Environmental Team. Document control will ensure: – Each report is uniquely titled, dated, and version-controlled – Sensitive biodiversity data are redacted before public or stakeholder release – Internal review is completed prior to external submission – Archived reports remain accessible for the duration of the approval period – Records of all reporting activity will be included in the Annual Compliance Report and available for audit.
Annual Compliance Report	An Annual Compliance Report will be prepared and must include: – Summary of monitoring results for monitoring events identified in the Monthly Environmental Monitoring report and Annual Monitoring Report (Table 24) – Record of activities within the OMP Management Zones and OHEZ – Documentation of non-compliances, corrective actions and any approved variations to measures identified in Section 4.7. – Summary of audit findings (Section 7.1) and risk assessments (Section 3.1) – Any OHEZ entries under non-construction related activity provisions. The Annual Compliance Report would be subject to an independent audit in accordance with EPBC 2021/9121 CoA 39-47.

Table 25: OMP reporting requirements

Report Type	Purpose	Frequency/Trigger	Reporting content	Responsibility	Timing	Recipients
OMP Annual Orchid Population Monitoring Report	Document outcomes of orchid population and habitat monitoring	Annually during construction and first 2 years of operation	– Date, location, and activity relevant to the report – Description of the monitoring result – Maps, photos, and data summaries (e.g. habitat condition, orchid presence) – Analysis of performance indicators and any trigger value exceedance – Summary of the Monthly Environmental Monitoring results where relevant – Compliance tracking information (in line with environmental inspections per Section 3.9.1 of the CEMP)	Transgrid	Within 30 business days of survey completion	HumeLink West, Transgrid, and Commonwealth DCCEEW, NSW DCCEEW copy only
Monthly Environmental Monitoring report	Requirement of the CEMP to assess and document compliance with the CEMP and OMP commitments. Relevant sections of this report would be incorporated into the Annual Compliance Report as detailed below.	Monthly during pre-construction and construction	– Description of the monitoring result – Maps, photos, and data summaries – Analysis of performance indicators and any trigger value exceedance – Confirmation that ERSED Plans are up to date and site controls are installed as per the ERSED plan – OHEZ fence is in place and no-go signs attached? – Review and audit of required documentation relating to the OMP, including documentation of incidents, non-construction related activities within the OHEZ, or incidental finds. – Compliance tracking information (in line with environmental inspections per Section 3.9.1 of the CEMP)	HumeLink West DP	Within 10 working days of the end of each calendar month.	Transgrid
Environmental Incident Report	Document any event that may cause harm to orchid individuals or habitat	In response to an incident	– Date, location, and incident relevant to the report – Description of the incident, or non-compliance – Maps, photos, and data summaries – Analysis of performance indicators and any trigger value exceedance	HumeLink West DP	Within 24 hours (NSW) and 2 days (Commonwealth) of becoming aware of the incident.	NSW DCCEEW and Commonwealth DCCEEW

Report Type	Purpose	Frequency/Trigger	Reporting content	Responsibility	Timing	Recipients
			– Corrective or preventive measures implemented or proposed – Stakeholders or personnel involved – Regulatory correspondence, if relevant – Refer to Table 27 of the OMP for requirements of written notification requirements to the Commonwealth DCCEEW and Appendix A7 if the CEMP for requirements of written notification requirements to NSW DCCEEW.		Subsequent incident report within 7 days of making an incident notification (NSW) and 12 days of making and incident notification (Commonwealth)	
Incidental Finds Incident Report	Report and assess new orchid discoveries made during construction	Immediately upon identification during clearing during pre-construction and construction	– Date, location, and activity relevant to the report – Description of the incidental find – Maps, photos, and data summaries of the orchid presence identified – Corrective or preventive measures implemented or proposed – Stakeholders or personnel involved – Regulatory correspondence, if relevant	HumeLink West DP	Summary report within 5 business days; full report if notified to DCCEEW	HumeLink West, Transgrid, Orchid Specialist, NSW DCCEEW (if notified)
Annual Compliance Report (ACR)	Required under Commonwealth Approval 2021/9121 CoA 30–33 to assess compliance with all conditions and OMP commitments (Section 6.3).	Annually during pre-construction and construction	– Description of any trigger value exceedance/non-compliance – Corrective or preventive measures implemented or proposed – Stakeholders or personnel involved – Regulatory correspondence, if relevant	HumeLink West DP	Within 20 business days after end of each ACR period (within 12 months of the anniversary date of the approval)	Transgrid, NSW DCCEEW and Commonwealth DCCEEW

8. Audit and review

8.1 Environmental auditing

Transgrid will be responsible for coordinating the independent audits in accordance with the Commonwealth Approval CoA 39-47 and the Independent Audit and Audit Report Guidelines, with input from the Delivery Partner during construction and Orchid Specialists as required.

An audit report must be prepared and submitted to the DCCEEW within 3 months following the end of each audit period, or as otherwise directed by the Minister in writing. Transgrid must publish each audit report on the website, in a format that is easily accessible and downloadable, within 10 business days of the date the department agrees to that audit report in writing and notify the department within 5 business days of the date the audit report is published on the website.

8.2 OMP review

The Orchid Management Plan (OMP) will be subject to review to evaluate its effectiveness in achieving the objectives outlined in Section 1.3 and ensuring compliance with the relevant approval conditions detailed in Section 2.1.

Reviews will be initiated under the following circumstances:

- A significant environmental incident affecting the OMP Subject Land
- Audit outcomes identifying issues relevant to the OMP
- Monitoring data or corrective actions indicating a decline in performance or habitat integrity
- Modification of the Approved Project or changes to the Final Layout Plans that alter potential impacts to Subject Orchids or their habitat
- Routine internal review conducted at least every 12 months from the previous review or initial implementation
- Prior to the commencement of operational activities

Transgrid will coordinate the review process, with input from the Delivery Partner during construction and Orchid Specialists as required. A review will be prepared and submitted to the DCCEEW within 30 business days of the circumstance that triggered the review.

9. Incident Notification and Emergency Response

9.1 Emergency Response Procedure

In the context of this OMP, an incident has been defined as any unplanned event or activity that results in, or has the potential to result in, harm (as defined by the Commonwealth Approval 2021/9121) to Subject Orchid Species or Subject Orchid Species Habitat (refer to Section 2.4 for definitions of 'harm' and 'Incident').

The HumeLink West CEMP provides an overarching Incident and Emergency Response Plan for the Project, which has been prepared in accordance with Transgrid's Environmental Incident Classification and Reporting Procedure, which would be implemented in the event of an incident within the OMP MZ.

9.2 Emergency contacts

The personnel identified in Table 26 are authorised to stop works, assess incidents and coordinate emergency responses during construction of HumeLink that results in potential or actual harm to the Subject Orchids or their habitat. Operational contacts will be included in a revised version of the OMP prior to the commencement of operations.

Table 26: Emergency contacts

Role	Organisation	Responsibility	Contact Details
Environmental Manager (Primary)	HumeLink West	Lead environmental response	[redacted]
Project Ecologist	HumeLink West	On-site incident assessment, habitat and species advice	
Orchid Specialist (as required)	Specialist Contractor	Species ID, orchid-specific advice, habitat management	
Construction Director	HumeLink West	Coordinates site response, ensures OHEZ boundaries maintained	
Transgrid Senior Environmental Advisor	Transgrid	Client representative; supports escalation and reporting	
Transgrid Senior Biodiversity Business Partner	Transgrid	Consultation and notifications to externanal staekholders including DEECCW	

9.3 Incident notification

Table 27 provides a summary of the additional incident and non-compliance requirements from the Commonwealth Approval that would be applicable to indicators or non-compliances relating to the Subject Orchids or their habitat.

Table 27: EPBC Act approval condition and associated non-compliance reporting requirements

EPBC Act Approval Condition	Non-compliance Reporting Requirements
Condition 37	The approval holder must notify the **department** electronically, within 2 **business days** of becoming aware of any **incident**. The approval holder must specify in each notification: a. any condition or commitment made in a **plan** which has not been, or may have not been, complied with, b. a short description of the **incident**, and c. the location (if applicable, including co-ordinates), date and time of the **incident**.
Condition 38	The approval holder must provide to the **department** in writing, within 12 **business days** of becoming aware of an **incident**, the details of that **incident**. The approval holder must specify: d. all corrective measures and investigations which the approval holder has already taken in respect of the **incident**, e. the potential impacts of the **incident**, f. the method and timing of any corrective measures that the approval holder proposes to undertake to address the **incident**, and g. any variation of these conditions or revision of a **plan** that will be required to prevent recurrence of the **incident** and/or to address its consequences.

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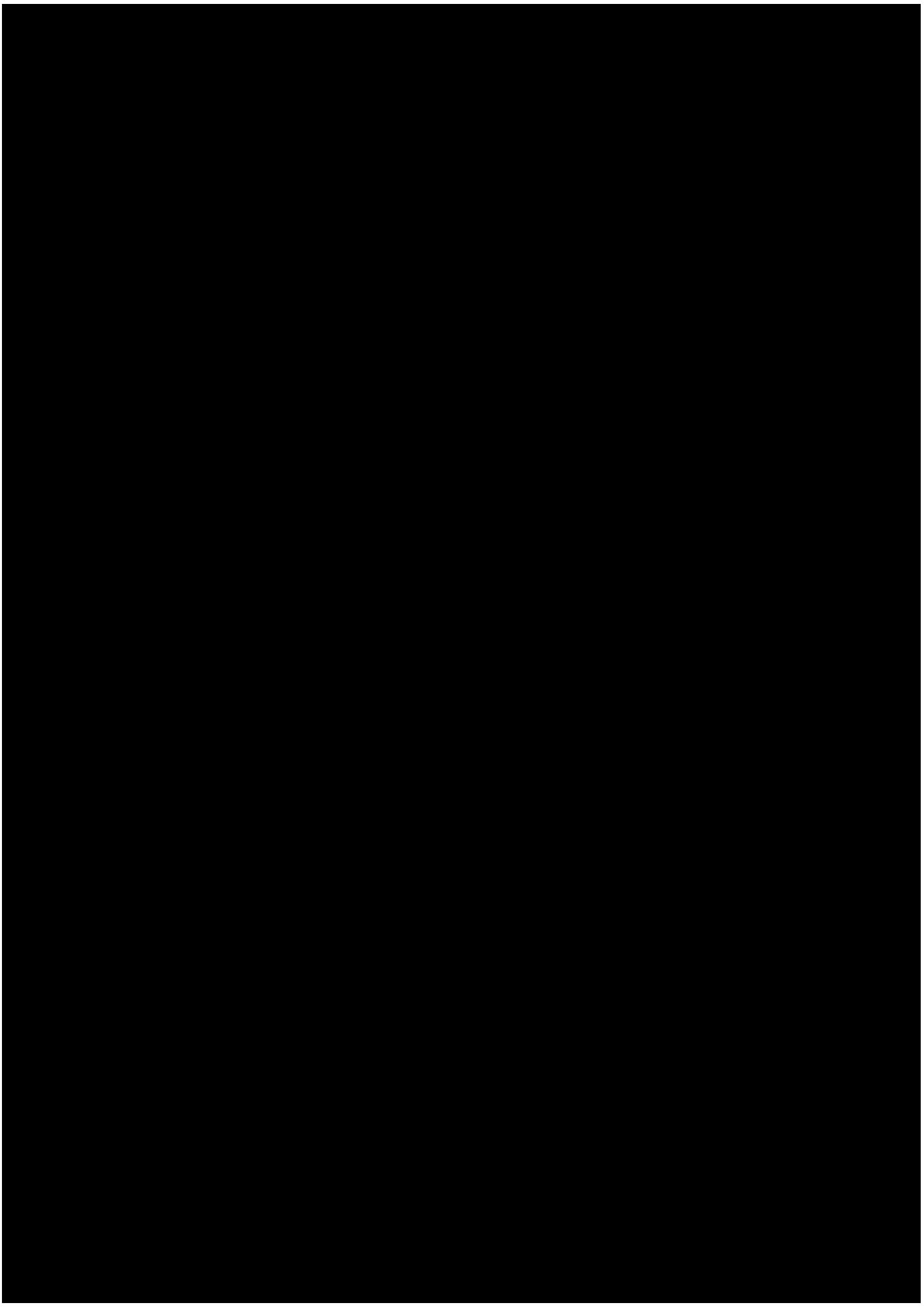
Appendix 1
Orchid specialists curriculum vitae

BRIAN TOWLE

SENIOR ECOLOGIST | ACCREDITED BAM ASSESSOR

QUALIFICATIONS

- Bachelor of Environmental Science (Hons I), University of NSW, Sydney
- BioBanking Accredited Assessor (No. 0229)
- Biodiversity Assessment Methodology (BAM) Accredited Person (No. 17057)
- Approved Species Expert under the BAM for seven orchid species (*Caladenia tessellata, Calochilus pulchellus, Cryptostylis hunteriana, Genoplesium baueri, Genoplesium branwhiteorum*, *Genoplesium insigne* and *Pterostylis ventricosa*).

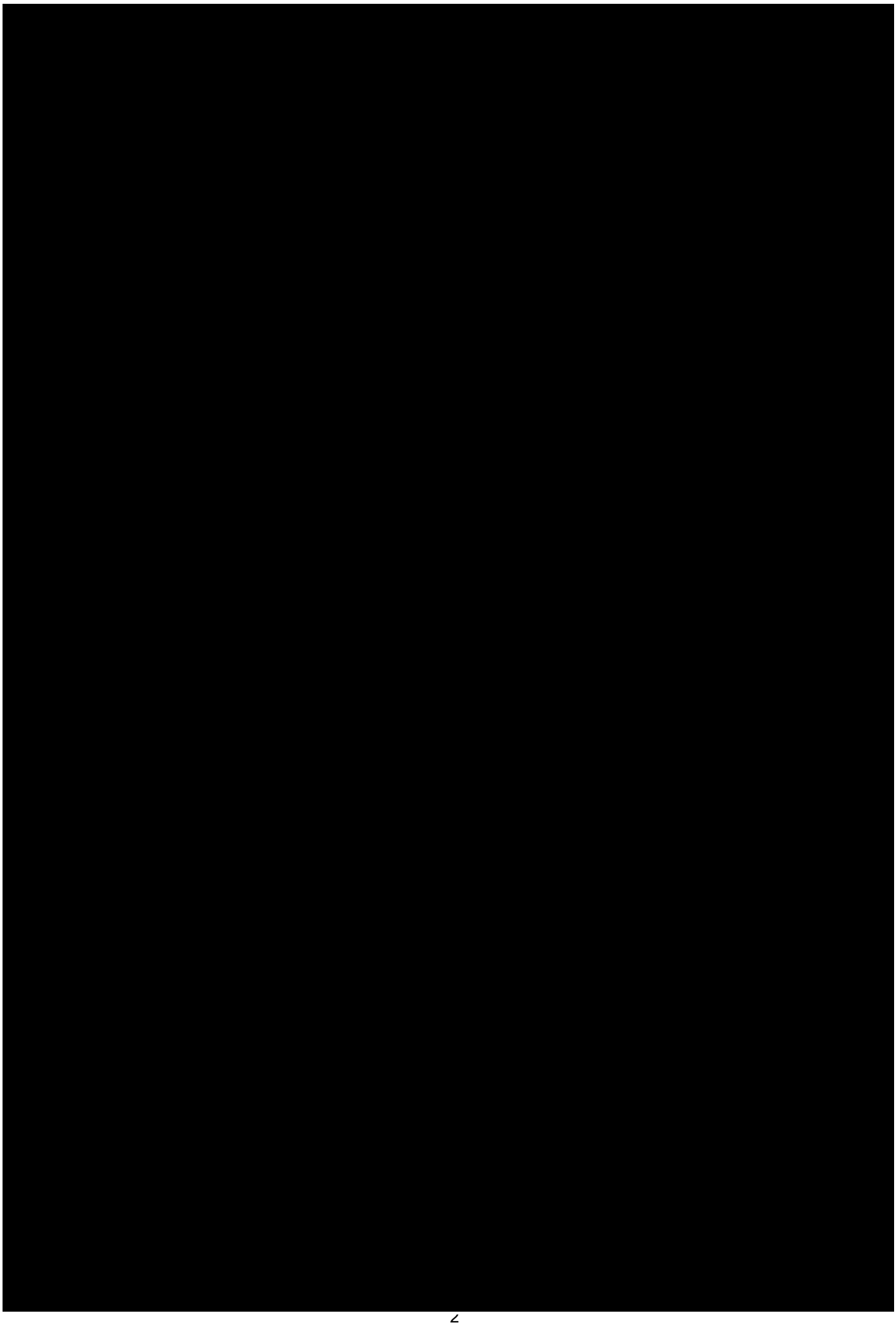


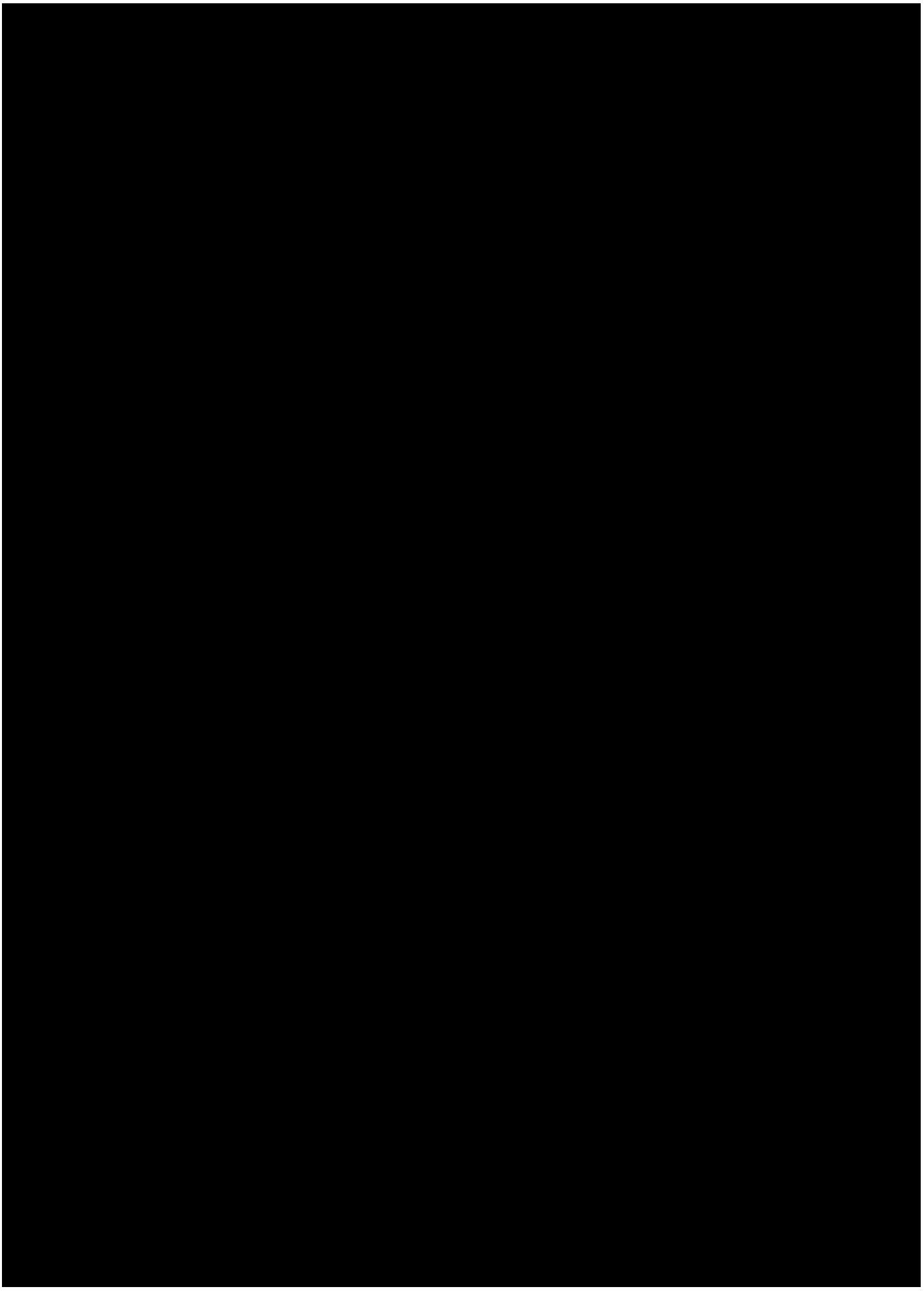
ROBERT HUMPHRIES

PRINCIPAL ECOLOGIST | ACCREDITED BAM ASSESSOR | NATIVE ORCHID SPECIALIST

QUALIFICATIONS

- Bachelor of Applied Science, Ballarat College of Advanced Education 1983-85
- Master of Applied Science, University of Ballarat 1986-89
- Biodiversity Assessment Method Accredited Assessor (BAAS 20022)





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