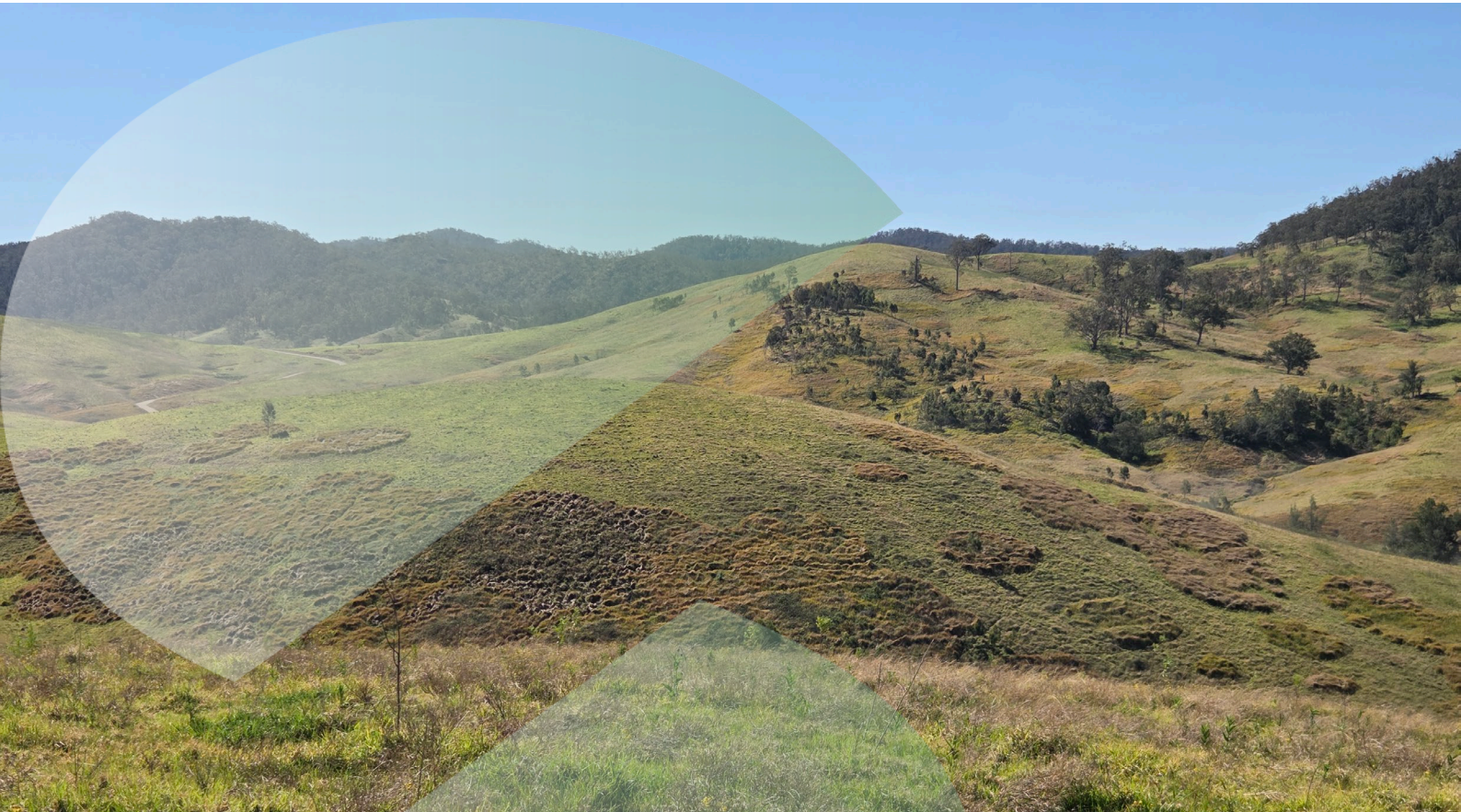


Cooplacurripa Nature Repair Market – Year 2 Planting Area

PROJECT PLAN

REPLANTING FOREST AND WOODLAND ECOSYSTEMS

SEPTEMBER 2026



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Document overview

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Glossary of Terms

Term	Detail
AA	Activity Area
AACo	Australian Agricultural Company
ACCU	Australian Carbon Credit Unit
BMWS	Bushfire Mitigation Works Schedule
Cooplacurripa	Cooplacurripa Station
Covalent	Covalent Land Australia
DCCEEW	Department of Climate Change, Energy, the Environment and Water (Commonwealth)
EP	Environmental planting
ha	Hectares
IUCN	The International Union for Conservation of Nature
MVG	Major Vegetation Group (level 5 “association level” of the IUCN Global Ecosystem Typology)
NARCIIM	NSW and Australian Regional Climate Modelling project
NPWS	National Parks and Wildlife Service
NRM	Natural Resource Management
the Method	Nature Repair (Replanting Native Forest and Woodland Ecosystems) Methodology Determination 2025
NVIS	National Vegetation Information System
PCT	Plant Community Type
PLANR	Platform for Land and Nature Repair
PMST	Protected Matters Search Tool
PP	Project Plan
Project	Silva Capital Cooplacurripa Biodiversity Project No. 2
RCP	Representative Concentration Pathway
SAA	Sub-activity Area
SAR	Site Assessment Report
SSA	Starting state assessment
TEC	Threatened ecological communities

1. Introduction

Silva Capital Cooplacurripa Biodiversity Project No. 2 (the Project) is an environmental planting (EP) project covered by *Nature Repair (Replanting Native Forest and Woodland Ecosystems) Methodology Determination 2025* (the Method). The Project will be registered under the Method and aims to restore ecosystems representing several major vegetation groups (MVGs), including Eucalypt Tall Open Forests, Eucalypt Woodlands, Casuarina Forests and Woodlands and Rainforests and Vine Thickets. The Project materially overlaps with the Cooplacurripa Environmental Planting Project (Phase 2), which is a related project registered under the Australian Carbon Credit Unit (ACCU) Scheme.

This Project Plan (PP) has been prepared for the Project to address the requirements of Division 2.6 of the Method. The purpose of this PP is to set out a program of actions for the replanting that will likely achieve the Project's restoration targets and biodiversity outcome.

1.1 Project Description

Silva Capital Pty Ltd (Silva Capital) acquired the Cooplacurripa Station (Cooplacurripa) in September 2024 to establish a large-scale Environmental Plantings project. Cooplacurripa is an historic 23,000 hectare (ha) pastoral property located on Biripi/Birpai Country in the Upper Manning Catchment (mid-north coast, NSW) and is surrounded by national parks, state forests, conservation areas and nature reserves.

There are over 6,500 ha of Cooplacurripa identified as suitable for reforestation. Silva Capital Cooplacurripa Biodiversity Project No. 1 was registered in August 2025 and involves the restoration of over 430 ha of land. This Project (Project No. 2) will involve replanting over 1,200 ha of land along the Cooplacurripa River valley floor and lower to mid slopes, providing vegetated connections across the valley floor and enhancing landscape connectivity more broadly.

1.2 Project Details

Project name	Silva Capital Cooplacurripa Biodiversity Project No.2
Project ID	NR001019
Proponent details	Silva Capital Pty Ltd ACN: 666 501 846
Project location	Cooplacurripa Station, Upper West Manning Catchment, west of Taree: 6167 Nowendoc Road, Cooplacurripa, NSW, 2424.
Project timeframes	The Project is to implement a replanting program capable of achieving forest cover within 25 years post initial planting. This is to be maintained for 100 years. The PP and any subsequent amendments are to be implemented for the entirety of the Project. Planting for the Project is estimated to commence in June 2026.

1.3 Project Plan Preparation

This Project Plan was prepared by suitably qualified persons Cecilia Phu (Principal Botanist) and Martin Campbell (Ecology Manager) in accordance with the requirements set out in Division 2.5, Section 35 of the *Replanting Native Forests and Woodland Ecosystems (Methodology Determination) 2025*.

A summary of the qualifications and experience of suitably qualified persons is provided in Table 1, with full curriculum vitae for suitably qualified persons provided in Appendix A.

Table 1: Suitably qualified persons and contributors

Name	Contact details	Role / responsibility	Qualification	Relevant experience
Cecilia Phu (Nature Positive Advisory)	info@naturepositiveadvisory.au	Suitably Qualified Person, Principal Botanist - Field survey lead - Report preparation	Bachelor of Science with Honours (Biological Sciences) Accredited assessor under the NSW Biodiversity Assessment Method (BAM) Accreditation Scheme.	Botanist and ecological consultant with over 19 years of consulting experience across NSW, specialising in vegetation surveys and threatened species assessments to inform environmental planning and approvals, and biodiversity offsetting.
Signature			Date: 18/09/2026	
Martin Campbell (Covalent Land Australia)	enquire@covalentland.au	Suitably Qualified Person, Ecology Manager - Field survey - Report contributor	Bachelor of Science (Vegetation Ecology)	Ecologist with 25+ years' experience managing natural resources across large, complex land portfolios. His expertise includes bushfire preparedness, invasive species management, threatened species programs, cultural and heritage management, and safety and risk-led project delivery.
Signature			Date: 18/09/2026	

Name	Contact details	Role / responsibility	Qualification	Relevant experience
Nathan Garvey (Nature Positive Advisory)	info@naturepositiveadvisory.au	Suitably Qualified Person, Principal Advisor Technical oversight	Fellow of the Environment Institute of Australia and New Zealand (FEIANZ) Certified Environmental Practitioner (CEnvP) Biodiversity Assessment Method (BAM) Accredited Assessor Member of the Environment Institute of Australia and New Zealand (MEIANZ) Graduate Diploma (Biological Science) Bachelor of Science	Experienced ecologist with over 20 years' practice in leading ecological assessments and approvals across eastern Australia. Nathan is one of NSW's leading experts in biodiversity approvals and offsetting.
Cuong Tran (Covalent Land Australia)	enquire@covalentland.au	Suitably Qualified Person, Chief Executive Officer - Technical oversight - Report technical review	PhD Fire Ecology and Flammability. Bachelor of Science (Biology) Healthy Land & Water Science Committee Member (2023-current).	Cuong is an ecologist with over 20 years' experience in bushfire research and management and is a recognised expert in the field of fire management, ecology and planning.
Jay van Rijn (Covalent Land Australia)	enquire@covalentland.au	Suitably Qualified Person, Chief Operations Officer - Project scope, planning, method alignment - Report technical review	Bachelor of Science with Honours.	Jay is an environmental scientist with over 15 years' experience in environmental compliance and markets.
Gemma van Hemert (Nature Positive Advisory)	info@naturepositiveadvisory.au	Graduate Ecologist - Report assistance - Field survey assistance	Bachelor of Environmental Science and Management	Gemma is an early career ecologist with over 2 years' experience working as an environmental professional.

Name	Contact details	Role / responsibility	Qualification	Relevant experience
Rosie Walshe (Covalent Land Australia)	enquire@covalentland.au	Project Lead - Report assistance - Field survey assistance	Bachelor of Science (Geology) Master of Environment	Rosie is an environmental professional with over 4 years' experience working with vegetation methods in the Australian carbon market and related schemes.
Tegan Scott (Covalent Land Australia)	enquire@covalentland.au	GIS Spatial Data Analyst Project mapping	Bachelor of Environmental Science and Management	Tegan is a Geospatial Analyst with three years' experience working with natural resource systems and developed expertise in GIS, spatial analysis, and project management.

1.4 Additional Stakeholder Details

Stakeholder Name	Personnel and Role	Responsibilities
Silva Capital	Raf Wood (Co-managing Director) Brad Mytton (Co-managing Director)	Overall project governance and compliance
	Max Butler (Investment Director) Bruce Griffin (Investment Director)	Operational oversight of the project
	Roger Cameron (Investment Director)	Oversight of Indigenous and Community Engagement
Covalent Land Australia	Cuong Tran (Chief Executive Officer)	Overall project governance and compliance
	Jan van Rijn (Chief Operations Officer)	Operational oversight of project
	Eoghan O'Connor (Head of Operations) Lachlan Cook (Head of Commercial) Rosie Walshe (Project Lead) Martin Campbell (Ecology Manager)	Strategic planning and co-ordination of the project
	Laura Osmetti (Head of Community & Social Performance)	Indigenous and community engagement, relationship management and social performance
	Will Miles (Senior Operations Manager) Rory Francis (Operations Manager – Cooplacurripa Station)	Implementation and maintenance of the project

Stakeholder Name	Personnel and Role	Responsibilities
	Nikki Cronyn (Portfolio & Regulatory Compliance Manager) Tegan Scott (GIS Spatial Data Analyst)	Spatial data and regulatory compliance management

1.5 Scope of Project Plan

This PP is required to comply with Part 2, Division 2.6 of the Method. This PP is broadly set out as follows:

- Section 2 – summarises the results of the starting state assessment (SSA) for each activity area
- Section 3 – sets out the restoration targets for each activity area
- Section 4 – describes the environmental planting activities proposed to be undertaken
- Section 5 – describes any potential threats to restoration outcomes, and the management activities to address these
- Section 6 – describes threatened entities present and any conservation measures proposed
- Section 7 – describes other features required by Division 2.6, Section 37(l) in relation to hydrological features, natural regeneration and legal interests that may influence Project activities
- Section 8 – describes engagement activities with Indigenous stakeholders in relation to the design and implementation of the Project.

2. Activity Areas

2.1 Management history

2.1.1 Ownership and Land Use History

Cooplacurripa is a long-standing pastoral station, first established by the Australian Agricultural Company (AACo) as far back as 1845, but certainly with intensity from the early 1860's. However, it wasn't until after the Second World War that larger areas of the station were cleared for primary production. Cooplacurripa is purported to be the largest pastoral station east of The Great Dividing Range.

AACo managed the property until 2012 when it was sold to Rifa to continue livestock operations. Rifa then sold the station to the previous owners (the Bell family) around 2019, before Silva acquired the property from the Bell Family, with that deal being finalised in September 2024.

The Phase 1 EP Project and Nature Repair Project No. 1 were registered and planting commenced in 2025. The property continues to support livestock operations in areas outside of the Phase 1 EP Project area.

2.1.2 Historic Clearing

A review of basemap imagery archives show that Cooplacurripa was comprehensively cleared at least since January 2009 (Esri, 2014). Based on the known land use history, it is widely acknowledged that much of this clearing occurred prior to 1985. The extent of woody vegetation across the Project area remains broadly consistent and unchanged between 2016 and 2026 (i.e. 10 years from the assessment date), with the canopy layer of native trees removed and absent from at least 90% of the land defined at a 10 m x 10 m scale.

A small proportion of the Project area has been cultivated and sown periodically, with the last event likely to have taken place in late (October-November) 2022 based on historical imagery (Esri, 2024a). There is no readily available documentation to determine whether these areas were sown for pasture, or for crop.

The Project area appears to be unchanged by damage or destruction of native vegetation by mechanical or chemical means, or by cultivation or other activities involving significant soil disturbance within the last three years, based on aerial imagery captured in November 2022 (Esri, 2024a) and October 2023 (Esri, 2024b).

2.2 Summary of historic drivers of change

The main historic drivers of change relevant to the Project are a testament to Cooplacurripa's long history of more than 150 years of use in primary production. Such drivers of change and their contemporary impacts are summarised in Table 2 with further detail in section 4 of the Site Assessment Report (SAR).

Table 2: Historic drivers of change for all AAs

Historic driver	Details	Impact
Land clearing	Long history of land clearing, with the land comprehensively cleared over 15 years ago and with a large proportion having occurred before 1985, pre-dating good satellite coverage. No further large-scale clearing undertaken within the last 10 years (i.e. no new grazing paddocks created or clearing for new homesteads). Extent of native woody vegetation largely consistent within all activity areas.	• The soils have been heavily compacted. • Inundation by weed and pest species. • Changes to natural drainage and water flows.
Cultivation and soil disturbance	From October 2025, ripping activities, track establishment activities and fence removal and installation were undertaken across all activity areas. Decompaction of the soil using bulldozers fitted with rippers was undertaken during the summer months as part of site preparation for planting, to break up the soil and grassy layer.	• Creation of wide-spaced decompaction (rip-lines) following the contour of the landscapes, to maximise plant establishment success. • No damage or clearing of native woody vegetation as a result of these activities. • Native vegetation impacted is restricted to native ground covers in native and improved (exotic) pastures.
Primary production practices, including livestock grazing and cropping	Use of the land for primary production purposes has largely been focused on livestock, and in particular, cattle and cattle grazing.	• The soils have been heavily compacted. • Changes to the nutrient content and nutrient cycling • Inundation by common weeds and exotic species.
Planned burning	Frequent burning to maintain open areas for cattle grazing pastures was common practice in the region. No management burns have been undertaken since acquisition of the property by Silva Capital, although planned burns will be undertaken as part of future bushfire management under a Bushfire Management Plan to be developed for the property.	• Burning promotes the growth and spread of Blady Grass (<i>Imperata cylindrica</i>) and Bracken Fern (<i>Pteridium esculentum</i>). The dominance of the former is evident across the rolling hills in the planting area and also Bracken Fern in clearings near treed margins. • Large areas of Blady Grass infestations are recorded in AA4 and AA6.

Historic driver	Details	Impact
Wildfire	The Project Aarea, much like the entire Mid-Coast region, was impacted by the 2019-2020 Black Summer Bushfire event. NSW NPWS fire severity mapping clearly shows large portions of the Project were affected by high severity and high intensity bushfire in the higher elevations where bushfires used the steeper topography to exhibit adverse fire behaviour.	- Alterations in the vegetation structure on the slopes due to the opening of the canopy and shrub strata. Overall reduction in biodiversity for the region. - Promotion of Blady Grass (<i>Imperata cylindrica</i>) growth in the pasture areas of the Project Area.
Infrastructure establishment	There have been a total of 9 homesteads and associated infrastructure (access tracks, fences, transmission line etc) built on the property as well as a large council-owned road that traverses east-west through the midpoint of the Project Area.	- Dust is readily generated by the council road. - Spread and introduction of weed and pest species

2.3 Reference Ecosystems

There are eight activity areas identified across the Project area representing four major vegetation groups (MVGs) occurring largely in two key starting ecosystem condition states: State B and C.

The NSW vegetation classification hierarchy groups vegetations by major structural and physiognomic features at the highest classification level (Vegetation Formations), within which related plant communities sharing floristic similarities and habitat are further grouped together into Vegetation Classes. The NSW vegetation classification hierarchy broadly aligns on a 1:1 basis with the MVGs established under the National Vegetation Information System (NVIS) at the Vegetation Formation level. Vegetation benchmarks under the NSW vegetation classification system are established largely at the Vegetation Class level.

The reference ecosystems identified in each activity area are classified by Plant Community Type (PCT), which is the finest level in the NSW vegetation classification system and describes native plant species assemblage patterns in relation to environmental conditions (soil, temperature, moisture and other factors). There are five PCTs identified across the Project area:

- 3076 | Hunter Valley Whalebone Dry Rainforest
- 3240 | Lower North Escarpment Red Gum Grassy Forest
- 3252 | Northern Hinterland Grey Gum-Mahogany Grassy Forest
- 3329 | Northern Hinterland Valleys Red Gum Grassy Forest
- 4079 | Northern Hinterland Grassy River Oak Forest

The activity areas (AA) and associated reference ecosystems are summarised in Table 3 and Table 4. There are sub-activity areas (SSA) associated with AA4 and AA5.

Starting values and benchmark values for ecosystem indicators for each activity area are provided in Section 2.3 and Appendix B respectively. The locations of sampling plots completed to inform the starting state assessment are also provided in Appendix B.

Table 3: Summary of activity areas

Activity Area	IUCN functional group	Major vegetation group (MVG)	Vegetation class ¹	Starting state	Reference ecosystem ²	Area (ha)
AA1	T1.2 Tropical/subtropical dry forests and thickets	MVG 1 - Rainforests and Vine Thickets	Dry Rainforests	B	3076	1.43
AA2	T1.2 Tropical/subtropical dry forests and thickets	MVG 1 - Rainforests and Vine Thickets	Dry Rainforests	C	3076	4.28
AA3	T2.5 Temperate pyric humid forests	MVG 2 - Eucalypt Tall Open Forests	Northern Hinterland Wet Sclerophyll Forests	B	3240 (SAA1) 3252 (SAA2)	16.06 5.33
AA4	T2.5 Temperate pyric humid forests	MVG 2 - Eucalypt Tall Open Forests	Northern Hinterland Wet Sclerophyll Forests	C	3240 (SAA3) 3252 (SAA4)	310.01 84.69
AA5	T4.4 Temperate woodlands	MVG 5 - Eucalypt Woodlands	Coastal Valley Grassy Woodlands	B	3329	5.21
AA6	T4.4 Temperate woodlands	MVG 5 - Eucalypt Woodlands	Coastal Valley Grassy Woodlands	C	3329	709.08
AA7	TF1.2 Subtropical / temperate forested wetlands	MVG 8 - Casuarina Forests and Woodlands	Eastern Riverine Forests	B	4079	1.24
AA8	TF1.2 Subtropical / temperate forested wetlands	MVG 8 - Casuarina Forests and Woodlands	Eastern Riverine Forests	C	4079	92.98
Total (ha)						1,230.32

¹ Vegetation classes are defined under the NSW Vegetation Classification System and in the Project Area, align on a 1:1 basis with the MVGs established under the National Vegetation Information System (NVIS). Vegetation benchmarks under the NSW Vegetation Classification System are established largely at the Vegetation Class level.

² Plant Community Type (PCT) under the NSW Vegetation Classification System.

Table 4: Description of reference ecosystems

Major vegetation group (MVG)	Vegetation Class	Reference ecosystem (Plant Community Type)	Location and brief description
MVG 1 - Rainforests and Vine Thickets	Dry Rainforests	3076 Hunter Valley Whalebone Dry Rainforest	Small, and scattered linear patches associated with steep and/or rocky gullies or on lower hill slopes where flow is intermittent. Can occur as a dense rainforest but also as a rainforest sub-canopy with an emergent eucalypt canopy. Canopy composition is variable but often includes Red Kamala (<i>Mallotus philippensis</i>) and Whalebone Tree (<i>Streblus brunonianus</i>). In the Project area, remnants are typically indicated by only scattered individual trees typically White Cedar (<i>Melia azedarach</i>), <i>Alectryon subdentatus</i> and rarely, Red Kamala (<i>Mallotus philippensis</i>) within bare or grassed drainage gullies on hillsides and on rocky upper banks of the Cooplacurripa River.
MVG 2 - Eucalypt Tall Open Forests	Northern Hinterland Wet Sclerophyll Forests	3240 Lower North Escarpment Red Gum Grassy Forest	Tall sclerophyll open forest associated with the mid to upper hillslopes. The canopy features a mix of eucalypt species including Forest Red Gum (<i>Eucalyptus tereticornis</i>), Grey Gum (<i>Eucalyptus canaliculata</i>) and Thin-leaved Stringybark (<i>Eucalyptus eugenioides</i>) with a noticeable small tree layer of she-oaks (<i>Allocasuarina torulosa</i> or <i>Allocasuarina littoralis</i>). The understorey includes soft-leaved shrubs (e.g. <i>Clerodendrum floribundum</i> and Coffee Bush <i>Breynia oblongifolia</i>) and a ground cover of grasses and other graminoids as well as vines and creepers. In the Project area, large areas of improved pastures dominated by Kikuyu (<i>Cenchrus clandestinus</i>) and White Clover (<i>Trifolium repens</i>) on the mid to upper slopes of the Cooplacurripa Valley would have once supported this PCT.

Major vegetation group (MVG)	Vegetation Class	Reference ecosystem (Plant Community Type)	Location and brief description
		3252 Northern Hinterland Grey Gum-Mahogany Grassy Forest	Tall sclerophyll grassy open forest occurring on low to mid elevations in wet locations on coastal hills and escarpment foothills. Canopy frequently includes Small-fruited Grey Gum (<i>Eucalyptus propinqua</i>) or Grey Ironbark (<i>Eucalyptus siderophloia</i>), with a sub-canopy of Forest Oak (<i>Allocasuarina torulosa</i>) and a moderately dense ground layer of mixed grasses, vines and forbs. The mid-stratum is variable but is known to contain vines and mesic or soft-leaved shrubs like Coffee Bush (<i>Breynia oblongifolia</i>), Native Guava (<i>Rhodomyrtus psidioides</i>) and White Aspen (<i>Acronychia oblongifolia</i>). In the Project area, large areas of improved pastures dominated by Kikuyu (<i>Cenchrus clandestinus</i>) and White Clover (<i>Trifolium repens</i>) on low hills above the Cooplacurripa River retain rare and scattered occurrences of shrub species like Native Frangipani (<i>Hymenosporum flavum</i>) and <i>Alectryon subdentatus</i>.
MVG 5 - Eucalypt Woodlands	Coastal Valley Grassy Woodlands	3329 Northern Hinterland Valleys Red Gum Grassy Forest	This is likely to have been the most wide-spread plant community occurring across the valley floor and lower slopes along the Cooplacurripa River. It is a tall, open forest with a distinctly grassy ground layer occurring on low and undulating hills in hinterland valleys. The canopy layer is characterised by Forest Red Gum (<i>Eucalyptus tereticornis</i>) or Cabbage Gum (<i>Eucalyptus amplifolia</i>), occasionally with Thin-leaved Stringybark (<i>Eucalyptus eugenioides</i>), Coastal Grey Box (<i>Eucalyptus moluccana</i>) and apples (<i>Angophora subvelutina</i> or <i>Angophora floribunda</i>) with a sparse mid-layer of mixed wattle species. The ground layer is characterised by a mix of native grasses and forbs, including Barb-wire Grass (<i>Cymbopogon refractus</i>), Kangaroo Grass (<i>Themeda triandra</i>), Whiteroot (<i>Pratia purpurascens</i>), <i>Rostellularia adscendens</i> and Kidney Weed (<i>Dichondra repens</i>). The lower slopes and undulating hills within the Project area are now comprised of improved pastures dominated by Kikuyu (<i>Cenchrus clandestinus</i>) and White Clover (<i>Trifolium repens</i>), with localised and dense patches of Blady Grass (<i>Imperata cylindrica</i>) in places.

Major vegetation group (MVG)	Vegetation Class	Reference ecosystem (Plant Community Type)	Location and brief description
MVG 8 - Casuarina Forests and Woodlands	Eastern Riverine Forests	4079 Northern Hinterland Grassy River Oak Forest	A riparian she-oak forest occurring as a gallery forest along the Cooplacurripa River, with scattered occurrences of River Oak (<i>Casuarina cunninghamiana</i>) trees present along main side tributaries. Other canopy species frequently encountered in this plant community includes White Cedar (<i>Melia azedarach</i>) and Broad-leaved Apple (<i>Angophora subvelutina</i>). The ground layer would have once been dominated by a mix of native grasses and forbs, including Weeping Meadowgrass (<i>Microlaena stipoides</i>), Basket Grass (<i>Oplismenus aemulus</i>), Forest Hedgehog Grass (<i>Echinopogon ovatus</i>), Swamp Dock (<i>Rumex brownii</i>), Native Geranium (<i>Geranium solanderi</i>) and <i>Commelina cyanea</i> .

2.4 Starting Ecosystem Indicator

Table 5: Starting Ecosystem Indicator Values

Indicators/sub-indicators	AA1	AA2	AA3	AA4	AA5	AA6	AA7	AA8
(a) canopy height of native vegetation (m)	0	0	0	0	0	0	0	0
(b) crown cover - canopy native (%)	0	0	0	0	0	0	0	0
(c) crown cover - midstorey native (%)	0	0	0	0	0	0	0	0
(d) crown cover - canopy non-native (%)	0	0	0	0	0	0	0	0
(e) crown cover - midstorey non-native (%)	0	0	0	0	0	0	0	0
(f) proportion of native ground cover – A1+A2+A3 (%)	82.75	19.81	74.10	24.73	71.14	16.04	73.20	24.61
(g) proportion of exotic ground cover – A4+A5 (%)	17.25	80.19	25.90	75.27	28.86	83.96	26.80	75.39
native species richness index by life form (sub-indicator):								
tree	1	1	1	0	2	0	0	0
shrub	1	0	2	0	0	1	1	0
vine	4	1	3	4	3	2	2	4
grass	15	15	25	24	23	16	20	27
herbaceous vascular	16	6	24	12	14	14	14	14
TOTAL	37	23	55	40	42	33	37	45
(h) Native species richness index (NSRI)	0.38	0.20	0.44	0.27	0.57	0.24	0.63	0.46

3. Restoration Targets

3.1 Project outcome

The biodiversity outcome for this project is to enhance or protect biodiversity in native species by replanting native forest and woodland ecosystems in the project area on historically cleared land in modified landscapes in a way that will improve the extent and condition of native vegetation or support ecological connectivity.

3.2 How the project outcome is intended to be achieved

Across the development of the project (including the overlapping Environmental Planting ACCU project), we will plant a diverse species mix of up to 25 canopy and mid-storey species in each activity area (see section 4).

Across the activity areas we have used wide-spaced decompaction (rip-lines) following the contour of the landscapes, to maximise plant establishment success – this wider spacing reduces competition for resources, increases access for active land management and facilitates the movement of water across the steep slopes, for the water to ‘pool’ along the decompaction lines as water moves into the creek from any rainfall event.

We will remove livestock from designated activity areas and reinforce the fence-line and creek-line fencing and infrastructure to ensure that grazing will not occur in activity areas until 90% of individual trees that comprise the plantings in the activity area have reached 1.5m in height.

Our specialist delivery partners, Covalent Land Australia, will provide ongoing and active land management outcomes, linked to seasonal weather patterns and forecasts – applying bushfire mitigation strategies in the lead up to the annual bushfire season (typically November – March of each year) are implemented to maximise preparedness and the use of fire as a management activity will be undertaken in accordance with s14(2) of the method (when s14(3) does not apply).

We will have our own station managers on site to look after the requirements of the working farm to ensure land activities do not affect the planting project. Finally, we will use long-term forecasts to help forward plan our seasonal activities, to allow us to have adequate time to implement actions to increase landscape resilience and reduce impacts.

3.3 Nomination of restoration targets

Table 6: Restoration targets for ecosystem condition

Activity Area	Starting state ecosystem condition	Restoration target level
AA1	B	2
AA2	C	1
AA3	B	2
AA4	C	1
AA5	B	2
AA6	C	1
AA7	B	2
AA8	C	1

3.4 Threshold values

Threshold values are calculated in accordance with Schedule 7 of the Method for each activity area.

Table 7: Threshold values

Indicators/sub-indicators	AA1	AA2	AA3	AA4	AA5	AA6	AA7	AA8
(a) canopy height of native vegetation (m)	1.66-5	1.66-5	5	5	5	5	3.33-5	3.33-5
(b) crown cover - canopy native (%)	24	24	26.33	26.33	20	20	15.66	15.66
(c) crown cover - midstorey native (%)	18	18	6.66	6.66	3.66	3.66	2	2
(d) crown cover - canopy non-native (%)	≤10	≤15	≤10	≤15	≤10	≤15	≤10	≤15
(e) crown cover - midstorey non-native (%)	≤10	≤15	≤10	≤15	≤10	≤15	≤10	≤15
(f) proportion of native ground cover – A1+A2+A3 (%)	90	19.81	90	24.73	88.93	16.04	90	24.61
(g) proportion of exotic ground cover – A4+A5 (%)	12.94	80.19	19.425	75.27	21.65	83.96	20.1	75.39
native species richness index by life form (sub-indicator):								
tree	3	1	3	1	2	1	1	1
shrub	3	1	3	1	2	1	2	1
vine	3	1	3	1	1	1	1	0
grass	1	0	2	1	3	1	2	1
herbaceous vascular	3	1	4	1	4	2	3	1

4. Project Activities

4.1 Replanting Project Activities

4.1.1 Environmental Plantings

The environmental plantings that are proposed to be carried out in the activity area will be a mixed species environmental block planting. The planting design seeks to:

- Predominantly utilise tubestock planting of species that are native to the project, are sourced locally and appropriate to the biophysical characteristics of the activity area or sub-area. Broadcast drone seeding is planned for discrete areas which are unsuitable for typical site preparation methods;
- Plant with the community structures and distributions that are described in pre-clearing PCTs and introduces an appropriate combination of species from the canopy layer, mid-storey layer and ground layer that collectively are capable of achieving forest cover within 25 years after the initial planting (including ecological in-fill plantings) and through natural regeneration;
- Plant in a block design (multiple rows of contiguous areas) that is likely to result in a structure and composition of a forest that is consistent with the reference ecosystem for the activity area or sub-area;
- Dominant canopy cover species are selected for this project and their physical traits demonstrate each one to be a tree or shrub species that will grow to (and surpass) the 2-metre height requirement of the method;
- Ground cover species are critical as part of the program as they will suppress weeds, retain soil moisture and prevent erosion. The introduction of the ground cover layer will be achieved by as mixed species of perennials & grasses. This is achieved through several techniques such as natural regeneration, hydro mulching, direct seeding either into topsoil or ash layers and through planting by machine or hand.
- Planting and natural regeneration success will be monitored throughout the project. If additional strata species representative of reference PCTs are required to be planted, these species will be established through ecological in-fill;
- Planting for the purposes of an environmental project and is consistent with the nominated restoration targets for the ecosystem condition of the activity area.

Table 8: AA1 proposed environmental plantings

Activity Area ID	AA1
Site preparation method(s)	The predominant site preparation method for AA1 will be hand cultivation with a mattock or mechanical auger. These areas will be spot sprayed (1m diameter) to reduce weed competition and to assist planting crews identify seedling locations. Decompaction of the soil using dozers fitted with rippers was undertaken in minor areas undertaken during the summer months to break up the soil and grassy layer. This increases the moisture retention during the summer rains. Follow-up herbicide treatment was then undertaken to ensure the decompaction (also known as rip lines) were accessible and maintained. These decompaction lines are widely-spaced along contour lines, to reflect the forest structure, allow the plants to have maximum access to water and light to establish once planted. Pursuant to s19(6) of the method, no native vegetation was damaged or destroyed during this process.

Activity Area ID	AA1
	Historic time-stamped satellite imagery has been reviewed as evidence that native vegetation in the activity areas was not damaged or destroyed by mechanical or chemical means within the last three years, including when under different ownership.
Planting method(s)	Tubestock
Target stem density	417 stems per hectare
Species to be planted	Reference ecosystem: PCT 3076 <i>Eucalyptus acmenoides</i> <i>Eucalyptus moluccana</i> <i>Eucalyptus punctata</i> <i>Eucalyptus saligna</i> <i>Eucalyptus siderophloia</i> <i>Eucalyptus tereticornis</i> <i>Lophostemon confertus</i> <i>Acacia falcata</i> <i>Acacia implexa</i> <i>Acacia maidenii</i> <i>Acacia melanoxylon</i> <i>Bursaria spinosa</i> <i>Callistemon salignus</i>

Table 9: AA2 proposed environmental plantings

Activity Area ID	AA2
Site preparation method(s)	The predominant site preparation method for AA2 will be hand cultivation with a mattock or mechanical auger. These areas will be spot sprayed (1m diameter) to reduce weed competition and to assist planting crews identify seedling locations. Decompaction of the soil using dozers fitted with rippers was undertaken in minor areas undertaken during the summer months to break up the soil and grassy layer. This increases the moisture retention during the summer rains. Follow-up herbicide treatment was then undertaken to ensure the decompaction (also known as rip lines) were accessible and maintained. These decompaction lines are widely-spaced along contour lines, to reflect the forest structure, allow the plants to have maximum access to water and light to establish once planted. Pursuant to s19(6) of the method, no native vegetation was damaged or destroyed during this process. Historic time-stamped satellite imagery has been reviewed as evidence that native vegetation in the activity areas was not damaged or destroyed by mechanical or chemical means within the last three years, including when under different ownership.

Activity Area ID	AA2
Planting method(s)	Tubestock
Target stem density	417 stems per hectare
Species to be planted	Reference ecosystem: PCT 3076 <i>Eucalyptus acmenoides</i> <i>Eucalyptus moluccana</i> <i>Eucalyptus punctata</i> <i>Eucalyptus saligna</i> <i>Eucalyptus siderophloia</i> <i>Eucalyptus tereticornis</i> <i>Lophostemon confertus</i> <i>Acacia falcata</i> <i>Acacia implexa</i> <i>Acacia maidenii</i> <i>Acacia melanoxylon</i> <i>Bursaria spinosa</i> <i>Callistemon salignus</i>

Table 10: AA3 proposed environmental plantings

Activity Area ID	AA3
Site preparation method(s)	Decompaction of the soil using dozers fitted with rippers was undertaken during the summer months to break up the soil and grassy layer. This increases the moisture retention during the summer rains. Follow-up herbicide treatment was then undertaken to ensure the decompaction (also known as rip lines) were accessible and maintained. These decompaction lines are widely-spaced along contour lines, to reflect the forest structure, allow the plants to have maximum access to water and light to establish once planted. Pursuant to s19(6) of the method, no native vegetation was damaged or destroyed during this process. Some parts of AA3 on steep slopes or at treed margins will be hand cultivated with a mattock or mechanical auger. These areas will be spot sprayed (1m diameter) to reduce weed competition and to assist planting crews identify seedling locations. A prescribed burn in autumn is planned to occur in minor part of SAA1 for several reasons, firstly the terrain is too steep to have machinery and planters work safely and secondly to increase biodiversity through burning the landscape and create an ash layer to undertake a seeding program in spring, whilst reducing the weed infestations within the area and stimulate the growth of native remnant and groundcover species. The burn will be undertaken in cool conditions in the late afternoon on soils with good moisture content to ensure it is low in intensity and slow-moving

Activity Area ID		AA3	
		fire. Fine fuels may be raked allowing burnt areas to extinguish themselves and protect juvenile remnant vegetation naturally occurring. Historic time-stamped satellite imagery has been reviewed as evidence that native vegetation in the activity areas was not damaged or destroyed by mechanical or chemical means within the last three years, including when under different ownership.	
Planting method(s)		Tubestock Broadcast seeding (minor part of SAA1)	
Target stem density		417 stems per hectare	
Species to be planted			
	SAA1	SAA2	
	Reference ecosystem: PCT 3240 <i>Angophora floribunda</i> <i>Angophora subvelutina</i> <i>Corymbia maculata</i> <i>Eucalyptus acmenoides</i> <i>Eucalyptus amplifolia</i> <i>Eucalyptus biturbinata</i> <i>Eucalyptus blakelyi</i> <i>Eucalyptus carnea</i> <i>Eucalyptus eugenioides</i> <i>Eucalyptus melliodora</i> <i>Eucalyptus microcorys</i> <i>Eucalyptus moluccana</i> <i>Eucalyptus saligna</i> <i>Eucalyptus tereticornis</i> <i>Lophostemon confertus</i> <i>Acacia blakei</i> <i>Acacia floribunda</i> <i>Acacia implexa</i> <i>Acacia irrorata</i> <i>Acacia longissima</i> <i>Acacia maidenii</i> <i>Acacia melanoxylon</i> <i>Allocasuarina littoralis</i> <i>Allocasuarina torulosa</i> <i>Callistemon salignus</i>	Reference ecosystem: PCT 3252 <i>Corymbia maculata</i> <i>Eucalyptus acmenoides</i> <i>Eucalyptus carnea</i> <i>Eucalyptus microcorys</i> <i>Eucalyptus propinqua</i> <i>Eucalyptus siderophloia</i> <i>Eucalyptus tereticornis</i> <i>Eucalyptus resinifera</i> <i>Lophostemon confertus</i> <i>Syncarpia glomulifera</i> <i>Acacia binervata</i> <i>Acacia floribunda</i> <i>Acacia irrorata</i> <i>Acacia maidenii</i> <i>Acacia melanoxylon</i> <i>Allocasuarina torulosa</i> <i>Bursaria spinosa</i>	

Table 11: AA4 proposed environmental plantings

Activity Area ID		AA4	
Site preparation method(s)	Decompaction of the soil using dozers fitted with rippers was undertaken during the summer months to break up the soil and grassy layer. This increases the moisture retention during the summer rains. Follow-up herbicide treatment was then undertaken to ensure the decompaction (also known as rip lines) were accessible and maintained. These decompaction lines are widely-spaced along contour lines, to reflect the forest structure, allow the plants to have maximum access to water and light to establish once planted. Pursuant to s19(6) of the method, no native vegetation was damaged or destroyed during this process. Some parts of AA4 on steep slopes or at treed margins will be hand cultivated with a mattock or mechanical auger. These areas will be spot sprayed (1m diameter) to reduce weed competition and to assist planting crews identify seedling locations. A prescribed burn in autumn is planned to occur in minor part of AA4 for several reasons, firstly the terrain is too steep to have machinery and planters work safely and secondly to increase biodiversity through burning the landscape and create an ash layer to undertake a seeding program in spring, whilst reducing the weed infestations within the area and stimulate the growth of native remnant and groundcover species. The burn will be undertaken in cool conditions in the late afternoon on soils with good moisture content to ensure it is low in intensity and slow-moving fire. Fine fuels may be raked allowing burnt areas to extinguish themselves and protect juvenile remnant vegetation naturally occurring. Historic time-stamped satellite imagery has been reviewed as evidence that native vegetation in the activity areas was not damaged or destroyed by mechanical or chemical means within the last three years, including when under different ownership.		
	Planting method(s)		
	Tubestock		
	Broadcast seeding (minor area)		
	Target stem density		
417 stems per hectare			
Species to be planted	SAA3		SAA4
	Reference ecosystem: PCT 3240		Reference ecosystem: PCT 3252
	Angophora floribunda		Corymbia maculata
	Angophora subvelutina		Eucalyptus acmenoides
	Corymbia maculata		Eucalyptus carnea
	Eucalyptus acmenoides		Eucalyptus microcorys
	Eucalyptus amplifolia		Eucalyptus propinqua
	Eucalyptus biturbinata		Eucalyptus siderophloia
	Eucalyptus blakelyi		Eucalyptus tereticornis
	Eucalyptus carnea		Eucalyptus resinifera
	Eucalyptus eugenioides		Lophostemon confertus
	Eucalyptus melliodora		Syncarpia glomulifera

Activity Area ID	AA4
	<i>Eucalyptus microcorys</i> <i>Eucalyptus moluccana</i> <i>Eucalyptus saligna</i> <i>Eucalyptus tereticornis</i> <i>Lophostemon confertus</i> <i>Acacia blakei</i> <i>Acacia floribunda</i> <i>Acacia implexa</i> <i>Acacia irrorata</i> <i>Acacia longissima</i> <i>Acacia maidenii</i> <i>Acacia melanoxylon</i> <i>Allocasuarina littoralis</i> <i>Allocasuarina torulosa</i> <i>Callistemon salignus</i>
	<i>Acacia binervata</i> <i>Acacia floribunda</i> <i>Acacia irrorata</i> <i>Acacia maidenii</i> <i>Acacia melanoxylon</i> <i>Allocasuarina torulosa</i> <i>Bursaria spinosa</i>

Table 12: AA5 proposed environmental plantings

Activity Area ID	AA5
Site preparation method(s)	Decompaction of the soil using dozers fitted with rippers was undertaken during the summer months to break up the soil and grassy layer. This increases the moisture retention during the summer rains. Follow-up herbicide treatment was then undertaken to ensure the decompaction (also known as rip lines) were accessible and maintained. These decompaction lines are widely-spaced along contour lines, to reflect the forest structure, allow the plants to have maximum access to water and light to establish once planted. Pursuant to s19(6) of the method, no native vegetation was damaged or destroyed during this process. Some parts of AA5 on steep slopes or at treed margins will be hand cultivated with a mattock or mechanical auger. These areas will be spot sprayed (1m diameter) to reduce weed competition and to assist planting crews identify seedling locations. A prescribed burn in autumn is planned to occur in a very small part of AA6 for several reasons, firstly the terrain is too steep to have machinery and planters work safely and secondly to increase biodiversity through burning the landscape and create an ash layer to undertake a seeding program in spring, whilst reducing the weed infestations within the area and stimulate the growth of native remnant and groundcover species. The burn will be undertaken in cool conditions in the late afternoon on soils with good moisture content to ensure it is low in intensity and slow-moving fire. Fine fuels may be raked allowing burnt areas to extinguish themselves and protect juvenile remnant vegetation naturally occurring. Historic time-stamped satellite imagery has been reviewed as evidence that native vegetation in the activity areas was not damaged or destroyed by

Activity Area ID	AA5
	mechanical or chemical means within the last three years, including when under different ownership.
Planting method(s)	Tubestock Broadcast seeding (minor area)
Target stem density	417 stems per hectare
Species to be planted	Reference ecosystem: PCT 3329 <i>Angophora floribunda</i> <i>Angophora subvelutina</i> <i>Corymbia maculata</i> <i>Eucalyptus amplifolia</i> <i>Eucalyptus carnea</i> <i>Eucalyptus eugenioides</i> <i>Eucalyptus melliodora</i> <i>Eucalyptus microcorys</i> <i>Eucalyptus siderophloia</i> <i>Eucalyptus tereticornis</i> <i>Lophostemon confertus</i> <i>Acacia blakei</i> <i>Acacia binervata</i> <i>Acacia falcata</i> <i>Acacia floribunda</i> <i>Acacia irrorata</i> <i>Acacia longissima</i> <i>Acacia maidenii</i> <i>Acacia melanoxylon</i> <i>Allocasuarina littoralis</i> <i>Allocasuarina torulosa</i> <i>Bursaria spinosa</i> <i>Dodonaea viscosa</i> <i>Grevillea robusta</i>

Table 13: AA6 proposed environmental plantings

Activity Area ID	AA6
Site preparation method(s)	Decompaction of the soil using dozers fitted with rippers was undertaken during the summer months to break up the soil and grassy layer. This increases the moisture retention during the summer rains. Follow-up herbicide treatment was then undertaken to ensure the decompaction (also known as rip lines) were accessible and maintained. These decompaction lines are widely-spaced along contour lines, to reflect the forest structure, allow the plants to have maximum access to water and light to establish once planted. Pursuant to s19(6) of the method, no native vegetation was damaged or destroyed during this process. Some minor parts of AA6 on steep slopes or at treed margins will be hand cultivated with a mattock or mechanical auger. These areas will be spot sprayed (1m diameter) to reduce weed competition and to assist planting crews identify seedling locations. A prescribed burn in autumn is planned to occur in a minor part of AA6 for several reasons, firstly the terrain is too steep to have machinery and planters work safely and secondly to increase biodiversity through burning the landscape and create an ash layer to undertake a seeding program in spring, whilst reducing the weed infestations within the area and stimulate the growth of native remnant and groundcover species. The burn will be undertaken in cool conditions in the late afternoon on soils with good moisture content to ensure it is low in intensity and slow-moving fire. Fine fuels may be raked allowing burnt areas to extinguish themselves and protect juvenile remnant vegetation that are naturally occurring. Historic time-stamped satellite imagery has been reviewed as evidence that native vegetation in the activity areas was not damaged or destroyed by mechanical or chemical means within the last three years, including when under different ownership.
Planting method(s)	Tubestock Broadcast seeding (minor area)
Target stem density	417 stems per hectare
Species to be planted	Reference ecosystem: PCT 3329 <i>Angophora floribunda</i> <i>Angophora subvelutina</i> <i>Corymbia maculata</i> <i>Eucalyptus amplifolia</i> <i>Eucalyptus carnea</i> <i>Eucalyptus eugenioides</i> <i>Eucalyptus melliodora</i> <i>Eucalyptus microcorys</i> <i>Eucalyptus siderophloia</i> <i>Eucalyptus tereticornis</i> <i>Lophostemon confertus</i>

Activity Area ID	AA6
	<i>Acacia blakei</i> <i>Acacia binervata</i> <i>Acacia falcata</i> <i>Acacia floribunda</i> <i>Acacia irrorata</i> <i>Acacia longissima</i> <i>Acacia maidenii</i> <i>Acacia melanoxylon</i> <i>Allocasuarina littoralis</i> <i>Allocasuarina torulosa</i> <i>Bursaria spinosa</i> <i>Dodonaea viscosa</i> <i>Grevillea robusta</i>

Table 14: AA7 proposed environmental plantings

Activity Area ID	AA7
Site preparation method(s)	The predominant site preparation method for AA8 will be hand cultivation with a mattock or mechanical auger. These areas will be spot sprayed (1m diameter) to reduce weed competition and to assist planting crews identify seedling locations. Decompaction of the soil using dozers fitted with rippers was undertaken in minor areas undertaken during the summer months to break up the soil and grassy layer. This increases the moisture retention during the summer rains. Follow-up herbicide treatment was then undertaken to ensure the decompaction (also known as rip lines) were accessible and maintained. These decompaction lines are widely-spaced along contour lines, to reflect the forest structure, allow the plants to have maximum access to water and light to establish once planted. Pursuant to s19(6) of the method, no native vegetation was damaged or destroyed during this process. Historic time-stamped satellite imagery has been reviewed as evidence that native vegetation in the activity areas was not damaged or destroyed by mechanical or chemical means within the last three years, including when under different ownership.
Planting method(s)	Tubestock
Target stem density	417 stems per hectare
Species to be planted	Reference ecosystem: PCT 4079 <i>Angophora subvelutina</i> <i>Casuarina cunninghamiana</i> <i>Eucalyptus tereticornis</i> <i>Acacia floribunda</i>

Activity Area ID	AA7
	<i>Acacia longissima</i> <i>Acacia maidenii</i> <i>Bursaria spinosa</i> <i>Grevillea robusta</i>

Table 15: AA8 proposed environmental plantings

Activity Area ID	AA8
Site preparation method(s)	Decompaction of the soil using dozers fitted with rippers was undertaken during the summer months to break up the soil and grassy layer. This increases the moisture retention during the summer rains. Follow-up herbicide treatment was then undertaken to ensure the decompaction (also known as rip lines) were accessible and maintained. These decompaction lines are widely-spaced along contour lines, to reflect the forest structure, allow the plants to have maximum access to water and light to establish once planted. Pursuant to s19(6) of the method, no native vegetation was damaged or destroyed during this process. Some parts of AA8 on steep slopes, at treed margins or close to waterways will be hand cultivated with a mattock or mechanical auger. These areas will be spot sprayed (1m diameter) to reduce weed competition and to assist planting crews identify seedling locations. A prescribed burn in autumn is planned to occur in a minor part of AA9 for several reasons, firstly the terrain is too steep to have machinery and planters work safely and secondly to increase biodiversity through burning the landscape and create an ash layer to undertake a seeding program in spring, whilst reducing the weed infestations within the area and stimulate the growth of native remnant and groundcover species. The burn will be undertaken in cool conditions in the late afternoon on soils with good moisture content to ensure it is low in intensity and slow-moving fire. Fine fuels may be raked allowing burnt areas to extinguish themselves and protect juvenile remnant vegetation naturally occurring. Historic time-stamped satellite imagery has been reviewed as evidence that native vegetation in the activity areas was not damaged or destroyed by mechanical or chemical means within the last three years, including when under different ownership.
Planting method(s)	Tubestock Broadcast seeding (minor area)
Target stem density	417 stems per hectare
Species to be planted	Reference ecosystem: PCT 4079 <i>Angophora subvelutina</i> <i>Casuarina cunninghamiana</i> <i>Eucalyptus tereticornis</i> <i>Acacia floribunda</i>

Activity Area ID	AA8
	<i>Acacia longissima</i> <i>Acacia maidenii</i> <i>Bursaria spinosa</i> <i>Grevillea robusta</i>

4.1.2 Staggered plantings

Staggered plantings will be used to facilitate the progressive establishment of vegetation community structure and species diversity. The initial plantings will focus on the planting of canopy and mid-storey layers to establish a structural framework and create favourable microclimate conditions. Ground cover species will be established progressively during the first 10 years of the project. This is achieved through several techniques such as natural regeneration, hydro mulching, direct seeding either into topsoil or ash layers and through planting by machine or hand. The success of natural regeneration of ground cover species will be monitored in the initial years of the project to determine the extent of direct establishment required to achieve the restoration target level for each activity area.

Table 16 provides an indicative composition of species likely to be introduced through staggered plantings. Species selection may vary depending on the success of natural regeneration, establishment outcomes, plant availability and project conditions.

Table 16: Indicative ground cover species established through staggered plantings

Activity Area	Reference ecosystem	Ground layer species
AA1 AA2	PCT 3076	<i>Oplismenus</i> spp. (Basket Grass) <i>Pseuderanthemum variabile</i> (Variable Pastel Flower) <i>Desmodium</i> spp. (Tick-trefoils) <i>Adiantum aethiopicum</i> (Common Maidenhair Ferns) <i>Pellaea falcata</i> (Sickle Fern) <i>Dianella caerulea</i> (Flax Lily)

Activity Area	Reference ecosystem	Ground layer species
SAA1 (AA3) SAA3 (AA4)	PCT 3240	<i>Themeda triandra</i> (Kangaroo Grass) <i>Rytidosperma</i> spp. (Wallaby Grasses) <i>Microlaena stipoides</i> (Weeping Grass) <i>Cymbopogon refractus</i> (Barbed-wire Grass) <i>Eragrostis leptostachya</i> (Paddock Lovegrass) <i>Panicum simile</i> (Panic Grasses) <i>Cymbopogon refractus</i> (Barbed Wire Grass). <i>Oplismenus</i> spp. (Basket Grass) <i>Dichondra repens</i> (Kidney Weed) <i>Desmodium</i> spp. (Tick-trefoils) <i>Lomandra</i> spp. (e.g. <i>L. filiformis</i> , <i>L. longifolia</i>) <i>Dianella caerulea</i> (Flax Lily) <i>Gahnia</i> spp. (saw-sedges)
SAA2 (AA3) SAA4 (AA4)	PCT 3252	<i>Themeda triandra</i> (Kangaroo Grass) <i>Entolasia marginata</i> (Bordered Panic) <i>Cymbopogon refractus</i> (Barbed-wire Grass). <i>Desmodium</i> spp. (Tick-trefoils) <i>Lomandra</i> spp. (e.g. <i>L. filiformis</i> , <i>L. longifolia</i>) <i>Dianella caerulea</i> (Flax Lily)

Activity Area	Reference ecosystem	Ground layer species
AA5 AA6	PCT 3329	<i>Themeda triandra</i> (Kangaroo Grass) <i>Rytidosperma</i> spp. (Wallaby Grasses) <i>Entolasia stricta</i> (Wiry Panic) <i>Microlaena stipoides</i> (Weeping Grass) Barbed-wire grass (<i>Cymbopogon refractus</i>) <i>Austrostipa</i> spp. (Spear-grasses) <i>Eragrostis leptostachya</i> (Paddock Lovegrass) <i>Panicum simile</i> (Panic Grasses) <i>Cymbopogon refractus</i> (Barbed Wire Grass). <i>Oplismenus</i> spp. (Basket Grass) <i>Dichondra repens</i> (Kidney Weed) <i>Gonocarpus tetragynus</i> (Common Raspwort) <i>Goodenia hederacea</i> (Forest Goodenia) <i>Wahlenbergia</i> spp. (Bluebell) <i>Pteridium esculentum</i> (Bracken) <i>Calochlaena dubia</i> (Common Ground Fern) <i>Lomandra</i> spp. (e.g. <i>L. filiformis</i> & <i>L. longifolia</i>) <i>Lepidosperma laterale</i> (Ribbon Fruit) <i>Dianella caerulea</i> (Flax Lily)
AA7 AA8	PCT 4079	<i>Microlaena stipoides</i> (Weeping Grass) <i>Eragrostis leptostachya</i> (Paddock Lovegrass) <i>Entolasia marginata</i> (Bordered Panic) <i>Cymbopogon refractus</i> (Barbed Wire Grass). <i>Oplismenus</i> spp. (Basket Grass) <i>Dichondra repens</i> (Kidney Weed) <i>Pseuderanthemum variabile</i> (Pastel flower) <i>Hydrocotyle</i> spp. (Penny wort) <i>Viola hederacea</i> (Native Violet) <i>Lomandra</i> spp. (e.g. <i>L. filiformis</i> , <i>L. longifolia</i>) <i>Adiantum aethiopicum</i> (Common Maidenhair Ferns) <i>Pellaea falcata</i> (Sickle Fern)

4.1.3 Natural regeneration

Natural regeneration of native tree and shrub species was rare across the Project Area and generally restricted to the periphery of the Project Area on steep hills and slopes, at the interface of the AA boundaries with remnant vegetation outside of the Project Area.

Areas of tree regeneration (where stem diameter at breast height is less than 5cm) were rare limited to scattered individuals and seedlings comprising less than 1% cover (of sampling plots) with an approximate

age of less than 3 years. The species, number, location and evidence that natural regeneration will not be damaged in the implementation of the proposed plantings are detailed in Table 17 below.

Table 17: Natural regeneration relied on within each activity area

Activity Area ID	Species name	Location and number of species	Evidence that natural regeneration will not be damaged in the implementation of the proposed plantings
AA1	<i>Angophora floribunda</i>	1 observed in 3076B_T21	- Large tree with fibrous bark that occurs at Cooplacurripa and the east coast of Australia growing on alluvial soils and floodplains and along watercourses. - Plantings will not impact this tree as <i>A. floribunda</i> does appear in the two of the largest plant community types (PCT's) for the planting project which forms a high proportion of the total seedling mix, and therefore, this species will be added to the overall genetic diversity of our planting. - Natural regeneration of this species was found at the perimeters of AA1 in areas which will be hand planted and will not be impacted by ground preparation works. - This tree is fire resistant/tolerant due to the rough bark serving to insulate the tree for protection. Fires both planned or unplanned, this species will be able to take advantage of post-fire conditions as it will naturally regenerate quickly.
AA2	<i>Eucalyptus tereticornis</i>	1 observed in 3076C_T23	- Tall resilient species that occurs widely across Cooplacurripa and east coast of Australia, occurring in a wide habitat range - Plantings will not impact this tree as <i>E. tereticornis</i> is being planted as part of the plantings project. It forms a high proportion of the total seedling mix, and therefore, this species will add to the overall genetic diversity of our plantings - Natural regeneration of this species was found close to waterways AA2 in areas which will be hand planted and will not be impacted by ground preparation works. - This tree is fire adapted, so any fires planned or unplanned, this species will be able to take advantage of post-fire conditions
AA3	<i>Eucalyptus tereticornis</i>	1 observed in 3420B_T42	As above Natural regeneration of this species was found at the perimeters of AA3 in areas which will likely be hand planted. If ground preparation works occur in this area care will be taken to prevent impacts to tree species.
AA5	<i>Eucalyptus tereticornis</i>	1 observed in 3329B_T36 1 observed in 3329B_T45	As above Natural regeneration of this species was found at the perimeters of AA5 in areas which will likely be hand planted. If ground preparation works occur in this area care will be taken to prevent impacts to tree species.

Activity Area ID	Species name	Location and number of species	Evidence that natural regeneration will not be damaged in the implementation of the proposed plantings
	<i>Eucalyptus eugenoides</i>	1 observed in 3329B_T45	- Considered a medium sized tree that occurs across Cooplacurripa and the east coast of Australia, occurring in dry sclerophyll or grassy forest/woodland often on heavier deep soils of moderate fertility. - Planting will not impact this tree as <i>E.eugenoides</i> does appear in the two of the largest PCTs for the planting project which forms a high proportion of the total seedling mix, and therefore, this species will be added to the overall genetic diversity of our planting. - Natural regeneration of this species was found at the perimeters of AA5 in areas which will likely be hand planted. If ground preparation works occur in this area care will be taken to prevent impacts to tree species. - This tree is not considered as fire adaptive or resistant and should be considered flammable due to its bark featuring as fibrous (stringy) and can carry flames into the crown. The species is known to survive fire either through epicormic resprouting, lignotubers and seed.

4.1.4 Seed collection

Seed collection has commenced and is planned to continue at Cooplacurripa Station and surrounding areas (where required). Contractors engaged to supply seed will be required to hold relevant permits and licences and works will comply with industry best practice, relevant environmental and safety legislation.

Seed collection will be undertaken using approved industry-standard methods designed to maximise seed recovery while minimising environmental impact. These methods include:

- Ground Picking: Manual removal of seed pods, beans, or cones from shrubs and small trees using tools such as secateurs, pole loppers, and collection bags.
- Elevated Work Platform (EWP): Used for accessible medium-sized trees where vehicle and equipment access is possible. Enables safe and efficient removal of small branchlets containing seed.
- Climbing Techniques: Employed for large tree species where ground-based or EWP access is not practical. Climbing must follow safety protocols and pruning guidelines, ensuring that no more than 50% of crown volume is removed, the apical leader remains intact, and trees are left in a stable and balanced condition

In accordance with section 16 of the Method, no more than 10% of the fruits, nuts or seeds of any native species in an activity area will be removed in a calendar year.

4.2 Additional Management Activities

4.2.1 Bushfire management

For the duration of the 100-year permanence period the following bushfire management activities (including, but not limited to) are proposed to adaptively manage the replanting project to ensure the project outcome is likely to be achieved and maintained:

- Improving track network and signage to promote accessibility for emergency vehicles across the property including water point access.
- Signage of fire trails to provide firefighters with vehicle accessibility information.

- Slashing near assets (fence lines, tracks, carbon/biodiversity asset perimeter & agricultural) to prevent spread of fire through the surface fuel sources.
- Planned burns to prevent spread of fire through the surface fuel sources.
- Use of herbicide to prevent spread of fire through elevated fuel sources.
- Mechanical removal of branches/limbs within trafficable surfaces to prevent spread of fire through the canopy fuel sources.
- Maintenance of asset protection zones

Where management involves the use of fire in activity areas, burns will be undertaken in accordance with s14(2) of the method.

4.2.2 Grazing

Livestock may be reintroduced to the project area during the permanence period of the project, ensuring plantings within an activity area are sufficiently established, such that 90% of individual have reached 1.5 m. Total grazing pressure (including from livestock, vertebrate pests and overabundant native species) will be managed appropriately, and in accordance with relevant legislation, to prevent a threat to the establishment of the project or achievement of the project outcome.

4.2.3 Thinning

Thinning may be used as a management activity during the permanence period of the project. However, there will be no thinning during the 10 years following registration. After the project has been registered for 10 years, no more than 10% of any activity area will be thinned for ecological purposes.

4.2.4 Pest and disease control

For the duration of the 100-year permanence period the following actions may be used to control pests and diseases:

- The responsible application of herbicides and slashing to remove weed or pasture competition near plantings sites.
- Humane and permitted control of feral animals identified at the property that are a browsing risk, through various techniques.

4.2.5 Monitoring and evaluation

Annual field monitoring will occur, in the field and supplemented with routine satellite and/or drone imagery to assess condition of planted vegetation.

5. Threats and Adverse Events

5.1 Weeds

A number of weeds were identified on the site during field surveys. Weeds have the potential to out-compete the planted species if not properly managed, however, it is expected that the residual risk to achieving the Project outcomes would be low with the proposed measures.

Priority weeds for the site are provided in 37Table 18.

Table 18: Priority weeds for the site

Weed	Mitigation and management measures	Residual risk
Blackberry bush (<i>Rubus fruticosus</i>)	Biomass reduction and targeted herbicide treatment.	Low – whilst sighted in the Project Area, it is representative and typical for the overall landscape. There were no large infestations sighted nor was the weed identified as widespread. It is expected to be suitably managed with the proposed measures.
Kikuyu (<i>Cenchrus clandestinus</i>)	Suppressing Kikuyu Grass growth within planted rows with chemical treatment and maintaining Kikuya Grass along the inter-rows.	Low – whilst the weed is widespread throughout the Project Area as it was initially planted as a fast-growing groundcover species, it is expected to be suitably managed with the proposed measures.
Other invasive weed species	Ealy identification and use of targeted biomass reduction through use of mechanical and herbicide treatment to keep the weed burden low, especially in the high pasture / modified landscapes.	Low- it is expected to be suitably managed with the proposed measures.

5.2 Pests

Pest species have the potential to kill and destroy planting by way of eating, trampling or spreading weeds and other harmful materials into the Activity Areas.

Three pests of priority concern have been identified on the Site; pigs, rabbits and hares. These species are to be managed through the use of fencing and targeted humane control throughout the year. Alignment of methods and strategies with neighbouring properties, especially from National Parks & Wildlife and State Forest land, for a collaborative pest species programs of works would be utilised where practical and feasible.

Through the use of the proposed measures, it is expected that the residual risk to achieving the Project outcomes from pest species would be low.

5.3 Extreme Weather Events and Risks

The site is exposed to a number of natural extreme weather events and risks by nature of being a large, variable and rural environment. The primary weather events and risks of note for the Project and associated mitigation and management measures are provided in Table 19.

Table 19: Extreme weather events / risks and associated mitigation measures

Weather event	Risk	Mitigation and management measures	Residual risk
Bushfire	- Being surrounded by significant amounts of woodlands and vegetation that carry large amounts of fuel for bushfires - Additional fuel sources being added to the environment through plantings - Rural location of the site making access and response times for bushfires challenging	A comprehensive Bushfire Mitigation Works Schedule (BMWS) has already been developed for property. The BMWS uses site based assessment of bushfire potential (fuel loads, structure, fire regime departures and other thresholds) and recommends mitigation strategies matched to that risk profile.	Moderate
Drought	- Reduced water availability resulting in reduced survival and growth of plantings - Increased herbivory by pest animals resulting from a reduction of the availability of alternative food sources.	- Early decompaction to retain moisture in rip-line - Use of water crystals to improve soil moisture retention during planting - Overabundant native and vertebrate pest species control to reduce pressure on system - Watering at the time of planting and early in the establishment - Infill planting in wetter years in the case of dieback.	Moderate
Storms	Storms have the potential to bring strong winds, lightning and heavy rainfall which may present threats to infrastructure and equipment stored on the Site as well as the ability to destroy young plantings and vegetation.	- All infrastructure would be installed/constructed to the relevant Australian Standard. - Equipment would be stored in allocated areas, reasonably protected from the elements. - A maintenance schedule would: - Allow for infrastructure to be maintained and structurally sound - Repair infrastructure where required - Ensure replanting is undertaken where necessary	Low

Weather event	Risk	Mitigation and management measures	Residual risk
Flooding	- With a number of perennial and non-perennial streams running through the site, there is potential significant rainfall to flood different portions of the site, potentially 'drowning' some of the plantings - Flooding has the potential to hold up works, such as ripping and planting - Flooding may render access tracks either temporarily or permanently unusable.	- Temporary access tracks or relocation of tracks would be investigated and used where appropriate - A maintenance schedule would: - Allow for infrastructure to be maintained and structurally sound - Repair infrastructure where required - Ensure replanting is undertaken where necessary	Low

5.4 Climate Change Considerations

5.4.1 Potential climate change effects across all activity areas

The Climate Change in Australia – Climate Projections & Analogues tool (CSIRO and Bureau of Meteorology, 2025) and the Interactive climate change projections map (NSW Government, 2024) were investigated to access projected climate changes and application-ready future climate data (applied to observational data) to create a regional summary on future climate projections.

Projected regional climate change outcomes for the East Coast South sub-cluster of Natural Resource Management (NRM) regions are summarised below:

- Average temperatures will continue to increase in all seasons (very high confidence). There is very high confidence in continued substantial increases in projected mean, maximum and minimum temperatures in line with our understanding of the effect of further increases in greenhouse gas concentrations.
- More hot days and warm spells are projected with very high confidence. Fewer frosts are projected with high confidence.
- Decreases in winter rainfall is projected with medium confidence. Other changes are possible but unclear.
- Increased intensity of extreme rainfall events is projected, with high confidence.
- A harsher fire-weather climate in the future (high confidence).
- On an annual and a decadal basis, natural variability in the climate system can act to either mask or enhance any long-term human induced trend, particularly in the next 20 years and for rainfall.

Using the Climate Analogues projection tool¹ (CSIRO and Bureau of Meteorology, 2025) for Taree (as having the most similar vegetation groups to the Project area) and applying an emissions scenario of Representative Concentration Pathway (RCP) 4.5, it is projected that Cooplacurripa will have a similar climate in 2050 to the current climate of other northern locations Kempsey, Caboolture, Brisbane, Atherton, Grafton, Gold Coast, and Lismore.

¹ The climate analogues tool (CSIRO and Bureau of Meteorology, 2025) matches the proposed future climate of a location of interest with the current climate experienced in another location using annual average rainfall and maximum temperature.

The NSW and Australian Regional Climate Modelling project (NARClIM) 2.0 projections (NSW Government, 2024) provide nation-leading climate model data that span the range of plausible future changes in climate for south-east Australia at a 4 km resolution, and for the broader Australasian region at a 20 km resolution.

Key findings for Hunter region and Cooplacurripa area are listed below:

- Warmer average temperatures: 1 - 4.5 degrees increase in Cooplacurripa.
- Hot days to become more frequent, cold days to decrease.
- Rainfall to remain variable.

5.4.2 Reducing the risk of climate change effects on project outcome

Covalent have recommended flora species with a higher tolerance to environmental stressors, including the potential impacts of climate change. Choosing species with this higher resilience will help provide a buffer to local changes to weather and environmental conditions (Timpane-Padgham BL, 2017) (Prober, 2015)

The planting design has been designed to 'mimic' natural forest structure and characteristics, so that it maximises 'climate refugia' for biodiversity (Vallejo, 2021).

The use of active land management techniques, ecological and bushfire mitigation fire regimes, in the project area and working with neighbouring stakeholders; like NPWS, State Forest, Midcoast Council and Walcha Council on collaborative land management programs at a landscape/natural resource management regional scale will also help reduce the impact of a changing climate on the project.

A summary of climate change effects and risk reduction measures is presented in Table 20.

Table 20: Summary of potential climate change impacts and risk reduction measures

Climate indicator	Effect	Impact	Risk reduction	Residual risk
Temperature	Temperatures will increase during all seasons, including for mean, maximum and minimums (very high confidence). There will be an increase in the number of extreme hot days and fewer frosts and cold days (very high confidence).	Heat stress can cause die-off and die-back in new and existing plantings. Scheduling disruption due to extreme heat.	Maintenance planting schedule to account for temperature-related mortality of plantings. Species selected with a higher tolerance to environmental stressors. Collaboration with relevant surrounding stakeholders.	Low
Rainfall	Decrease in winter rainfall (medium confidence). Increase in intensity of extreme rainfall events (high confidence). Variability in rainfall remains likely.	Potential reduction in rainfall in the growing seasons. Scheduling disruption from extreme rainfall events.	Maintenance planting schedule to account for a planting potentially lost to extreme rainfall events. Species selected with a higher tolerance to environmental stressors. Collaboration with relevant surrounding stakeholders.	Low
Fire weather	Harsh and severe fire-weather to increase	Destruction of existing and new plantings, with areas of higher elevation at greater risk.	Implement the Bushfire Mitigation Works Schedule (BMWS) for the project Species selected with a higher tolerance to environmental stressors. Collaboration with relevant surrounding stakeholders.	Low

6. Threatened Species and Ecological Communities

A search of the Commonwealth DCCEEW PMST was undertaken on 23 June 2026 and was used to conservatively determine what threatened species and threatened ecological communities (TEC) listed under the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) are modelled to occur within or surrounding the Project Area. The complete PMST report can be found in Appendix C of the SAR.

A search of the BioNet Atlas of NSW Wildlife was also undertaken to gain an understanding of the threatened species listed under both the EPBC Act and NSW *Biodiversity Conservation Act 2016* (BC Act) that have been recorded within 10 km of the Project Area.

Approximately 89 threatened or migratory species have been recorded or are predicted to occur within 10 km of the Project Area, comprising 70 fauna species and 19 flora species. These are summarised in Table 10 of the SAR. No threatened species or listed migratory birds were identified during the SSA, however, the likelihood of occurrence of these species within the Project Area has been assessed on a desktop basis.

The following threatened ecological communities (TECs) were predicted to occur by the PMST:

- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (Critically Endangered)
- Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions (Endangered)
- New England Peppermint (*Eucalyptus nova-anglica*) Grassy Woodlands (Critically Endangered)
- Ben Halls Gap Sphagnum Moss Cool Temperate Rainforest (Critically Endangered)
- Lowland Rainforest of Subtropical Australia (Critically Endangered)
- Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland (Endangered)

No TECs were recorded within the Project Area. However, PCT 3076 is associated with several rainforest TECs including:

- Lower Hunter Valley Dry Rainforest in the Sydney Basin and NSW North Coast Bioregions (Vulnerable under the BC Act),
- Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions (Endangered under the BC Act), and
- Lowland Rainforest of Subtropical Australia (Critically endangered under the EPBC Act).

Although PCT 3076 is likely to have been historically present within the Project Area, it does not currently occur within the Project Area. The Project aims to reinstate PCT 3076 through environmental planting activities.

Measures to promote or conserve the recovery of threatened species and ecological communities:

Cooplacurripa Station is located in the Upper Manning Catchment and has two main rivers running across the property, the Cooplacurripa and Mummel Rivers – these freshwater rivers support the region's catchment. Destocking and fencing off the access to the rivers to protect habitat along both of the rivers will occur. Species on the proposed planting list are known Koala food trees and will be able to support the existing population once they are mature.

Regular weed and vertebrate pest control will occur throughout all activity areas to reduce exotic flora species competition with native flora species and herbivory of native species by vertebrate pests.

7. Other Features

7.1 Significant Hydrological Features

There are no hydrological features of significance in the Project Area.

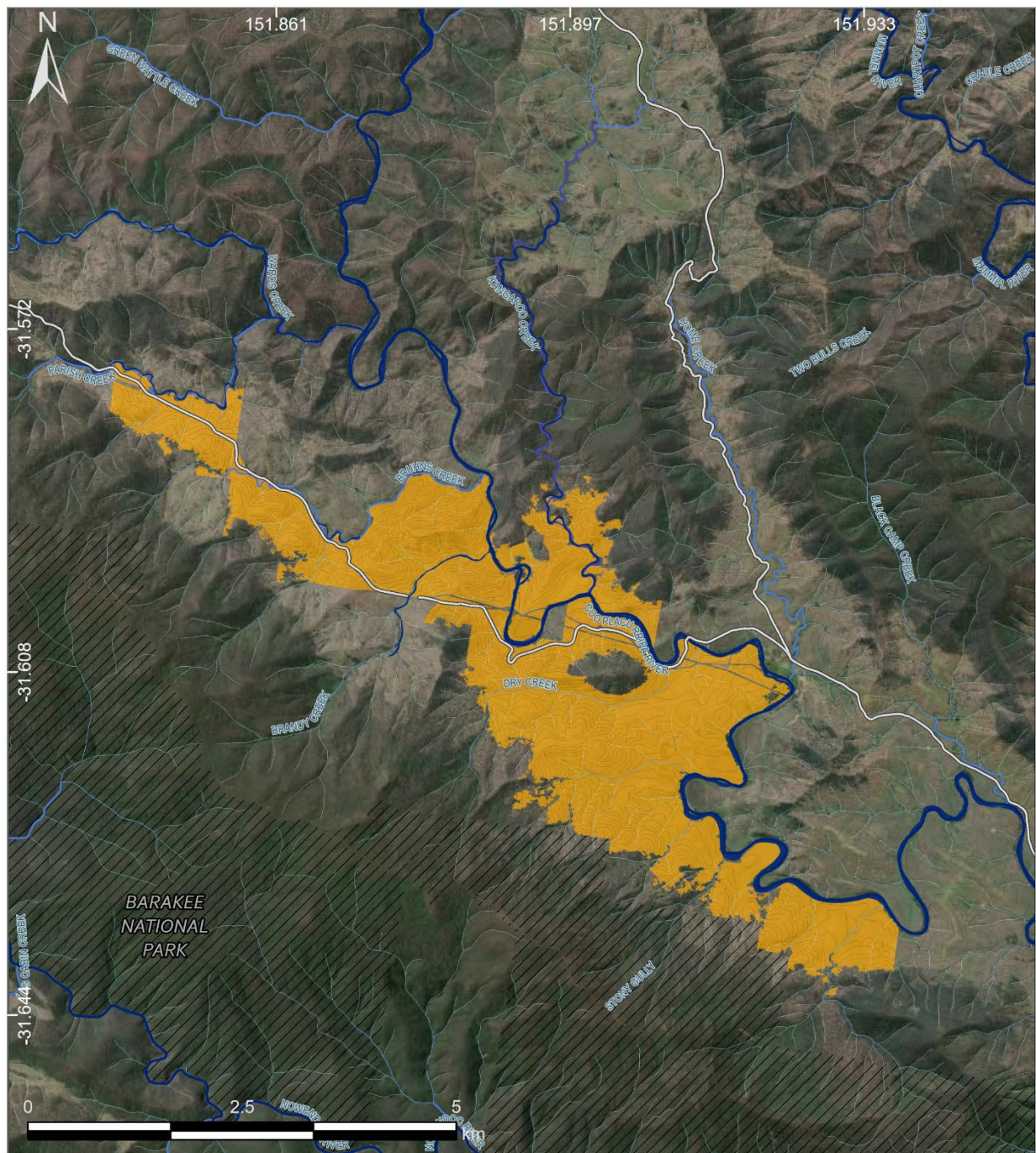
There are a number of perennial and non-perennial streams which surround the Project Area from the Hunter-Central Rivers Catchment Management Area which intersect with the Project, these are detailed in Table 21 and shown in Figure 1. Cooplacurripa River and Kangaroo Creek being the most significant streams present in the Project Area.

A search of the Commonwealth DCCEEW Protected Matters Search Tool (PMST) was undertaken on 25 February 2026 and confirmed that no Wetlands of International Importance (RAMSAR wetlands) were present within the Project Area.

Table 21: Relevant hydrological features

Stream name	Flow	Strahler order	Drainage
Cooplacurripa River	Perennial	6	Drains from the north-west of the Project Area to the south-east, into the Nowendoc River beyond the Project Area.
Kangaroo Creek	Perennial	5	Drains from the north west to the south east, where it combines with Cooplacurripa River within the Project Area.
Bruhns Creek	Non-perennial	4 and 3	Drains from the south west to the north east before joining Cooplacurripa River just outside of the Project Area. Largely runs along the perimeter of the north western boundary of the Project Area.
Parish Creek	Non-perennial	4	Drains from west to east along the perimeter in the north western corner of the Project Area, draining into Wards Creek before joining the Cooplacurripa River.
Brandy Creek	Non-perennial	3	Drains from the south west to north east, into the Cooplacurripa River.
Dry Creek	Non-perennial	3	Drains from the south west to north east, into the Cooplacurripa River.
Stony Gully	Non-perennial	3	Drains from the south west to north east, into the Cooplacurripa River in the south eastern portion of the Project Area.

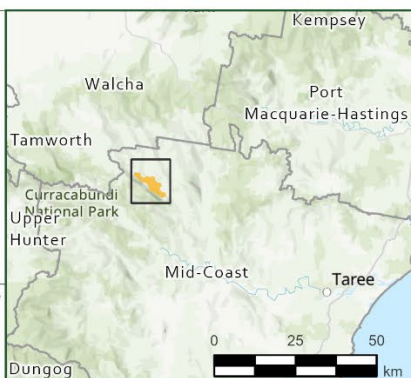
Figure 1: Hydrological features



**Cooplacurripa
Biodiversity Project
No. 2**
Hydrological Features

 NRM Project Area Boundary	Strahler Stream Order
Land Features	1
 National Park	2
 Contours 10m	3
 Public Roads	4
 Rivers	5
	6

Spatial Reference: GDA2020 MGA Zone 56 | Basemap: Esri, Geoscience Australia, NASA, NGA, USGS, Vantor, Airbus, USGS, NGA, NASA, CGIAR, NCEAS, NLS, OS, NMA, Geodatastyreisen, GSA, GSI and the GIS User Community
Date Published: 6/10/2026 11:29 AM | Scale: A4 :1:58,880



7.2 Covenants or Other Legal Encumbrances

Identification of covenants and other legal encumbrances were informed by:

- search of the applicable land title register;
- search of any applicable state or territory register relating to cultural heritage;
- search of the Register under the *Carbon Farming Initiative Act 2011* (CFI Act); and
- a signed statement from the owner of the land.

Conduct of these searches identified that there is one legal encumbrance applicable to the entirety of the Project: AU512816 Mortgage to Commonwealth Bank of Australia.

8. Indigenous Engagement

8.1 Engagement Undertaken

Engagement with the Purfleet-Taree Local Aboriginal Land Council (PTLALC) has occurred and will be ongoing throughout the project. Whilst to date, there has been no Indigenous knowledge, values or Indigenous data used in the implementation of the project; if in the future Indigenous knowledge, values or Indigenous data is used in the project, it will be treated in accordance with Section 29 of the method.

Additionally, Silva Capital and Covalent have co-designed a First Nations Engagement Protocol with the PTLALC which incorporates principles relating to cultural heritage protection, Indigenous Cultural and Intellectual Property (ICIP), and Indigenous Data Sovereignty (IDS), in reference to the following leading practice frameworks:

- United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP): sets international standards for recognising and protecting Indigenous peoples' rights. It affirms self-determination, cultural integrity, and Free, Prior and Informed Consent, ensuring communities have authority over decisions affecting their lands and heritage. Alignment with UNDRIP embeds rights-based approaches into project design and delivery, strengthening ethical governance and global best practice.
- Dhawura Ngilan Business and Investor Initiative (DNBII): supports businesses and investors to embed First Nations-led cultural heritage standards into governance, strategy, and operations. It provides practical guidance to respect for Country, uphold Free, Prior and Informed Consent, and strengthen partnerships that protect cultural heritage while building responsible, future-focused business and investment practices.
- Australian Carbon Industry Code of Conduct: sets high standards for integrity and transparency, encouraging carbon projects to engage meaningfully with Traditional Owners, respect Native Title rights, and deliver equitable, sustainable co-benefits for First Nations communities
- Indigenous Carbon Industry Network (ICIN) Guidance: emphasises Indigenous-led governance of carbon projects, and provides standards for participation, decision-making, and benefit-sharing that respect Country and strengthen livelihoods.
- NSW Caring for Country and Protecting Our Places: emphasises Aboriginal-led stewardship of land and water, empowering communities to protect sacred sites, revitalise cultural practices, and restore landscapes in ways that strengthen resilience and deepen connections to Country.
- NSW Cultural Knowledge Standards Framework: sets clear guidance for working with Aboriginal communities in ways that respect cultural heritage, protect Aboriginal Cultural Intellectual Property, and strengthen culturally safe collaboration across government, research, and industry.

As part of this collaborative approach, the project team hosted representatives from the PTLALC during the SSA as part developing a shared understanding of the practical implementation of the Method and to identify potential collaboration opportunities in future projects on the same property.

Silva Capital and Covalent have co-ordinated with Purfleet-Taree Local Aboriginal Land Council (PTLALC) to implement a co-designed cultural heritage induction and cultural heritage unexpected finds procedure that apply to any works undertaken across the property.

9. Assumptions and Limitations

- Variables beyond the control of Silva and the subcontractors used on the Project may affect the actual species list received from the nurseries and actual planting density.
- Benchmark values have been derived from the NSW Governments BioNet Vegetation Classification system and Commonwealth Department of the Environment and Energy, applying the average rainfall benchmarks and default conditions for the NSW North Coast IBRA region.
- Due to size restraints in uploading the Project shapefile into the PMST, a conservative polygon (covering a greater area than the Projects actual footprint) of the Projects perimeter was drawn directly into the tool.
- The use of the PMST identified a number of threatened species and communities that were not identified during the surveys, however this does not confirm the absence or presence of these species or communities as no targeted surveys were undertaken.

10. References

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Appendices

Appendix a: Suitably Qualified Person(s)

Appendix B1: Curriculum Vitae



Cecilia Phu

Principal Botanist

Nature Positive Advisory Pty Limited



Professional Overview

Cecilia is a consultant botanist with over 18 years of practice experience and has worked extensively in the Hunter and Central Coast regions, as well as the western slopes, central-west and north-west regions of NSW. A NSW accredited BAM assessor, Cecilia has led and delivered biodiversity impact assessments, developed offset strategies and prepared EPBC Act referrals for state significant projects, local developments, and public works across a diverse range of sectors including mining, extractive, transport and transmission infrastructure, renewable energy, residential and commercial development. Cecilia specialises in terrestrial vegetation survey and assessment throughout NSW and focuses on delivering robust assessments backed by data. Cecilia works closely with clients and project teams to identify solutions that achieve positive project outcomes.

Qualifications and licences

- Member of the Environment Institute of Australia and New Zealand (MEIANZ)
- Member of the Ecological Society of Australia (MESA)
- Accredited BBAM and BAM Assessor
- Bachelor of Science, Biology (Hons), University of Sydney, 2008
- Senior First Aid Certificate
- Rail Industry Worker Card
- 4WD Driver Training
- Workcover Construction White Card

Specialisation

- Terrestrial vegetation survey and assessment
- Biodiversity Assessment Method

Work history

- Principal Botanist, Nature Positive Advisory Pty Ltd (June 2025 – current)
- Associate Ecologist | Team Manager - Ecology, EMM Consulting Pty Limited (September 2023 – May 2025)
- Associate Ecologist | Team Leader – Ecology (NSW), EMM Consulting Pty Limited (September 2020 – August 2023)
- Senior Ecologist (Botany), GHD (April 2018 – September 2020)
- Senior Ecologist (Botany), Kleinfelder Australia (May 2017 – March 2018)
- Senior Project Manager | Ecologist, Cumberland Ecology (now SLR) (July 2010 – April 2017)
- Ecologist | Project Manager, Cumberland Ecology (now SLR) (November 2006 – June 2010)

Representative experience

Biocertification projects

- Biocertification to support Planning Proposal for urban/residential project, Fennell Bay NSW (Landcom)

- Biocertification to support Planning Proposal for urban/residential project, Kingscliff NSW (Gales Kingscliff Pty Ltd)
- Biocertification to support Planning Proposal for urban/residential project, Manyana NSW (JWD Project Pty Ltd)
- Biocertification to support Planning Proposal for several sites on the Central Coast NSW (Darkinjung Aboriginal Land Council)
- Biocertification to support subdivision proposal at Lake Munmorah NSW (Landcom)

Biodiversity assessments

- Cooplacurripa Biodiversity Project No. 2 Starting State Assessment and Project Plan, Cooplacurripa NSW (Covalent Land Australia Pty Ltd)
- Category 1 land assessment and low conservation values grassland assessment, Hunter Valley NSW (Covalent Land Australia Pty Ltd)
- Dog Trap Hill Biodiversity Stewardship Agreement, Yeoval NSW (Woodside Pastoral)
- Long Gully Farm Biodiversity Stewardship Agreement, Breakfast Creek NSW (Steve McCall)
- Tycannah East and West Biodiversity Stewardship Agreement, Moree NSW
- Sundown Solar Farm, Biodiversity Development Assessment Report, Glenn Innes NSW (Canadian Solar)
- Wellington BESS, Biodiversity Development Assessment Report, Wellington NSW (AMPYR Australia)
- New England Solar Farm MOD 2, Biodiversity Development Assessment Report, Uralla NSW (UP/C Renewables)
- New Shellharbour Hospital, Biodiversity Development Assessment Report, Shellharbour NSW (Health Infrastructure)
- Belmont temporary desalination project, biodiversity assessment, Belmont NSW (Hunter Water)
- Sydney Light Rail Stage 2, impact assessment, Sydney NSW (Transport for NSW)

- Mt Arthur Coal Mine, ecological impact assessment, Muswellbrook NSW (BHP Billiton)
- Bengalla Mine Extension, ecological impact assessment, Muswellbrook NSW (Coal and Allied)
- Maules Creek Coal Project, ecological impact assessment, Boggabri (Whitehaven Coal)
- Mt Pleasant Coal Project, ecological impact assessment, Muswellbrook NSW (Rio Tinto)
- Drayton South Coal Mine, ecological impact assessment, Muswellbrook NSW (Anglo American)
- Curragh Mine, ecological impact assessment, Blackwater Qld (BHP Billiton)
- Project China Stone, ecological impact assessment, Clermont Qld (MacMines Austasia)
- GEMCO Eastern Leases Project, ecological impact assessment, Groote Eylandt NT (Groote Eylandt)
- Tampakan Copper-Gold Project, terrestrial and aquatic impact assessment, Mindanao Island Philippines (Sagittarius Mines)
- Dungog Rural Land Use Strategy Review, biodiversity lands assessment, Dungog NSW (Dungog Shire Council)
- Meadowbank Pedestrian Access Project, biodiversity constraints analysis, Meadowbank NSW (Transport for NSW)
- Wollar Preliminary Regional Issues Assessment, review of biodiversity constraints, Wollar NSW (Department of Planning, Industry and Environment)
- Bob's Farm Sand Extraction Project, biodiversity gaps analysis and feasibility advice, Bob's Farm NSW (Strategy Assessment Management)
- Somersby Development Constraints Analysis, biodiversity constraints analysis, Somersby NSW (Department of Planning and Environment)
- Project Hume, biodiversity due diligence assessment, Medway NSW (Landcom)
- Project Summit, biodiversity due diligence assessment, Lochinvar NSW (Landcom)
- Undisclosed project, biodiversity due diligence assessment for a proposed solar farm in the CWO REZ, Dunedoo NSW (Pacific Partnerships)
- Hunter Transmission Connections Project, biodiversity constraints assessment (EnergyCo)
- Transport Access Projects at Normanhurst Train Station, biodiversity assessment, Normanhurst NSW (Transport for NSW)
- Transport Access Projects at Thornleigh Train Station, biodiversity assessment, Thornleigh NSW (Transport for NSW)
- Sewerage Treatment Scheme for township of Wyee, biodiversity impact assessment, Wyee NSW (Hunter Water)
- Sewerage Upgrade for township of Bundarra, biodiversity impact assessment, Bundarra, NSW (Uralla Shire Council)
- Sewerage Treatment Scheme for township of Cullen Bullen, biodiversity impact assessment, Cullen Bullen NSW (Lithgow City Council)

- Richmond Vale Rail Trail Project, biodiversity development assessment report, Richmond Vale NSW (Newcastle City Council)
- Epping to Thornleigh Third Track Project, impact assessment, Epping to Thornleigh NSW (Transport for NSW)
- M2 upgrade, impact assessment, Sydney NSW (Roads and Maritime Service)
- Ecological assessments for sewer and stormwater infrastructure, Sydney Growth Centres (Sydney Water)
- Powerline upgrade project, impact assessment, Sydney NSW (Novorail Alliance)

Vegetation and ecological risk mapping

- Inland Rail Project, vegetation mapping and threatened species survey, Narrabri to Narromine NSW (ARTC Rail Network)
- Ecological risk mapping project, Ulan Single Line and Mt Thorley Loop, NSW (ARTC Hunter Valley)
- Ecological risk mapping project, Kundabung to Lawrence Drive NSW section (ARTC Interstate)
- Port Kembla to Wilton Gas Pipeline Project, vegetation mapping and targeted threatened flora surveys, Port Kembla to Wilton NSW (APA Group)
- East Grampians Rural Pipeline Project, rapid vegetation assessment, East Grampians NSW (GWMWater)

Commonwealth assessments

- Williamstown Sand Quarry, EPBC Act preliminary documentation, Williamstown NSW (Williamstown Sand Syndicate)
- Emirates One&Only eco-resort, EPBC Act public environment report, Wolgan Valley NSW (Emirates Australia)

Threatened species

- Threatened species monitoring, northern dunes bi-annual monitoring, *Syzygium paniculatum* surveys, Mungo Brush National Park NSW (Office of Environment and Heritage)
- Saving our species project: Monitoring and management works for four threatened species on the Northern Tablelands, NSW (Office of Environment and Heritage)
- Targeted survey for threatened flora species *Corunastylis* sp. Charmhaven, *Thelymitra adorata*, *Cryptostylis hunteriana* and *Rutidosia heterogama*, Warnervale NSW (Pastoral Investment Land and Loan Pty Ltd)
- Swift Parrot and Regent Honeyeater Project Plan with the Australian National University, Maules Creek Project (Whitehaven Coal)
- Mt Arthur Coal Mine, annual monitoring of a *Diuris tricolor* population, Muswellbrook NSW (BHP Billiton)

Biodiversity monitoring and management

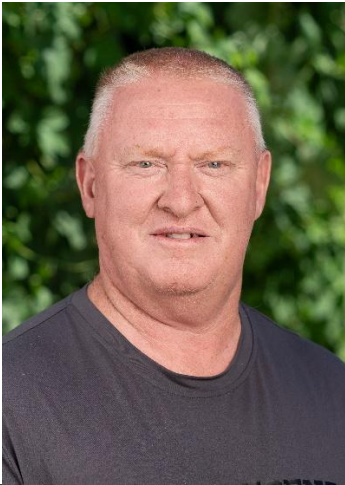
- M4 widening, construction pre-clearing and clearing supervision, Sydney NSW (Westconnex)

- Snowy 2.0 Main Works, biodiversity monitoring program 2020-2023 (Snowy Hydro Limited)
- Mt Arthur Coal Mine, annual flora and fauna monitoring, Muswellbrook NSW (BHP Billiton)
- Ravensworth Mine, flora and fauna monitoring, Liddell (Glencore)
- Donaldson Coal Mine, post-mining monitoring, Black Hill NSW (Yancoal)
- Ashton Coal Project, post-mining monitoring, Camberwell NSW (Ashton Coal Operations)
- Irrawang Swamp, wetland monitoring and mapping, Raymond Terrace NSW (Hunter Water)
- Grahamstown Dam, wetland health and condition monitoring, Tomago NSW (Hunter Water)
- Newstan Mines, wetland monitoring, Fassifern NSW (Centennial Coal)
- Mandalong Mines, wetland monitoring, Mandalong NSW (Centennial Coal)
- Wianamatta Regional Park Grazing Exclusion Monitoring, Ropes Crossing and Jordan Springs NSW (Lendlease)
- Shannon Creek Dam, annual flora and fauna monitoring, Clarence Valley NSW (Clarence Valley Council)
- Macropod grazing exclosure study within the Wianamatta Regional Park, St Marys NSW (Lendlease)
- Solar Farm Grassland VI study (Department of Planning)

Environmental audits

- M8 Independent Environmental Audit WestConnex Stage 2: M5 – Beverly Hills to St Peters (“the New M5”) Technical Specialist (Biodiversity) review (Fulton Hogan Egis Operation and Maintenance)
- Independent Environmental Audit Tomago Aluminium, Technical Specialist (Biodiversity) review, Tomago NSW (Tomago Aluminium Company Pty Ltd)
- Project Approval Compliance Audit Ulan Coal Mine, Technical Specialist (Biodiversity) review, Ulan NSW (Ulan Coal Mine Limited)

Martin Campbell



SKILLS

Land management
Ecology
Grounds maintenance
Safety
Service Delivery
Stakeholder engagement
Asset management
Reporting
Governance

EDUCATION

University of Canberra

Bachelor of Environmental
Science (Vegetation
Ecology)

CIT Canberra Institute of Canberra

Diploma of Horticulture
(Landscape)

Certificate in Horticulture

Certificate in Animal
Science

ECOLOGY MANAGER

Covalent Land Australia | Canberra, ACT

Martin is a qualified and experienced ecologist with over 25 years' experience managing the environment and natural resources for the Department of Defence estates and military training ranges. Within the diverse land management portfolio under Martin's management, includes disciplines such as bushfire preparedness and mitigation, weed and vertebrate management, threatened species programs, overabundant native species, Cultural and Heritage management, sustainability and tree management and holds extensive experience in project management including safety and risk management.

Graduating from Canberra University with a Bachelor of Science Degree in Vegetation Ecology, Martin has experience working throughout the ACT, NSW and QLD regions. Martin is a qualified Horticulturalist and has experience working in Australian, European and Japanese landscapes. During this time Martin was able to work in a wide variety of horticultural fields such as landscape management, green keeping, nursery practices in propagation and seed collection, landscaping construction, floral displays and garden style such heritage and Japanese styles.

EXPERIENCE

ECOLOGY MANAGER

Covalent Land Australia | 2024 – present

Leading the delivery and expansion of high-integrity land restoration projects through carbon and nature-based finance, driving sustainable outcomes that enhance natural capital and productive land use.

Building customer value by integrating strategic stakeholder engagement, risk management, and resilience principles to deliver innovative, commercially viable restoration solutions.

ENVIRONMENTAL PROJECTS SUPERVISOR

Downer Defence | 2018 – 2023

Responsible for the delivery of all Environmental projects within ACT/SNSW Defence Estates. Projects managed are environmental weed & vertebrate management, bushfire mitigation, heritage (cultural/European) management, threatened species management, tree management, bushland regeneration. This role also supports the SNSW regions of the Riverina and Shoalhaven regions.

OTHER QUALIFICATIONS

Certificate Vertebrate
Pest Management

Certificate 5 in Frontline
Management

Certificate in ChemCert
(21001585)

Certificate in chainsaw
operation – Trim & Cross
Cut

Certificate in Frontend
Loader Operation

Certificate 212A Grassfire
First Response

Certificate in WH&S White
Card (03493)

Certificate in Microsoft
packages

Certified Wires Reptile
Handler

Senior First Aid

SHOALHAVEN LAND COORDINATOR

Spotless Facilities Services | Nov 2015 – Feb 2018

Responsibilities in this position was the transition into the Estate Management & Operational Services (EMOS) contract for ACT/SNSW. Responsible for the delivery of ground services in the ACT/SNSW regions. The position was also responsible for the management of the environmental projects for weeds, vertebrates, and bushfire management, along with the company compliance for all auditing, staff management, service delivery, innovation, implementation and management of safety, budgeting, asset management, stakeholder engagement and senior management reporting.

REGIONAL ENVIRONMENTAL/GROUND MANAGER – SNSW DEFENSE ESTATES

Serco Sodexho Defense Services | Feb 2008 – Oct 2014

Responsible for the delivery of the Environment & Heritage, Land & Estates, Grounds maintenance, Pest and Vermin and Sustainability (waste & water). The role was also responsible for the management of all staff, asset management, governance, budgets, stakeholder and senior management reporting, safety.

Cuong Tran



CHIEF EXECUTIVE OFFICER

Covalent Land Australia | Brisbane, QLD

Cuong has over 20 years' experience in bushfire research and management and is a recognised expert in the field of fire management, ecology and planning. He has applied novel and new ways of thinking to traditional land management practices, particularly by incorporating environmental risk impacts such as bushfires. Cuong is a transformative leader and facilitator, nurturing his team to get their best. Leading cultural change improves business performance, Cuong loves playing a role in that.

SKILLS

Natural Resource Management
Subject Matter Expert Bushfire
Financial Acumen
Team Leadership
Project Planning
Accountability
Improving Efficiency
Risk Assessment
Strategy Into Practice

TECHNICAL SKILLS

Bushfire Behaviour
ArcGIS / Spatial Data
Landscape Ecologist
Project Management

EDUCATION

BACHELOR OF SCIENCE
(1st CLASS HONS)
Biology Major
Griffith University 1992–96

DOCTOR OF PHILOSOPHY
Fire Ecology & Flammability
Griffith University 2008

EXPERIENCE

CHIEF EXECUTIVE OFFICER

Covalent Land Australia | September 2024 – present

Support the scaling of high integrity land restoration projects through carbon financing, whilst enhancing natural and Cultural heritage and primary production values. Focused on building highly effective teams and nurturing a rich and diverse culture. Applying knowledge of landscape ecological fire regimes under a changing climate to reduce risk and enhance environmental values.

PRINCIPAL – SUSTAINABILITY & CLIMATE CHANGE

Aurecon – Market Advisory Group | 2022 – September 2024

Lead nature-based carbon abatement & sequestration programs, providing tailored solutions to reduce liabilities, presenting high integrity projects with identifiable co-benefits (such as biodiversity).

GENERAL MANAGER

Covalent Land Australia (renamed from Market Advisory Group – Project Services) | 2020 – September 2024

Lead delivery of programs for groups / corporations to establish as carbon market developers. Assist in solutioning, integrating natural resource management into existing and new programs.

EXECUTIVE MANAGER

Ten Rivers | 2017 – 2020

Led and transformed a significant repositioning of the business, without major disruption to service delivery. Identified new clients, and ensured continued high quality delivery across both consulting and delivery sectors of the business. Leading by example for bushfire management and mitigation programs.

continued....

PROFESSIONAL DEVELOPMENT

FIRE BEHAVIOR ANALYST
QFES Training, 2018

PLANNED BURN
SUPERVISOR
Fire Management
Training, 2018

CREW MEMBER – FIRE-
FIGHTER
Qld Dept. of Forestry, 1994

- Bushfire, risk and strategic landscape management planning for large land managers and owners
- Integrated land management planning, principally fire and weed management
- Business development, and extension of environmental services across the Broadspectrum group
- Increase revenue 10-15% year on year, highest staff retention in sector of parent company
- Returning bases to operation within two days. Total clean-up effort lasted six months, costs over 5M

NATIONAL MANAGER – ENVIRONMENTAL SERVICES

Broadspectrum | August 2017 – May 2019

Seconded role to lead and transform service delivery to Broadspectrum's largest contract, Defence Base Services for the Commonwealth Dept. of Defence. A challenging role, this was a client facing, deeply involved position, but I was proud to drive consistency of service delivery of Land Management programs across WA, SA, NT, VIC & TAS (over 3M hectares of land). Operating annual budget of >\$30M.

- Enhanced service delivery to save 10 – 20% on resources to land management deliverables
- Managed nine direct reports, service delivery at over fifty different locations across the country
- Led the clean-up effort following TC Marcus (in Darwin) in Feb 2019

NATIONAL SCIENCE LEAD BUSHFIRE MANAGEMENT SERVICES

Transfield Services (now Broadspectrum) | September 2012 – 2017

Developed and implemented new methods to analyse and record bushfire risk across Defence estates in WA, SA, and Victoria. Helped with creation of new entity (Ten Rivers) as a start-up venture. Client facing with challenging customer with varying expectations at the regional level. Increased service delivery by 20%

- Integrated and adaptive estate management for a diverse group of land managers, including local govt, resources industries, utility companies and Defence.
- Enhancing environmental outcomes by using smarter business-orientated techniques
- Created an external market for bushfire risk management opportunities

FIRE MANAGEMENT & ECOLOGY SPECIALIST**Serco Sodexo Defence Services / July 2009 – September 2012**

Developed and implemented robust measures of bushfire risk across the Defence Estate in NT, NW WA, North Qld, Northern NSW and the ACT. Evidence-based approach of risk management led to 30% increase in revenue for implementation of risk-reduction programs. Be sure to use job-specific keywords to catch your future employer's eye, and to get chosen by application tracking systems.

- Fire management planning across the Defence Estate
- Coordinating landscape management programs across the Defence Estate

ACADEMIC**School of Environmental Sciences, Griffith University | 2001 – 2009**

Developed new research theme in bushfire ecology and management at the School.

Refreshed and taught courses in Botany, Ecology and Wildlife Management. Coordinated the SEQ Fire & Biodiversity Consortium, servicing LGA, Qld Parks & Wildlife Service, Qld Fire & Emergency Services, & Forestry.

- Supervised five Honours (4 – 1st Class, 1 – 2nd Class Div. A) and 2 PhD students to completion.
- Organised the 2006 International Bushfire Conference: Translating Science into Practice, held in Brisbane in July 2006. Special Edition (Vol 115) of the Proceedings of the Royal Society of Queensland followed
- Recipient of Qld Safer Community Award for Bushfire Planning

Jay van Rijn



SKILLS

Natural Resource Management

Subject Matter Expert ACCU & Nature Repair Market Schemes

Commercial Acumen

Legal Negotiation

HSEQ Management

TECHNICAL SKILLS

Carbon Markets

Emerging Environmental Markets

Business Administration

EDUCATION

BACHELOR OF SCIENCE (1st CLASS HONS)
Marine & Climate Science
Monash University 2005–2009

GUEST LECTURER (MASTERS OF SUSTAINABILITY)
University of Melbourne;
Monash University 2020–2021

CHIEF OPERATIONS OFFICER

Covalent Land Australia | Adelaide, SA

Jay has more than 15 years of experience across climate and environmental science, project delivery, commercial negotiation, operations, and sales and marketing. He has held commercial development roles at Greening Australia and South Pole, combining strong client management with technical expertise to deliver high-quality project outcomes. Jay helps deliver nature-based solutions that generate measurable impact and sustainable project returns.

EXPERIENCE

CHIEF OPERATIONS OFFICER

Covalent Land Australia | August 2023 – present

Coordinating the scaling up of high-integrity land restoration projects through carbon and nature-based finance, while enhancing natural capital and integrated, productive land-use practices. Focused on demonstrating customer value through a leading-practice approach that embeds stakeholder engagement, risk management, and resilience initiatives into project delivery.

DIRECTOR – COMMERCIAL DEVELOPMENT

Greening Australia/Canopy | March 2021 – August 2023

Led the commercial development team and business unit of Greening Australia's environmental markets portfolio, scaling high-integrity restoration projects through carbon and nature finance while driving customer value, partnerships, and sustainable land-use outcomes.

HEAD OF CLIMATE STRATEGY – OCEANIA

South Pole | September 2017 – March 2021

Managed the development and delivery of climate strategies (including consulting and trading services) for corporate clients, aligning decarbonisation pathways with carbon market solutions and advancing net-zero commitments through high-integrity climate action.

BUSINESS DEVELOPMENT MANAGER

Australian Ecosystems | Biofilta | Gardline Environmental 2013 – 2017

Responsible for business development activities across environmental services and infrastructure projects, building client relationships, originating opportunities, and growing revenue in ecological restoration, urban stormwater management and coastal/marine sectors.



Nathan Garvey

Director | Principal Advisor

Nature Positive Advisory Pty Limited



Professional Overview

Nathan is an experienced ecologist with over 25 years' practice in leading ecological assessments and approvals across eastern Australia. Nathan has delivered projects across a diverse range of sectors including mining, oil and gas, linear infrastructure, renewable energy and residential development. He has extensive experience in biodiversity assessment and approvals, including biodiversity assessment for major projects and EPBC Act referrals, and has worked on large-scale projects such as Snowy 2.0, Hunter Transmission Project, Oven Mountain Pumped Hydro, Clarrie Hall Dam, Dungowan Dam and Mole River Dam.

Nathan is one of NSW's leading experts in biodiversity approvals and offsetting and his strategic, expert advice is actively sought by public and private sector clients. His innovative, tailored, whole-of-project approach to approvals and offsets delivers solutions for our clients, saving both time and money. He works collaboratively with our project teams to ensure high quality project outcomes.

Qualifications and licences

- Fellow of the Environment Institute of Australia and New Zealand (FEIANZ)
- Certified Environmental Practitioner (CEnVP)
- Biodiversity Assessment Method (BAM) Accredited Assessor
- Member of the Environment Institute of Australia and New Zealand (MEIANZ)
- Graduate Diploma (Biological Science), University of NSW, 2003
- Bachelor of Science, University of NSW, 2001

Advisory Panels

- National Environmental Law Reform – Biodiversity Subject Matter Expert
- Independent Expert Advisory Panel for Mining (IEAPM)
- Independent Expert Advisory Panel for Energy Assessment (IEAPEA)

Specialisation

- Strategic advisory
- Biodiversity assessment and approvals (State and Commonwealth)
- Biodiversity offsetting
- Natural Capital
- Nature Positive

Work history

- Director | Principal Advisor, Nature Positive Advisory Pty Ltd (2024 – current)
- National Operations Executive – Ecology, Environmental Approvals and Engagement, WSP Australia Pty Ltd (May – September 2024)
- Associate Director | Strategic Advisor – Biodiversity and Natural Capital, EMM Consulting Pty Limited (July 2023 – May 2024)

- Associate Director | Division Leader - Bushfire, Ecology, Heritage and Spatial Solutions, Transport, Acoustics and Air Quality, EMM Consulting Pty Limited (March 2022 – June 2023)
- Associate Director | Division Leader – Bushfire, Ecology, Heritage and Spatial Solutions, EMM Consulting Pty Limited (April 2018 – March 2022)
- Associate Ecologist, EMM Consulting Pty Ltd (August 2017 – April 2018)
- Newcastle Resource Group Manager, Biosis Pty Ltd (October 2015 – August 2017)
- Senior Consultant Ecologist, Biosis Pty Ltd (February – October 2015)
- Wollongong Resource Group Manager, Biosis Pty Ltd (January 2011 – February 2015)
- Consultant Zoologist, Biosis Pty Ltd (October 2009 – December 2010)
- Zoologist, Biosis Pty Ltd (February – September 2009)
- Technical Assistant, Biosis Pty Ltd (February 2007 – February 2009)
- Project Manager and Ecologist, Cumberland Ecology Pty Ltd (2003 – 2007)
- Research Assistant, University of NSW (2001 – 2003)

Representative experience

Biodiversity assessments

- Starting State Assessment Cooplacurripa Biodiversity Project No.2 (Covalent Land Australia Pty Ltd)
- Upper Hunter Battery Energy Storage System and Transmission Line (North Harbour Clean Energy)
- Richmond Vale Battery Energy Storage biodiversity assessment (Vena Energy)

- Hunter Transmission Project, approvals strategy and biodiversity offset strategy, Hunter Valley NSW (EnergyCo)
- Hunter Transmission Project, preliminary biodiversity assessment (EnergyCo)
- Munmorah Biodiversity Certification (Landcom and Darkinjung Local Aboriginal Land Council)
- Prelim Options Analysis, New England Renewable Energy Zone Transmission Route Alignment (EnergyCo)
- Clarrie Hall Dam Wall Raising biodiversity assessment, Kyogle NSW (Tweed Shire Council)
- Oven Mountain Pumped Hydro biodiversity assessment including transmission lines, Lower Creek NSW (Alinta Energy, NSW)
- Central West Orana Renewable Energy Zone Transmission Corridor, NSW (WSP and EnergyCo)
- Moomba to Wilton Pipeline - Mod 3 biodiversity assessment (APA Group)
- Dungowan Dam biodiversity assessment (Water Infrastructure NSW)
- Mole River Dam, biodiversity assessment (Water Infrastructure NSW)
- Snowy 2.0, biodiversity assessment and EPBC referral, Kosciuszko National Park NSW (Snowy Hydro Ltd)
- Wee Waa Solar Farm, biodiversity assessment, Wee Waa (Overland Sun Farming)
- Junee Solar Farm Grid Connection Biodiversity Assessment, Junee (Geolyse and Terrain Solar)
- Gunnedah, Limondale, Hay and Hillston Solar Farms, biodiversity assessments, NSW (Overland Sun Farming)
- Walgett Solar Farm, biodiversity assessment and biodiversity management plan, Walgett (Geolyse and Epuron)
- Hunter Valley Operations Continuation Project, Hunter Valley NSW (Glencore)
- Dunmore Quarry, biodiversity assessment, Dunmore (Boral)
- Upper Thredbo Valley Track, Review of Environmental Factors, Thredbo (NSW National Parks and Wildlife Service)
- McPhillamys Gold Project, biodiversity assessment, Blayney (Regis Resources)
- New England Solar Farm, biodiversity assessment, Uralla (UPC Renewables)
- Mugga Quarry, biodiversity assessment and EPBC referral, Symonston (Boral)
- Gulgong Solar Project, biodiversity assessment, Gulgong (Vena Energy)
- Wagga Wagga Solar Project, biodiversity assessment, Gulgong (Vena Energy)
- Orange Grove Solar Farm, biodiversity assessment, Orange Grove (Overland Sun Farming)
- Quorn Park solar project, biodiversity assessment, Parkes (Renewable Energy Consultancy)
- Balranald Mineral Sand Mine Modification biodiversity assessment, Balranald NSW (Iluka)
- Reeves Street, Somersby: Flora and Fauna Assessment for Planning Proposal (Darkinjung LALC)
- Blueys Estate Planning Proposal, biodiversity assessment, Blueys Beach (City Plan Services)
- Coffs Harbour Bypass, biodiversity assessment and EPBC referral, NSW (Aurecon and NSW Roads and Maritime Services)
- Goonumbla Solar Farm, biodiversity assessment, Goonumbla (Geolyse and Renewable Energy Developments)
- Amended Rocky Hill Coal Project, biodiversity assessment, targeted fauna surveys and EPBC referral, Gloucester (RW Corkery & Co and Gloucester Resources Limited)
- Yarraman Abattoir and Feedlot, biodiversity impact assessment, Yarraman (KMH Environmental)
- Brandy Hill Quarry Expansion, biodiversity impact assessment, Brandy Hill (Hanson Construction Materials)
- Underground Expansion Project, biodiversity assessment and EIS for the EPBC referral, Wollongong (Hansen Bailey and Wollongong Coal)
- Nyngan Inground Storage, biodiversity assessment, Nyngan (NSW Public Works)
- Crest Road Albion Park, flora and fauna assessment, Albion Park (MMJ Wollongong and Spinitu)
- Princes Highway Upgrade, Foxground and Berry Bypass, biodiversity assessment, Foxground (AECOM and Roads and Maritime Services)
- Princes Highway Upgrade, Berry Bypass, biodiversity assessment, Berry (AECOM and Roads and Maritime Services)
- AGL Camden North Gas Project, flora and fauna assessment, Camden (AGL Upstream Investments)
- Dundas Tablelands Wind Farm, detailed flora and fauna assessment, Casterton (Origin Energy)
- Underground Expansion Project, biodiversity offset strategy, Russell Vale (Wollongong Coal)

Biodiversity offsets

- Kunderang Biodiversity Stewardship Agreement (Dorado)
- Pratten Biodiversity Stewardship Agreement (Dorado)
- Yarraman Biodiversity Stewardship Agreement (Dorado)
- Dog Trap Hill Biodiversity Stewardship Agreement (Woodside Pastoral)
- Woodside Biodiversity Stewardship Agreement Variation (Woodside Pastoral)
- Long Gully Farm Biodiversity Stewardship Agreement (Steve McCall)
- Queensland Pumped Hydro, Offset Technical Lead – Borumba and Pioneer Burdekin Projects (Queensland Pumped Hydro)
- Central West Orana (CWO) Renewable Energy Zone (REZ) Transmission Connection biodiversity offsets (EnergyCo)
- Tycannah East and West Biodiversity Stewardship Agreements (Dorado)
- Tumba Tops Biodiversity Stewardship Agreement (Snowy Hydro)

- Christmas Hill Biodiversity Stewardship Agreement (Snowy Hydro)
 - Darkinjung Local Aboriginal Land Council Conservation Land Strategy (Darkinjung LALC)
 - NSW Biodiversity Offsets Scheme: Guidance on Partial Loss (Biodiversity Conservation Division)
 - Cumberland Plain Conservation Plan Biodiversity Certification Review (Biodiversity Conservation Division)
 - Strategic Advice on the Biodiversity Offsets Scheme (Landcom and Biraban Local Aboriginal Land Council)
 - Snowy 2.0 Transmission Connection, biodiversity offset strategy (Snowy Hydro Ltd and TransGrid)
 - NSW Biodiversity Offsets Scheme Strategic Reforms, advice to Regional NSW (Department of Regional NSW)
 - Issues paper on the NSW Biodiversity Offsets Scheme (Urban Development Institute of NSW)
 - Environmental Offset Calculator (WaterNSW)
 - Snowy 2.0 Exploratory Works, biodiversity offset framework and strategy (Snowy Hydro Ltd)
 - Gunlake Quarry, BioBanking agreement, Marulan (Gunlake Quarries)
 - 33 – 35 Warradale Road, Silverdale: credit sourcing and retirement, Silverdale (SitePlus and TRN Group)
 - Western Sydney Priority Growth Areas, biodiversity advice (Office of Environment and Heritage)
 - Wilton Gardens and Wilton East, biodiversity offset advice and strategy, Wilton (Country Garden Australia)
 - Albion Park Rail Bypass project, offset site advice, Albion Park (Shellharbour City Council)
 - BioBanking Assessor services, various location in NSW (NSW Office of Environment and Heritage)
 - Redgum Ridge Western Precinct, biodiversity certification, Figtree (Clifford Developments)
 - Redgum Ridge Western Precinct, BioBanking Agreement, Figtree (Clifford Developments)
 - 89 Port Stephens Drive Taylors Beach, BioBanking Agreement and BioBanking Statement, Taylors Beach (Port Stephens Council)
 - Lots 4 and 6 DP 243079 Wilton, BioBanking Agreement, Wilton (Weaving Family Trust)
 - 33 – 35 Warradale Road, Silverdale, BioBanking Statement, Silverdale (SitePlus and TRN Group)
 - 33 – 35 Warradale Road, Silverdale, BioBanking Agreement, Silverdale (SitePlus and TRN Group)
 - NorthConnex, biodiversity offset strategy, Sydney NSW (Lend Lease Bouyeres Joint Venture)
 - Arbus Pottsville Pty Ltd vs Tweed Shire Council: Class 1 Hearing in the Land and Environment Court, Henry Lawson Drive Terranora NSW (Tweed Shire Council)
 - Damileast Pty Ltd v Blacktown City Council: Class 3 Hearing in the Land and Environment Court, 60 Glengarrie Road, Marsden Park
 - Mahers Lane Development Pty Ltd vs Tweed Shire Council: Class 1 Hearing in the Land and Environment Court, Henry Lawson Drive Terranora NSW (Tweed Shire Council)
 - Variant Group Pty Ltd vs Tweed Shire Council: Class 1 Hearing in the Land and Environment Court, Boyle Avenue, Banora Point (Tweed Shire Council)
 - Turner Contracting Pty Ltd vs Tweed Shire Council: Class 1 Hearing in the Land and Environment Court, 1126 Pottsville Road, Pottsville (Tweed Shire Council)
 - Bullawah Wind Farm, Plain-wanderer serious and irreversible impact assessment peer review (Bullawah Wind Farm Pty Ltd)
 - Oven Mountain Pumped Hydro Storage Project, Brush-tailed Rock-wallaby and *Pultenaea rubescens* serious and irreversible impact assessment expert review (EMM Consulting Pty Ltd)
 - Independent Expert Advisory Panel for Mining: Metropolitan Mine Longwalls 312 to 316 Extraction Plan Review (Department of Planning, Housing and Infrastructure)
 - Independent Expert Advisory Panel for Energy Assessment: Stratford Pumped Hydro (Department of Planning, Housing and Infrastructure)
 - Pottinger Wind Farm – Peer review and biodiversity advice (Department of Planning, Housing and Infrastructure)
 - Valley of the Winds – Peer review and biodiversity advice (Department of Planning, Housing and Infrastructure)
 - Springvale Colliery Independent Monitoring Panel – Biodiversity expert (Department of Planning, Housing and Infrastructure)
 - Independent Expert Advisory Panel for Mining: Large Swamp Environmental Assessment Requirements for Extraction Plan for Metropolitan Mine Longwalls 311 to 316 (Department of Planning and Environment)
 - Peer Review and Expert Advice: Humelink Biodiversity Development Assessment Report (Department of Planning and Environment)
 - Independent Expert Advisory Panel for Mining: Dendrobium Coal Mine - Longwall 19A Subsidence Management Plan (Department of Planning and Environment)
 - Independent Expert Advisory Panel for Mining: Moolarben Coal Complex Stage 2 Modification 4 (Department of Planning and Environment)
 - Mount Pleasant Operations independent environmental audit (MACH Energy)
 - Kooragang Island Waste Emplacement facility independent environmental audit (Hunter Central Coast Development Corporation)
- Peer review, expert witness services and auditing**
- Willottree Planning Pty Ltd vs Tweed Shire Council: Class 1 Hearing in the Land and Environment Court, Henry Lawson Drive Terranora NSW (Tweed Shire Council)

- UPG 72 Pty Ltd vs Blacktown City Council: Class 3 Hearing in the Land and Environment Court, Regent Street, Riverstone NSW (UPG 72 Pty Ltd)
- Snowy 2.0 Transmission Connection, biodiversity development assessment report review (Snowy Hydro Ltd and TransGrid)
- Mako Minerals Pty Ltd vs Liverpool City Council: Class 1 Hearing in the Land and Environment Court, 135 Kurrajong Rd, Prestons - Lot 103 (Liverpool City Council)
- Mako Minerals Pty Ltd vs Liverpool City Council: Class 1 Hearing in the Land and Environment Court, 125 Kurrajong Rd, Prestons - Lot 102 (Liverpool City Council)
- Austral Developers Pty Ltd vs Liverpool City Council: Class 1 Hearing in the Land and Environment Court, Ninth Avenue, Austral (Sparke Helmore Lawyers and Liverpool City Council)
- Snowy 2.0 Transmission Connection, biodiversity development assessment report review (Snowy Hydro Ltd and TransGrid)
- Cumberland Plain Conservation Plan Biodiversity Certification Review (Biodiversity Conservation Division)
- Hunter Valley Operations: proposed Striped Legless Lizard survey methods (Glencore)
- Albion Park Bypass: biodiversity stewardship site assessments for Croome Reserve and Dunmore Wetlands (Shellharbour City Council)
- Gunlake Quarry Pty Ltd vs The Minister for Planning: Class 1 Hearing in the Land and Environment Court, Modification to Consent for the Gunlake Quarry (Corrs Chambers Westgarth and Gunlake Quarry)
- IRT Culburra Beach Development Application: biodiversity assessment peer review, Culburra Beach (Illawarra Retirement Trust)
- Blueys Estate Biodiversity Assessment: peer review, Blueys Beach (City Plan Services)
- Expert review of the Addendum to NSW Biodiversity Offset Policy for Major Projects: Upland swamps impacted by longwall mining subsidence (NSW Minerals Council).
- Tarrone Gas-fired Power Station, expert witness statement, Tarrone (URS Corporation)
- Ballarat Koala Habitat Assessment, expert witness testimony to the Victorian Civil and Administrative Tribunal, Vic (VCAT)

Ecological monitoring and management plans

- Snowy 2.0 Main Works, biodiversity monitoring plan, Kosciuszko National Park (Snowy Hydro Limited)
- Snowy 2.0 Exploratory Works, biodiversity monitoring program, Kosciuszko National Park (Snowy Hydro Limited)
- Snowy 2.0 Exploratory Works, biodiversity monitoring plan, Kosciuszko National Park (Snowy Hydro Limited)
- Dunmore Hard Rock Quarry, flora and fauna management plan, Dunmore (Boral)
- Beryl Solar Farm, biodiversity management plan, Beryl (Geolyse and Downer)
- Mona Vale Road, biodiversity monitoring plan and implementation, Sydney NSW (Roads and Maritime Services)

- Walgett Solar Farm, biodiversity management plan, Walgett (Geolyse and Epuron)
- Balickera Tunnel, targeted microbat surveys, Balickera (GHD and Hunter Water)
- Additional Crossing of the Clarence River at Grafton, flora and fauna management plan, NSW (Fulton Hogan)
- Dendrobium Mine, biodiversity management plans and monitoring (Illawarra Coal)
- Longwall 6 and 7, biodiversity and upland swamp management plans, Russell Vale (Wollongong Coal)
- NRE No. 1 Colliery Dam 6 Green and Golden Bell Frog monitoring program, Russell Vale (Wollongong Coal)
- Appin Area 9, biodiversity management plan, Appin (Illawarra Coal)
- Shell Port Kembla, Green and Golden Bell Frog management plan, Port Kembla NSW (URS Australia)
- Penshurst Wind Farm, targeted surveys for the Brolga and Southern Bent-wing Bat, Penshurst (RES Australia)
- Holcim Colac Quarry, Coorangamite Water Skink translocation plan, Colac (Holcim Australia)
- Victorian Desalination Plant, targeted surveys for the Growling Grass Frog, Wonthagi (GHD)

Industry panels and working groups

- Member of the Independent Expert Advisory Panel for Energy Assessments (Department of Planning, Housing and Infrastructure)
- Member of the Independent Expert Advisory Panel for Mining (Department of Planning, Housing and Infrastructure)
- Participant in the Taskforce for Environmental Law Reforms on Australia's new national environmental laws (representing UDIA)

Publications and presentations

- Are we serious about closing the gap? The role of biodiversity offsets in promoting and thwarting economic and social self-determination for First Nations people. Presentation at the EIANZ National Biodiversity Offsets Conference, July 2024.
- Creating value from natural capital: Biodiversity offsets and the double dividend. Presentation to the Jana Investors Annual Conference, November 2022.
- Disaster to recovery: A tail of the Smoky Mouse. Presentation to the EIANZ Annual Conference October 2020.
- BAM – where does fauna fit into the requirements of the new Biodiversity Conservation Act? Presentation to the Ecological Consultants Association of NSW annual conference, 2017.
- The Biodiversity Conservation Act 2016: a new framework for biodiversity assessment in NSW and how you can be prepared. Presentation to EMM breakfast seminar, Sydney, 2017.
- An assessment of changes in the extent and distribution of upland swamps in relation to longwall mining. Report to Wollongong Coal, 2015.

- The assessment and offsetting of indirect impacts. Presentation at the Biodiversity Offsetting for Mining, Infrastructure and Urban Development Conference, Sydney, 2015.
- Coastal upland swamps and longwall mining. Presentation to the Australian Institute of Mining and Metallurgy, Wollongong, 2014.
- Garvey, N, Ben-Ami, D, Ramp, D & Croft, D 2010, Survival behaviour of swamp wallabies during prescribed burning and wildfire, Wildlife Research 37(1), pp. 1–12.

Appendix B: Benchmark Values and Plot Locations

Appendix B1: Benchmark Values for AA

The benchmark values for each AA have been derived in accordance with Section 30(1)(b)(i) of the Method. Benchmarks were sourced from PCT benchmark attribute data obtained from the NSW BioNet Vegetation Classification database, which is on the approved benchmark source list for the Method. As the NSW BioNet Vegetation Classification database benchmarks do not include benchmark values for canopy height, canopy height benchmarks are taken from NSW Vegetation Class descriptions.

Table 22: Benchmark values

Indicator	Reference ecosystem				
	PCT 3076	PCT 3240	PCT 3252	PCT 3329	PCT 4079
canopy height of native vegetation (m)	5-20	40	40	20-35	10-40
crown cover - canopy native (%)	72	79	79	60	47
crown cover - midstorey native (%)	54	20	20	11	6
crown cover - canopy non-native (%)	0	0	0	0	0
crown cover - midstorey non-native (%)	0	0	0	0	0
ground cover (proportion of A category plants):					
sub-category A1 – A3 as a proportion of total groundcover from category A plants (%)	100	100	100	100	100
sub-category A4 A5 as a proportion of total groundcover from category A plants (%)	0	0	0	0	0
native species richness index by life form (sub-indicator):					
tree	11	10	10	6	5
shrub	12	11	11	7	6
vine	12	10	10	5	4
grass	4	9	9	12	8
herbaceous vascular	13	14	14	16	13

Appendix B2: Locations of Permanent Sampling Plots

As per the requirements of Part 2, Division 2.6, Section 37(g) the description and location of the permanent sampling plots for each AA and SAA are provided below.

Table 23: Permanent sampling plot locations

Sampling Plot		AA	SAA	Coordinates of permanent markers (GDA20z56)				Bearing (degrees)
#	SurveyID			Start location		End location		
				Easting	Northing	Easting	Northing	
T01	3329C_T1_E	AA6	n/a	398757.6	6499254	398803.0	6499236	111.4
T02	3329C_T2_E	AA6	n/a	396710.2	6500292	396758.8	6500276	108.0
T03	3329C_T3_E	AA6	n/a	395511.8	6501826	395462.8	6501813	255.4
T04	3329C_T4_E	AA6	n/a	397241.0	6502304	397291.9	6502290	105.6
T05	3240C_T5_E	AA4	SAA3	390253.7	6505456	390209.6	6505477	295.6
T06	3240C_T6_E	AA4	SAA3	391129.7	6505058	391131.5	6505009	177.9
T07	3329C_T7_E	AA6	n/a	391489.7	6504567	391524.1	6504530	137.2
T08	3329C_T8_E	AA6	n/a	392836.4	6503771	392840.4	6503723	175.2
T11	3329C_T11_E	AA6	n/a	395545.2	6502722	395544.3	6502772	359.0
T14	3240C_T14_E	AA4	SAA3	394364.3	6502318	394335.5	6502360	325.7
T15	3076C_T15_E	AA2	n/a	394469.1	6502765	394434.7	6502726	221.1
T18	3240C_T18_E	AA4	SAA3	395922.4	6500665	395959.7	6500699	47.7
T19	3252C_T19_E	AA4	SAA4	397038.8	6501815	396992.1	6501794	245.5
T20	4079C_T20_E	AA8	n/a	396800.8	6502519	396788.1	6502569	345.8
T21	3076B_T21_E	AA1	n/a	395520.3	6500495	395557.6	6500526	50.6
T22	3076B_T22_E	AA1	n/a	395847.9	6500498	395804.9	6500478	244.5
T23	3076C_T23_E	AA2	n/a	392323.0	6503603	392322.6	6503553	180.5
T24	3240B_T24_E	AA4	SAA3	392244.9	6503818	392292.2	6503811	98.2
T27	3252B_T27_E	AA3	SAA2	394491.4	6503485	394536.4	6503475	102.7
T29	3252C_T29_E	AA4	SAA4	393735.6	6504438	393700.8	6504400	222.6
T32	4079C_T32_E	AA8	n/a	395430.3	6502111	395421.3	6502061	190.3
T33	4079C_T33_E	AA8	n/a	396740.5	6500621	396742.1	6500572	178.1
T34	4079C_T34_E	AA8	n/a	391766.1	6504599	391733.3	6504562	221.7
T35	3329B_T35_E	AA5	n/a	398093.6	6498867	398142.4	6498875	80.4
T36	3329B_T36_E	AA5	n/a	397855.3	6498918	397865.3	6498965	11.9
T37	4079C_T37_E	AA8	n/a	395549.1	6503398	395577.6	6503440	34.3
T38	4079C_T38_E	AA7	n/a	392182.5	6504307	392230.6	6504301	96.9
T40	3240B_T40_E	AA3	SAA1	395406.8	6500525	395440.6	6500554	49.6

Sampling Plot		AA	SAA	Coordinates of permanent markers (GDA20z56)				Bearing (degrees)
#	SurveyID			Start location		End location		
				Easting	Northing	Easting	Northing	
T42	3420B_T42_E	AA3	SAA1	394798.9	6501588	394837.1	6501560	126.2
T43	3240B_T43_E	AA3	SAA1	396040.2	6503306	396005.3	6503281	234.0
T45	3329B_T45_E	AA5	n/a	398290.0	6498768	398257.7	6498801	316.1
T46	4079B_T46_E	AA7	n/a	398327.7	6498778	398311.9	6498823	340.3

