



GUNN AGRI PARTNERS

Nortongong Biodiversity Restoration Project

Replanting Native Forest and Woodland Ecosystems (Nature Repair Market)

PROJECT PLAN





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1. Project Details

1.1 Background

This report has been prepared by Gunn Agri Partners (GAP) for the Clean Energy Regulator (CER) to accompany the reforestation by environmental planting project application *Nature Repair (Replanting Native Forest and Woodland Ecosystems) Methodology Determination 2025*. If any changes are made to this plan, then the updated versions will also accompany the relevant biodiversity reports for this project.

1.2 Site Context

The Nortongong Biodiversity Restoration Project is a landscape-scale ecological restoration initiative established under Australia's Nature Repair Market. It is located on Nortongong Aggregation, a 6,163ha mixed-farming property approximately 25 km south-southeast of Coonamble, NSW, on the Castlereagh River floodplain.

This NRM project spans 968ha is designed to repair degraded landscapes, restore regionally significant native plant communities, and enhance biodiversity values. It shares the same project boundaries and complements the Nortongong Biodiversity Restoration Project Environmental Reforestation by Environmental or Mallee Plantings- FullCAM 2024 method (ERF202584), which targets ecologically sensitive or structurally diverse areas, including riparian corridors and remnant understorey-deficient woodlands.

Table 1: Project details and identifiers

Project name	Nortongong Biodiversity Restoration Project
Project ID	NR001016
Date of project plan	01 May 2026
Project description	The Nortongong Biodiversity Restoration Project quantifies the ecological benefits resulting from activities implemented through the existing Reforestation by Environmental or Mallee Plantings initiative. These activities, including restoring endemic trees and shrubs and habitat rehabilitation, directly enhance biodiversity and ecological integrity on previously degraded agricultural lands. By explicitly quantifying ecological outcomes, the project emphasises improvements in habitat quality and landscape connectivity achieved through established reforestation practices.



1.3 Proponent Details

Table 2: Project proponent details

Name of project proponent(s)	Wilga Farming (Australia) Pty Ltd
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1.4 Additional Stakeholder Details

Table 3: Project stakeholders and roles

Stakeholder Name	Roles and responsibilities
Luka Susnjara	Senior Analyst – Natural Capital, Gunn Agri Partners Pty Ltd. Coordination of the starting state assessment, preparation of the Project Plan and Site Assessment Report, liaison with the suitably qualified persons and the Clean Energy Regulator, and management of the registration and reporting process.
Gunn Agri Partners Pty Ltd	Project development, registration management, regulatory compliance, stakeholder coordination and adaptive management oversight. Prepared the Project Plan and Site Assessment Documentation.
Narla Environmental Pty Ltd	Suitably qualified person (SQP) services: field survey design and execution, starting state assessment, site assessment report preparation, project plan certification, and ecological advisory services. SQPs: Brodie Miller (BA MEnvMgt, BAAS25016) and Chris Moore (BBioCon, BAAS21009).
Wilga Farming (Australia) Pty Ltd	Project proponent and landholder. Responsible for on-ground property management, livestock exclusion, fire preparedness, pest and weed management, and provision of site access for monitoring and assessment.

1.5 Key Assumptions & Limitations

The following key assumptions underpin the development of this project plan, as required by s7(h) of the rules.

Assumptions

Threshold achievement at year 25. The project assumes the Restoration Target Level 2 thresholds (canopy height ≥ 3 m, native canopy crown cover $\geq 20\%$, native mid-storey crown cover $\geq 7.3\%$, NSRI ≥ 6) will be achieved within 25 years of the initial plantings, based on the proposed planting configuration, an assumed 80% tubestock survival rate, and the growth-rate evidence presented in Section 3.

Limitations

Climate variability. Establishment and threshold achievement are subject to the reasonably expected effects of climate change described in Section 15 — reduced and more variable rainfall, increased drought, and increased frequency of severe fire-weather days — which may extend establishment timeframes.

Datasets. This Plan relies on the datasets current at the date of submission, including the BioNet community condition benchmarks for PCT 27, the Prescribed Vegetation Classification System, the Protected Matters Search Tool and NARClm2.0 regional projections. Outputs may be refined if superseded datasets become available (for example, NVIS level 5/6 mapping for PCT 27).



2. Indigenous Engagement

The project area is freehold land traditionally associated with the Gomeroi people, who are acknowledged as the Traditional Custodians of the land on which the project is conducted. Freehold land is excluded from the operation of the *Native Title Act 1993* under section 23B(2)(c) of that Act. Accordingly, no consent under the *Native Title Act 1993* is required for the project, and Indigenous land interests do not apply to the project area for the purposes of section 28 of the *Nature Repair (Replanting Native Forest and Woodland Ecosystems) Methodology Determination 2025*.

As part of project planning, Gunn Agri Partners wrote to the Gomeroi claim group through NTSCORP Limited, as the claim group's legal representative. The correspondence outlined the project location and proposed Nature Repair replanting activities and provides an opportunity for further discussion.

The project proponent recognises the value of respectful engagement in long-term land restoration projects. Over the life of the project, including during monitoring, adaptive management and other on-ground activities, the project proponent remains open to engagement with the Gomeroi people where engagement is appropriate and welcomed. If future engagement informs project design, implementation or monitoring, the Project Plan may be updated to reflect the outcomes of that engagement. Any use of Indigenous knowledge, values or data would be subject to appropriate attribution, consent and culturally appropriate governance arrangements.

3. 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. Specifically, the project will restore cleared agricultural land to a native woodland ecosystem consistent with the reference ecosystem PCT 27 Weeping Myall open woodland of the Darling Riverine Plains Bioregion (IUCN T4.4 Temperate Woodlands; NVIS MVG 6). The project aims to achieve Restoration Target Level 2 for the single consolidated activity area over 25 years.

The Restoration Target Level 2 thresholds applicable to this project under Schedule 7 of the method are: canopy crown cover $\geq 20\%$, mid-storey crown cover $\geq 7.3\%$, and canopy height ≥ 3 m. Peer-reviewed allometric and growth-rate evidence supporting threshold achievement at year 25 under the proposed planting configuration is summarised in Table 4. At this site, *Eucalyptus populnea* and *Casuarina cristata* form the upper-storey (canopy); *Acacia pendula*, *Acacia salicina*, *Rhagodia spinescens* and *Atriplex nummularia* form the mid-storey, consistent with the site-scale stratification described in Section 1.5.





Table 4: Project stakeholders and roles

Threshold	Target	Projected to reach or exceed target	Key peer-reviewed evidence
Canopy crown cover	≥ 20 %	Yes	<i>Eucalyptus populnea</i> growth rates are documented for semi-arid woodland systems, including Poplar Box growth responses under lower-density / thinned woodland conditions (Ngugi et al. 2015; Playford et al. 2009). DBH–crown allometry supports projected crown expansion for open-grown eucalypts over time (Verma et al. 2014; Harrington 1979). Mature Weeping Myall woodland communities are documented as supporting woodland projective foliage cover consistent with the canopy-cover threshold (DCCEEW 2009).
Mid-storey crown cover	≥ 7.3 %	Yes	<i>Acacia pendula</i> is a structurally important species in Weeping Myall woodland and is capable of contributing materially to mid-storey cover at this site where it occurs below the upper canopy (Maslin 2001; DCCEEW 2009). <i>Atriplex nummularia</i> is a large saltbush capable of contributing shrub-layer crown area in semi-arid restoration contexts (Le Houérou 1992).
Canopy height	Canopy species reach ≥ 3 m	Yes	Environmental plantings can develop measurable woody structure within 10–25 years, although habitat and structural attributes mature over longer periods (Cunningham et al. 2007; Vesk et al. 2008). The nominated canopy species are capable of exceeding 3 m height within the 25-year period under suitable establishment and management conditions, supported by published growth and species-profile evidence for <i>Eucalyptus populnea</i> and <i>Casuarina</i> -dominated woodland systems (Ngugi et al. 2015; Playford et al. 2009; ABARES 2019).

Threshold projections were calculated using documented crown-size and growth-rate evidence for the planted species, the proposed planting density of 199 canopy stems/ha and 78 mid-storey stems/ha, and an assumed 80% tubestock survival rate to year 25. The survival assumption will be tested through project monitoring and adaptive management, including supplementary planting where required. Projections are based on planted stems only and do not include the additional contribution of natural regeneration, which is expected to supplement mid-storey crown cover over the 25-year period given the regenerative capacity of the target woodland community, livestock exclusion and the existing native ground-layer condition recorded during the starting state assessment.

Sources

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Verma, N.K., Lamb, D.W., Reid, N. and Wilson, B. (2014) 'An allometric model for estimating DBH of isolated and clustered *Eucalyptus* trees from measurements of crown projection area', *Forest Ecology and Management*, 326, pp. 125–132. <https://doi.org/10.1016/j.foreco.2014.04.003>

Vesk, P.A., Nolan, R., Thomson, J.R., Dorrough, J.W. and Mac Nally, R. (2008) 'Time lags in provision of habitat resources through revegetation', *Biological Conservation*, 141(1), pp. 174–186. <https://doi.org/10.1016/j.biocon.2007.09.010>

3.1 How the project outcome is intended to be achieved

Stage 1: Initial Environmental Plantings (July 2025 — Completed)

Environmental plantings were established across the activity area in July 2025 as part of the registered Environmental Plantings ACCU project (ERF202584). Planting was undertaken using tubestock at a density of 207 stems per hectare, comprising six native species consistent with PCT 27. The planting configuration follows existing rip lines spaced at approximately 10 m intervals, with tubestock planted along each rip line at approximately 4.8 m intervals. Species composition was dominated by *Eucalyptus populnea* (Poplar Box — 139 stems/ha) and *Casuarina cristata* (Belah — 60 stems/ha), which form the target canopy layer, with smaller quantities of mid-storey and shrub species including *Acacia pendula* (Weeping Myall), *Acacia salicina* (Cooba), *Rhagodia spinescens* (Salt Bush) and *Atriplex nummularia* (Old Man Salt Bush).



Stage 2: Ecological Infill Planting (2026 — Planned)

Staggered ecological infill planting is planned for mid-2026 to enhance the mid-storey and shrub layer diversity of the restoration. The infill planting will be undertaken at a density of approximately 70 stems per hectare in a 1-in-5 row configuration between existing planting rows. Species composition for the infill planting comprises *Acacia pendula* (50 stems/ha), *Rhagodia spinescens* (10 stems/ha) and *Atriplex nummularia* (10 stems/ha).

Following completion of the infill planting, the combined planting density across the activity area will be approximately 277 stems per hectare.

Stage 3: Ongoing Adaptive Management (2025 — Permanence Period)

Adaptive management will be implemented for the duration of the 100-year permanence period, including weed and pest management, monitoring of survival and growth, fire management and supplementary planting where required. Specific management activities are detailed in Section 14.

Within 25 years of project commencement, the planting program is expected to establish a woodland structure with a developing upper-storey canopy of *Eucalyptus populnea* and *Casuarina cristata*, a mid-storey of *Acacia pendula*, *Acacia salicina*, *Atriplex nummularia* and *Rhagodia spinescens*, and a ground layer of native grasses and forbs maintained through the existing 91.69 % native ground cover and supported by the restored canopy microclimate.

The 2026 ecological infill planting at 70 stems/ha is specifically designed to enhance mid-storey density. Natural regeneration of mid-storey species is also expected to contribute to threshold achievement over the 25-year period, supported by livestock exclusion (s14(4)) and the existing native ground layer. The threshold values for Restoration Target Level 2 are expected to be achievable within this timeframe, subject to survival monitoring, infill planting where required and ongoing adaptive management.

The likelihood of achieving the project outcome is further supported by several factors. The project is delivered by Gunn Agri Partners Pty Ltd, supported by Narla Environmental Pty Ltd's accredited ecologists who undertook the field survey and prepared the Site Assessment Report; details of qualifications and experience are provided in Section 17. Stock-proof fencing was erected around AA1 prior to the July 2025 plantings and is maintained throughout the establishment phase, ensuring complete exclusion of livestock until 90 % of canopy stems reach 1.5 m in accordance with s14(4) of the method (Section 14). Significant hydrological features within and adjacent to AA1, including flood-prone areas and the ephemeral drainage line that materially affects plant water availability, are sensitively managed through buffer setbacks and adaptive management measures detailed in Sections 12.2 and 14. Management measures for the threatened species and ecological communities identified for the area, including the Weeping Myall Woodlands TEC, are detailed in Section 16 in accordance with s40 of the method. Tubestock is sourced from locally adapted provenances within the same IBRA subregion to build resilience to the projected climate envelope; where local supply is limited, climate-adjusted provenances drawn from comparable bioregions may be used to support climate adaptation (Sections 10 and 15).

evidence, field-verified biophysical attributes and adjacent remnants (Section 5); the option to apply



3.2 Restoration target levels for each activity area

Table 5: Nominated restoration target levels for each activity area

Activity Area ID	Starting Condition State	Target Level
AA1	Starting State B	Target Level 2

4. Permanent Sampling Plots

Permanent sampling plots were established in accordance with paragraph 30(1)(c) of the Nature Repair (Replanting Native Forest and Woodland Ecosystems) Methodology Determination 2025. These plots were used to determine initial values for ecosystem condition indicators (paragraph 30(1)(e)), characterise the baseline ecosystem condition (paragraph 30(1)(f)), and support ongoing monitoring of progress toward threshold values and nominated restoration targets (subsection 48(1)).

The number of plots established was determined by the total area of the Activity Area, in accordance with the sampling intensity outlined in the 2025 methodology. The Activity Area was subdivided into equal portions, with one 50 m x 10 m sampling plot randomly located within each portion. Plot locations were reviewed and, where necessary, replaced to ensure that the selected plots were collectively representative of at least 90% of the Activity Area.

Each sampling plot was permanently marked by either placing markers at both ends of the centre line or placing a marker at one end and recording a compass bearing along the centre line. Permanent markers comprised fence posts, flagged ground markers, or GPS-referenced points, depending on site conditions.

All plots were assigned unique identifying numbers, which were recorded in field notes and the site assessment report and physically attached to the respective markers.

Table 6: Permanent sampling plot details

Activity Area ID	Sampling Plot ID	Location of sampling plot including GPS coordinates	Location of permanent markers/centre lines including GPS coordinates
AA1	AA2P1	-31.205859, 148.464346	1.) -31.205859, 148.464346 2.) Compass bearing 0° (North) from Point 1
AA1	AA2P2	-31.203928, 148.468030	1.) -31.203928, 148.468030 2.) Compass bearing 0° (North) from Point 1
AA1	AA2P3	-31.194402, 148.464912	1.) -31.194402, 148.464912 2.) Compass bearing 0° (North) from Point 1
AA1	AA2P4	-31.201965, 148.471856	1.) -31.201965, 148.471856 2.) Compass bearing 0° (North) from Point 1
AA1	AA2P5	-31.201474, 148.475253	1.) -31.201474, 148.475253 2.) Compass bearing 0° (North) from Point 1



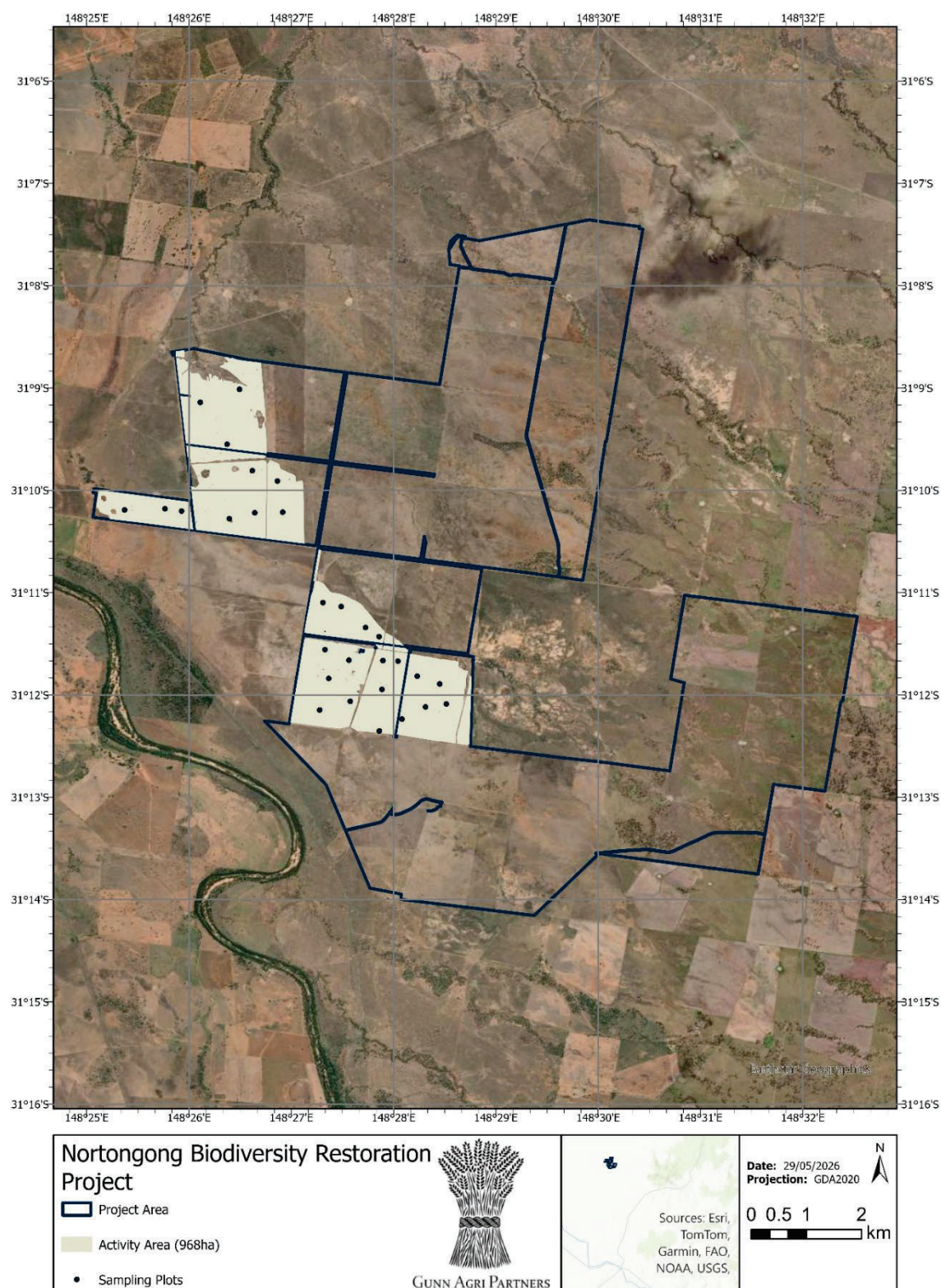
Activity Area ID	Sampling Plot ID	Location of sampling plot including GPS coordinates	Location of permanent markers/centre lines including GPS coordinates
AA1	AA2P6	-31.196953, 148.470515	1.) -31.196953, 148.470515 2.) Compass bearing 0° (North) from Point 1
AA1	AA2P7	-31.198211, 148.474181	1.) -31.198211, 148.474181 2.) Compass bearing 0° (North) from Point 1
AA1	AA3P1	-31.184948, 148.455143	1.) -31.184948, 148.455143 2.) Compass bearing 0° (North) from Point 1
AA1	AA3P2	-31.185608, 148.458128	1.) -31.185608, 148.458128 2.) Compass bearing 0° (North) from Point 1
AA1	AA3P3	-31.189022, 148.462081	1.) -31.189022, 148.462081 2.) Compass bearing 0° (North) from Point 1
AA1	AA3P4	-31.165167, 148.447731	1.) -31.165167, 148.447731 2.) Compass bearing 0° (North) from Point 1
AA1	AA5P1	-31.202445, 148.454635	1.) -31.202445, 148.454635 2.) Compass bearing 0° (North) from Point 1
AA1	AA5P2	-31.197324, 148.456088	1.) -31.197324, 148.456088 2.) Compass bearing 0° (North) from Point 1
AA1	AA5P3	-31.192599, 148.455473	1.) -31.192599, 148.455473 2.) Compass bearing 0° (North) from Point 1
AA1	AA5P4	-31.201036, 148.459598	1.) -31.201036, 148.459598 2.) Compass bearing 0° (North) from Point 1
AA1	AA5P5	-31.199093, 148.464758	1.) -31.199093, 148.464758 2.) Compass bearing 0° (North) from Point 1
AA1	AA5P6	-31.194348, 148.459373	1.) -31.194348, 148.459373 2.) Compass bearing 0° (North) from Point 1
AA1	AA5P7	-31.194477, 148.467390	1.) -31.194477, 148.467390 2.) Compass bearing 0° (North) from Point 1
AA1	AA6P2	-31.169869, 148.422821	1.) -31.169869, 148.422821 2.) Compass bearing 0° (North) from Point 1
AA1	AA6P4	-31.169689, 148.429406	1.) -31.169689, 148.429406 2.) Compass bearing 0° (North) from Point 1
AA1	AA6P5	-31.170039, 148.432120	1.) -31.170039, 148.432120 2.) Compass bearing 0° (North) from Point 1
AA1	AA7P1	-31.171284, 148.439909	1.) -31.171284, 148.439909 2.) Compass bearing 0° (North) from Point 1
AA1	AA7P4	-31.170335, 148.444042	1.) -31.170335, 148.444042 2.) Compass bearing 0° (North) from Point 1
AA1	AA7P5	-31.170221, 148.448607	1.) -31.170221, 148.448607 2.) Compass bearing 0° (North) from Point 1



Activity Area ID	Sampling Plot ID	Location of sampling plot including GPS coordinates	Location of permanent markers/centre lines including GPS coordinates
AA1	AA7P6	-31.163476, 148.443643	1.) -31.163476, 148.443643 2.) Compass bearing 0° (North) from Point 1
AA1	AA7P7	-31.165167, 148.447731	1.) -31.165167, 148.447731 2.) Compass bearing 0° (North) from Point 1
AA1	AA8P2	-31.159157, 148.439533	1.) -31.159157, 148.439533 2.) Compass bearing 0° (North) from Point 1
AA1	AA8P4	-31.152336, 148.435152	1.) -31.152336, 148.435152 2.) Compass bearing 0° (North) from Point 1
AA1	AA8P6	-31.150217, 148.441562	1.) -31.150217, 148.441562 2.) Compass bearing 0° (North) from Point 1



Figure 1: Project Area, Activity Area, and Sampling Plots





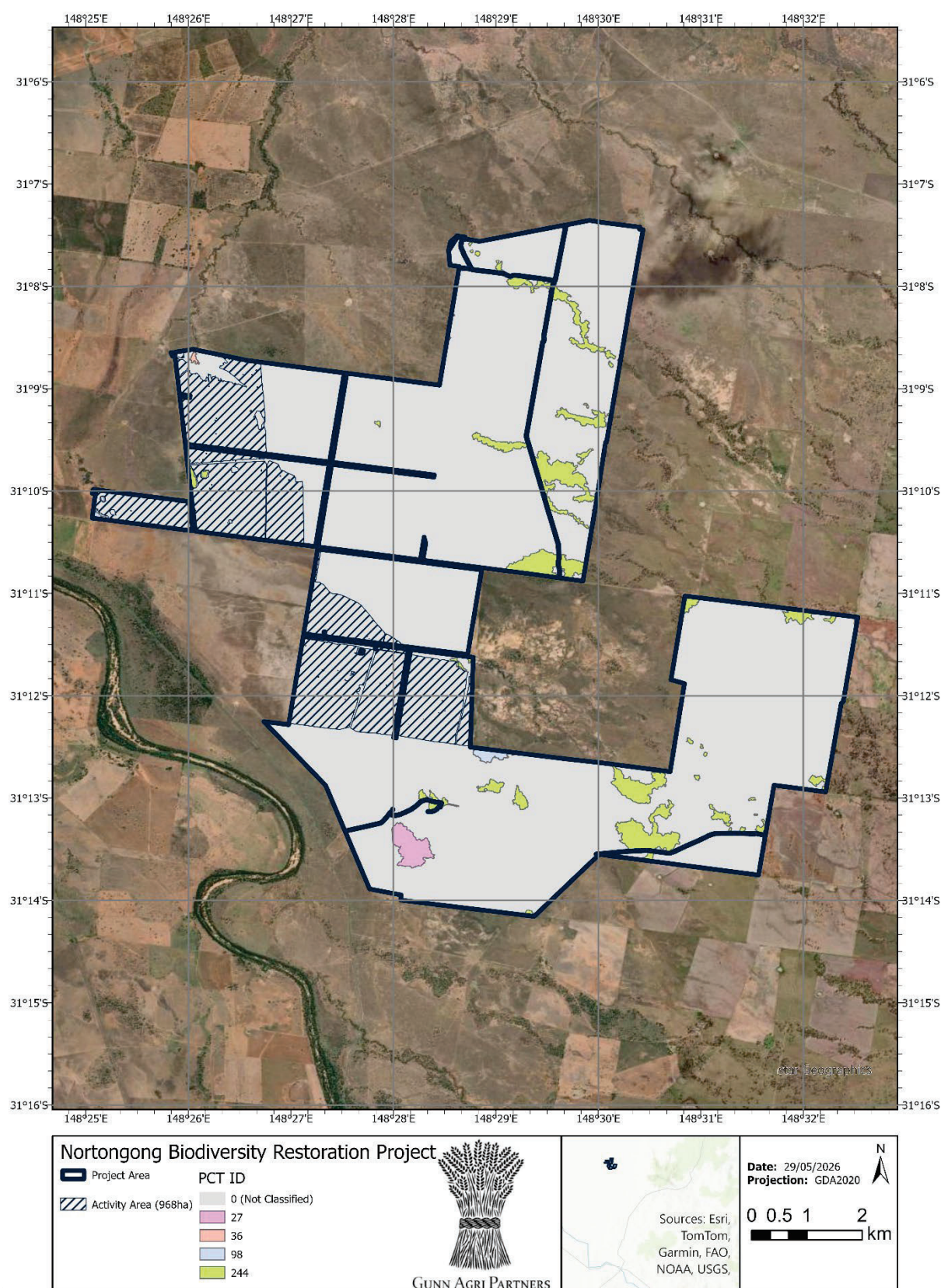
5. Reference Ecosystems

The Prescribed Vegetation Map (PLANR) was reviewed in accordance with section 46 of the method to identify mapped native vegetation types within the activity areas, undertaken at a maximum scale of 3 hectares, with a minimum width of 50 metres for linear features. Further interpretation was undertaken using the State Vegetation Type Map (SVTM v3.1 – Pre-1750 and Current Extent), the NSW Plant Community Type (PCT) Database, and NVIS v7.0 datasets. These datasets were used to confirm PCT, Major Vegetation Group (MVG) and sub-group relationships, and to assess the consistency of mapped vegetation with on-ground observations and site data.





Figure 2: Project Area, Activity Area, PCTs



PCT Determination: The prescribed vegetation mapping indicates that the activity areas are almost exclusively classified as PCT 0 (Unclassified), with smaller isolated areas mapped as PCT 98 – Poplar Box–White Cypress Pine–Wilga–Ironwood shrubby woodland on red sandy-loam soils in the Darling



Riverine Plains and Brigalow Belt South Bioregions. Limited areas of mapped vegetation occur adjacent to, but not consistently within, the activity areas. On the basis of the virtual assessment and field survey, the prescribed vegetation map was determined to be likely not correct for the activity areas, and the reference ecosystem was therefore determined using the Prescribed Vegetation Classification System (PVCS) in accordance with sections 46(10)–(13) of the method.

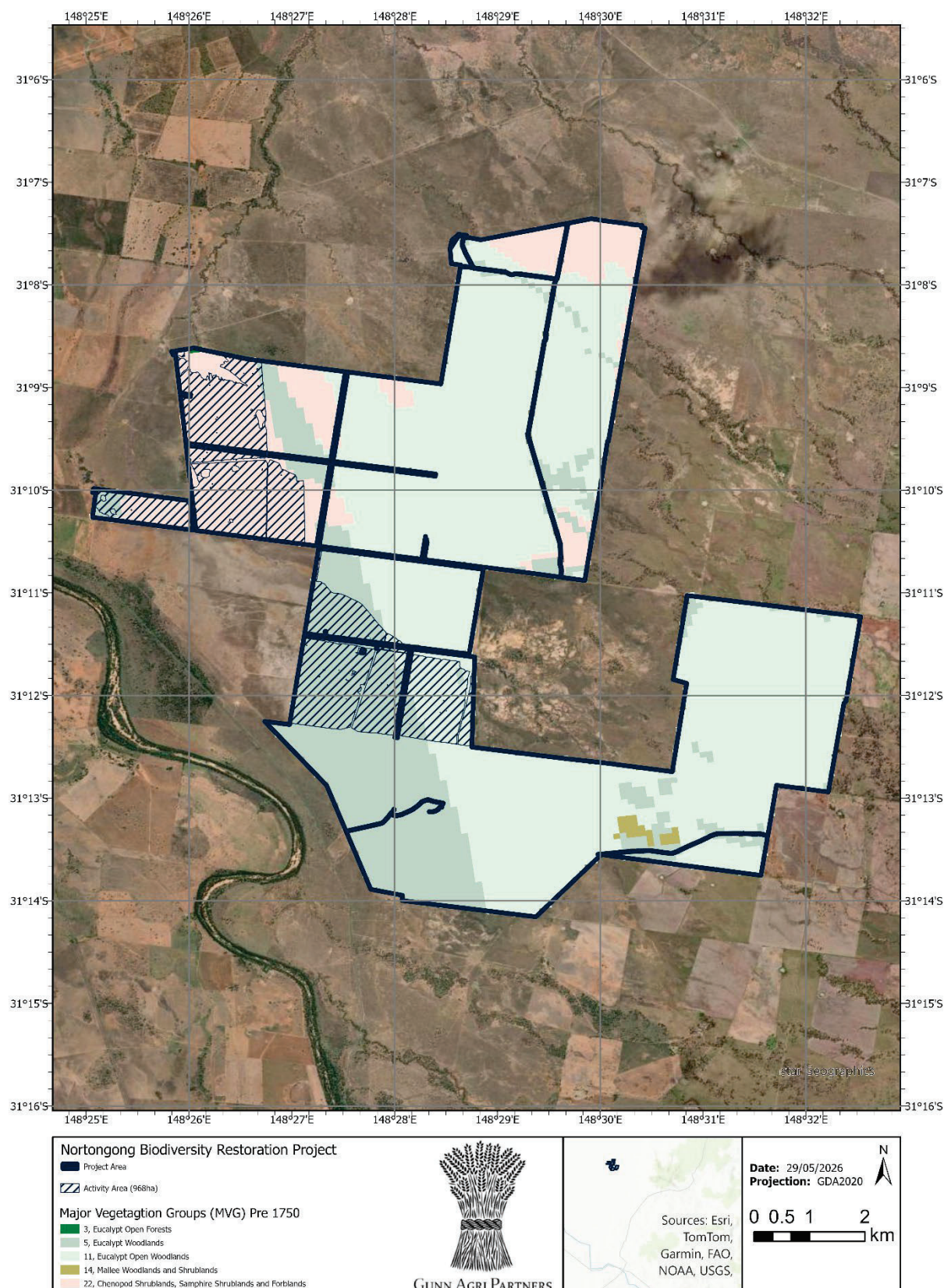
An on-ground field assessment of proposed activity areas was undertaken during the Starting State Assessment to verify the accuracy of the prescribed vegetation mapping and to determine the most likely pre-clearing native vegetation type. The assessment involved direct observation of dominant canopy, sub-canopy and ground-layer species, soil texture and colour, landform position, and comparison with adjacent remnant vegetation.

Across all activity areas, remnant vegetation occurs along paddock boundaries and as isolated stands throughout cleared areas. The vegetation present is characterised by a canopy dominated by *Eucalyptus populnea* and *Casuarina cristata*, with lower-density individuals of *Acacia pendula* (Weeping Myall) and scattered *Alectryon oleifolius* (Rosewood). The mid-storey is dominated by *Acacia pendula*, with *Rhagodia spinescens*, *Acacia salicina* and *Atriplex nummularia* commonly present. Soils across the activity areas are grey-brown cracking clay-loams on level to gently undulating alluvial plains of the Castlereagh River floodplain.

These floristic, structural and edaphic characteristics are consistent with the published profile for PCT 27 – Weeping Myall open woodland in the NSW Plant Community Type Database. Adjacent areas in the southern portion of the property are mapped as PCT 27 and exhibit the same dominant canopy species, mid-storey composition and soil characteristics observed within the activity areas, providing direct evidence of the historic pre-clearing ecosystem for the land in accordance with s46(3) of the method.

Figure 3: Project Area, Activity Area, and Major Vegetation Groups





MVG Determination: Although SVTM and NVIS mapping identify a mosaic of MVG 5 – Eucalypt Woodlands, MVG 11 – Eucalypt Open Woodlands, and MVG 23 – Chenopod Shrublands, Samphire



Shrublands and Forblands across the activity areas and broader property, field observations confirm that vegetation structure and species composition are largely continuous across these mapped polygons. All mapped areas share a consistent canopy of *Eucalyptus populnea* and *Casuarina cristata*, with a persistent mid-storey of *Acacia pendula*, *Rhagodia spinescens*, *Atriplex nummularia* and *Acacia salicina*.

The vegetation present does not align with MVG 11 – Eucalypt Open Woodlands, characterised by a limited mid-storey development, nor with MVG 23 – Chenopod Shrublands, which lacks a consistent eucalypt overstorey. The site instead supports a structurally distinct Poplar Box–Belah woodland with a mid-storey of Weeping Myall and associated chenopod shrubs, growing on alluvial clay gilgai soils at the eastern extent of the Darling Riverine Plains.

Under NVIS v7.0, PCT 27 in this biophysical context is classified within MVG 6 – Acacia Forests and Woodlands, reflecting the structural prominence of *Acacia pendula* in the mid-storey and the alluvial clay substrate, which supports denser structural development than the MVG 5 – Eucalypt Woodlands classification typical of the drier, sandier western occurrences of this PCT. This MVG 6 assignment is confirmed by the Commonwealth's Prescribed Vegetation Classification System (PVCS) dataset, accessed in accordance with s46(10) of the method as an authoritative source for identifying reference ecosystems and Major Vegetation Groups. The PVCS dataset explicitly maps PCT 27 to MVG 6 (Acacia Forests and Woodlands). The PLANR vegetation layer independently classifies a 30.57 ha remnant PCT 27 patch on the property as MVG 6, with 89% coverage in the Biodiversity Benefit Tool, further supporting this determination.

Based on direct field observations, the site's biophysical context, application of the Prescribed Vegetation Classification System in accordance with sections 46(10)–(13) of the method, and cross-referencing with PLANR, SVTM, NVIS, NSW Soil Landscape Mapping, and BioNet Atlas data, PCT 27 – Weeping Myall open woodland is adopted as the reference ecosystem for the project. Under the IUCN Global Ecosystem Typology (GET) 2.0, PCT 27 is classified as T4.4 Temperate Woodlands (Keith et al. 2020). Under NVIS v7.0, this site occurrence of PCT 27 is classified within MVG 6 – Acacia Forests and Woodlands, as supported by the site's biophysical context, structural expression, and geographic position at the eastern extent of the Darling Riverine Plains where alluvial clay gilgai soils support the denser structural expression characteristic of this classification.

Mid-storey classification of *Acacia pendula*: For the purposes of crown cover indicator calculations, *Acacia pendula* is classified as contributing to the mid-storey layer rather than the canopy layer. This reflects the observed structural expression at the project site, where *Eucalyptus populnea* forms a distinct upper canopy that overtops *Acacia pendula*. This site-scale structural variation is consistent with the range of structural expressions documented for PCT 27 / Weeping Myall Woodlands. The Commonwealth Conservation Advice for the Weeping Myall Woodlands ecological community states that "the structure and composition of the community varies, particularly with latitude" and that "in some areas the shrub and canopy stratum may have been reduced or eliminated by clearing or heavy grazing" (DCCEEW 2009). The NSW Scientific Committee Final Determination for Myall Woodland likewise records that "the structure of the community varies from low woodland and low open woodland to low sparse woodland or open shrubland, depending on site quality and disturbance history" (NSW Scientific Committee 2011). The NSW BioNet PCT 27 community profile (PCT 27 – Weeping Myall open woodland on alluvial clay-loam soils mainly in the Darling Riverine Plains

Bioregion) similarly records *Acacia pendula* in the upper / mid stratum depending on stand structure, and identifies *Eucalyptus populnea* as a co-occurring canopy species where present. The site-scale stratification of *Acacia pendula* as mid-storey for crown cover indicator calculations (per Schedule 5, section 10) is independent of, and does not modify, the MVG 6 reference ecosystem classification, which is determined at the PCT level via the PVCS as set out in SSA Section 5.

Detailed level 5 (association) and level 6 (sub-association) floristic attributes for PCT 27 under NVIS v7.0 are not currently available for this part of the Darling Riverine Plains Bioregion; the project plan will be updated to incorporate these attributes when the mapping becomes available, in accordance with s46(4)(b) of the method.

Table 7: Reference ecosystem assignment

Activity Area	Reference Ecosystem
AA1	PCT 27 — Weeping Myall open woodland of the Darling Riverine Plains Bioregion

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6. Starting Ecosystem Condition

For each activity area or sub-area, the starting values for each ecosystem indicator must be calculated in accordance with the process in section 10 of schedule 5 of the method. The data relied upon is provided in the field data workbook (Nortongong_Field_Data_AA1.xlsx) submitted with this report.

Overall cover percentage

The overall cover percentage for each subcategory was calculated by averaging the pooled point intercept proportion and pooled quadrat proportion across all 29 sampling plots in AA1, in accordance with Schedule 5 Section 11 of the method.

TABLE 11A: OVERALL COVER PERCENTAGE OF CATEGORY A AND SUBCATEGORY A PLANT SPECIES

Activity area	% of A1	% of A2	% of A3	% of A4	% of A5
AA1	69.32%	20.89%	1.47%	6.16%	2.15%

Calculating species number (richness)

Using data from the quadrat surveys and the whole-plot species census, the total number of category A species recorded across all 29 sampling plots is presented below. Species were identified to species level where possible; genus-level identifications (e.g. *Sclerolaena* spp.) are counted as single taxa.

TABLE 11B: NUMBER OF CATEGORY A AND SUBCATEGORY A PLANT SPECIES

Activity area	No. A1 spp.	No. A2 spp.	No. A3 spp.	No. A4 spp.	No. A5 spp.	Total Cat A
AA1	15	14	2	8	1	40

7. Starting Values for Ecosystem Condition Indicators

Table 8: Starting values of each indicator AA1 (Section 11, 29 sampling plots)

Indicator	Sub -Indicator	AA1
(a) Canopy height of native vegetation (m)	-	0m
(b) Crown cover from native plants in the canopy layer (%)	-	0%
(c) Crown cover from native plants in the mid-storey layer (%)	-	0%
(d) Crown cover from plants in the canopy layer provided by non-native plants (%)	-	0%
(e) Crown cover from plants in the mid-storey layer provided by non-native plants (%)	-	0%
(f) Ground cover from A1, A2, A3 plants as proportion of total A ground cover	-	91.69%



(g) Ground cover from A4, A5 plants as proportion of total A ground cover	-	8.31%
(h) Native species richness index (NSRI)	Native Trees	0.0
	Native Shrubs	0.7
	Native Vines	0.0
	Native Grasses	3.7
	Native Herbaceous (Forb)	4.5
	Total NSRI	35.6% <i>Indicator (h) is calculated per Schedule 5, s10. For each of the 29 permanent sampling plots in AA1, the number of native species in each life form was counted and capped at the relevant benchmark (Trees 2, Shrubs 7, Vines 1, Grasses 5, Forbs 10). The mean across the 29 plots is reported above for each life form. The NSRI for AA1 is the sum of those means (8.9) divided by the total benchmark (25), giving 0.356 or 35.6 % of benchmark.</i>



8. Benchmark Values for Ecosystem Condition Indicators

Benchmark values for the reference ecosystem (PCT 27) have been established from the BioNet Vegetation Classification database for the Darling Riverine Plains IBRA bioregion, supplemented by field survey data from reference sites in accordance with the approved benchmark source list.

Table 9: Benchmark values for each indicator PCT 27 (Darling Riverine Plains)

Activity area	
Indicator	Benchmark Value
Canopy height of native vegetation (in metres)	9m
Crown cover from native plants in the canopy layer (as a percentage)	5%
Crown cover from native plants in the mid-storey layer (as a percentage)	22%
Crown cover from plants in the canopy layer provided by non-native plants (as a percentage)	0%
Crown cover from plants in the mid-storey layer provided by non-native plants (as a percentage)	0%
Ground cover from sub-category A1, A2 and A3 plants as a proportion of total ground cover from category A plants	100%
Ground cover from sub-category A4 and A5 plants as a proportion of total ground cover from category A plants	0%
Native species richness index by life form (native tree, shrub, vine, grass and herbaceous vascular plant species other than grasses)	Trees: 2 Shrubs: 7 Vines: 1 Grass: 5 Herbaceous: 10 Total: 25

Benchmark values represent the expected value of each indicator for the reference ecosystem in an undegraded state. The canopy height benchmark of 9 m is derived from the Walter–Hopkins height chart for the vegetation class, reflecting the average mature height range sourced from the BioNet PCT 27 profile for the DRP bioregion. Crown cover and species richness benchmarks are sourced from the BioNet PCT 27 profile for the DRP bioregion.



9. Threshold Values for Ecosystem Condition Indicators

Threshold values have been determined based on the nominated Restoration Target Level 2 for the activity area, in accordance with Schedule 6 of the method. These are the minimum values that must be achieved for each indicator to demonstrate that the restoration target has been met, as required for the issuance of a biodiversity certificate.

Table 10: Threshold values for ecosystem condition indicators: Restoration Target Level 2

Activity area	
Indicator	Threshold Value
Canopy height of native vegetation (in metres)	3
Crown cover from native plants in the canopy layer (as a percentage)	20%
Crown cover from native plants in the mid-storey layer (as a percentage)	7.3%
Crown cover from plants in the canopy layer provided by non-native plants (as a percentage)	No more than 10%
Crown cover from plants in the mid-storey layer provided by non-native plants (as a percentage)	No more than 10%
Ground cover from sub-category A1, A2 and A3 plants as a proportion of total ground cover from category A plants	90% (or 125% of starting)
Ground cover from sub-category A4 and A5 plants as a proportion of total ground cover from category A plants	no more than 10%; or no more than 75% of the non-native cover proportion as at the date of the starting state assessment
Native species richness index by life form (native tree, shrub, vine, grass and herbaceous vascular plant species other than grasses)	6 (25% of benchmark 25)



10. Proposed Plantings

Table 11: Proposed planting schedule and species composition

Field	Details
Activity Area	AA1 (Consolidated)
Species planted (Initial — July 2025)	<i>Eucalyptus populnea</i> — 139 stems/ha (Tree) <i>Casuarina cristata</i> — 60 stems/ha (Tree) <i>Rhagodia spinescens</i> — 5 stems/ha (Shrub) <i>Acacia salicina</i> — 1 stems/ha (Tree) <i>Atriplex nummularia</i> — 1 stems/ha (Shrub) <i>Acacia pendula</i> — 1 stems/ha (Tree) Initial total: 207 stems/ha
Species planned (Staggered Infill — 2026)	<i>Acacia pendula</i> — 50 stems/ha (Tree) <i>Rhagodia spinescens</i> — 10 stems/ha (Shrub) <i>Atriplex nummularia</i> — 10 stems/ha (Shrub) Infill total: 70 stems/ha
Combined total density	277 stems/ha
Target density	277 stems/ha (combined initial + infill)
Site preparation	The ground was mechanically ripped and disced to enhance soil aeration, maximize soil moisture and reduce compaction prior to planting. Rip lines were established at 10m intervals following natural contours. No native vegetation was damaged or destroyed by mechanical or chemical means during site preparation.
Planting method	Tubestock, hand-planted into rip lines
Provenance	All species are native to the local area and consistent with the reference ecosystem (PCT 27). Seed used for tubestock sourced from natural distribution range of each species.
Ground layer species	The existing native ground layer provides a strong ecological foundation for ground layer development without the need for direct ground-layer planting. The starting state assessment recorded 52 unique native vascular plant taxa across the activity area, with native ground cover species (subcategories A1, A2 and A3) comprising approximately 92% of total ground cover. This includes key PCT 27 indicator species across multiple growth forms: grasses (average 3.7 species per plot including <i>Aristida ramosa</i> , <i>Chloris truncata</i> , <i>Dichanthium sericeum</i> , <i>Enteropogon acicularis</i> , <i>Sporobolus spp.</i>), herbs and forbs (average 4.5 species per plot including <i>Alternanthera denticulata</i> , <i>Goodenia fascicularis</i> , <i>Marsilea drummondii</i> , <i>Centipeda thespidioides</i> , <i>Sida corrugata</i>), and shrub-layer components (<i>Sclerolaena spp.</i> , <i>Maireana spp.</i>). Ninety-seven per cent of sampling plots contain five or more native ground-layer species. Livestock exclusion and weed management will progressively enhance conditions for native ground-layer recruitment while suppressing exotic pasture competition. Should monitoring indicate that ground layer species richness is not progressing toward benchmark values, supplementary direct seeding of native grasses and forbs consistent with the PCT 27 floristic profile will be undertaken as part of the adaptive management program.



11. Natural Regeneration

No naturally regenerating native woody species (stems with diameter at breast height < 5 cm and height < 2 m) were recorded across the activity area during the July 2025 field survey. This is consistent with the comprehensive clearing history of the project area and the Starting State B determination. The suitably qualified persons confirmed that existing remnant trees on the broader property are mature individuals (estimated age > 100 years) and do not represent natural regeneration from recent land clearing events. The native ground layer (91.69% native ground cover at starting state) provides a soil seed bank reserve that is expected to support ground-layer recruitment following livestock exclusion and weed control as part of the project management program.

Table 12: Reliance on natural regeneration

Activity area ID	Species name	Location and number	Evidence that regeneration will not be damaged in the implementation of the proposed plantings
AA1	Ground-layer native grasses and forbs (Full PCT 27 ground-layer profile; see SSA Section 5)	Distributed across the activity area; 91.69% native ground cover at starting state	The proposed plantings are tubestock hand-planted along pre-prepared rip lines at approximately 4.8 m intervals between plants, with no broadscale soil disturbance between rip lines. Existing native ground-layer vegetation between rip lines is undisturbed by the planting program. Livestock exclusion (s14(4)) and weed management (Section 14) protect the existing native ground layer and support regeneration.

12. Threats to the Project Outcome

Threats to the project outcome were identified during the starting state assessment by direct field observation, by review of historical pest and weed treatment records provided by the landholder, and by desktop analysis of climate vulnerability (Section 11) and surrounding land use, in accordance with s32(b), s33(2)(3), s34 and s35(1)(o) of the method. Threats are documented at the activity area scale (AA1) and include threats present within the activity area as well as in the surrounding landscape. Management activities to address these threats are detailed in Section 14 of the Project Plan in accordance with s37(l)(i) and s43.

TABLE 13: THREATS TO THE PROJECT OUTCOME

Threat category (s34)	Description and supporting evidence
Non-native plant species (s34(a))	Exotic pasture grasses (predominantly introduced <i>Cenchrus</i> , <i>Hordeum</i> and <i>Lolium</i> species) and broadleaf weeds (<i>Conyza bonariensis</i> , <i>Hypochaeris radicata</i> , <i>Sonchus oleraceus</i>) recorded across the activity area during the July 2025 field survey. Exotic ground cover proportion at starting state is 8.31% of category A ground cover, indicating moderate but manageable weed pressure. Surrounding landscape includes ongoing cropping operations that present a continuous propagule source.
Non-native animal species (s34(a))	Feral pigs (<i>Sus scrofa</i>), feral goats (<i>Capra hircus</i>) and European rabbits (<i>Oryctolagus cuniculus</i>) are present in the broader Coonamble district per historical landholder records and Western Local Land Services pest



	distribution data. Risk to plantings: trampling, browse on tubestock, soil disturbance.
Contaminants and contaminant sources (s34(b))	Adjacent cropping land within and abutting the property uses inorganic fertilisers and herbicides under standard broadacre agricultural practice. Risk of nutrient or chemical drift to the activity area is low given the buffer width but is identified as a residual threat.
Significant natural disturbances (s34(c)) drought	The project area is in a semi-arid zone (~450 mm mean annual rainfall) with documented drought episodes in 2002–2009 and 2017–2019. Climate projections (Section 11) indicate increased drought frequency and intensity. Drought poses a survival risk to establishing tubestock during the first 3–5 years post-planting.
Significant natural disturbances (s34(c)) flood	The activity area is situated on the Castlereagh River alluvial floodplain and is subject to periodic inundation following major rainfall events. Periodic inundation is consistent with the hydrological regime of PCT 27 and is not a threat to the reference ecosystem itself, but presents a risk to immature plantings during establishment.
Significant natural disturbances (s34(c)) fire	Grassland fuel load presents a wildfire risk during dry summer conditions. Climate projections (Section 11) indicate increased severe fire weather days. Risk is highest during the early establishment phase before bark development confers fire protection.

12. Other Features

12.1 Covenants and Legal Encumbrances

The project area was reviewed for covenants, legal encumbrances and other registered interests in accordance with s35(1)(t) of the method. The following sources were assessed:

- **NSW Land Registry Services land title:** reviewed for registered mortgages, easements, restrictions on use, positive covenants, profits à prendre, leases and other notations on the certificate of title for each of the 27 lots comprising the property;
- **Australian National Registry of Emissions Units (ANREU):** Reviewed for any Carbon Farming Initiative or Emissions Reduction Fund projects registered against the property;
- **Biodiversity Conservation Trust (BCT) public register and NSW Biodiversity Stewardship Site Register** Reviewed for any biodiversity stewardship agreement, conservation agreement, or registered offset site over the project area lots;
- **NSW Environmental Interest Holdings (EIH) and registered Property Vegetation Plans (PVP)** — reviewed via the NSW Native Vegetation Regulatory Map and BioNet for any registered conservation interests applicable to the project lots;

Identified encumbrances applicable to the project area are tabulated below. Management actions and consents required for the project are described alongside each encumbrance. Updates to the status of these encumbrances during the project's permanence period will be reflected in subsequent versions of this Project Plan.



Table 14: Covenants and legal encumbrances

Activity area ID	Description of covenants and legal encumbrances	
AA1	None	No mortgage is registered over the activity area.

12.2 Significant Hydrological Features

There are no significant hydrological features (as defined by section 32 of the method) identified through the Commonwealth Protected Matters Search Tool within the project area. However, three Wetlands of International Importance (Ramsar Wetlands) are located downstream of the project area, as identified in the Protected Matters Search Tool report generated 18 March 2026. Given the distance from the project area (700–1,000 km downstream), no impacts on these Ramsar sites are anticipated as a result of the project activities.

Table 14: Significant hydrological features

Feature	Description and treatment
Ephemeral drainage line (NSW Hydrography layer)	A minor ephemeral watercourse traverses one section of the activity area, identified on the NSW Hydrography spatial layer and confirmed by field observation. The watercourse flows only following significant rainfall events and is usually dry. It does not materially affect plant water availability within the activity area beyond the immediate riparian margin
Floodplain inundation	The activity area is situated on the Castlereagh River alluvial floodplain and is subject to periodic inundation following major rainfall events. NSW Floodplain mapping does not identify the activity area as flood-prone in the regulatory sense (i.e. no 1% AEP flood-prone designation applies), but periodic broad-scale inundation is a documented landscape characteristic. Periodic inundation is consistent with the hydrological regime of PCT 27 (Weeping Myall open woodland) and supports the reference ecosystem rather than threatening it.
Ramsar wetlands (PMST downstream proximity)	Three Wetlands of International Importance (Ramsar wetlands) were identified by the PMST report as being downstream of the project area within the Murray-Darling Basin: Banrock Station Wetland Complex (Ramsar site No. 63, 800–900 km downstream), Riverland (Ramsar site No.29 700–800 km downstream), and The Coorong, and Lakes Alexandrina and Albert Wetland (Ramsar site No.25, 900–1,000 km downstream). Given the distance from the project area, no measurable impacts on these Ramsar sites are anticipated from the project activities. The project will deliver beneficial impacts on regional water quality through reduced erosion, increased ground cover and improved riparian function.



13. Management History and Historical Drivers

The Nortongong property has been subject to agricultural land management for over 100 years, involving broadacre cropping and pastoral grazing. The following historic drivers of change have been identified:

Comprehensive clearing of native vegetation: The original woodland vegetation was comprehensively cleared more than 15 years prior to the application date for agricultural purposes. Aerial imagery and historical records confirm the absence of native canopy trees across the activity area.

Pastoral grazing: Long-term grazing by domestic livestock (cattle and sheep) has suppressed natural regeneration of native woody species and altered ground layer composition, favouring exotic pasture grasses over native species.

Cultivation: Periodic cropping activities have disturbed soil structure and further depleted native seed banks.

Weed invasion: Exotic pasture grasses and opportunistic weed species have established across the activity area, particularly in disturbed areas.

For detailed information about historical drivers of change, refer to the site assessment report.

14. Management Activities

The project incorporates a targeted approach to manage key threats, ensuring the long-term resilience of the site. This includes planning for flood, fire, drought, and pest pressures.

Fire management is phased. In the first five years, fuel loads are controlled through slashing, weed management, and maintenance of fire tracks and defensible space around buildings. Beyond this period, fuel management continues using a mix of mechanical slashing and chemical controls. All livestock will be excluded from the activity area until 90% of individual trees have reached 1.5 m in height, in accordance with section 14(4) of the method. The land manager also maintains fire preparedness through staff training, equipment maintenance, and firebreak creation within the project area.

Drought resilience is supported using drought-tolerant species including, low initial planting densities consistent with woodland structure, and annual health monitoring. Weed control helps reduce competition for water during dry periods. No thinning will be carried out during the 10 years following project registration, in accordance with section 14(6) of the method.

Pest and disease risks are addressed through regular monitoring, weed control, and feral animal management, particularly targeting pigs and goats, to reduce vegetation stress and protect ecological outcomes.



15. Climate Change Considerations

15.1 Projected Climate Change Effects

In accordance with s42 of the method, the vulnerability of the project area to the reasonably expected effects of climate change has been assessed using NARClIM2.0 (Di Virgilio et al. 2025), the NSW Government's authoritative downscaled regional climate modelling framework. Coonamble falls within the Central West and Orana NRM planning region, for which a dedicated Climate Change Snapshot was published. The snapshot identifies that northern areas of the region including Coonabarabran and Nyngan will experience the greatest temperature increases, placing the Nortongong project area at or above the regional average for warming impacts.

NARClIM2.0 projections are reported for SSP1-2.6 (low emissions) and SSP3-7.0 (high emissions) scenarios at 2050 (averaged 2040–2059) and 2090 (averaged 2080–2099) time horizons, relative to a 1990–2009 baseline. All values below are Central West and Orana regional ensemble means.

Temperature

Mean temperature is projected to increase by +1.2°C (range 0.6–1.7°C) under SSP1-2.6 and +2.1°C (range 1.1–2.9°C) under SSP3-7.0 by 2050. By 2090, increases reach +1.4°C (range 0.6–2.1°C) under SSP1-2.6 and +4.1°C (range 2.9–5.7°C) under SSP3-7.0. The current observed baseline is 30.5 hot days per year ($\geq 35^{\circ}\text{C}$) for the Central West and Orana region as a whole. Within the region, the snapshot reports baseline hot day frequencies of 45–55 days per year for Nyngan (the closest reporting town northwest of the project area, approximately 165 km west-southwest of Coonamble). Under SSP3-7.0 by 2090, the snapshot projects an additional 56.7 hot days per year for Dubbo (the closest reporting town southeast of the project area, approximately 130 km south of Coonamble), more than tripling Dubbo's baseline of 29.7 hot days per year. Coonamble's projected change is expected to fall within the range bracketed by Nyngan and Dubbo given its location between the two reporting points (NARClIM2.0 Central West and Orana Snapshot 2024; AdaptNSW).

Rainfall

The baseline observed annual rainfall is 562 mm. Ensemble-mean projections indicate declining rainfall across all seasons, though model spread is wide, encompassing both wetter and drier outcomes. Annual rainfall is projected to decline by –9.3% (range –23.2% to +17.5%) under SSP1-2.6 by 2050 and –15.7% (range –36.1% to +7.2%) under SSP3-7.0 by 2050. Spring rainfall faces the largest projected decline, down 21.2% by 2090 under SSP3-7.0 (range –52.3% to +45.6%), with direct implications for woodland recruitment, as spring is the primary germination and growth season for native grasses and woody seedlings in the Darling Riverine Plains (NARClIM2.0 Central West and Orana Snapshot 2024).

Fire Weather

Severe fire weather days (Forest Fire Danger Index > 50) are projected to increase from an observed baseline of approximately 4.9 days per year by +2.4 days/year (SSP1-2.6) to +3.8 days/year (SSP3-7.0) by 2050, and by +2.7 days/year (SSP1-2.6) to +7.5 days/year (SSP3-7.0) by 2090. Under SSP3-7.0, severe fire weather days would more than double to approximately 12+ days per year by 2090. The NARClIM2.0 snapshot notes the greatest fire weather increases are projected for the “central and western areas of the region including Dubbo and Nyngan,” which encompasses the Coonamble project area (NARClIM2.0 Central West and Orana Snapshot 2024; AdaptNSW).



15.2 Reducing Risk of Climate Change Effects on Project Outcome

The following evidence-based measures address the identified climate risks, as required by s42(b) of the method.

Climate-resilient species selection: All planted species demonstrate documented tolerance to projected conditions. *Eucalyptus populnea* accesses deep soil water beneath hardpans at 60–80 cm depth and maintains water potentials of –3 to –3.6 MPa when understorey shrubs reach extreme stress at –8 MPa (Hodgkinson 1992). *Casuarina cristata* tolerates annual rainfall as low as 175 mm via nitrogen-fixing root associations and reduced-leaf branchlet architecture that minimises water loss (National Research Council 1984; ABARES 2019). *Acacia pendula* is drought- and frost-tolerant across a wide soil range (Maslin 2001; DCCEE 2009). *Atriplex nummularia*, among the most heat-tolerant terrestrial dicotyledons maintains optimal photosynthesis at 30–35°C and tolerates salinities exceeding seawater concentration (Ben Salem et al. 2010).

Structural design for microclimate buffering: The planting configuration follows existing natural contours at moderate density (277 stems/ha combined), avoiding excessive competition for water under drying conditions while maintaining sufficient density to develop canopy shade, litter accumulation, and soil moisture retention. The multi-species, multi-strata design creates functional redundancy: species have differing drought, heat, and waterlogging tolerances (e.g. *Acacia pendula* does not tolerate prolonged waterlogging but thrives in drought; *Casuarina cristata* tolerates both), ensuring the woodland persists across the range of projected conditions (Timpane-Padgham et al. 2017).

Fire management: Fuel load management, firebreak maintenance, and equipment preparedness address the projected increase in severe fire weather days. The principal canopy species, *Eucalyptus populnea*, is a well-documented epicormic resprouter capable of post-fire recovery from buds protected beneath the bark, a trait shared across eucalypts and considered a key resilience mechanism under fire regimes characteristic of semi-arid woodlands (Burrows 2013; Hodgkinson 1992). *Casuarina cristata* contributes structural diversity and tolerates the projected drier conditions (National Research Council 1984). The mid-storey species *Atriplex nummularia* and *Rhagodia spinescens* function as fire retardants. Their high leaf moisture and salt content reduce ignitability and slow surface fire spread, and both species are listed on government fire-retardant plant references (ACT Transport Canberra and City Services 2023). Fire management will be undertaken in accordance with s14(2) of the method.

Adaptive management: Annual monitoring of growth rates, survival, and vegetation health will detect climate-related stress, consistent with adaptive management frameworks for climate-resilient ecological restoration (Simonson et al. 2021; Timpane-Padgham et al. 2017). If monitoring indicates stagnation or dieback correlated with climatic conditions, adaptive interventions including supplementary watering, soil moisture conservation measures, and replacement planting with adjusted species composition will be implemented.



15.3 Local Council Context

Coonamble Shire Council's Community Strategic Plan 2032 acknowledges environmental sustainability as a strategic priority but does not include a dedicated climate change adaptation strategy or land management-specific climate risk assessment. The Western Local Land Services Regional Strategic Plan identifies declining woodland condition and fragmentation as key natural resource management priorities for the region. The Nortongong project directly contributes to both regional biodiversity restoration and landscape-scale climate resilience objectives.

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16. Threatened Species and Ecological Communities

The Commonwealth Protected Matters Search Tool (PMST) report was generated to identify matters of national environmental significance (MNES) that may occur within or relate to the project area. The full PMST report is provided as an appendix to this project plan.

Listed Threatened Ecological Communities

Five threatened ecological communities listed under the EPBC Act were identified as likely to occur or may occur within the project area:

- Weeping Myall Woodlands – *Endangered – Community likely to occur within area*
- Poplar Box Grassy Woodland on Alluvial Plains – *Endangered – Community likely to occur within area*
- Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia – *Endangered – Community likely to occur within area*
- Coolibah – Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions – *Endangered – Community may occur within area*
- White Box–Yellow Box–Blakely's Red Gum Grassy Woodland and Derived Native Grassland – *Critically Endangered – Community may occur within area*

Listed Threatened Species

Twenty-six threatened species listed under the EPBC Act were identified as likely to occur or may occur within the project area. No threatened species were identified on site during the starting state assessment field survey; however, survey effort was not focused on targeted threatened species detection.

Birds (18 species)

- *Pedionomus torquatus* Plains-wanderer – *Critically Endangered*



- *Calidris ferruginea* Curlew Sandpiper – *Critically Endangered*
- *Lathamus discolor* Swift Parrot – *Critically Endangered*
- *Botaurus poiciloptilus* Australasian Bittern – *Endangered*
- *Rostratula australis* Australian Painted Snipe – *Endangered*
- *Melanodryas cucullata cucullata* South-eastern Hooded Robin – *Endangered*
- *Lophochroa leadbeateri leadbeateri* Major Mitchell's Cockatoo (eastern) – *Endangered*
- *Stagonopleura guttata* Diamond Firetail – *Vulnerable*
- *Hirundapus caudacutus* White-throated Needletail – *Vulnerable*
- *Aphelocephala leucopsis* Southern Whiteface – *Vulnerable*
- *Leipoa ocellata* Malleefowl – *Vulnerable*
- *Calyptorhynchus lathami lathami* South-eastern Glossy Black-Cockatoo – *Vulnerable*
- *Gallinago hardwickii* Latham's Snipe – *Vulnerable*
- *Neophema chrysostoma* Blue-winged Parrot – *Vulnerable*
- *Falco hypoleucos* Grey Falcon – *Vulnerable*
- *Grantiella picta* Painted Honeyeater – *Vulnerable*
- *Polytelis swainsonii* Superb Parrot – *Vulnerable*
- *Calidris acuminata* Sharp-tailed Sandpiper – *Vulnerable*

Mammals (2 species)

- *Phascolarctos cinereus* Koala (combined populations of Qld, NSW and the ACT) – *Endangered*
- *Nyctophilus corbeni* Corben's Long-eared Bat – *Vulnerable*

Fish (1 species)

- *Mogurnda adspersa* (Murray-Darling Basin population) Southern Purple Spotted Gudgeon – *Endangered*

Plants (3 species)

- *Lepidium monoplacoides* Winged Pepper-cress – *Endangered*
- *Lepidium aschersonii* Spiny Peppercress – *Vulnerable*
- *Swainsona murrayana* Slender Darling-pea – *Vulnerable*



Reptiles (2 species)

- *Hemiaspis damelii* Grey Snake – *Endangered*
- *Anomalopus mackayi* Five-clawed Worm-skink – *Vulnerable*

Listed Migratory Species

Eight listed migratory species were identified, including Fork-tailed Swift, White-throated Needletail, Yellow Wagtail, Common Sandpiper, Sharp-tailed Sandpiper, Curlew Sandpiper, Pectoral Sandpiper and Latham's Snipe. The project area may provide transitory habitat for some of these species during migration periods.

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

The project will directly contribute to the recovery of the threatened ecological communities and species identified above through the following measures, in accordance with s40 of the method.

Weeping Myall Woodlands (Endangered, EPBC Act): The project directly restores this community by establishing PCT 27 species (*Acacia pendula*, *Eucalyptus populnea*, *Casuarina cristata*, *Rhagodia spinescens*, *Atriplex nummularia*) on comprehensively cleared land within the known distribution of the TEC. The conservation advice for this community identifies “actively restore native vegetation to degraded areas of Myall Woodland” and “fence off remnant and restored areas to manage grazing” as priority recovery actions (Threatened Species Scientific Committee 2008). Both are core activities of this project.

Koala (Endangered, EPBC Act): *Eucalyptus populnea* is a recognised Koala food tree species. The planting of 139 stems/ha of *Eucalyptus populnea* across the activity area will create future Koala habitat. Livestock exclusion will protect habitat quality and reduce soil compaction effects on tree health. The Koala conservation advice identifies habitat restoration and connectivity as priority actions for the inland NSW population.

Woodland birds (Diamond Firetail, Painted Honeyeater, South-eastern Hooded Robin, Superb Parrot): These species are associated with grassy woodlands and box-gum woodland habitats. The restoration of multi-strata woodland structure with native ground cover provides foraging, nesting and dispersal habitat. Pest animal management (foxes, cats) and livestock exclusion reduce predation pressure and habitat disturbance. The multi-species planting design with retained native ground cover creates the structural complexity required by these species for foraging and nesting.

Plains-wanderer (Critically Endangered, EPBC Act): This species is associated with sparse native grasslands rather than woodland habitats. The project will not adversely affect Plains-wanderer habitat, as environmental plantings are confined to areas designated for woodland restoration. Existing open grassland areas outside the activity area boundary are excluded from planting.





17. Suitably Qualified Persons

Report Certification

Works for this report were undertaken by the following suitably qualified persons:

Staff Name	Position
Chris Moore BBioCon	Narla Environmental General Manager and Principal Ecologist Accredited Assessor (BAAS21009)
Brodie Miller BA MEnvMgt (Cons)	Narla Environmental Project Manager and Ecologist Accredited Assessor (BAAS25016)
Gemma Hicks BBioCon	Narla Environmental Ecologist
Kayla Spithoven BSc/BLang	Narla Environmental Ecologist





By signing below, the suitably qualified person or persons declares that implementation of this project plan is likely achieve the project outcome and result in a biodiversity certificate being issued in respect of the project (s36(1)(3) of the method). Declaration may be subject to change.

Table 15: Suitably qualified person certification - Brodie Miller

Full name of suitably qualified person	Brodie Miller
Contact details	brodie.miller@narla.com.au
Role	☐ Prepared the Project Plan ☒ Certified the Project Plan
Relevant Qualifications or experience	Brodie is a dedicated ecologist and experienced project manager with a background in ecology consultancy, bush regeneration, and government sectors. Throughout her career, she has demonstrated proficiency in leading and managing ecological projects, ensuring compliance with legislation and industry standards, and delivering optimal outcomes for clients and the environment. Brodie's expertise encompasses ecological assessments, technical reporting, and vegetation management. Brodie holds a Master of Environmental Management and is a Biodiversity Assessment Method (BAM) Accredited Assessor (BAAS25016) with 5 years of experience. Please refer to the professional CV document provided.
Signature	
Signature date	26/06/2026

Table 16: Suitably qualified person certification - Chris Moore

Full name of suitably qualified person	Chris Moore
Contact details	chris.moore@narla.com.au
Role	☐ Prepared the Project Plan ☒ Certified the Project Plan
Relevant Qualifications or experience	Chris is a General Manager and Principal Ecologist with extensive experience working in approvals and providing ecological advice on projects across NSW. Chris has experience working on jobs varying from large scale State Significant Infrastructure projects to State Significant Developments and Part 5 local government approvals, as well as Part 4 development applications. Chris specialises in flora ecology, managing many projects that involve large scale vegetation mapping and conducting vegetation plots in accordance with Biodiversity Assessment Methodology. Chris has conducted vegetation surveys all over NSW from Clarence Valley Council in northern NSW to Eurobodalla Council in the south and Central Darling Shire in the west. Chris holds a Bachelor of Biodiversity and Conservation and is a Biodiversity Assessment Method (BAM) Accredited Assessor with over 7 years of experience. Please refer to the professional CV document provided.
Signature	 Chris Moore (Jun 26, 2026 16:01:56 GMT+10)
Signature date	26/06/2026



GUNN AGRI PARTNERS

Level 1 Suite 1.02 19/23 Hollywood Ave, Bondi Junction NSW 2022

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Final Audit Report

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