



24 DEGREE **FOREST**



KARINYA DOWNS WET SCLEROPHYLL FOREST AND RAINFOREST RESTORATION

Replanting Native Forest and Woodland Ecosystems Method

Site Assessment Report

27 March 2026



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Part 1: Project details

Table 1: Details of the proposed project area

Name and address of the property or properties	Karinya Downs, 900 Doon Doon Road, Doon Doon NSW 2484
Lot and plan number	Lot 100 DP42408, Lot A DP403666
Covenants and legal encumbrances	<p>Water Access License - Title number WAL27369</p> <p>Carbon Credits (Carbon Farming Initiative) (Reforestation by Environmental or Mallee Plantings-FullCAM) Methodology Determination 2024. ERF207666 - 24 Degree Forest - Rainforest rehabilitation on slopes and riparian zones Doon Doon Project</p> <p>Identification of covenants and other legal encumbrances were informed by:</p> <ul style="list-style-type: none">• search of the applicable land title register;• search of any applicable state or territory register relating to cultural heritage; and• search of the Register under the CFI Act 2011• search for crown land using NSW Spatial Services - Planning Portal Crown Land - Crown Land Layer (ID: 258) 2025 from ArcGIS REST Services Directory.

Project Description

The Karinya Downs Wet Sclerophyll and Rainforest Restoration project aims to restore wet sclerophyll forest and rainforest ecosystems on the steep slopes, riparian zones and gullies of Karinya Downs. Karinya Downs was established as a pastoral property following clearing between the late 1800's and the 1950's, starting with dairy operations and transitioned to beef cattle in the late 1980's. The project aims to extend and connect remnant vegetation by establishing dense (~2,500 stems/ha) mixed-species native plantings that will improve habitat connectivity, biodiversity, fire resilience, microclimatic buffering, soil stability and water quality while maintaining the long-term productivity of the surrounding grazing enterprise.

Indigenous land interests

The project area is located within an area subject to a Native Title claim by the Tweed River Bundjalung People (Federal Court File NSD876/2020) that has not been accepted for registration. The claim excludes freehold land and therefore no indigenous land interests apply to the project area.

In November 2025 the Tweed River Bundjalung People were contacted about the ACCU planting project and feedback was sought on the project's design and implementation. Acknowledgement of contact was made by the Tweed River Bundjalung People's legal representative.

Additional engagement was sought on April 2026 to engage in species selection and project design, specifically in relation to the Nature Repair Market registration. Acknowledgement of contact was made by the Tweed River Bundjalung People's legal representative.

Map 1: Landscape and Property Context

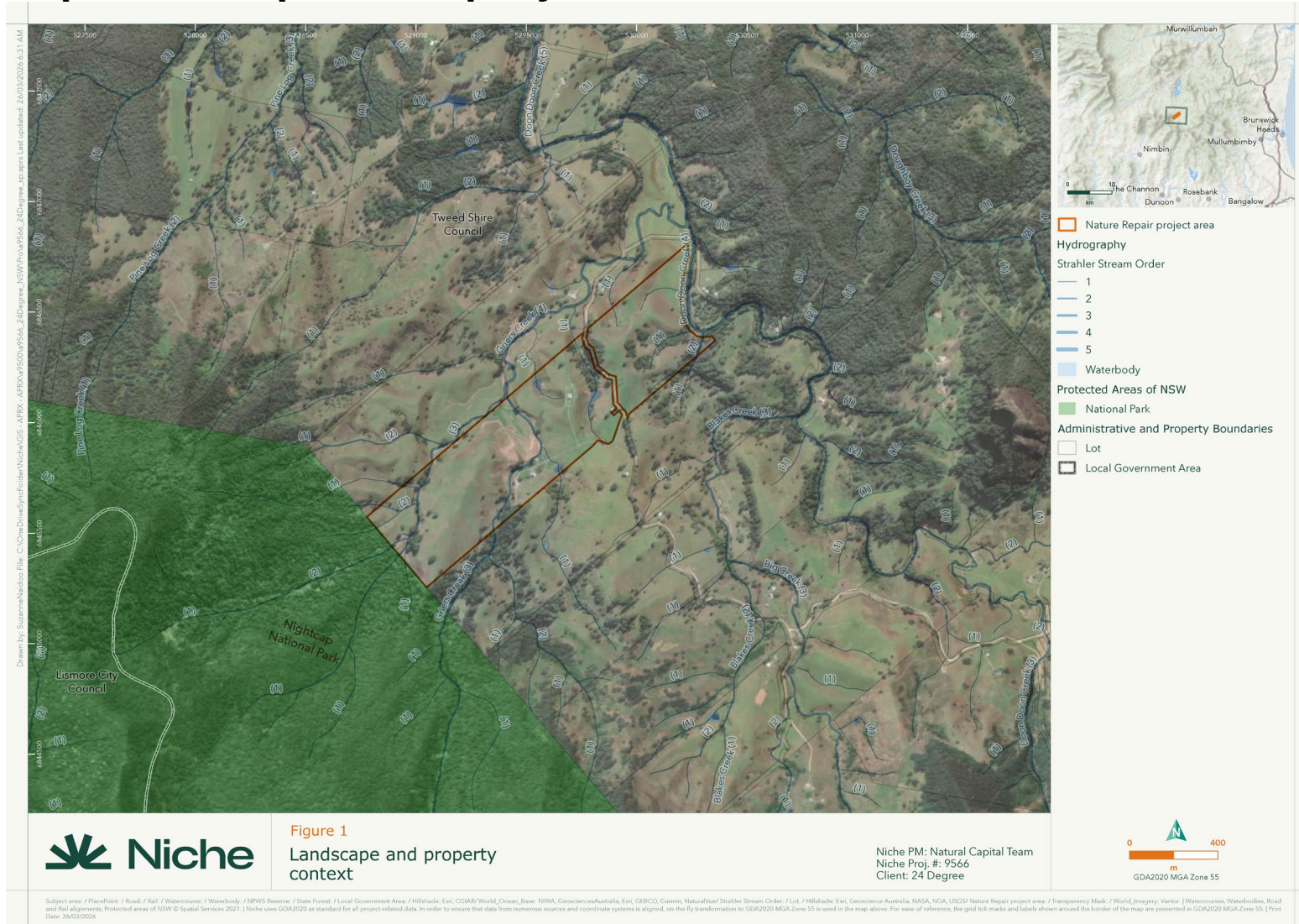


Figure 1: Map of Landscape and Property Context

Map 2: Activity Areas

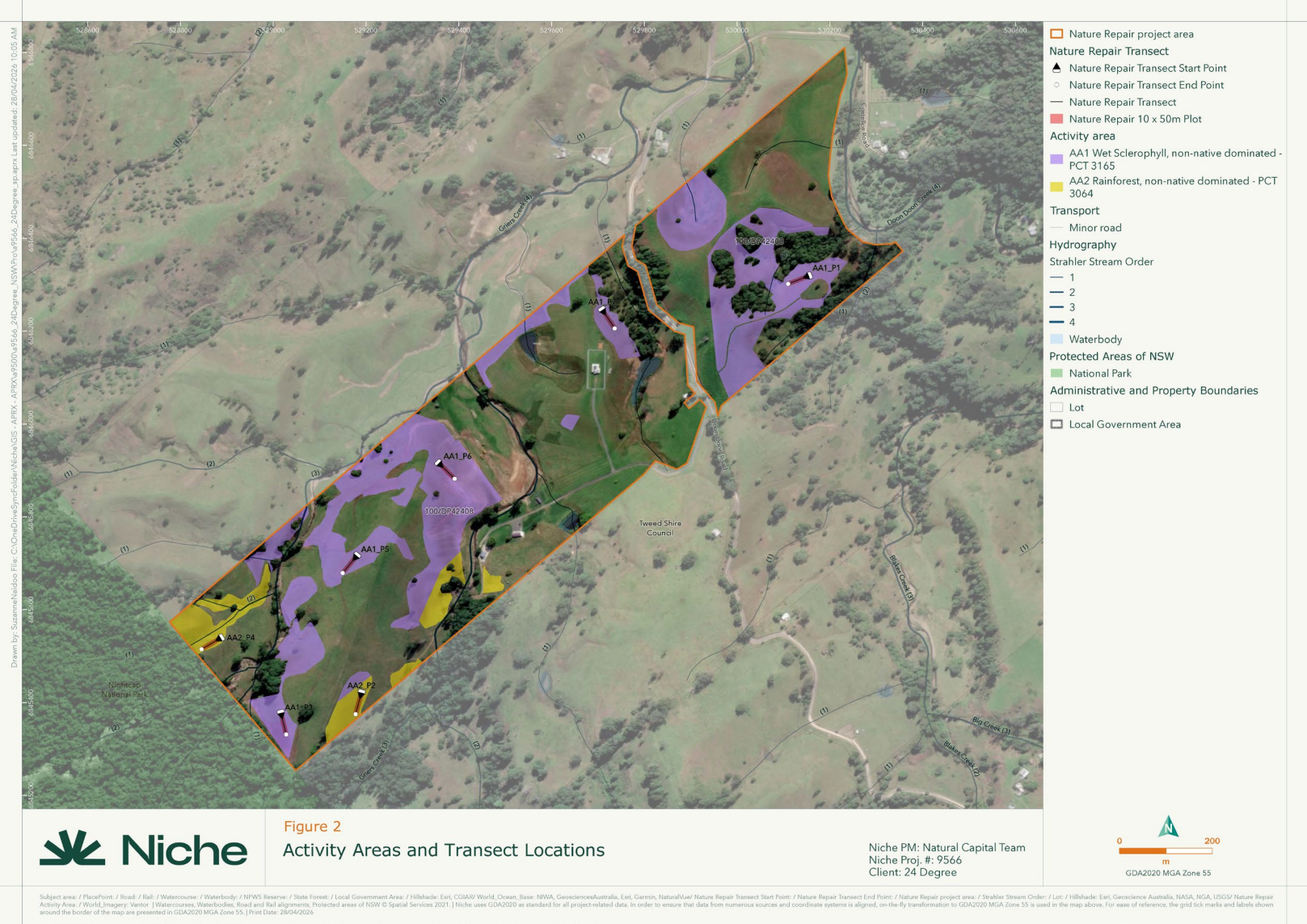


Figure 2: Map of Activity Areas and Transect Plot Locations

Part 2: Project Design

History of Clearing

Karinya Downs was established as a pastoral property in the early to mid-1900's after being cleared for timber from late 1800's to the 1950's. The project proponent understands it was initially used as a dairy farm supplying, in particular, cream to the butter factory in Uki. A segment was also used for banana plantations. In the 1980's the land was further cleared and transitioned to beef cattle pasture where it was used as a second property for a Doon Doon cattle farmer for finishing off waeners. During this time it was heavily neglected with heavy infestation of Lantana (*Lantana camara*), Tobacco Bush (*Solanum mauritianum*), Devil's Fig (*Solanum torvum*). During this period *Setaria* (*Setaria sphacelata*) was and contaminated machinery also introduced rat's tail grass (*Sporobolus* spp.) and Parramatta grass (*Sporobolus*)¹.

Karinya Downs has been owned by the current landholder since 2008 (18 years). Since this change of ownership, the land has not been cleared, and native regeneration in many areas has been suppressed through consistent grazing practices.

Google Earth satellite imagery (Landsat / Copernicus 1985, Airbus 2025) supports the clearing history as the earliest available imagery (1985) shows cleared land similar the most recent satellite imagery at the time of the report. Historical imagery searched using Google Earth shows no areas of the project area have been comprehensively cleared in the last seven years. See imagery provided in Appendix 5. In the three years prior to the application date there has been no damaged or destroyed native vegetation in the activity area.

Activity Area Assessment

In preparation of the Starting State Assessment field survey, the Niche project team completed a desktop review of the property in accordance with Section 22 of the method to determine the pre-1750 Plant Community Types (PCTs) using the Pre-1750 NSW State Vegetation Type Mapping (SVTM) and NSW Land Use mapping (v1.5 2017) to determine to Starting Condition State. The National Vegetation Information System (NVIS) and IUCN Global Ecosystem Typology were reviewed prior to, and during field work to confirm Functional Group, Major Vegetation Group (MVG) and Sub-group (MVS) best fit Reference Ecosystems. PLANR was also used to check reference ecosystems mapped across the property and this was compared against SVTM mapping. During preliminary stratification a total of ten PCTs and two condition states were identified that were to be confirmed through an on-ground assessment.

The Starting State Assessment was undertaken in early March during the optimal plant growth period as per Section 46 (2). This aligned with the projects planting dates. The North Coast Planting Plan Guide² supports that the optimal time for planting (and subsequently field surveys) should be "undertaken in the wetter months on the North Coast between December and May". The advice in the guide was based on input from a wide range of resources including North

¹ Source: Karinya Downs Pty Ltd, March 2026

² Source: North Coast Planting Plan Guide

<https://www.energy.nsw.gov.au/sites/default/files/2025-03/NSW-2025-LivingCarbonGrants-Planting-Plan-North-Coast-guide-2024method.pdf>

Coast Local Land Services that considered regional natural resource management plans, average day length and level of precipitation that supports plant growth.

During the Starting State Assessment field survey, it was determined that the SVTM, Land Use layer and PLANR was incorrect for vegetation classification across most areas of the property. Due to historical clearing and pastoral use, with modified pastures dominating the landscape, evidence to support the PCT mapping from directly within the plantings areas was difficult to determine in isolation. The most appropriate PCT for those areas was identified by reviewing multiple aspects as described below.

Reference Ecosystems were confirmed based on the pre-1750 SVTM mapping, soil types (eSpade), landscape position, aspect, elevation, rainfall data, and the presence of remnant vegetation located adjacent to the Activity Areas within the property and land adjacent to the property including Nightcap National Park. The assignment of Reference Ecosystems was assessed at a maximum scale of 3 hectares, with a minimum width of 50 metres for linear features.

A short list of reference ecosystems was developed by querying pre-1750 SVTM mapping of PCTs within a 1km buffer of Karinya Downs. This list was refined based on field data, which included records of floristics and lithology. Floristics were recorded across Karinya Downs via rapid data points where the most abundant species were recorded in every stratum within an area of homogenous vegetation. Recording floristics in remnant vegetation was prioritised because remnant vegetation included enough diversity to make a determination of the appropriate PCT and, subsequently, reference ecosystem. Lithology was recorded opportunistically across Karinya Downs.

Remnant vegetation around Karinya Downs consisted of rainforest and wet sclerophyll forest with Hoop pine (*Araucaria cunninghamii*) dominating the canopy of rainforest and Brush box (*Lophostemon confertus*) dominating the canopy of wet sclerophyll patches.

Contrary to soil mapping which suggests a transition between volcanic and sedimentary lithologies, Karinya Downs is wholly on a basaltic / volcanic substrate. This finding invalidated a significant portion of short-listed PCTs (e.g. PCTs 3148, 3035), communities that do not occur on this lithology. The elevation range of Karinya Downs also excluded several more PCTs (e.g. PCTs 3172, 3147, 3193).

On this basis and based on sampled rainforest remnants, the rainforest PCT, PCT 3064, was selected to be the reference ecosystem. For wet sclerophyll PCTs, PCT 3165 was chosen over 3174 and 3253 because sampled vegetation lacked *Allocasuarina spp.*, a key species for PCT 3174, and *Eucalyptus propinqua*, a key species for PCT 3253.

The Starting Condition States were determined during the Starting State Assessment with most areas being exotic dominated grasses. One area was determined to be potentially native dominated using visual assessment while on site and a plot was assigned to that area to further determine its native or exotic dominance. After the survey plot analysis results confirmed exotic dominance this area remained as part of Activity Area 1 (AA1).

Two PCTs and one Starting Condition State was determined to be present on site, generating two Activity Areas as detailed in Table 2.

Table 2. Reference Ecosystem details for each Activity Area

Reference ecosystem	Starting ecosystem condition state	NVIS - MVG & MVS	IUCN	Activity Area ID	Hectares
PCT 3165 - Northern Brush Box Subtropical Wet Forest	Starting State C (STM 14)	MVG 2 MVS 3	T2.5 Temperate pyric humid forests	AA1	17.15 ha
PCT 3064 - Far North Hoop Pine Dry Rainforest	Starting State C (STM 14)	MVG 1 MVS 62	T1.1 Tropical/ Subtropical lowland rainforests	AA2	2.75 ha

Sampling Plots

Permanent sampling plots were established within each Activity Area as part of the Starting State Assessment, in accordance with Schedule 5, Section 2 of the method. The 'Random Points in Polygons' algorithm in QGIS was used to assign plot locations within each portion of the Activity Area. Where necessary, plot locations further refined on the ground to ensure plots were entirely located within the Activity Areas.

Location of sampling plots including GPS coordinates provided in spatial files and Figure 2.

Table 3: Details of permanent sampling plots

Activity area ID	Sub -area ID (where applicable)	Sampling plot ID	Location of permanent markers including GPS coordinates
AA1	N/A	AA1_P1_start	Start: 530156.7137, 6846319.6921 End: 530110.1515, 6846301.5257
AA2	N/A	AA2_P2_start	Start: 529190.6169, 6845423.4277 End: 529177.5076, 6845375.197
AA1	N/A	AA1_P3_start	Start: 529016.0269, 6845379.8849 End: 529027.91, 6845331.3376
AA2	N/A	AA2_P4_start	Start: 528888.4862, 6845540.1244 End: 528845.4932, 6845514.6362
AA1	N/A	AA1_P5_start	Start: 529181.3449, 6845717.7404 End: 529149.6966, 6845679.0566

Activity area ID	Sub -area ID (where applicable)	Sampling plot ID	Location of permanent markers including GPS coordinates
AA1	N/A	AA1_P6_start	Start: 529355.5392, 6845916.909 End: 529391.0752, 6845881.7629
AA1	N/A	AA1_P7_start	Start: 529708.4503, 6846247.1926 End: 529736.1611, 6846205.5973

Stratification of the Activity Areas

In accordance with Section 22 of the method, initial stratification of Activity Areas aligns with the Carbon Estimation Areas (CEA) of the 24 Degree Forest – Rainforest rehabilitation on slopes and riparian zones Doon Doon Project (ERF207666) which consists of environmental plantings. Refer to the Project Plan which has a description of the environmental plantings that are proposed to be carried out in the Activity Areas.

Forest cover was assessed over Activity Areas at the 10mx10m scale. Satellite imagery was used to determine existing forest cover using and areas were retained or excluded as per the method.

Forest cover potential was determined using the vegetation composition and benchmark values of the Reference Ecosystem assigned to each Activity Area (AA1 - PCT 3165, AA2 - PCT 3064) during the Starting State Assessment.

The Reference Ecosystems and remnant vegetation patches across the site, surrounding properties and National Parks indicate native forest was well established prior to historical clearing events. Refer to Figure 1.

Additionally, the selected native species for the planting project readily exceed 2m in height when established with some species exceeding 40m in height. The project uses dense plantings (2m spacing at 2,500–3,000 stems/ha) to mirror the reference ecosystems, satisfying the forest cover requirements refer to Project Plan for further detail.

Stratification Requirements

To determine if the areas meet the 10m and 30m minimum width rules under Section 22, a spatial assessment was undertaken using the project area boundaries. This included a visual inspection of aerial photography, with support from the site assessment, to see if part of the Activity Area polygons were contiguous with native vegetation, inland water, recently planted areas or isolated.

A script was used to calculate the average width of each polygon across all Activity Areas. This process was iterative and included cutting polygons with narrow sections or edges into 900 square/metre sections and recalculating the width on just those 900m² sections. Manual adjustment was used where appropriate.

No excluded water was detected within the Activity Areas as per Section 22 (11).

Part 3: Historic drivers of change

During the Site Assessment and survey efforts there was no significant disturbance noted across the site. The landholder has advised there has not been a significant natural disturbance within the last 10 years that has impacted remnant native vegetation in any activity areas.

Table 4: Significant disturbances in Activity Areas

Activity Area ID	Details of disturbances
All Activity Areas	<p>Historic clearing</p> <p>As specified in Part 2 Karinya Downs has operated as a pastoral station since the late 1800's, with reduced grazing intensity and overall property management from the 1980s. This shift led to gradual pasture decline and the proliferation of woody weeds. This long history as a working grazing and beef enterprise would likely indicate the use of herbicides and fertilisers to support farming operations. The presence of improved pasture grasses – (e.g. South African Pigeon grass (<i>Setaria sphacelate</i>), as well as disturbance tolerant/pioneer native ground cover Blady Grass (<i>Imperata cylindrica</i>) and Bracken Fern (<i>Pteridium esculentum</i>) in the open grazing areas are indicators of frequent disturbance resulting from grazing activities and suppression of regrowth over time.</p>
No Activity Areas	<p>Bushfires in 2019/2020 affected areas adjacent to the site during a period of drought but there was no damage to native vegetation in any activity areas. Bushfires came from the south, east and west through the surrounding national parks, including Nightcap National Park. Fire spread through the surrounding Eucalyptus dominated canopies but did not spread through the surrounding rainforest canopy, only the forest floor burnt in the rainforest. This demonstrates that even in drought rainforest ecosystems provide landscape fire resilience.</p>
All Activity Areas	<p>Site preparation for this project</p> <p>All activity areas have or will be subject to site preparation as follows:</p> <ol style="list-style-type: none"> 1. Weed spraying (completed prior to the submission of this report) 2. Mulching to reduce the volume of <i>Setaria sphacelate</i> to assist with planting operations and to provide mulch for planted seedlings to aid with establishment. 3. Manual hand-held augering of individual holes for each seedling to be planted. Approx 2,500 holes per ha.

Part 4: Project Context

Threats to the Project Area

Threats to the project were identified as part of the Starting State Assessment. These threats include those present within the project area as well as in the surrounding landscape within a 500-meter radius. Desktop analysis was also conducted to identify any significant natural disturbances that are threats to the project outcome. No invasive fauna species were identified during the starting state assessment surveys, but wild dogs and feral cats are reported from time to time in the region, with no specific sightings reported on the property. Feral deer and goats have not been sighted in the immediate region. Cane toads are prevalent across the region.

Records of pest and weed treatments over the past 10 years were obtained from the owner of the property. Pest and weed treatments were limited to spot spraying glyphosate (rat's tail grass (*Sporobolus* spp.) and Parramatta grass (*Sporobolus*) or physical removal of weeds and routine cattle treatments.

Table 5: Threats to the project by Activity Area

Activity area ID	Description of threats to project outcome and supporting evidence
AA1	<p>Devil's fig (<i>Solanum torvum</i>), Lantana (<i>Lantana camara</i>) and Tobacco bush (<i>Solanum mauritianum</i>) were observed in the Nightcap National park near a watercourse along the property boundary and in proximity to Activity Areas. Devils fig was also observed in the watercourse running from Nightcap National Park into the property outside of the Activity Areas. Lantana was observed within one area of AA1 near survey plot 4.</p> <p>If not controlled, Devils fig, Lantana and Tobacco bush may out-compete the planted native species and natural regeneration. Overall threat levels are considered low to typical of the overall landscape when risk mitigations are applied.</p>
All Activity Areas	<p>Introduced, fast growing pasture species such as South African Pigeon grass (<i>Setaria sphacelate</i>) may be a threat to planted areas by out-competing planted native species and natural regeneration.</p> <p>Bushfires will be a threat if the fire is severe and extensive. Overall threat level of bushfire risk is considered low to medium, when risk mitigations are applied. As mentioned above ecological communities planted in this project will naturally provide cooling effects.</p>

Significant hydrological features

To assess hydrological features of significance, a comprehensive review was undertaken of each proposed Activity Area and its surrounding landscape within a 500-metre radius. Additionally, the identification of flood-prone areas and other features that materially affect plant water availability was assessed.

The Protected Matters Search Tool Map was used to identify relevant hydrological features, including those associated with protected environmental matters. The Protected Matters Search Tool report has been attached as supporting evidence for this assessment.

There were no hydrological features of significance identified through desktop assessment or the Commonwealth Protected Matters Search within the project area. Please refer to Figure 1.

Table 6: Significant hydrological features in each Activity Area

Activity area ID	Description of significant hydrological features
All Activity Areas	No significant hydrological features were detected. A number of non-perennial and perennial streams (Strahler order 1, 2 and 3) flow across the Activity Areas as shown in Figure 2.

Threatened species and ecological communities

As part of preparing the site assessment report, the Protected Matters Search Tool was used to determine what threatened species and ecological communities might occur, or are likely to occur, within the project area and the surrounding landscape. In addition to this desktop analysis, observations made by a suitably qualified person during the field survey of the starting state assessment were incorporated.

Five threatened ecological communities and 83 threatened species were reported as 'may occur', 'likely to occur' or 'known to occur' in the project area and in the surrounding landscape.

Lowland Rainforest of Subtropical Australia (Critically Endangered) may occur in parts of the project area according to the Protected Matters Search Tool and based on preliminary field assessment results.

No threatened fauna species were identified on site during the Site Assessment or surveys. However, survey effort did not focus on threatened species detection and so does not confer that species listed are not present on the site and numerous species could occur. Many of the threatened fauna listed which are mobile and wide ranging could occur at the site from time to time and certain fauna may be resident within adjacent areas such as the Nightcap National Park.

Scrub Turpentine (*Rhodamnia rubescens*) was recorded on site (albeit outside of activity areas) in two locations within 50m of Activity Areas and is listed as Critically Endangered under the EBPC Act.

Karinya Downs is unlikely to contain additional, undetected threatened flora; however, the surrounding landscape is likely to contain robust populations of cryptic and listed plants especially in areas like Nightcap National Park that abuts to the boundary of Karinya Downs.

Table 7: Threatened species and ecological communities by activity area.

Activity area ID	Description
AA2	Was observed to align with the Critically Endangered ecological community Lowland Rainforest of Subtropical Australia.
All Activity Areas	Scrub Turpentine (<i>Rhodamnia rubescens</i>) was recorded on site in two locations within 50m of Activity Areas and is listed as Critically Endangered under the EBPC Act.

Natural regeneration

During the Starting State Assessment, natural regeneration was assessed across the project area to identify any existing woody biomass within each Activity Area. Some existing woody biomass was identified in Activity Area 1 as specified in Table 8. In each instance the stems were reviewed

against Section 19 (8) of the method to determine if they were to be retained or excluded from Activity Areas by fulfilling the species, stem diameter and density requirements.

Table 8: Natural regeneration within each activity area.

Activity area ID	Description of natural regeneration
AA1	<p>Natural regeneration was rare and limited to scattered individuals of species and seedlings of <i>Acacia maidenii</i>, <i>Toona siliata</i>, <i>Acacia concurrens</i> and <i>Lophostemon confertus</i>. There were a total of 13 individuals scattered across the activity areas ranging from 1-10 years all with diameters at breast height over 5cm. No area of native regeneration for these species was removed from the activity area as it did not meet the stems per 10mx10m threshold.</p> <p>A cluster of soil seeded <i>Acacia concurrens</i> and <i>Lophostemon confertus</i> all with stems over 5cm and over 2 years old were located in an area of AA1 between the house and the main road. This area of native regeneration was mapped and removed as it met the stems per 10mx10m threshold.</p>

Climate change considerations

A review of national and regional climate projections^{3, 4} indicate that the whole project area will be vulnerable to the impacts of climate change. All reference ecosystems are identified to be impacted by anticipated warmer average temperatures, increased extreme rainfall events leading to erosion and increased fire risk.

The Climate Change in Australia Projection Tool⁵ for the East Coast South identifies that average temperatures will continue to increase in all seasons with very high confidence. This includes more hot days and warm spells projected with very high confidence and fewer frosts projected with high confidence. Increased intensity of extreme rainfall events is projected with high confidence while decreases in winter rainfall are projected with medium confidence. A harsher fire-weather climate in the future is projected with high confidence. Given these projections, it is possible that the ability to achieve the intended biodiversity outcomes may be affected across the project life. The climatic elements outlined above could influence the development and long-term resilience of the reference ecosystem that has been established. Please refer the project plan for further information on this project's approach to climate resilience.

³ Source: NSW Government. 2024. Adapt NSW - Interactive climate change projections map. Available from <https://www.climatechange.environment.nsw.gov.au/projections-ma> Accessed 20/03/26.

⁴ Source: North Coast Local Land Services Natural Resource Management Plan <https://www.nsw.gov.au/departments-and-agencies/local-land-services/resource-library/natural-resource-management-plans>

⁵ Source: CSIRO and Australian Bureau of Meteorology. 2025. Projection Tools - Regional Climate Change Explorer - East Coast South. Available from <https://www.climatechangeinaustralia.gov.au/en/projections-tools/regional-climate-change-explorer/sub-clusters/?current=ECSC&tooltip=true&popup=true> Accessed 20/03/26.

Part 5: Benchmark values for Reference Ecosystems in Activity Areas

Benchmarking for NSW PCTs is done at the Vegetation Class level specific to each IBRA region or Catchment Management Authority (CMA). The values provided are from PCT reports and associated Walker and Hopkins (1990)⁶ height class by growth table along with descriptions from the NSW BioNet Vegetation Classification system and BioBanking data.

Table 9: Benchmark values for indicators of ecosystem condition

Indicators	Naming equivalent or calculations used	Data Source with link
Approved Source Benchmark List Used	Plant Community Type (PCT) Benchmarks for New South Wales	
Canopy height of native vegetation (in metres)	Mid value of height classes from PCT 3165 and 3064 descriptions within the NSW BioNet Vegetation Classification system	PCT reports and associated Walker and Hopkins (1990) Height class by growth form table. https://vegetation.bionet.nsw.gov.au
Crown cover from native plants in the canopy layer (as a percentage)	Native overstorey cover minimum and maximum as a median value	NSW BioBanking Assessment Method archived data available from: https://www.environment.nsw.gov.au/topics/animals-and-plants/biodiversity/nsw-bionet/about-bionet-vegetation-classification/archived-biometric-datasets
Crown cover from native plants in the mid-storey layer (as a percentage)	Native mid-storey cover minimum and maximum as a median value	
Crown cover from plants in the canopy layer provided by non-native plants (as a percentage)	N/A	The method automatically defines this indicator as 0%
Crown cover from plants in the mid-storey layer provided by non-native plants (as a percentage)	N/A	The method automatically defines this indicator as 0%
Ground cover from sub-category A1, A2 and A3 plants as a proportion of total ground cover from category A plants	N/A	The method automatically defines this indicator as 100%
Ground cover from sub-category A4 and A5 plants as a proportion of total ground cover from category A plants	N/A	The method automatically defines this indicator as 0%

⁶ Walker J. and Hopkins M. S. (1990). Vegetation. In: *Australian Soil and Land Survey: Field Handbook* (Second Edition). (Eds R. C. McDonald, R. F. Isbell, J. G. Speight, J. Walker and M. S. Hopkins) pp. 58–86. Inkata Press, Melbourne.

Native species richness index by life form (sub-indicator)		
Native tree	Tree richness	NSW Biodiversity Assessment Method (NSW DPIE 2020) Vegetation Condition Benchmarks V1.2. Available from: https://www.environment.nsw.gov.au/topics/animals-and-plants/native-vegetation/vegetation-condition-benchmarks
Shrub	Shrub richness	
Vine	<p>Vine: as component proportion of 'other' richness under the NSW BAM (NSW DPIE) 2020</p> <p>PCT 3165 and 3064 reference plot data from the NSW BioNet Vegetation Classification system</p>	<p>Vegetation Condition Benchmarks V1.2 Dataset SEED</p> <p>NSW Biodiversity Assessment Method (NSW DPIE 2020) Vegetation Condition Benchmarks V1.2.</p> <p>Available from: https://www.environment.nsw.gov.au/topics/animals-and-plants/native-vegetation/vegetation-condition-benchmarks</p> <p>https://vegetation.bionet.nsw.gov.au</p>
Grass	Grass and grasslike richness	Vegetation Condition Benchmarks V1.2 Dataset SEED
Herbaceous vascular plant species other than grasses	<p>Forb richness + fern richness + component proportion of 'Other' category that is not vines under the NSW BAM (DPIE 2020)</p> <p>PCT 3165 and 3064 reference plot data from NSW BioNet Vegetation Classification system</p>	<p>NSW Biodiversity Assessment Method (NSW DPIE 2020) Vegetation Condition Benchmarks V1.2.</p> <p>Available from: https://www.environment.nsw.gov.au/topics/animals-and-plants/native-vegetation/vegetation-condition-benchmarks</p> <p>https://vegetation.bionet.nsw.gov.au</p>

Table 10: Benchmark values for North Coast Wet Sclerophyll Forests Reference Ecosystem

Activity Area ID: AA1 Benchmarks for North Coast Wet Sclerophyll Forests in NSW North Coast IBRA	
Indicators	Benchmark values
	PCT 3165
Canopy height of native vegetation (in metres)	35.0m ⁷
Crown cover from native plants in the canopy layer (as a percentage)	55% ⁸
Crown cover from native plants in the mid-storey layer (as a percentage)	52.5%
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 (sub-indicator)	
Native tree	13
Shrub	14
Vine (incorporated in 'other' species under BAM benchmarking)	10
Grass (and grass like)	5
Herbaceous vascular plant species other than grasses	15
Total species richness	57

⁷ This value broadly corresponds with the Eucalypt forest Plant Community Type (PCT) descriptions of 'very tall to extremely tall' under schemes adopted by the BAM and the Commonwealth (e.g. Specht et al. 1974, Walker and Hopkins 1990). The BAM, which is recommended for benchmarking in NSW, does not specify precise height values for PCTs or broader classifications (i.e. at the class or formation level).

⁸ The NSW BAM is recommended by the method for benchmarking. However, the NSW BAM does not provide a benchmark for crown cover, rather it provides a benchmark value for tree cover at all stratum levels. Therefore, the benchmark value provided has been sourced from Biobanking benchmark data for relevant vegetation classes (North Coast Wet Sclerophyll Forests) within the Northern Rivers. These are represented as a median value of the range (as provided here).

Table 11: Benchmark values for indicators of ecosystem condition

Activity area ID: AA2 Benchmarks for Dry Rainforests in NSW North Coast IBRA	
Indicators	Benchmark values
	PCT 3064
Canopy height of native vegetation (in metres)	20.5m ⁹
Crown cover from native plants in the canopy layer (as a percentage)	60% ¹⁰
Crown cover from native plants in the mid-storey layer (as a percentage)	40%
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 (sub-indicator)	
Native tree	11
Shrub	12
Vine	9
Grass	4
herbaceous vascular plant species other than grasses	11
Total species richness	46

⁹ As per footnote 1 but for 'mid high to very tall' growth forms.

¹⁰ As per footnote 2 but for 'Dry Rainforests within the Northern Rivers'

Part 6: Starting ecosystem condition state

Overall cover percentage

Table 12: Overall cover percentage of Category A species

Activity area ID	% of A1 plants	% of A2 plants	% of A3 plants	% of A4 plants	% of A5 plants
AA1	3.82	1.72	0	94.46	0
AA2	0.65	0.6	0	98.75	0

Calculating species number (species richness)

Table 13: Number of Category A species

Activity area ID	No. of A1 species	No. of A2 species	No. of A3 species	No. of A4 species	No. of A5 species	Total no. of category A species
AA1	7	7	0	36	0	50
AA2	1	4	0	26	0	31

Ecosystem Scores

Table 14. Ecosystem scores for the project

Activity area ID	Starting ecosystem condition score	Forecast ecosystem condition score	Starting contribution to biodiversity persistence score	Forecast contribution to biodiversity persistence score
AA1	0.35	0.55	1.81	2.85
AA2	0.35	0.65	0.72	1.34
Aggregate Scores	0.33	0.53	6.41	10.34

Part 7: Starting values for ecosystem condition indicators


For each activity 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.

Table 15: Starting values for ecosystem indicators

Indicators/sub-indicators	Starting value	
	AA1	AA2
canopy height of native vegetation (in metres)	0	0
crown cover from native plants in the canopy layer (as a percentage)	0	0
crown cover from native plants in the mid-storey layer (as a percentage)	0	0
crown cover from plants in the canopy layer provided by non-native plants (as a percentage)	0	0
crown cover from plants in the mid-storey layer provided by non-native plants (as a percentage)	0	0
ground cover from sub-category A1, A2 and A3 plants as a proportion of total ground cover from category A plants	5.54%	1.25%
ground cover from sub-category A4 and A5 plants as a proportion of total ground cover from category A plants	94.46%	98.75%
native species richness index by life form (sub-indicators) (native tree, shrub, vine, grass and herbaceous vascular plant species other than grasses)	2.8	2.5

Appendix 1. Suitably qualified persons

By signing below, the suitably qualified person declares that the information provided is true and not misleading. The signature date is taken as the date of the site assessment report.

Full name of suitably qualified person	Dmitri Medvedko
Contact details	info@niche-eh.com
The suitably qualified person was responsible for (select one or more)	<input checked="" type="checkbox"/> Undertaking the field survey for the starting state assessment <input checked="" type="checkbox"/> Preparing the site assessment report <input checked="" type="checkbox"/> Certifying the site assessment report
Relevant qualifications and experience (attach evidence)	See below.
Signature	
Signature date	27/3/2026

Dmitri Medvedko CV

BSc.

Senior Associate – Ecology and Natural Capital

- 10 years of experience in Australia and 3 years of experience in California as an environmental scientist and ecologist
- Strong knowledge of environmental legislation and development approval pathways in Queensland and New South Wales
- Accredited BAM Assessor (BAAS22009) under the *Biodiversity Conservation Act 2016* (NSW)
- Proficient in environmental construction management.

Career overview

Dmitri's career experience includes over ten years in ecological and environmental consulting. Dmitri has worked in numerous ecosystems, predominantly based in South East Queensland but extending as far north as Hervey Bay, as far south as Newcastle, and as far west as Broken Hill. Dmitri's experience includes a broad range of projects from linear infrastructure, large residential subdivisions and airport infrastructure to bespoke environmental management and habitat restoration. Dmitri is proficient in flora and fauna surveys, navigating environmental approvals and managing environmental aspects of construction.

Experience in most stages of a development on a diverse range of projects provided Dmitri with well-rounded skills in survey, data analysis, reporting and stakeholder liaison.

Skills

- BioCondition Assessment (QLD)
- Protected Plant Surveys (QLD)
- Applying the Biodiversity Assessment Method (NSW)
- Vegetation mapping (QLD and NSW)
- Targeted threatened species surveys (flora and fauna)

Flagship projects

APA Pty Ltd Bulloo Interlink Pipeline Biodiversity Approvals and Offsets Strategy (2025 – present)

Top Yarraman Partnership Pty Ltd Top Yarraman Biodiversity Stewardship Site Establishment (2024 – 2026)

Boral Resources Pty Ltd Johns River Quarry Extension Biodiversity Development Assessment Report (2024 – 2025)

Andres Property Group Bushland Drive, Taree Industrial Subdivision Biodiversity Development Assessment Report (2021 – 2022)

NSW Health Infrastructure Tweed Valley Hospital Habitat Restoration and Monitoring (2019 – 2023)

Pelican Waters Golf Pelican Waters Golf Environmental Management Plan (2022 – 2023)

SEE Civil Flagstone and Covella Residential Subdivisions (2019 – 2022)

Various clients Cobaki Residential Estate (2015 – 2023), Altitude Aspire Residential Subdivision (2015 – 2019), Fraser Cove Residential Subdivision (2015 – 2020), Hundred Hills Residential Subdivision (2015 – 2016), RivaVue Residential Subdivision (2016 – 2021), Tanglewood Emerald Mountain Residential Subdivision (2022 – 2023)



“I seek to create positive interactions between the built and natural environment.”

Employment history

- 2025 – present: Senior Associate, Niche Environment and Heritage
- 2023– 2025: Associate, Niche Environment and Heritage
- 2015 – 2023: Environmental Scientist, Boyds Bay Group
- 2014 – 2015: Environmental Compliance Coordinator, Seaport Refining
- 2012 – 2014: Ecologist, Sierra Nevada Research Institute

Appendix 2. Images of permanent sampling plots

AA1_P1_start_foward



AA1_P1_start_right



AA1_P1_start_left



AA1_P1_end_foward



AA1_P1_end_right



AA1_P1_end_left



AA2_P2_start_foward



AA2_P2_start_right



AA2_P2_start_left



AA2_P2_end_foward



AA2_P2_end_right



AA2_P2_end_left



AA1_P3_start_foward



AA1_P3_start_right



AA1_P3_start_left



AA1_P3_end_foward



AA1_P3_end_right



AA1_P3_end_left



AA2_P4_start_foward



AA2_P4_start_right



AA2_P4_start_left



AA2_P4_end_foward



AA2_P4_end_right



AA2_P4_end_left



AA1_P5_start_foward



AA1_P5_start_right



AA1_P5_start_left



AA1_P5_end_foward



AA1_P5_end_right



AA1_P5_end_left



AA1_P6_start_foward



AA1_P6_start_right



AA1_P6_start_left



AA1_P6_end_foward



AA1_P6_end_right



AA1_P6_end_left



AA1_P7_start_foward



AA1_P7_start_right



AA1_P7_start_left



AA1_P7_end_foward



AA1_P7_end_right



AA1_P7_end_left



Appendix 3. Protected Matters Search Tool



Australian Government

Department of Climate Change, Energy,
the Environment and Water

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 26-Feb-2026

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	1
National Heritage Places:	1
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	5
Listed Threatened Species:	83
Listed Migratory Species:	11

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <https://www.dcceew.gov.au/parks-heritage/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	21
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	1
Regional Forest Agreements:	1
Nationally Important Wetlands:	None
EPBC Act Referrals:	1
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	1
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

World Heritage Properties			[Resource Information]
Name	State	Legal Status	
Gondwana Rainforests of Australia	NSW	Declared property	

National Heritage Places			[Resource Information]
Name	State	Legal Status	
Natural			
Gondwana Rainforests of Australia	NSW	Listed place	

Listed Threatened Ecological Communities			[Resource Information]
For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.			
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.			

Community Name	Threatened Category	Presence Text
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community may occur within area
Dunn's white gum (Eucalyptus dunnii) moist forest in north-east New South Wales and south-east Queensland	Endangered	Community may occur within area
Grey box-grey gum wet forest of subtropical eastern Australia	Endangered	Community may occur within area
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community likely to occur within area
Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions	Endangered	Community likely to occur within area

Listed Threatened Species			[Resource Information]
Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.			
Number is the current name ID.			
Scientific Name	Threatened Category	Presence Text	
BIRD			
Anthochaera phrygia			
Regent Honeyeater [82338]	Critically Endangered	Species or species habitat may occur within area	

Scientific Name	Threatened Category	Presence Text
Atrichornis rufescens Rufous Scrub-bird [655]	Endangered	Species or species habitat likely to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat likely to occur within area
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat may occur within area
Cyclopsitta diophthalma coxeni Coxen's Fig-Parrot [59714]	Critically Endangered	Species or species habitat likely to occur within area
Dasyornis brachypterus Eastern Bristlebird [533]	Endangered	Species or species habitat may occur within area
Erythrorhynchus radiatus Red Goshawk [942]	Endangered	Species or species habitat likely to occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat may occur within area
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat may occur within area
Turnix melanogaster Black-breasted Button-quail [923]	Vulnerable	Species or species habitat likely to occur within area
CRUSTACEAN		
Euastacus girurmulayn Smooth Crayfish [83146]	Endangered	Species or species habitat may occur within area
FROG		
Assa darlingtoni Pouched Frog [1965]	Vulnerable	Species or species habitat likely to occur within area
Litoria olongburensis Wallum Sedge Frog [1821]	Vulnerable	Species or species habitat may occur within area
Mixophyes balbus Stuttering Frog, Southern Barred Frog (in Victoria) [1942]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Mixophyes fleayi Fleay's Frog [25960]	Endangered	Species or species habitat likely to occur within area
Mixophyes iteratus Giant Barred Frog, Southern Barred Frog [1944]	Vulnerable	Species or species habitat likely to occur within area
INSECT		
Argynnis hyperbius inconstans Australian Fritillary [88056]	Critically Endangered	Species or species habitat may occur within area
Phyllodes imperialis smithersi Pink Underwing Moth [86084]	Endangered	Breeding likely to occur within area
MAMMAL		
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Endangered	Species or species habitat likely to occur within area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat known to occur within area
Notamacropus parma Parma Wallaby [89289]	Vulnerable	Species or species habitat may occur within area
Petauroides volans Greater Glider (southern and central) [254]	Endangered	Species or species habitat may occur within area
Petaurus australis australis Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat likely to occur within area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Potorous tridactylus tridactylus Long-nosed Potoroo (northern) [66645]	Vulnerable	Species or species habitat likely to occur within area
Pseudomys novaehollandiae New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat may occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
PLANT		
Amyema plicatula [81879]	Endangered	Species or species habitat likely to occur within area
Arthraxon hispidus Hairy-joint Grass [9338]	Vulnerable	Species or species habitat likely to occur within area
Baloghia marmorata Marbled Balogia, Jointed Baloghia [8463]	Vulnerable	Species or species habitat likely to occur within area
Bosistoa transversa Three-leaved Bosistoa, Yellow Satinheart [16091]	Vulnerable	Species or species habitat likely to occur within area
Bulbophyllum globuliforme Miniature Moss-orchid, Hoop Pine Orchid [6649]	Vulnerable	Species or species habitat may occur within area
Clematis fawcettii Stream Clematis [4311]	Vulnerable	Species or species habitat may occur within area
Coleus nitidus listed as Plectranthus nitidus Nightcap Plectranthus, Silver Plectranthus [91380]	Endangered	Species or species habitat likely to occur within area
Corokia whiteana [17820]	Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Cryptocarya foetida Stinking Cryptocarya, Stinking Laurel [11976]	Vulnerable	Species or species habitat may occur within area
Cryptostylis hunteriana Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat may occur within area
Cynanchum elegans White-flowered Wax Plant [12533]	Endangered	Species or species habitat likely to occur within area
Davidsonia jerseyana Davidson's Plum [67219]	Endangered	Species or species habitat may occur within area
Davidsonia johnsonii Smooth Davidsonia, Smooth Davidson's Plum, Small-leaved Davidson's Plum [67178]	Endangered	Species or species habitat likely to occur within area
Diospyros mabacea Red-fruited Ebony, Silky Persimmon, Ebony [18548]	Endangered	Species or species habitat may occur within area
Diploglottis campbellii Small-leaved Tamarind [21484]	Endangered	Species or species habitat likely to occur within area
Eidothea hardeniana Nightcap Oak [76351]	Critically Endangered	Species or species habitat may occur within area
Endiandra floydii Floyd's Walnut, Crystal Creek Walnut [52955]	Endangered	Species or species habitat likely to occur within area
Endiandra hayesii Rusty Rose Walnut, Velvet Laurel [13866]	Vulnerable	Species or species habitat likely to occur within area
Floydia praealta Ball Nut, Possum Nut, Big Nut, Beefwood [15762]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Fontainea australis Southern Fontainea [24037]	Vulnerable	Species or species habitat likely to occur within area
Hicksbeachia pinnatifolia Monkey Nut, Bopple Nut, Red Bopple, Red Bopple Nut, Red Nut, Beef Nut, Red Apple Nut, Red Boppel Nut, Ivory Silky Oak [21189]	Vulnerable	Species or species habitat likely to occur within area
Isoglossa eranthemoides Isoglossa [16663]	Endangered	Species or species habitat may occur within area
Leichhardtia longiloba listed as Marsdenia longiloba Clear Milkvine [91911]	Vulnerable	Species or species habitat likely to occur within area
Macadamia integrifolia Macadamia Nut, Queensland Nut Tree, Smooth-shelled Macadamia, Bush Nut, Nut Oak [7326]	Vulnerable	Species or species habitat may occur within area
Macadamia tetraphylla Rough-shelled Bush Nut, Macadamia Nut, Rough-shelled Macadamia, Rough-leaved Queensland Nut [6581]	Vulnerable	Species or species habitat likely to occur within area
Ochrosia moorei Southern Ochrosia [11350]	Endangered	Species or species habitat likely to occur within area
Owenia cepiodora Onionwood, Bog Onion, Onion Cedar [11344]	Vulnerable	Species or species habitat likely to occur within area
Ozothamnus vagans Wollumbin Dogwood [56207]	Vulnerable	Species or species habitat may occur within area
Pedleya acanthoclada listed as Desmodium acanthocladum Thorny Pea [93275]	Vulnerable	Species or species habitat likely to occur within area
Phaius australis Lesser Swamp-orchid [5872]	Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Rhodamnia maideniana Smooth Scrub Turpentine [20665]	Critically Endangered	Species or species habitat likely to occur within area
Rhodamnia rubescens Scrub Turpentine, Brown Malletwood [15763]	Critically Endangered	Species or species habitat likely to occur within area
Rhodamnia whiteana White Malletwood [14067]	Endangered	Species or species habitat may occur within area
Rhodomyrtus psidioides Native Guava [19162]	Critically Endangered	Species or species habitat likely to occur within area
Sarcochilus fitzgeraldii Ravine Orchid [19131]	Vulnerable	Species or species habitat likely to occur within area
Sarcochilus hartmannii Waxy Sarcochilus, Blue Knob Orchid [4124]	Vulnerable	Species or species habitat likely to occur within area
Sophora fraseri [8836]	Vulnerable	Species or species habitat likely to occur within area
Symplocos baeuerlenii Small-leaved Hazelwood, Shrubby Hazelwood [19010]	Vulnerable	Species or species habitat likely to occur within area
Syzygium hodgkinsoniae Smooth-bark Rose Apple, Red Lilly Pilly [3539]	Vulnerable	Species or species habitat likely to occur within area
Syzygium moorei Rose Apple, Coolamon, Robby, Durobby, Watermelon Tree, Coolamon Rose Apple [12284]	Vulnerable	Species or species habitat may occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Uromyrtus australis Peach Myrtle [8830]	Endangered	Species or species habitat likely to occur within area
Vincetoxicum woollsii listed as Tylophora woollsii [40080]	Endangered	Species or species habitat likely to occur within area

REPTILE		
Coeranoscincus reticulatus Three-toed Snake-tooth Skink [59628]	Vulnerable	Species or species habitat likely to occur within area
Delma torquata Adorned Delma, Collared Delma [1656]	Vulnerable	Species or species habitat may occur within area
Harrisoniascincus zia Rainforest Cool-skink [84785]	Vulnerable	Species or species habitat may occur within area

Listed Migratory Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area

Migratory Terrestrial Species		
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area

Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species	[Resource Information]	
Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat may occur within area overfly marine area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat likely to occur within area overfly marine area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat may occur within area
Pterodroma cervicalis White-necked Petrel [59642]		Species or species habitat may occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area overfly marine area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area
Sterna striata White-fronted Tern [799]		Migration route may occur within area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat known to occur within area overfly marine area

Extra Information

State and Territory Reserves			[Resource Information]
Protected Area Name	Reserve Type	State	
Nightcap	National Park	NSW	

Regional Forest Agreements	[Resource Information]
Note that all areas with completed RFAs have been included. Please see the associated resource information for specific caveats and use limitations associated with RFA boundary information.	

RFA Name	State
Upper North East	New South Wales

EPBC Act Referrals			[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed

Bioregional Assessments		[Resource Information]
SubRegion	BioRegion	Website
Clarence-Moreton	Clarence-Moreton	BA website

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- [-Natural history museums of Australia](#)
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- [-Other groups and individuals](#)

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact us](#) page.

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Appendix 4. Reference Ecosystems

BioNet Vegetation Classification - Community Profile Report

Plant Community Type ID (PCT ID): 3165

PCT Name: Northern Brush Box Subtropical Wet Forest

Classification Confidence Level: 1-Very High

Total Number of Replicates: 67

Number of Primary Replicates: 63

Number of Secondary Replicates: 4

Vegetation Description: Very tall to extremely tall, sclerophyll open to closed forest with mid-dense to dense mesic small tree layer, or rarely rainforest with eucalypt emergents. This PCT occurs at disjunct locations in the ranges north from Lismore and in coastal ranges and valleys from Coffs Harbour to Taree. The canopy commonly includes *Lophostemon confertus*, which often has the highest foliage cover, occasionally accompanied by *Eucalyptus grandis* and rarely *Eucalyptus microcorys* and *Syncarpia glomulifera*. The palm *Archontophoenix cunninghamiana* is very frequent, occasionally with high foliage cover. The mid-stratum very frequently includes trees *Wilkiea huegeliana*, *Sarcopteryx stipata* and *Cryptocarya glaucescens*, vines *Gynochthodes jasminoides* and *Cissus hypoglauca* and the tree fern *Cyathea leichhardtiana*. The ground layer very frequently includes the fern *Blechnum cartilagineum*, which is occasionally abundant. This PCT occurs on sheltered or lower slopes or in gullies, in moderately warm, very wet locations receiving 1480-1890 mm mean annual rainfall, at low to mid-elevations of 10-470 metres asl. In the Coffs Harbour area, it may grade into PCT 3021 on creek flats and more sheltered slopes.

Vegetation Formation: Wet Sclerophyll Forests (Shrubby sub-formation);

Vegetation Class: North Coast Wet Sclerophyll Forests;

IBRA Bioregion(s): NSW North Coast; South Eastern Queensland;

IBRA Sub-region(s): Chaelundi; Coffs Coast and Escarpment; Dalmorton; Macleay Hastings; Washpool; Clarence Sandstones; Scenic Rim; Burringbar-Conondale Ranges;

LGA: BELLINGEN; BYRON; CLARENCE VALLEY; COFFS HARBOUR; GLEN INNES SEVERN; KEMPSEY; LISMORE; MID-COAST; NAMBUCCA VALLEY; PORT MACQUARIE-HASTINGS; TWEED;

Elevation (m) (Min, Median, Max): 12.9 133.4 595.7

Annual Rainfall (mm) (Min, Median, Max): 1100 1661 2184

Annual Mean Temperature (deg C) (Min, Median, Max): 14.53 17.56 18.73

Median Native Species Richness per plot: 55

TEC Assessed: Has associated TEC

TEC List: Listed BC Act,E: Lowland Rainforest on Floodplain in the New South Wales North Coast Bioregion (Part); Listed BC Act,E: Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions (Part); Listed EPBC Act,CE: Lowland Rainforest of Subtropical Australia (Part);

TEC Comments: (Comment TEC1) Relates to the NSW Lowland Rainforest TEC as it is associated with one of the SubAlliances (Primary) listed in paragraph 4 of the Final Determination. However it must still satisfy the elevation thresholds of less than 600 m asl in the NSW North Coast bioregion or less than 350 m asl in the Sydney Basin bioregion (IBRA Version 4.0) depending on the distribution of the PCT (paragraph 1). Candidate areas of the TEC may adjoin this PCT if they satisfy the requirements of one of the SubAlliances included in paragraph 5, subject to the same elevation thresholds by bioregion. The related PCTs are included in the interpretation of the relationships for this TEC. (Comment TEC2) Relates to the NSW Lowland Rainforest on Floodplain TEC but only applies where the PCT is situated within the NSW North Coast bioregion (IBRA Version 4.0) and on a floodplain as per paragraph 2 in the Final Determination. Floodplain is not defined in the Final Determination but users should be guided by the best available fine scale spatial data that represents alluvial deposits in the NSW North Coast bioregion (IBRA Version 4.0). (Comment TEC3) Relates to the Commonwealth Lowland Rainforest of Subtropical Australia TEC as it is associated with one of the SubAlliances listed in Section 6 of the Listing Advice. A patch must occur at an elevation generally less than 300 m asl on soils derived from basalt or alluvium or enriched rhyolitic soils or basaltically enriched metasediments, and satisfy condition thresholds as per Section 5 of the Listing Advice. Patches where non-rainforest species make up greater than 30 percent of canopy emergents are excluded but stands with a dominance of *Lophostemon confertus* are included as per the Listing Advice.

PCT Percent Cleared: 26.26

PCT Definition Status: Approved

Species By Growth Form Group

Growth Form Group	Species	Median cover score	Frequency
Fern (EG)	<i>Blechnum cartilagineum</i>	2	81
Fern (EG)	<i>Adiantum silvaticum</i>	2	51
Fern (EG)	<i>Asplenium australasicum</i>	1	47
Fern (EG)	<i>Platyserium bifurcatum</i>	1	47
Fern (EG)	<i>Lastreopsis microsora</i> subsp. <i>microsora</i>	2	42
Fern (EG)	<i>Doodia aspera</i>	2	35
Fern (EG)	<i>Arthropteris tenella</i>	1	27
Fern (EG)	<i>Microsorium scandens</i>	1	26
Fern (EG)	<i>Adiantum hispidulum</i>	2	20

Fern (EG)	<i>Blechnum patersonii</i>	2	20
Fern (EG)	<i>Lastreopsis decomposita</i>	1	20
Fern (EG)	<i>Adiantum formosum</i>	2	16
Fern (EG)	<i>Arachniodes aristata</i>	2	13
Fern (EG)	<i>Cyclosorus dentatus</i>	1	13
Fern (EG)	<i>Davallia solida</i> var. <i>pyxidata</i>	1	13
Fern (EG)	<i>Lastreopsis acuminata</i>	2	13
Fern (EG)	<i>Platyserium superbum</i>	1	12
Fern (EG)	<i>Blechnum wattsii</i>	2	10
Fern (EG)	<i>Lastreopsis marginans</i>	2	8
Fern (EG)	<i>Microsorium pustulatum</i> subsp. <i>pustulatum</i>	1	7
Fern (EG)	<i>Pyrrosia rupestris</i>	1	7
Fern (EG)	<i>Asplenium polyodon</i>	1	5
Fern (EG)	<i>Cephalomanes caudatum</i>	2	5
Fern (EG)	<i>Dennstaedtia davallioides</i>	2	5
Fern (EG)	<i>Pellaea falcata</i>	1	5
Fern (EG)	<i>Diplazium assimile</i>	3	4
Fern (EG)	<i>Diplazium dilatatum</i>	2	4
Fern (EG)	<i>Lastreopsis munita</i>	2	4
Fern (EG)	<i>Pteridium esculentum</i>	2	4
Fern (EG)	<i>Adiantum diaphanum</i>	1	2
Fern (EG)	<i>Asplenium aethiopicum</i>	1	2
Fern (EG)	<i>Blechnum spinulosum</i>	2	2
Tree (TG)	<i>Tristaniopsis collina</i>	1	5
Tree (TG)	<i>Alangium villosum</i> subsp. <i>polyosmoides</i>	1	4
Tree (TG)	<i>Anetholea anisata</i>	3	4
Tree (TG)	<i>Austrobuxus swainii</i>	1	4
Tree (TG)	<i>Ehretia acuminata</i> var. <i>acuminata</i>	1	4
Tree (TG)	<i>Endiandra sieberi</i>	3	4
Tree (TG)	<i>Eucalyptus resinifera</i>	1	4
Tree (TG)	<i>Euroschinus falcatus</i> var. <i>falcatus</i>	3	4
Tree (TG)	<i>Hicksbeachia pinnatifolia</i>	2	4
Tree (TG)	<i>Olea paniculata</i>	1	4
Tree (TG)	<i>Pararchidendron pruinoseum</i> var. <i>pruinoseum</i>	1	4
Tree (TG)	<i>Polyscias murrayi</i>	1	4
Tree (TG)	<i>Pseudoweinmannia lachnocarpa</i>	1	4
Tree (TG)	<i>Stenocarpus sinuatus</i>	2	4
Tree (TG)	<i>Syzygium hodgkinsoniae</i>	3	4
Tree (TG)	<i>Syzygium moorei</i>	1	4
Tree (TG)	<i>Waterhousea floribunda</i>	3	4
Tree (TG)	<i>Acacia binervata</i>	1	2
Tree (TG)	<i>Acronychia baeuerlenii</i>	1	2
Tree (TG)	<i>Acronychia wilcoxiana</i>	1	2

Tree (TG)	<i>Araucaria cunninghamii</i>	1	2
Tree (TG)	<i>Archidendron muellerianum</i>	2	2
Tree (TG)	<i>Arytera divaricata</i>	2	2
Tree (TG)	<i>Beilschmiedia obtusifolia</i>	1	2
Tree (TG)	<i>Brachychiton acerifolius</i>	1	2
Tree (TG)	<i>Castanospermum australe</i>	3	2
Tree (TG)	<i>Castanospora alphandii</i>	1	2
Tree (TG)	<i>Commersonia bartramia</i>	1	2
Tree (TG)	<i>Corymbia gummifera</i>	1	2
Tree (TG)	<i>Cupaniopsis flagelliformis</i> var. <i>australis</i>	1	2
Tree (TG)	<i>Daphnandra tenuipes</i>	1	2
Tree (TG)	<i>Davidsonia jerseyana</i>	1	2
Tree (TG)	<i>Dendrocnide excelsa</i>	1	2
Tree (TG)	<i>Dendrocnide photinophylla</i>	1	2
Tree (TG)	<i>Elaeocarpus obovatus</i>	1	2
Tree (TG)	<i>Elattostachys xylocarpa</i>	1	2
Tree (TG)	<i>Eucalyptus ancophila</i>	3	2
Tree (TG)	<i>Ficus fraseri</i>	1	2
Tree (TG)	<i>Flindersia schottiana</i>	1	2
Tree (TG)	<i>Gossia bidwillii</i>	1	2
Tree (TG)	<i>Macadamia tetraphylla</i>	1	2
Tree (TG)	<i>Quintinia sieberi</i>	1	2
Tree (TG)	<i>Rhodamnia argentea</i>	1	2
Tree (TG)	<i>Symplocos thwaitesii</i>	1	2
Tree (TG)	<i>Syzygium luehmannii</i>	1	2
Fern (EG)	<i>Diplazium australe</i>	1	2
Fern (EG)	<i>Histiopteris incisa</i>	1	2
Fern (EG)	<i>Hymenophyllum cupressiforme</i>	1	2
Fern (EG)	<i>Hypolepis glandulifera</i>	2	2
Fern (EG)	<i>Hypolepis rugosula</i>	2	2
Fern (EG)	<i>Pellaea paradoxa</i>	2	2
Fern (EG)	<i>Polystichum formosum</i>	2	2
Fern (EG)	<i>Pteris tremula</i>	1	2
Fern (EG)	<i>Pteris umbrosa</i>	3	2
Fern (EG)	<i>Pyrrosia confluens</i> var. <i>confluens</i>	1	2
Fern (EG)	<i>Sticherus flabellatus</i> var. <i>flabellatus</i>	1	2
Fern (EG)	<i>Sticherus lobatus</i>	1	2
Fern (EG)	<i>Vittaria elongata</i>	1	2
Forb (FG)	<i>Pothos longipes</i>	1	43
Forb (FG)	<i>Gymnostachys anceps</i>	1	42
Forb (FG)	<i>Alpinia arundelliana</i>	1	31
Forb (FG)	<i>Alpinia caerulea</i>	1	27
Forb (FG)	<i>Dianella caerulea</i>	1	26

Forb (FG)	<i>Calanthe triplicata</i>	1	20
Forb (FG)	<i>Pseuderanthemum variabile</i>	2	20
Forb (FG)	<i>Tripladenia cunninghamii</i>	2	12
Forb (FG)	<i>Alocasia brisbanensis</i>	1	8
Forb (FG)	<i>Aneilema acuminatum</i>	2	7
Forb (FG)	<i>Lobelia trigonocaulis</i>	2	7
Forb (FG)	<i>Drymophila moorei</i>	2	5
Forb (FG)	<i>Commelina cyanea</i>	2	4
Forb (FG)	<i>Elatostema reticulatum</i>	2	4
Forb (FG)	<i>Pollia crispata</i>	2	4
Forb (FG)	<i>Brunoniella spiciflora</i>	2	2
Forb (FG)	<i>Dianella tasmanica</i>	2	2
Forb (FG)	<i>Hydrocotyle laxiflora</i>	1	2
Forb (FG)	<i>Libertia paniculata</i>	1	2
Forb (FG)	<i>Solanum prinophyllum</i>	1	2
Forb (FG)	<i>Vernonia cinerea</i>	1	2
Forb (FG)	<i>Viola hederacea</i>	1	2
Grass & grasslike (GG)	<i>Lomandra longifolia</i>	1	31
Grass & grasslike (GG)	<i>Lomandra hystrix</i>	1	27
Grass & grasslike (GG)	<i>Lomandra spicata</i>	1	27
Grass & grasslike (GG)	<i>Cyperus tetraphyllus</i>	2	23
Grass & grasslike (GG)	<i>Cyperus filipes</i>	2	18
Grass & grasslike (GG)	<i>Oplismenus imbecillis</i>	1	10
Grass & grasslike (GG)	<i>Exocarya sclerioides</i>	2	7
Grass & grasslike (GG)	<i>Entolasia marginata</i>	2	4
Grass & grasslike (GG)	<i>Oplismenus aemulus</i>	2	4
Grass & grasslike (GG)	<i>Carex appressa</i>	1	2
Grass & grasslike (GG)	<i>Carex hubbardi</i>	1	2
Grass & grasslike (GG)	<i>Cyperus disjunctus</i>	2	2
Grass & grasslike (GG)	<i>Cyperus imbecillis</i>	1	2
Grass & grasslike (GG)	<i>Entolasia stricta</i>	2	2
Grass & grasslike (GG)	<i>Gahnia aspera</i>	2	2
Grass & grasslike (GG)	<i>Gahnia clarkei</i>	1	2
Grass & grasslike (GG)	<i>Lomandra confertifolia</i>	2	2
Grass & grasslike (GG)	<i>Lomandra filiformis</i>	2	2
Grass & grasslike (GG)	<i>Oplismenus undulatifolius</i>	2	2
Other (OG)	<i>Archontophoenix cunninghamiana</i>	3	91
Other (OG)	<i>Gynochthodes jasminoides</i>	1	88
Other (OG)	<i>Cissus hypoglauca</i>	3	86
Other (OG)	<i>Cyathea leichhardtiana</i>	2	75
Other (OG)	<i>Cordyline stricta</i>	1	69
Other (OG)	<i>Calamus muelleri</i>	2	66
Other (OG)	<i>Dioscorea transversa</i>	1	66

Other (OG)	Palmeria scandens	2	64
Other (OG)	Cissus antarctica	2	61
Other (OG)	Embelia australiana	1	61
Other (OG)	Melodinus australis	1	56
Other (OG)	Ripogonum discolor	2	56
Other (OG)	Linospadix monostachyos	2	53
Other (OG)	Flagellaria indica	1	48
Other (OG)	Smilax australis	1	48
Other (OG)	Cephalalaria cephalobotrys	1	47
Other (OG)	Ripogonum elseyanum	2	42
Other (OG)	Rubus moorei	1	40
Other (OG)	Ripogonum fawcettianum	2	37
Other (OG)	Petermannia cirrosa	1	34
Other (OG)	Geitonoplesium cymosum	1	32
Other (OG)	Trophis scandens subsp. scandens	1	29
Other (OG)	Trimenia moorei	2	23
Other (OG)	Cyathea australis	1	21
Other (OG)	Cordyline petiolaris	1	20
Other (OG)	Parsonsia straminea	1	20
Other (OG)	Smilax glyciophylla	1	18
Other (OG)	Cordyline rubra	1	16
Other (OG)	Piper hederaceum var. hederaceum	1	16
Other (OG)	Derris involuta	1	15
Other (OG)	Hibbertia scandens	1	13
Other (OG)	Maclura cochinchinensis	1	13
Other (OG)	Parsonsia velutina	1	13
Other (OG)	Sarcopetalum harveyanum	1	13
Other (OG)	Uvaria leichhardtii	1	12
Other (OG)	Pandorea pandorana subsp. pandorana	1	10
Other (OG)	Ripogonum album	2	10
Other (OG)	Streptothamnus moorei	2	10
Other (OG)	Callerya megasperma	1	8
Other (OG)	Calochlaena dubia	2	8
Other (OG)	Carronia multiseppalea	2	8
Other (OG)	Celastrus subspicata	1	8
Other (OG)	Eustrephus latifolius	1	8
Other (OG)	Lepidozamia peroffskyana	1	8
Other (OG)	Tetrastigma nitens	1	8
Other (OG)	Austrosteenisia glabristyla	1	7
Other (OG)	Cissus sterculiifolia	1	7
Other (OG)	Cyathea cooperi	1	7
Other (OG)	Legnephora moorei	1	7
Other (OG)	Parsonsia dorrigoensis	1	7

Other (OG)	Tylophora paniculata	1	7
Other (OG)	Austrosteenisia blackii var. blackii	1	5
Other (OG)	Marsdenia liisae	1	5
Other (OG)	Stephania japonica var. discolor	1	5
Other (OG)	Bulbophyllum exiguum	2	4
Other (OG)	Cayratia clematidea	1	4
Other (OG)	Clematis aristata	1	4
Other (OG)	Clematis glycinoides	1	4
Other (OG)	Dendrobium aemulum	1	4
Other (OG)	Echinostephia aculeata	1	4
Other (OG)	Glycine clandestina	2	4
Other (OG)	Marsdenia lloydii	1	4
Other (OG)	Marsdenia rostrata	1	4
Other (OG)	Parsonsia induplicata	1	4
Other (OG)	Parsonsia lanceolata	1	4
Other (OG)	Plectorrhiza tridentata	1	4
Other (OG)	Sarcochilus australis	1	4
Other (OG)	Sarcochilus parviflorus	1	4
Other (OG)	Amylothea dictyophleba	1	2
Other (OG)	Aphanopetalum resinosum	1	2
Other (OG)	Billardiera scandens	1	2
Other (OG)	Caesalpinia scortechinii	1	2
Other (OG)	Cymbidium suave	1	2
Other (OG)	Dendrobium gracilicaule	1	2
Other (OG)	Dendrobium tetragonum	1	2
Other (OG)	Hibbertia dentata	1	2
Other (OG)	Livistona australis	1	2
Other (OG)	Marsdenia flavescens	1	2
Other (OG)	Pandorea jasminoides	1	2
Other (OG)	Pararistolochia praevenosa	1	2
Other (OG)	Parsonsia fulva	1	2
Other (OG)	Sarcochilus falcatus	1	2
Shrub (SG)	Wilkiea huegeliana	1	91
Shrub (SG)	Tabernaemontana pandacaqui	1	78
Shrub (SG)	Synoum glandulosum subsp. glandulosum	2	61
Shrub (SG)	Ficus coronata	1	56
Shrub (SG)	Tasmania insipida	1	48
Shrub (SG)	Pittosporum revolutum	1	43
Shrub (SG)	Callicoma serratifolia	3	35
Shrub (SG)	Cryptocarya rigida	1	35
Shrub (SG)	Pilidiostigma glabrum	1	32
Shrub (SG)	Pittosporum multiflorum	1	32
Shrub (SG)	Eupomatia laurina	1	31

Shrub (SG)	<i>Elaeocarpus reticulatus</i>	1	27
Shrub (SG)	<i>Archirhodomirtus beckleri</i>	1	26
Shrub (SG)	<i>Acronychia pubescens</i>	1	23
Shrub (SG)	<i>Melicope hayesii</i>	1	21
Shrub (SG)	<i>Rhodamnia rubescens</i>	1	21
Shrub (SG)	<i>Claoxylon australe</i>	1	20
Shrub (SG)	<i>Cuttsia viburnea</i>	1	18
Shrub (SG)	<i>Eupomatia bennettii</i>	1	18
Shrub (SG)	<i>Cryptocarya meissneriana</i>	1	16
Shrub (SG)	<i>Alectryon subcinereus</i>	1	15
Shrub (SG)	<i>Psychotria loniceroides</i>	1	15
Shrub (SG)	<i>Syzygium oleosum</i>	1	15
Shrub (SG)	<i>Croton verreauxii</i>	2	13
Shrub (SG)	<i>Triunia youngiana</i>	2	13
Shrub (SG)	<i>Atractocarpus benthamianus</i>	1	12
Shrub (SG)	<i>Capparis arborea</i>	1	12
Shrub (SG)	<i>Breynia oblongifolia</i>	1	10
Shrub (SG)	<i>Denhamia celastroides</i>	1	10
Shrub (SG)	<i>Harpullia alata</i>	2	10
Shrub (SG)	<i>Guilfoylia monostylis</i>	2	8
Shrub (SG)	<i>Stenocarpus salignus</i>	1	8
Shrub (SG)	<i>Abrophyllum ornans</i>	2	7
Shrub (SG)	<i>Hedraianthera porphyropetala</i>	2	7
Shrub (SG)	<i>Homalanthus populifolius</i>	1	7
Shrub (SG)	<i>Hymenosporum flavum</i>	1	7
Shrub (SG)	<i>Psychotria simmondsiana</i>	1	7
Shrub (SG)	<i>Backhousia myrtifolia</i>	3	5
Shrub (SG)	<i>Helicia ferruginea</i>	1	5
Shrub (SG)	<i>Myrsine subsessilis</i> subsp. <i>subsessilis</i>	1	5
Shrub (SG)	<i>Myrsine variabilis</i>	1	5
Shrub (SG)	<i>Persoonia media</i>	1	5
Shrub (SG)	<i>Pittosporum undulatum</i>	1	5
Shrub (SG)	<i>Polyscias sambucifolia</i>	1	5
Shrub (SG)	<i>Psychotria daphnoides</i>	1	5
Shrub (SG)	<i>Aphananthe philippinensis</i>	1	4
Shrub (SG)	<i>Cryptocarya laevigata</i>	2	4
Shrub (SG)	<i>Cupaniopsis newmanii</i>	2	4
Shrub (SG)	<i>Rubus moluccanus</i>	2	4
Shrub (SG)	<i>Sarcomelicope simplicifolia</i> subsp. <i>simplicifolia</i>	1	4
Shrub (SG)	<i>Solanum inaequilaterum</i>	1	4
Shrub (SG)	<i>Syzygium australe</i>	3	4
Shrub (SG)	<i>Acacia longissima</i>	1	2
Shrub (SG)	<i>Acronychia oblongifolia</i>	1	2

Shrub (SG)	<i>Actephila lindleyi</i>	1	2
Shrub (SG)	<i>Anopterus macleayanus</i>	1	2
Shrub (SG)	<i>Ardisia bakeri</i>	1	2
Shrub (SG)	<i>Backhousia leptopetala</i>	3	2
Shrub (SG)	<i>Banksia spinulosa</i>	2	2
Shrub (SG)	<i>Boehmeria macrophylla</i>	1	2
Shrub (SG)	<i>Clerodendrum floribundum</i> var. <i>floribundum</i>	1	2
Shrub (SG)	<i>Diospyros australis</i>	1	2
Shrub (SG)	<i>Helicia glabriflora</i>	1	2
Shrub (SG)	<i>Meiogyne stenopetala</i> subsp. <i>stenopetala</i>	3	2
Shrub (SG)	<i>Melicope micrococca</i>	1	2
Shrub (SG)	<i>Persoonia conjuncta</i>	1	2
Shrub (SG)	<i>Seringia arborescens</i>	1	2
Shrub (SG)	<i>Solanum brownii</i>	2	2
Tree (TG)	<i>Sarcopteryx stipata</i>	1	80
Tree (TG)	<i>Endiandra muelleri</i>	2	72
Tree (TG)	<i>Cryptocarya glaucescens</i>	2	70
Tree (TG)	<i>Neolitsea dealbata</i>	1	70
Tree (TG)	<i>Quintinia verdonii</i>	2	69
Tree (TG)	<i>Lophostemon confertus</i>	3	61
Tree (TG)	<i>Acmena smithii</i>	1	59
Tree (TG)	<i>Cryptocarya microneura</i>	1	58
Tree (TG)	<i>Diploglottis australis</i>	1	54
Tree (TG)	<i>Sloanea australis</i>	1	50
Tree (TG)	<i>Ceratopetalum apetalum</i>	3	47
Tree (TG)	<i>Schizomeria ovata</i>	3	47
Tree (TG)	<i>Sloanea woollsii</i>	1	43
Tree (TG)	<i>Alphitonia excelsa</i>	1	42
Tree (TG)	<i>Endiandra discolor</i>	1	42
Tree (TG)	<i>Trochocarpa laurina</i>	1	42
Tree (TG)	<i>Ackama paniculosa</i>	1	37
Tree (TG)	<i>Eucalyptus grandis</i>	3	34
Tree (TG)	<i>Polyosma cunninghamii</i>	2	32
Tree (TG)	<i>Cinnamomum oliveri</i>	1	31
Tree (TG)	<i>Guioa semiglauca</i>	1	31
Tree (TG)	<i>Caldcluvia paniculosa</i>	2	29
Tree (TG)	<i>Doryphora sassafras</i>	3	29
Tree (TG)	<i>Dysoxylum rufum</i>	1	27
Tree (TG)	<i>Elattostachys nervosa</i>	1	27
Tree (TG)	<i>Gmelina leichhardtii</i>	1	27
Tree (TG)	<i>Geissois benthamiana</i>	1	26
Tree (TG)	<i>Planchonella australis</i>	1	26
Tree (TG)	<i>Allocasuarina torulosa</i>	2	24

Tree (TG)	<i>Eucalyptus microcorys</i>	1	23
Tree (TG)	<i>Glochidion ferdinandi</i>	1	23
Tree (TG)	<i>Jagera pseudorhus</i> var. <i>pseudorhus</i>	1	21
Tree (TG)	<i>Mischocarpus pyriformis</i>	1	21
Tree (TG)	<i>Niemeyera whitei</i>	2	21
Tree (TG)	<i>Orites excelsus</i>	1	21
Tree (TG)	<i>Archidendron grandiflorum</i>	1	20
Tree (TG)	<i>Beilschmiedia elliptica</i>	1	20
Tree (TG)	<i>Litsea australis</i>	1	20
Tree (TG)	<i>Syncarpia glomulifera</i>	2	20
Tree (TG)	<i>Argyrodendron actinophyllum</i>	3	18
Tree (TG)	<i>Toechima dasyrrhache</i>	1	18
Tree (TG)	<i>Cryptocarya obovata</i>	1	16
Tree (TG)	<i>Dysoxylum fraserianum</i>	1	16
Tree (TG)	<i>Clerodendrum tomentosum</i>	1	15
Tree (TG)	<i>Daphnandra apatela</i>	1	15
Tree (TG)	<i>Diospyros pentamera</i>	1	15
Tree (TG)	<i>Tristaniopsis laurina</i>	2	15
Tree (TG)	<i>Citronella moorei</i>	2	13
Tree (TG)	<i>Corymbia intermedia</i>	3	13
Tree (TG)	<i>Baloghia inophylla</i>	2	12
Tree (TG)	<i>Eucalyptus saligna</i>	3	12
Tree (TG)	<i>Notelaea longifolia</i>	1	12
Tree (TG)	<i>Cinnamomum virens</i>	1	10
Tree (TG)	<i>Drypetes deplanchei</i>	1	10
Tree (TG)	<i>Ficus watkinsiana</i>	1	10
Tree (TG)	<i>Litsea reticulata</i>	1	10
Tree (TG)	<i>Mallotus philippensis</i>	1	10
Tree (TG)	<i>Polyscias elegans</i>	1	10
Tree (TG)	<i>Toona ciliata</i>	1	10
Tree (TG)	<i>Akania bidwillii</i>	1	8
Tree (TG)	<i>Endiandra crassiflora</i>	1	8
Tree (TG)	<i>Endiandra pubens</i>	2	8
Tree (TG)	<i>Acacia melanoxylon</i>	1	7
Tree (TG)	<i>Acradenia euodiiformis</i>	3	7
Tree (TG)	<i>Cyclophyllum longipetalum</i>	1	7
Tree (TG)	<i>Pennantia cunninghamii</i>	1	7
Tree (TG)	<i>Argyrodendron trifoliolatum</i>	1	5
Tree (TG)	<i>Canarium australasicum</i>	1	5
Tree (TG)	<i>Cleistanthus cunninghamii</i>	1	5
Tree (TG)	<i>Daphnandra micrantha</i>	2	5
Tree (TG)	<i>Dysoxylum mollissimum</i> subsp. <i>molle</i>	2	5
Tree (TG)	<i>Elaeocarpus grandis</i>	1	5

Tree (TG)	Emmenosperma alphonseioides	1	5
Tree (TG)	Endiandra hayesii	1	5
Tree (TG)	Eucalyptus pilularis	1	5
Tree (TG)	Neolitsea australiensis	1	5
Tree (TG)	Scolopia braunii	1	5
Tree (TG)	Syzygium corynanthum	1	5
Tree (TG)	Syzygium crebrinerve	1	5

BioNet Vegetation Classification - Community Profile Report

Plant Community Type ID (PCT ID): 3064

PCT Name: Far North Hoop Pine Dry Rainforest

Classification Confidence Level: 2-High

Total Number of Replicates: 14

Number of Primary Replicates: 13

Number of Secondary Replicates: 1

Vegetation Description: A mid-high to very tall, rarely extremely tall, mid-dense to dense rainforest, which occurs mainly on the lower slopes of the Tweed Range, with scattered occurrences south to Lismore and a possible isolated occurrence in gullies on the lower slopes of Limpinwood Nature Reserve. Tree species richness is high to very high and no single species is consistently most abundant. *Araucaria cunninghamii* is very frequently present as a very tall to extremely tall canopy tree or emergent and commonly has a high foliage cover. Other tree species almost always present include *Arytera distylis*, *Scolopia braunii*, *Mallotus philippinensis* and *Cryptocarya triplinervis*, generally with low cover, and commonly *Argyrodendron trifoliolatum*, sometimes with high cover. The climbing palm *Calamus muelleri* and vine *Uvaria leichhardtii* are almost always present, and sometimes locally common. This PCT occurs mainly in warm, very wet locations receiving 1520-1710 mm mean annual rainfall, at low to mid-elevations of 110-240 metres asl. It occurs on basalt and fertile, clay-rich sedimentary slopes below the basalt escarpment of the Tweed Range. It partly overlaps in range and environment with PCT 3003 which occurs mainly on basalt to the west and PCTs 3001 and 3002 which occur mainly on basalt to the east. To some extent, PCT 3064 is floristically intermediate between PCT 3003 in mainly cooler or drier sites and PCTs 3001 and 3002 in warmer or wetter sites and it may grade into one of these PCTs where they occur in proximity. It includes areas within intact forests, remnants in cleared areas, and vegetation on the fringes of extensively cleared valleys. In the latter two cases, sites may be difficult to assign with confidence and relationships with other PCTs may be obscured by disturbance effects.

Vegetation Formation: Rainforests;

Vegetation Class: Dry Rainforests;

IBRA Bioregion(s): South Eastern Queensland;

IBRA Sub-region(s): Scenic Rim;

LGA: KYOGLE; LISMORE; TWEED;

Elevation (m) (Min, Median, Max): 46.6 219.0 326.5

Annual Rainfall (mm) (Min, Median, Max): 1370 1693 1852

Annual Mean Temperature (deg C) (Min, Median, Max): 15.66 17.66 19.06

Median Native Species Richness per plot: 70

TEC Assessed: Has associated TEC

TEC List: Listed BC Act,E: Lowland Rainforest on Floodplain in the New South Wales North Coast Bioregion (Part); Listed BC Act,E: Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions (Part); Listed EPBC Act,CE: Lowland Rainforest of Subtropical Australia (Part);

TEC Comments: (Comment TEC1) Relates to the NSW Lowland Rainforest TEC as it is associated with one of the SubAlliances (Primary) listed in paragraph 4 of the Final Determination. However it must still satisfy the elevation thresholds of less than 600 m asl in the NSW North Coast bioregion or less than 350 m asl in the Sydney Basin bioregion (IBRA Version 4.0) depending on the distribution of the PCT (paragraph 1). Candidate areas of the TEC may adjoin this PCT if they satisfy the requirements of one of the SubAlliances included in paragraph 5, subject to the same elevation thresholds by bioregion. The related PCTs are included in the interpretation of the relationships for this TEC. (Comment TEC2) Relates to the NSW Lowland Rainforest on Floodplain TEC but only applies where the PCT is situated within the NSW North Coast bioregion (IBRA Version 4.0) and on a floodplain as per paragraph 2 in the Final Determination. Floodplain is not defined in the Final Determination but users should be guided by the best available fine scale spatial data that represents alluvial deposits in the NSW North Coast bioregion (IBRA Version 4.0). (Comment TEC3) Relates to the Commonwealth Lowland Rainforest of Subtropical Australia TEC as it is associated with one of the SubAlliances listed in Section 6 of the Listing Advice. A patch must occur at an elevation generally less than 300 m asl on soils derived from basalt or alluvium or enriched rhyolitic soils or basaltically enriched metasediments, and satisfy condition thresholds as per Section 5 of the Listing Advice.

PCT Percent Cleared: 42.37

PCT Definition Status: Approved

Species By Growth Form Group

Growth Form Group	Species	Median cover score	Frequency
Fern (EG)	<i>Doodia aspera</i>	2	70
Fern (EG)	<i>Arthropteris tenella</i>	1	62
Fern (EG)	<i>Platynerium superbum</i>	1	62
Fern (EG)	<i>Lastreopsis marginans</i>	2	54
Fern (EG)	<i>Pellaea falcata</i>	2	39
Fern (EG)	<i>Pellaea paradoxa</i>	2	39
Fern (EG)	<i>Adiantum aethiopicum</i>	1	24
Fern (EG)	<i>Adiantum hispidulum</i>	2	24

Fern (EG)	<i>Asplenium australasicum</i>	1	24
Fern (EG)	<i>Blechnum cartilagineum</i>	2	24
Fern (EG)	<i>Asplenium attenuatum</i>	2	16
Fern (EG)	<i>Lastreopsis acuminata</i>	2	16
Fern (EG)	<i>Lastreopsis decomposita</i>	2	16
Fern (EG)	<i>Lastreopsis munita</i>	2	16
Fern (EG)	<i>Pyrrosia confluens</i> var. <i>confluens</i>	2	16
Fern (EG)	<i>Pyrrosia rupestris</i>	2	16
Fern (EG)	<i>Adiantum formosum</i>	2	8
Fern (EG)	<i>Adiantum silvaticum</i>	1	8
Fern (EG)	<i>Arthropteris beckleri</i>	1	8
Fern (EG)	<i>Blechnum spinulosum</i>	2	8
Fern (EG)	<i>Cephalomanes caudatum</i>	2	8
Fern (EG)	<i>Davallia solida</i> var. <i>pyxidata</i>	1	8
Fern (EG)	<i>Grammitis billardierei</i>	1	8
Fern (EG)	<i>Hypolepis muelleri</i>	2	8
Fern (EG)	<i>Lastreopsis microsora</i> subsp. <i>microsora</i>	2	8
Fern (EG)	<i>Platynerium bifurcatum</i>	1	8
Forb (FG)	<i>Pseuderanthemum variabile</i>	2	70
Forb (FG)	<i>Alpinia caerulea</i>	1	54
Forb (FG)	<i>Pothos longipes</i>	2	31
Forb (FG)	<i>Alocasia brisbanensis</i>	1	24
Forb (FG)	<i>Peperomia blanda</i> var. <i>floribunda</i>	1	24
Forb (FG)	<i>Gymnostachys anceps</i>	1	16
Forb (FG)	<i>Aneilema biflorum</i>	2	8
Forb (FG)	<i>Dianella caerulea</i>	1	8
Forb (FG)	<i>Lobelia purpurascens</i>	2	8
Forb (FG)	<i>Urtica incisa</i>	2	8
Grass & grasslike (GG)	<i>Gahnia sieberiana</i>	2	39
Grass & grasslike (GG)	<i>Lomandra longifolia</i>	2	39
Grass & grasslike (GG)	<i>Oplismenus aemulus</i>	2	39
Grass & grasslike (GG)	<i>Cyperus tetraphyllus</i>	1	24
Grass & grasslike (GG)	<i>Oplismenus undulatifolius</i>	2	24
Grass & grasslike (GG)	<i>Cyperus enervis</i>	2	16
Grass & grasslike (GG)	<i>Cyperus lucidus</i>	2	16
Grass & grasslike (GG)	<i>Entolasia marginata</i>	2	16
Grass & grasslike (GG)	<i>Lomandra spicata</i>	2	16
Grass & grasslike (GG)	<i>Oplismenus imbecillis</i>	2	16
Grass & grasslike (GG)	<i>Carex appressa</i>	2	8
Grass & grasslike (GG)	<i>Carex brunnea</i>	1	8
Grass & grasslike (GG)	<i>Entolasia stricta</i>	2	8
Grass & grasslike (GG)	<i>Juncus usitatus</i>	2	8
Grass & grasslike (GG)	<i>Microlaena stipoides</i>	1	8

Grass & grasslike (GG)	<i>Poa queenslandica</i>	1	8
Other (OG)	<i>Calamus muelleri</i>	2	93
Other (OG)	<i>Uvaria leichhardtii</i>	2	93
Other (OG)	<i>Caesalpinia subtropica</i>	2	85
Other (OG)	<i>Cissus antarctica</i>	2	85
Other (OG)	<i>Derris involuta</i>	2	85
Other (OG)	<i>Ripogonum album</i>	1	85
Other (OG)	<i>Embelia australiana</i>	1	77
Other (OG)	<i>Dioscorea transversa</i>	1	70
Other (OG)	<i>Cordyline rubra</i>	1	62
Other (OG)	<i>Maclura cochinchinensis</i>	2	54
Other (OG)	<i>Melodinus australis</i>	2	54
Other (OG)	<i>Tetrastigma nitens</i>	2	47
Other (OG)	<i>Cordyline petiolaris</i>	1	39
Other (OG)	<i>Linospadix monostachyos</i>	1	39
Other (OG)	<i>Pandorea pandorana</i> subsp. <i>pandorana</i>	1	39
Other (OG)	<i>Trophis scandens</i> subsp. <i>scandens</i>	1	39
Other (OG)	<i>Geitonoplesium cymosum</i>	1	31
Other (OG)	<i>Smilax australis</i>	1	31
Other (OG)	<i>Archontophoenix cunninghamiana</i>	1	24
Other (OG)	<i>Cissus hypoglauca</i>	1	24
Other (OG)	<i>Jasminum dallachii</i>	1	24
Other (OG)	<i>Pandorea jasminoides</i>	1	24
Other (OG)	<i>Callerya megasperma</i>	2	16
Other (OG)	<i>Carissa spinarum</i>	1	16
Other (OG)	<i>Cayratia clematidea</i>	1	16
Other (OG)	<i>Cissus sterculiifolia</i>	1	16
Other (OG)	<i>Dendrobium schoeninum</i>	2	16
Other (OG)	<i>Dendrobium tetragonum</i>	1	16
Other (OG)	<i>Flagellaria indica</i>	1	16
Other (OG)	<i>Gynochthodes jasminoides</i>	2	16
Other (OG)	<i>Hippocratea barbata</i>	2	16
Other (OG)	<i>Hoya australis</i> subsp. <i>australis</i>	2	16
Other (OG)	<i>Legnephora moorei</i>	1	16
Other (OG)	<i>Parsonsia straminea</i>	1	16
Other (OG)	<i>Ripogonum elseyanum</i>	2	16
Other (OG)	<i>Sarcochilus falcatus</i>	1	16
Other (OG)	<i>Austrosteenisia blackii</i> var. <i>blackii</i>	3	8
Other (OG)	<i>Austrosteenisia glabristyla</i>	1	8
Other (OG)	<i>Cayratia acris</i>	1	8
Other (OG)	<i>Dendrobium cucumerinum</i>	2	8
Other (OG)	<i>Dendrobium teretifolium</i>	1	8
Other (OG)	<i>Jasminum volubile</i>	1	8

Other (OG)	Marsdenia fraseri	1	8
Other (OG)	Marsdenia rostrata	1	8
Other (OG)	Pararistolochia praevenosa	2	8
Other (OG)	Parsonsia lilacina	2	8
Other (OG)	Parsonsia longipetiolata	1	8
Other (OG)	Plectorrhiza tridentata	1	8
Other (OG)	Sarcochilus australis	1	8
Other (OG)	Tinospora tinosporoides	2	8
Other (OG)	Tylophora benthamii	1	8
Shrub (SG)	Aphananthe philippinensis	2	85
Shrub (SG)	Gossia acmenoides	2	85
Shrub (SG)	Pittosporum multiflorum	1	85
Shrub (SG)	Capparis arborea	1	77
Shrub (SG)	Anthocarapa nitidula	2	70
Shrub (SG)	Citrus australasica	1	62
Shrub (SG)	Elaeodendron australe	2	62
Shrub (SG)	Meiogyne stenopetala subsp. stenopetala	2	54
Shrub (SG)	Atractocarpus chartaceus	2	47
Shrub (SG)	Croton verreauxii	2	47
Shrub (SG)	Rhodamnia rubescens	1	47
Shrub (SG)	Pilidiostigma glabrum	1	39
Shrub (SG)	Ficus coronata	3	31
Shrub (SG)	Gossia hillii	1	31
Shrub (SG)	Pittosporum revolutum	1	31
Shrub (SG)	Synoum glandulosum subsp. glandulosum	2	31
Shrub (SG)	Acronychia oblongifolia	1	24
Shrub (SG)	Actephila lindleyi	2	24
Shrub (SG)	Alectryon subcinereus	2	24
Shrub (SG)	Cryptocarya laevigata	2	24
Shrub (SG)	Diospyros australis	1	24
Shrub (SG)	Psychotria loniceroides	1	24
Shrub (SG)	Wikstroemia indica	1	24
Shrub (SG)	Wilkiea austroqueenslandica	1	24
Shrub (SG)	Wilkiea huegeliana	1	24
Shrub (SG)	Clerodendrum floribundum var. floribundum	1	16
Shrub (SG)	Denhamia celastroides	1	16
Shrub (SG)	Melicope micrococca	1	16
Shrub (SG)	Sarcomelicope simplicifolia subsp. simplicifolia	1	16
Shrub (SG)	Tabernaemontana pandacaqui	1	16
Shrub (SG)	Alchornea ilicifolia	1	8
Shrub (SG)	Alyxia ruscifolia	1	8
Shrub (SG)	Archirhodommyrtus beckleri	2	8
Shrub (SG)	Breynia oblongifolia	1	8

Shrub (SG)	Callistemon salignus	1	8
Shrub (SG)	Croton acronychioides	2	8
Shrub (SG)	Eupomatia laurina	1	8
Shrub (SG)	Gossia fragrantissima	1	8
Shrub (SG)	Harpullia alata	2	8
Shrub (SG)	Hedraianthera porphyropetala	1	8
Shrub (SG)	Homalanthus populifolius	1	8
Shrub (SG)	Mallotus claoxyloides	3	8
Shrub (SG)	Myrsine subsessilis subsp. subsessilis	1	8
Shrub (SG)	Myrsine variabilis	1	8
Shrub (SG)	Notelaea johnsonii	1	8
Shrub (SG)	Phaleria chermsideana	1	8
Shrub (SG)	Pittosporum lancifolium	2	8
Shrub (SG)	Psychotria simmondsiana	1	8
Shrub (SG)	Rubus rosifolius	3	8
Shrub (SG)	Syzygium australe	1	8
Shrub (SG)	Triunia youngiana	1	8
Tree (TG)	Arytera distylis	2	100
Tree (TG)	Scolopia braunii	2	100
Tree (TG)	Cryptocarya triplinervis	1	93
Tree (TG)	Mallotus philippensis	1	93
Tree (TG)	Araucaria cunninghamii	3	85
Tree (TG)	Diospyros pentamera	2	85
Tree (TG)	Gossia bidwillii	2	77
Tree (TG)	Elattostachys xylocarpa	2	70
Tree (TG)	Elattostachys nervosa	2	62
Tree (TG)	Harpullia hillii	1	62
Tree (TG)	Polyscias elegans	1	62
Tree (TG)	Argyrodendron trifoliolatum	3	54
Tree (TG)	Arytera divaricata	1	54
Tree (TG)	Cleistanthus cunninghamii	1	54
Tree (TG)	Diploglottis australis	1	54
Tree (TG)	Flindersia schottiana	1	54
Tree (TG)	Guioa semiglauca	2	54
Tree (TG)	Pseudoweinmannia lachnocarpa	1	54
Tree (TG)	Cryptocarya obovata	1	47
Tree (TG)	Dendrocnide photinophylla	1	47
Tree (TG)	Drypetes deplanchei	1	47
Tree (TG)	Mischocarpus anodontus	2	47
Tree (TG)	Archidendron grandiflorum	1	39
Tree (TG)	Beilschmiedia obtusifolia	1	39
Tree (TG)	Cupaniopsis flagelliformis var. australis	1	39
Tree (TG)	Dysoxylum fraserianum	2	39

Tree (TG)	<i>Glochidion ferdinandi</i>	1	39
Tree (TG)	<i>Ixora beckleri</i>	1	39
Tree (TG)	<i>Alangium villosum</i> subsp. <i>polyosmoides</i>	1	8
Tree (TG)	<i>Allocauarina torulosa</i>	1	8
Tree (TG)	<i>Baloghia inophylla</i>	3	8
Tree (TG)	<i>Brachychiton discolor</i>	1	8
Tree (TG)	<i>Bridelia exaltata</i>	1	8
Tree (TG)	<i>Castanospora alphandii</i>	1	8
Tree (TG)	<i>Celtis paniculata</i>	2	8
Tree (TG)	<i>Cryptocarya bidwillii</i>	1	8
Tree (TG)	<i>Daphnandra apatela</i>	2	8
Tree (TG)	<i>Dendrocnide excelsa</i>	1	8
Tree (TG)	<i>Diospyros mabacea</i>	2	8
Tree (TG)	<i>Dysoxylum rufum</i>	1	8
Tree (TG)	<i>Ehretia acuminata</i> var. <i>acuminata</i>	1	8
Tree (TG)	<i>Elaeocarpus obovatus</i>	1	8
Tree (TG)	<i>Ficus obliqua</i>	1	8
Tree (TG)	<i>Flindersia australis</i>	3	8
Tree (TG)	<i>Flindersia bennettii</i>	1	8
Tree (TG)	<i>Geijera salicifolia</i>	3	8
Tree (TG)	<i>Halfordia kendack</i>	1	8
Tree (TG)	<i>Harpullia pendula</i>	1	8
Tree (TG)	<i>Hedycarya angustifolia</i>	1	8
Tree (TG)	<i>Litsea reticulata</i>	2	8
Tree (TG)	<i>Macadamia tetraphylla</i>	1	8
Tree (TG)	<i>Olea paniculata</i>	2	8
Tree (TG)	<i>Pararchidendron pruinoseum</i> var. <i>pruinoseum</i>	1	8
Tree (TG)	<i>Planchonella cotinifolia</i>	1	8
Tree (TG)	<i>Planchonella myrsinifolia</i> .	1	8
Tree (TG)	<i>Siphonodon australis</i>	1	8
Tree (TG)	<i>Syzygium hodgkinsoniae</i>	2	8
Tree (TG)	<i>Toeckia dasyrrhache</i>	1	8
Tree (TG)	<i>Jagera pseudorhus</i> var. <i>pseudorhus</i>	1	39
Tree (TG)	<i>Neolitsea australiensis</i>	2	39
Tree (TG)	<i>Pentaceras australe</i>	2	39
Tree (TG)	<i>Streblus brunonianus</i>	2	39
Tree (TG)	<i>Atalaya salicifolia</i>	1	31
Tree (TG)	<i>Beilschmiedia elliptica</i>	2	31
Tree (TG)	<i>Bosistoa pentacocca</i> var. <i>pentacocca</i>	1	31
Tree (TG)	<i>Cinnamomum oliveri</i>	1	31
Tree (TG)	<i>Cupaniopsis parvifolia</i>	1	31
Tree (TG)	<i>Denhamia bilocularis</i>	1	31
Tree (TG)	<i>Endiandra pubens</i>	2	31

Tree (TG)	Mischocarpus australis	3	31
Tree (TG)	Notelaea longifolia	1	31
Tree (TG)	Sarcopteryx stipata	2	31
Tree (TG)	Stenocarpus sinuatus	2	31
Tree (TG)	Brachychiton acerifolius	1	24
Tree (TG)	Cryptocarya microneura	1	24
Tree (TG)	Dysoxylum mollissimum subsp. molle	1	24
Tree (TG)	Endiandra muelleri	1	24
Tree (TG)	Ficus fraseri	1	24
Tree (TG)	Ficus watkinsiana	2	24
Tree (TG)	Hodgkinsonia ovatiflora	2	24
Tree (TG)	Planchonella australis	1	24
Tree (TG)	Symplocos thwaitesii	1	24
Tree (TG)	Alectryon tomentosus	1	16
Tree (TG)	Alphitonia excelsa	3	16
Tree (TG)	Corymbia intermedia	2	16
Tree (TG)	Cryptocarya glaucescens	2	16
Tree (TG)	Cyclophyllum longipetalum	1	16
Tree (TG)	Eucalyptus siderophloia	3	16
Tree (TG)	Euroschinus falcatus var. falcatus	1	16
Tree (TG)	Ficus superba var. henneana	3	16
Tree (TG)	Grevillea robusta	2	16
Tree (TG)	Lophostemon confertus	3	16
Tree (TG)	Melia azedarach	3	16
Tree (TG)	Mischocarpus pyriformis	1	16
Tree (TG)	Neolitsea dealbata	1	16
Tree (TG)	Owenia cepiodora	3	16
Tree (TG)	Rhodamnia argentea	1	16
Tree (TG)	Rhysotoechia bifoliolata subsp. bifoliolata	3	16
Tree (TG)	Syzygium francisii	2	16
Tree (TG)	Toona ciliata	1	16
Tree (TG)	Acacia melanoxylon	1	8
Tree (TG)	Acronychia baeuerlenii	1	8
Tree (TG)	Ailanthus triphysa	1	8

Appendix 5. Satellite Imagery

Historic Satellite Imagery

Exported from Google Earth on 29 April 2026.

