Dorrigo Escarpment Great Walk

Matters of National Environmental Significance Report

ecological AUSTRALIA
A TETRA TECH COMPANY

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Abbreviations

Abbreviation	Description
AOO	Area of occupancy
AoS	Assessment of significance
BNP	Bindarri National Park
BC Act	NSW *Biodiversity Conservation Act 2016*
CEEC	Critically Endangered Ecological Community
CMA	Commonwealth Marine Area
DARC	Dorrigo Arc Rainforest Centre
DAWE	Department of Agriculture, Water and Environment
DCCEEW	Commonwealth Department of Climate Change, Energy, the Environment and Water
DEGW	Dorrigo Escarpment Great Walk
DELWP	Department of Environment, Land, Water & Planning
DNP	Dorrigo National Park
DPE	NSW Department of Planning and Environment
EEC	Endangered Ecological Community
ELA	Eco Logical Australia Pty Ltd
EPBC Act	Commonwealth Environment Protection and Biodiversity Conservation Act 1999
GIS	Geographic Information System
HBT	Hollow-bearing tree
PMST	Protected Matter Search Tool
MNES	Matters of National Environmental Significance
NP	National Park
NPWS	National Parks and Wildlife Service
NSW	New South Wales
OEH	NSW Office of Environment and Heritage
OUV	Outstanding universal values
PCT	Plant Community Type
SEPP	State Environmental Planning Policy
SVTM	State Vegetation Type Map
TEC	Threatened Ecological Community

1. Introduction

This report addresses and assesses the impacts of the proposed new Dorrigo Escarpment Great Walk (DEGW) (study area) to Matters of National Environmental Significance (MNES) listed under the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act). The MNES relevant to the DEGW are:

- world heritage properties
- national heritage places
- nationally threatened species and ecological communities
- migratory species.

The assessment in this report is based on information gathered from data searches and field investigations and should be read in conjunction with the DEGW Ecological assessment report (ELA 2024a).

The EPBC Act aims to protect MNES including World and National Heritage areas, threatened species and communities, and listed migratory species. An action that may or is likely to have a significant impact on MNES should be referred to the Commonwealth to determine whether it is a Controlled Action that requires approval from the Commonwealth.

Two (2) MNES known as Gondwana Rainforests of Australia listed on the World Heritage List (WHL #368) and on the National Heritage List (NHL #105704) occur within the study area. An impact assessment was prepared against the significant impact criteria for natural heritage values of a World Heritage property (Section 5.1.1) and determined the impacts to be negligible and are not considered to significantly impact the natural heritage values of a World Heritage property. Both these MNES will be referred to the minister to confirm if the proposal is a controlled action. Refer to the DEGW statement of heritage impact (SOHI) (ELA 2024d) report for further detail.

An additional 28 MNES listed as threatened ecological communities (TECs), threatened and/or migratory species are known or have been identified as having the potential to occur within the study area (Appendix B). An assessment of significance was prepared against the significant impact criteria for each of these species and determined that the proposed impacts are unlikely to result in a significant impact (Section 5).

1.1. Proposed works

1.1.1. Project vision and objectives

The DEGW is a multi-day walk that aims to inspire future conservation advocacy and stewardship by providing a hiking experience that allows a greater number of people to spend a longer time exploring Dorrigo National Park (Dorrigo NP) and Bindarri National Park (Bindarri NP). The driving philosophy is to provide an experience that allows more people to connect to nature, culture and each other. The walk will provide access to the unique environments and landscapes protected within the parks and the Gondwana Rainforests of Australia World Heritage property (Gondwana Rainforests).

The DEGW is a single direction 4-day, 3-night walk starting at the new Dorrigo Arc Rainforest Centre (DARC) in Dorrigo NP and finishing at the Bindarray picnic area in the Bindarri NP (a total of approx.

distance of 44.1 km). 3 new hiker camps are proposed along the route. A shorter overnight 2-day loop walk between the DARC and a new hiker camp 1 at Baliiga, with the return leg following the existing Rosewood Creek and Blackbutt walking tracks, is also proposed.

1.1.2. Description of proposed works

The NSW National Parks and Wildlife Service (NPWS) is proposing to construct the Dorrigo Escarpment Great Walk (DEGW). The DEGW is located in Dorrigo National Park (Dorrigo NP) and Bindarri National Park (Bindarri NP) which are part of the World Heritage–listed Gondwana Rainforests of Australia.

The DEGW is a single direction 4-day, 3-night walk starting at the new Dorrigo Arc Rainforest Centre (DARC) in Dorrigo NP and finishing at the Bindarray picnic area in Bindarri NP. The walk covers approximately 44.1 km and includes:

- approximately 44.1 km of 600 to 900 mm wide walking track (in accordance with *Australian Standard 2156: Walking tracks classification and signage*, where possible)
- approximately 8.6 km upgraded management trails (8.1 km) and dormant roads (634 m)
- 3 new camps, incorporating hut accommodation, a camping area and communal buildings
- 1 upgraded remote camp area, including camping, tracks and amenities
- 1 future upgrade to the existing Baliiga picnic area, including parking, roads and amenities
- 43 waterway crossings including 5 single-span pedestrian bridges greater than 20 m long and one vehicle bridge
- 14 scenic viewpoints
- wayfinding and interpretation components
- temporary access
- temporary construction sites.

Construction is expected to start in mid-2025 and would take 24 to 48 months to complete.

2. Desktop assessment – Protected Matters Search Tool and BioNet

2.1. Ecology

A desktop assessment involved a search of the Protected Matters Search Tool (PMST, Appendix A) for MNES listed under the EPBC Act potentially present within a 5 km square radius from the study area (dated 31 May 2024) (DAWE 2023). The PMST identified:

- One World Heritage Place and one National Heritage Place: Gondwana Rainforests of Australia.
- A total of seven (7) possible threatened ecological communities (TECs), 33 threatened flora species, 46 threatened fauna species listed under the EPBC Act were considered in this assessment
- 16 migratory bird species listed under the EPBC Act were predicted to be present.

Results of the PMST were further supplemented through an NSW BioNet Atlas search which identified:

- Records for a total of 101 threatened entities listed under the EPBC Act available within a 5 km radius of the study area (refer to Appendix B).

All TECs and threatened species identified within the PMST and BioNet Atlas search have been considered through a likelihood of occurrence assessment process and table, which is summarised in section 4 and presented in Appendix B. Relevant potential impacts to MNES are further assessed in section 5.

2.2. Heritage

The 'Gondwana Rainforests of Australia' is listed on the World Heritage List (WHL #368) National Heritage List (NHL #105704). The item is considered to have Outstanding Universal Value (OUV) under the following Criteria for Selection:

- (vii) to contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance.
- (viii) to be outstanding examples representing major stages of earth's history, including the record of life, significant on-going geological processes in the development of landforms, or significant geomorphic or physiographic features.
- (ix) to be outstanding examples representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals.

The brief synthesis of the OUV states:

The Gondwana Rainforests of Australia is a serial property comprising the major remaining areas of rainforest in southeast Queensland and northeast New South Wales. It represents outstanding examples of major stages of the Earth's evolutionary history, ongoing geological and biological processes, and exceptional biological diversity. A wide range of plant and animal lineages and communities with ancient origins in Gondwana, many of which are restricted largely or entirely to the

Gondwana Rainforests, survive in this collection of reserves. The Gondwana Rainforests also provides the principal habitat for many threatened species of plants and animals.

The MNES impact assessment in Section 5.1 and 5.2 follows *Guidance and toolkit for impact assessments in a World Heritage context* (UNESCO 2022) and *Matters of National Environmental Significance - Significant impact guidelines 1.1* (DCCEEW 2013). Where necessary the relevant sections of the *Central Eastern Rainforest Reserves of Australia (CERRA) Strategic overview for management* (DEH 2000).

3. Field survey

3.1. Ecology

The field survey was conducted by ELA ecologists and NPWS staff on several occasions to cover the entirety of the study area (refer to Appendix C for field survey dates and methods). Field surveys included:

- Validation of existing vegetation mapping, determining type, condition and extent of NSW plant community types (PCTs) and other vegetation types through the collection of rapid data points. These PCTs were later associated with any relevant EPBC listed threatened ecological communities based on their commensuration with the conservation advice.
- Threatened flora survey for potential or likely threatened flora species listed under the EPBC Act, similar to the parallel field traverse method described in Surveying threatened plants and their habitats (DPIE 2020).
- Fauna habitat assessment including the identification and use assessment of habitat features which included foraging resources, hollow-bearing trees (HBTs), dens/burrows, nests, hollow logs and large woody debris, leaf litter, flaking bark, sphagnum moss, other identifiable foraging habitat, rocky habitat and aquatic habitat.
- Opportunistic fauna sightings.

One (1) TEC listed as critically endangered under the EPBC Act was recorded during the field surveys:

- Lowland Rainforest of Subtropical Australia

There is some overlap of the Gondwana Rainforests of Australia, and the Lowland Rainforest of Subtropical Australia TEC. Dorrigo National Park is included in the World Heritage listing, which contains significant patches of the TEC. 0.06 ha of this TEC occurs as Gondwana Rainforest within the study area, with 0.02 ha expected to be directly impacted by the proposal. A total of six (6) threatened species listed under the EPBC Act were recorded (sighted, heard and scats) during the field surveys:

- Spotted-tailed quoll *(Dasyurus maculatus)*
- Slender marsdenia (*Marsdenia longiloba*)
- Milky silkpod (*Parsonsia dorrigoensis*)
- Koala *(Phascolarctos cinereus)*
- Scrub turpentine *(Rhodamnia rubescens)*
- Cryptic forest twiner (*Tylophora woollsii*)

3.2. Heritage

NPWS undertook preliminary surveys with the Aboriginal community as part of the design of the walking track to be assessed under this Aboriginal cultural heritage assessment. Several significant Aboriginal cultural sites were identified. In keeping with the main aims of NPWS, to protect and conserve Aboriginal cultural values within Dorrigo National Park and Bindarri National Park, there have been modifications to the proposed walking track. This proactive approach by NPWS to avoid harm to Aboriginal cultural values has influenced the results of this archaeological survey. The current

design of the proposed walking track has avoided sensitive areas and previously identified Aboriginal sites. Due to the sensitive nature of the identified sites, they have been restricted on AHIMS database.

As part of the Aboriginal cultural heritage assessment process field survey was undertaken by ELA Senior Heritage Consultants Jessica Horton and Jennifer Norfolk with representatives of the Gumbaynggirr and NPWS staff. The archaeological surveys have covered 40 km of the proposed walking track over a 4-month period (October 2023 – Feb 2024). This coverage is about 70 to 80% of the entire 4-day walk. Preliminary coverage of the walk by NPWS and the Aboriginal groups has supported the current archaeological surveys.

The registered Aboriginal groups in collaboration with NPWS have completed 9 days of coverage, 15 Aboriginal site officers from 5 of the RAP groups took part (including 2 women). This participation has resulted in approximately 300 hrs of RAP survey time, including areas that have been removed from the current study area. NPWS supported the cultural surveys with 2 staff approximately 150 hrs. ELAs field archaeologist undertook 7 days of field survey, approximately 70 hrs of in-field work.

This archaeological survey aimed to comprehensively sample the areas of proposed development to understand the presence, nature, extent and inform significance of the cultural and archaeological resource. Primary focus was on the potential impacts the construction and future activities of the project would have on the Aboriginal and historical cultural values within the study area. The survey involved visiting parts of the study area where impact is planned to occur and searching for evidence of Aboriginal or historical occupation, and for evidence of the OUV. In all instances, detailed notes of the locations of the survey were taken, including GPS coordinates and the use of digital real-time mapping. These notes were supplemented by digital photography that recorded where necessary items of potential Aboriginal or historical heritage value, or OUV.

The field survey methodology was as follows:

- Involved a pedestrian survey with the Aboriginal community to identify any unrecorded sites, areas of archaeological potential, and any areas of historical land use/disturbance.
- Dorrigo NP has world and national significance for its natural outstanding values. Locations where construction is required, such as camp sites and creek crossings were discussed to determine the best method for limiting potential impacts to the geology and landscape processes.
- All landform units along the DEGW impact area were sampled as part of the field survey.
- The landforms, geology and vegetation conditions were recorded, and the effective survey coverage was documented.
- Cultural information as provided by Aboriginal representatives during the survey was documented and used to inform the cultural significance of the study area.
- Aboriginal sites and potential archaeological deposits identified within the impact area were recorded using a GPS and photographed.
- Any new Aboriginal sites were recorded on the Aboriginal Heritage Information Management System (AHIMS site card) as required by Heritage NSW.

Summary of field survey results:

All landforms have been sampled, several potential Aboriginal objects were identified, no areas of potential archaeological deposits were identified. Cultural values, intangible and tangible were recorded, key points identified during the archaeological surveys:

- High points were identified as being culturally significant areas along the walk. The high points provide visibility of the Bellinger Valley below and across to the ocean. These lookout locations were used to observe the movement of other Aboriginal groups in the area. They were also used for communication; fires were used to send up smoke to communicate to the groups beyond.
- A potentially sensitive men's area was identified. There were heightened emotions experienced when traversing this location. There were potential occupation locations within the vicinity. Large rocky outcropping may have provided shelter for short-term camping or ceremonial activities. The track route has been modified and moved away significantly to avoid this area.
- The major or permanent creek lines are connected to sensitive women's areas although away from the track alignment. The sensitive locations are often at the junction of 2 inflowing creek lines. No parts of the proposed walking track cross these sensitive junctions, but efforts need to be made to keep walkers on the designated walking track.
- Natural food and medicine resources were identified in areas of least disturbance and in areas of the rainforest that is re-establishing itself after past logging practices.
- Potential stone resources were identified as possibly occurring in the Never Never Creek line and near Gleniffer Falls and Urumbilum Falls. These major, high-flow watercourses have rounded the gravels and carried specific stone types beyond the national park.
- Australian brush turkeys (*Alectura lathami*) were used as a season indicator. They built their nests at lower elevations during the drier seasons and up in the higher elevations during the wet seasons. All brush turkey nests observed during the survey were old and not active as the summer has been dry and the walk traverses the higher elevations of Dorrigo and Bindarri NPs.
- No Aboriginal objects were identified during the archaeological surveys, no artefact scatters or isolated finds could be identified.
- No grinding grooves, raw materials or quarries were observed. Many old-growth trees have been removed, the surrounding geology is not conducive to grinding activities or as raw material for tool manufacture.
- A grouping of potential modified trees was identified during the surveys and require further assessment to determine if they should be registered in AHIMS.
- The study area is not conducive to burials as the soils are skeletal and bedrock is exposed across much of the walk.
- Contact or conflict sites were not identified by the Aboriginal community, but it has been identified that there was conflict between the early loggers and known massacre sites are located along the tablelands and in the Bellinger Valley beyond the study area due to conflict with European land holders, farmers and graziers.
- No areas of potential archaeological deposits were identified. The soils are shallow or skeletal with bedrock outcropping a main feature along the proposed walk.

The OUV were surveyed in a joint effort with the ecologists. The key factors were considered along the survey:

- The geology and landform were observed along the proposed walk with specific attention made to the creek crossings. At each creek or water crossing the construction method was discussed to determine the least impactful but most practical options. Minimal impact construction methods will be used to ensure the natural flow and ecosystems will not be impacted by the construction and use of the walk.
- The construction of the walking track will be done to a bare minimum requirement, utilising local resources and sympathetic construction methods dependant on the landform.
- The locations for the camp sites are located along the existing logging roads. The locations were carefully considered to ensure impacts to the landform and ecosystem is kept to a minimum and existing areas of high disturbance are put to best use.
- Access tracks to for emergency and to maintain the campsites will utilise the existing roads and logging trails into the national parks, there will be no new road construction.
- The Dorrigo escarpment has many major geological features along the ridgeline that contribute to the unique geological formations and significance of the heritage listing. Several of these locations will be utilised as lookout points along the walk. There will be no construction, damage, modification or obstruction of these unique landforms.

4. Likelihood of occurrence

The likelihood of occurrence for TECs, threatened and migratory species within the study area has been assessed on the presence of potential habitat. Results from the database searches were combined to produce a list of threatened species, populations and communities known or predicted to occur within the locality (refer to Appendix A).

Following the field survey, each species' likelihood of occurrence was determined by database records and habitat availability within the study area (based on the field survey), and literature available on the species' ecology. The likelihood of occurrence identified a total of 25 MNES that require impact assessments, inclusive of 11 vulnerable species, 8 endangered species, 1 critically endangered species, and 5 migratory species.

The following species have the potential to be impacted by the proposed works and have been assessed in accordance with the EPBC Act Significant impact guidelines known as an assessment of significance (AoS) (CoA 2013):

Threatened communities (n = 1)

Lowland Rainforest of Subtropical Australia

Vulnerable species (n = 11)

Slender marsdenia (*Marsdenia longiloba*)
Ravine orchid (*Sarcochilus fitzgeraldii*)
Stuttering frog (*Mixophyes balbus*)
Sphagnum frog (*Philoria sphagnicolus*)
Glossy black-cockatoo (*Calyptorhynchus lathami*)
White-throated needletail (*Hirundapus caudacutus*)
Black-breasted button-quail (*Turnix melanogaster*)
Parma wallaby (*Notamacropus parma*)
Long-nosed potoroo (*Potorous tridactylus*)
Grey-headed flying-fox (*Pteropus poliocephalus*)
Rainforest cool-skink (*Harrisoniascincus zia*)

Endangered species (n = 8)

Cryptic forest twiner (*Tylophora woollsii*)
Milky silkpod (*Parsonsia dorrigoensis*)
Giant barred frog (*Mixophyes iteratus*)
Rufous scrub-bird (*Atrichornis rufescens*)
Pink underwing moth (*Phyllodes imperialis*) - southern subspecies
Spotted-tailed quoll (*Dasyurus maculatus*)
Southern greater glider (*Petauroides volans*)
Koala (*Phascolarctos cinereus*)

Critically endangered species (n = 1)

Scrub turpentine (*Rhodamnia rubescens*)

Migratory species (n = 5)

Oriental cuckoo (*Cuculus optatus*)

Black-faced monarch (*Monarcha melanopsis*)

Satin flycatcher (*Myiagra cyanoleuca*)

Rufous fantail (*Rhipidura rufifrons*)

Spectacled monarch (*Symposiachrus trivirgatus*)

Impact assessments were conducted and outlined in Section 5.6 and Section 5.7. The likelihood of occurrence is presented in Appendix B.

5. Matters of National Environmental Significance

MNES likely to be impacted by the proposal have been assessed in accordance with the Matters of National Environmental Significance – Significant impact guidelines 1.1 (Department of the Environment 2013). The MNES relevant considerations are addressed below.

5.1. World Heritage properties

The study area is partially within Dorrigo National Park which is located inside the curtilage of the New England Group of the 'Gondwana Rainforests of Australia', listed on the World Heritage List (WHL #368). A statement of heritage impact (ELA 2024d) and an Aboriginal cultural heritage assessment report (ELA 2024c) have been prepared to assess the cultural heritage impacts and provide recommendations.

World Heritage values are protected under the EPBC Act and approval is required for any action occurring within or outside a declared World Heritage place that has, will have, or is likely to have a significant impact on the World Heritage values of the place.

According to the MNES significant impact guidelines for World Heritage values, an action is likely to have a significant impact on the World Heritage values of a declared World Heritage property if there is a real chance or possibility that it will cause:

- one or more of the World Heritage values to be lost,
- one or more of the World Heritage values to be degraded or damaged, or
- one or more of the World Heritage values to be notably altered, modified, obscured or diminished.

5.1.1. World Heritage properties with natural heritage values

An action is likely to have a significant impact on natural heritage values of a World Heritage property if there is a real chance or possibility that the action will:

5.1.1.1. Values associated with geology or landscape

- damage, modify, alter or obscure important geological formations
- damage, modify, alter or obscure landforms or landscape features, for example, by excavation or infilling of the land surface,
- modify, alter or inhibit landscape processes, for example, by accelerating or increasing susceptibility to erosion, or stabilising mobile landforms, such as sand dunes,
- divert, impound or channelise a river, wetland or other water body, and
- substantially increase concentrations of suspended sediment, nutrients, heavy metals, hydrocarbons, or other pollutants or substances in a river, wetland or water body

5.1.1.2. Biological and ecological values

- reduce the diversity or modify the composition of plant and animal species,
- fragment, isolate or substantially damage habitat important for the conservation of biological diversity,
- cause a long-term reduction in rare, endemic or unique plant or animal populations or species, and

- fragment, isolate or substantially damage habitat for rare, endemic or unique animal

5.1.1.3. populations or species. Wilderness, natural beauty, or rare or unique environmental values

- involve construction of buildings, roads, or other structures, vegetation clearance, or other actions with substantial, long-term or permanent impacts on relevant values, and
- introduce noise, odours, pollutants or other intrusive elements with substantial, long-term or permanent impacts on relevant values.

Assessment of impacts:

A key design principle is to finalise the track alignment on the ground to ensure minimal impact and sustainability. The new sections of the route will be built to blend into the natural environment using primarily hand tools and local materials where possible. No infilling works are proposed, and very minor excavation works will be undertaken to satisfy safety measures for track alignment and stability. Where possible the development will be constructed over areas that have previously been cleared by logging activities or disturbed, and designs of the huts and track will be low-key, use sustainable materials and blend in with the environment.

The track construction will use existing formal and informal walking routes, historical logging tracks, open ridges and areas of new construction. A variety of pedestrian bridges and crossings will be used to traverse rivers and creeks. A design principle is to manage the walk alignment to ensure minimal impacts both to natural surface level, waterways and vegetation in order to maintain a sustainable outcome ecologically and culturally. No disturbance to important geological, landscape features or land formations are expected under this proposal.

A construction environmental management plan (CEMP) and operational management plan (OMP) will be developed with relevant mitigation measures to ameliorate potential impacts to biodiversity values outside and within the development footprint via sedimentation, surface runoff and erosion, off-target damage to native vegetation, injured wildlife, noise, odours and pollutants, and will include a separate chapter for hygiene wash-down procedures to ameliorate biosecurity risks. Further details of the CEMP are provided in Table 39 of the DEGW ecological assessment report (ELA 2024a).

Flora species known as important Gondwana Rainforest relicts recorded within the study area include large numbers of ferns and conifers occurring in many of the mapped PCTs, and *Nothafagus moorei* (Antarctic beech) which was identified within two mapped PCTs (PCT 3031 and 4107). Songbird species belonging to some of the oldest lineages of passerines, including the superb lyrebird (*Menura novaehollandiae*), various scrub-birds (*Atrichornithidae*), treecreepers (*Climacteridae*) and bowerbirds and catbirds (*Ptilonorhynchidae*) were observed within the study area via sightings, bird calls, lyrebird mounds and nests. These species occur predominately in rainforest habitats.

In terms of 'Gondwana Rainforest' an analysis was undertaken on the impacts of the proposal on Keith Formation 'Rainforest' Plant Community Types (PCTs) mapped by ELA, which occur within the Dorrigo National Park only. A precautionary approach was undertaken, whereby all PCTs associated with rainforest communities were considered as associated with 'Gondwana Rainforest'. A total area of 8.87 ha of 'Rainforest' Keith formation PCTs occur within the proposal area within Dorrigo National Park, where up to 4.57 ha will be directly impacted. Of this a total area of 0.02 ha is

commensurate with the EPBC Act listed TEC Lowland Rainforest of Subtropical Australia, with 0.01 ha expected to be directly impacted. A detailed impact assessment of such habitats and additional threatened flora and fauna species can be found in Section 5.7 and the DEGW ecological assessment report (ELA 2024a).

Although the proposal spans over 44.1 km it has a very small overall footprint measuring just over 15 ha. Within the confines of the World Heritage listed Gondwana Rainforest area in Dorrigo National Park which measures 7,885 ha, this represents less than 0.07% of the total space.

Given the very small area, the design which focuses on minimising impacts, and deliberate limiting of people permitted to walk the path, this impact assessment considers the impact to be negligible and are not considered to significantly impact the natural heritage values of a World Heritage property.

The assessment has found that the proposal will have a negligible impact on the World Heritage values ascribed to the study area per its WH listing. This finding is supported by Table 1 and Table 2 which follow the toolkit approach in *Guidance and toolkit for impact assessments in a World Heritage context* (UNESCO 2022).

Table 1: Tool 1 and 2 - Heritage values, attributes and potential impacts

			Element of proposal that has the potential to cause an impact					
Heritage/ conservation values	Attributes	Criterion	Initial site survey	Clearance of path area	Construction of path	Construction of bridges	Establishment of camp sites	Use of the path and camps
Outstanding examples of major stages of Earth's evolutionary history	Major remaining area of rainforest across eastern Australia	viii	none	none	none	none	none	none
	Margin along Australia's eastern edge characterised by an asymmetrical marginal swell that runs parallel to the coastline, eroded into the Great Divide and the Great Escarpment	viii	none	none	none	none	none	none
Sequence of volcanos is significant as it enables the dating of the geomorphic evolution of eastern Australia	Volcanoes erupted in sequence along the east coast resulting in the Tweed, Focal Peak, Ebor and Barrington volcanic shield	viii	none	none	none	none	none	none
Outstanding examples of major stages of Earth's ongoing geological and biological processes	wide range of plant and animal lineages and communities with ancient origins in Gondwana	ix	Potential for damage to flora and fauna through carelessness	Potential for damage to flora and fauna through carelessness	Potential for damage to flora and fauna through carelessness	Potential for damage to flora and fauna through carelessness	Potential for damage to flora and fauna through carelessness	Potential for increased visitors to disrupt ecosystem
Multiple major stages of earths evolutionary history	'Age of the Pteridophytes' from the Carboniferous Period, 'Age of Conifers' in the Jurassic Period, Age of the Angiosperms' in the Early Cretaceous,	ix	Potential for damage to flora and fauna	Potential for damage to flora and fauna	Potential for damage to flora and fauna	Potential for damage to flora and fauna	Potential for damage to flora and fauna	Potential for increased visitors to

			Element of proposal that has the potential to cause an impact					
	the 'golden age' of the Early Tertiary, and a unique record of Miocene vegetation		through carelessness	through carelessness	through carelessness	through carelessness	through carelessness	disrupt ecosystem
outstanding number of songbird species	lyrebirds (Menuridae), scrub-birds (Atrichornithidae), treecreepers (Climacteridae) and bowerbirds and catbirds (Ptilonorhynchidae), belonging to some of the oldest lineages of passerines that evolved in the Late Cretaceous	ix	Potential for damage to flora and fauna through carelessness	Potential for damage to flora and fauna through carelessness	Potential for damage to flora and fauna through carelessness	Potential for damage to flora and fauna through carelessness	Potential for damage to flora and fauna through carelessness	Potential for increased visitors to disrupt ecosystem
Outstanding examples of major stages of Earth's exceptional biological diversity	principal habitat for many threatened species of plants and animals	x	Potential for damage to flora and fauna through carelessness	Potential for damage to flora and fauna through carelessness	Potential for damage to flora and fauna through carelessness	Potential for damage to flora and fauna through carelessness	Potential for damage to flora and fauna through carelessness	Potential for increased visitors to disrupt ecosystem
Significant and important natural habitats for species of conservation significance, particularly those associated with the rainforests	The Gondwana Rainforests provides the principal habitat for many species of plants and animals of outstanding universal value, including more than 270 threatened species as well as relict and primitive taxa	x	Potential for damage to flora and fauna through carelessness	Potential for damage to flora and fauna through carelessness	Potential for damage to flora and fauna through carelessness	Potential for damage to flora and fauna through carelessness	Potential for damage to flora and fauna through carelessness	Potential for increased visitors to disrupt ecosystem

Table 2: Tool 3 - Evaluation of potential impacts

Element of proposed action	Attributes	Description of potential impact	Frequency of action	Duration of action	Reversibility of action	Quality of action	Evaluation of impact
Initial site survey	wide range of plant and animal lineages and communities with ancient origins in Gondwana	Carelessness or ignorance of survey team lading to unintentional destruction of habitat or species	Once	Short-term	Reversible	Negative	Potential minor negative impact
Clearance of path area	'Age of the Pteridophytes' from the Carboniferous Period, 'Age of Conifers' in the Jurassic Period, Age of the Angiosperms' in the Early Cretaceous, the 'golden age' of the Early Tertiary, and a unique record of Miocene vegetation	Excessive or unnecessary clearance, unintentional destruction of habitat or species	Once	Short-term	Reversible	Negative	Potential minor negative impact
construction of path	lyrebirds (Menuridae), scrub-birds (Atrichornithidae), treecreepers (Climacteridae) and bowerbirds and catbirds (Ptilonorhynchidae), belonging to some of the oldest lineages of passerines that evolved in the Late Cretaceous.	Noise and alteration to vegetation disrupting local environment	Once	long-term	Reversible	Negative	Potential minor negative impact
construction of bridges	principal habitat for many threatened species of plants and animals	Disruption of unknown ecosystems during construction	Once	Short-term	Reversible	Negative	Potential minor negative impact
establishment of camp sites	The Gondwana Rainforests provides the principal habitat for many species of plants and animals of outstanding universal value, including more than 270 threatened species as well as relict and primitive taxa	Carelessness of workers during construction and use leading to unintentional destruction of habitat or species	Once	Short-term	Reversible	Negative	Potential minor negative impact

Element of proposed action	Attributes	Description of potential impact	Frequency of action	Duration of action	Reversibility of action	Quality of action	Evaluation of impact
use of the path and camps	wide range of plant and animal lineages and communities with ancient origins in Gondwana	Carelessness of visitors leading to disruption of habitats, species or ecosystems	Intermittent	Short-term	Reversible	Negative	Potential minor negative impact
use of the path and camps	'Age of the Pteridophytes' from the Carboniferous Period, 'Age of Conifers' in the Jurassic Period, Age of the Angiosperms' in the Early Cretaceous, the 'golden age' of the Early Tertiary, and a unique record of Miocene vegetation	Carelessness of visitors leading to disruption of habitats, species or ecosystems	Intermittent	Short-term	Reversible	Negative	Potential minor negative impact
use of the path and camps	lyrebirds (Menuridae), scrub-birds (Atrichornithidae), treecreepers (Climacteridae) and bowerbirds and catbirds (Ptilonorhynchidae), belonging to some of the oldest lineages of passerines that evolved in the Late Cretaceous.	Carelessness of visitors leading to disruption of habitats, species or ecosystems	Intermittent	Short-term	Reversible	Negative	Potential minor negative impact
use of the path and camps	principal habitat for many threatened species of plants and animals	Carelessness of visitors leading to disruption of habitats, species or ecosystems	Intermittent	Short-term	Reversible	Negative	Potential minor negative impact
use of the path and camps	The Gondwana Rainforests provides the principal habitat for many species of plants and animals of outstanding universal value, including more than 270 threatened species as well as relict and primitive taxa	Carelessness of visitors leading to disruption of habitats, species or ecosystems	Intermittent	Short-term	Reversible	Negative	Potential minor negative impact

5.1.2. World Heritage properties with cultural heritage values

The OUV of the World Heritage site are of natural significant values. Dorrigo National Park does not have cultural heritage values that meet the threshold of World or National significance. Indigenous cultural values and Historical heritage values have been identified within the DEWG and in the vicinity, but the significance of these values is of Local significance. A Statement of Heritage Impact and an Aboriginal Cultural Heritage report have been prepared to assess the cultural heritage impacts and provide recommendations. Given this, no assessment against the World Heritage properties with cultural heritage values listed in the MNES Significant impact guidelines is required.

5.2. National heritage places

'Gondwana Rainforests of Australia' is also listed on the National Heritage List (NHL #105704). A statement of heritage impact (ELA 2024d) and an Aboriginal cultural heritage assessment report (ELA 2024c) have been prepared to assess the cultural heritage impacts and provide recommendations.

The National Heritage Listing mirrors that of the WHL and so the above assessment in Table 1 and Table 2 above.

5.3. Wetlands of international importance (Ramsar wetlands)

The study area is not in a Ramsar listed wetland.

5.4. The Great Barrier Reef Marine Park

The Great Barrier Reef Marine Park does not occur within or adjacent to the study area.

5.5. Commonwealth marine area

The study area is not within a Commonwealth Marine Area and is not proposed to impact upon a CMA.

5.6. Threatened ecological communities

One TEC listed as critically endangered under the EPBC Act was recorded within the study area. This TEC has the potential to be impacted by the proposed works and has been assessed in accordance with the EPBC Act Significant impact guidelines (CoA 2013):

- *Lowland Rainforest of Subtropical Australia*.

Table 3: Ecological community profile – Lowland Rainforest of Subtropical Australia

Overview	Comment
EPBC Act Status	Critically endangered
Threat abatement plan	Yes (*Phytophthora cinnamomi*)
Recovery plan	No
Habitat and ecology	In a relatively undisturbed state, the community has a closed canopy, characterised by a high diversity of trees whose leaves may be mesophyllous and encompass a wide variety of shapes and sizes. Typically, the trees form three major strata: emergents, canopy and sub-canopy which, combined with variations in crown shapes and sizes, results in an irregular

Overview	Comment
	canopy appearance. The trees are taxonomically diverse at the genus and family levels, and some may have buttressed roots. A range of plant growth forms are present, including palms, vines and vascular epiphytes. Recorded from the NSW north coast south to the Hawkesbury River. Associated with a range of high-nutrient geological substrates, notably basalts and fine-grained sedimentary rocks, on coastal plains and plateau, footslopes and foothills.
Extent of local occurrence	Lowland Rainforest is known to occur within the study area below 300 m in altitude. The TEC is associated with five (5) PCTS (PCT 3019, 3021, 3032, 3165, 4107) within the study area. Upon further review of the conservation advice, only patches of PCT 3021 and 4107 meet the key diagnostic characteristics. According to the State Vegetation Type Map (SVTM) and elevation intersect approximately 1700 ha of potential habitat for this TEC occurs within the wider NP estate
Impacts	Lowland Rainforest is known to occur from the study area and the conservation advice is consistent with two (2) PCTS (PCT 3021 and 4107) that occur below 300 m in altitude. Direct removal of up to 0.03 ha is proposed to occur to this TEC. Impacts are proposed to occur to the following growth forms: groundcover, vines, woody midstorey and canopy species that are <15 cm DBH; with exception to areas of this TEC that occur at proposed camp and bridge sites, which may involve the removal of larger individuals of canopy species and additional growth forms. Indirect impacts during and post construction include higher risk of invasion of exotic plant species, edge effects and trampling of elements of this TEC from increased foot traffic.

Table 4: Assessment of significance – Lowland Rainforest of Subtropical Australia

Criterion	Question	Response
An action is likely to have a significant impact on a critically endangered or endangered ecological community if there is a real chance or possibility that it will:		
1)	reduce the extent of an ecological community	It is considered unlikely that the disturbance of up to 0.04 ha of this TEC, would lead to a reduced extent of this TEC that it would be risk of extinction within the locality. Additionally, impacts are only proposed to occur to the following growth forms: groundcover, vines, woody midstorey and canopy species that are <15 cm DBH; with exception to areas of this TEC that occur at proposed bridge sites, which may involve the removal of larger individuals of canopy species and additional growth forms.
2)	fragment or increase fragmentation of an ecological community, for example by clearing vegetation for roads or transmission lines	Given the primarily linear context of the proposal and wider extent of the TEC patches that occur within the locality, (estimated to be approximately 1700 ha in the adjacent NP estate according to the SVTM and elevation intersect), it is unlikely the removal of 0.04 ha of the TEC compared to the 3,000 ha within the wider extent will become isolated or fragmented as a result of the proposal.
3)	adversely affect habitat critical to the survival of an ecological community	The TEC patches within the study areas are maintained in a high condition and in the broader sense maintain an integral occurrence of an otherwise heavily disturbed TEC across its range. However, the limited proposed removal and modification to a portion of the TEC in the study area is not considered likely to adversely affect its habitat to the extent that a patch would be significantly impacted.

Criterion	Question	Response
4)	modify or destroy abiotic (non-living) factors (such as water, nutrients, or soil) necessary for an ecological community's survival, including reduction of groundwater levels, or substantial alteration of surface water drainage patterns	Direct removal of up to 0.04 ha of this TEC will have little to no impact on the abiotic factors necessary for the survival of a patch of Lowland Rainforest within the study area.
5)	cause a substantial change in the species composition of an occurrence of an ecological community, including causing a decline or loss of functionally important species, for example through regular burning or flora or fauna harvesting	The removal of up to 0.04 ha of this TEC, is unlikely to cause a substantial change in the species composition of Lowland Rainforest.
6)	cause a substantial reduction in the quality or integrity of an occurrence of an ecological community, including, but not limited to: - assisting invasive species, that are harmful to the listed ecological community, to become established, or - causing regular mobilisation of fertilisers, herbicides or other chemicals or pollutants into the ecological community which kill or inhibit the growth of species in the ecological community, or	The removal of 0.04 ha and predicted indirect impacts are marginal enough that it is considered unlikely to cause a substantial reduction in the quality or integrity of a patch of Lowland Rainforest. Mitigation measures are also proposed to remove the risk of invasive species or pathogens becoming established.
7)	interfere with the recovery of an ecological community.	A national recovery plan for this TEC is not available however it is not expected that the proposed impacts to patches of this TEC would interfere with its recovery in the study area or the broader listing.
Conclusion	**Is there likely to be a significant impact?**	**No. The DEGW is unlikely to have a significant impact on this critically endangered ecological community.**

5.7. Listed threatened and migratory species

The EPBC Act PMST (Appendix A) combined with a likelihood of occurrence assessment (Appendix B) returned a list of 21 threatened species and 6 migratory species that are known or likely to occur within the study area. These species have the potential to be impacted by the proposed works and have been assessed in accordance with the MNES Significant impact guidelines (CoA 2013):

Threatened ecological communities (n = 1)

- Lowland Rainforest of Subtropical Australia

Vulnerable species (n = 11)

- Slender marsdenia (*Marsdenia longiloba*)
- Ravine orchid (*Sarcochilus fitzgeraldii*)
- Stuttering frog (*Mixophyes balbus*)

- Sphagnum frog (*Philoria sphagnicolus*)
- Glossy black-cockatoo (*Calyptorhynchus lathami*)
- White-throated needletail (*Hirundapus caudacutus*)
- Black-breasted button-quail (*Turnix melanogaster*)
- Parma wallaby (*Notamacropus parma*)
- Long-nosed potoroo (*Potorous tridactylus*)
- Grey-headed flying-fox (*Pteropus poliocephalus*)
- Rainforest cool-skink (*Harrisoniascincus zia*)

Endangered species (n = 8)

- Cryptic forest twiner (*Tylophora woollsii*)
- Milky silkpod (*Parsonsia dorrigoensis*)
- Giant barred frog (*Mixophyes iteratus*)
- Rufous scrub-bird (*Atrichornis rufescens*)
- Pink underwing moth (*Phyllodes imperialis*) - southern subspecies
- Spotted-tailed quoll (*Dasyurus maculatus*)
- Southern greater glider (*Petauroides volans*)
- Koala (*Phascolarctos cinereus*)

Critically endangered species (n = 1)

- Scrub turpentine (*Rhodamnia rubescens*)

Migratory species (n = 5)

- Oriental cuckoo (*Cuculus optatus*)
- Black-faced monarch (*Monarcha melanopsis*)
- Satin flycatcher (*Myiagra cyanoleuca*)
- Rufous fantail (*Rhipidura rufifrons*)
- Spectacled monarch (*Symposiachrus trivirgatus*)

5.7.1. Vulnerable flora

Table 5: Species profile – *Marsdenia longiloba* (Slender marsdenia)

Overview	Comment
EPBC Act Status	Vulnerable
Threat abatement plan	No
Recovery plan	No
Habitat and ecology	In NSW, occurs at scattered locations on the north coast north from Barrington Tops. Subtropical and warm temperate rainforest, lowland moist eucalypt forest adjoining rainforest, areas with rock outcrops.
Extent of local occurrence	Twenty-four individuals were recorded within the study area with two BioNet records within the wider NP estate.
Impacts	Twenty-four individuals were recorded within the study area. NPWS will undertake pre-clearance surveys and micrositing prior to and during construction to ensure the recommended mitigation measures detailed in Table 39 of the ecological

Overview	Comment
	assessment are implemented to ensure the protection of each individual where practicably possible. Predicted direct impacts of four (4) individuals and disturbance to up to 9.27 ha of potential habitat have been considered for this assessment. Indirect impacts may occur during construction and operation through pedestrian trampling and potential spread of the soil borne pathogen *Phytophthora cinnamomi*.
Important population	No definition of important population is listed within the conservation advice. The MNES guidelines defines 'important population' as a population that is necessary for a species' long-term survival and recovery. This may include populations identified as such in recovery plans, and/or that are: • key source populations either for breeding or dispersal • populations that are necessary for maintaining genetic diversity, and/or • populations that are near the limit of the species range. Due to the limited number (2) of BioNet records for this species within the adjacent NPWS estate and considering 24 individuals were recorded within the study area during the targeted flora surveys there is potential these individuals form part of an important population for either dispersal or for maintaining genetic diversity. Therefore, he population in the study area has been precautionarily assumed to be important.

Table 6: Assessment of significance – Vulnerable flora: *Marsdenia longiloba* (Slender marsdenia)

Criterion	Question	Response
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:		
1)	lead to a long-term decrease in the size of an important population of a species	Twenty-four individuals were recorded within the study area, with four individuals expected to be impacted. Pre-clearance surveys will be undertaken prior to the construction of the track in accordance with Table 39 of the ecological assessment. Mitigation measures will be implemented prior to and during construction to avoid impacts to each individual, where practicably possible. The predicted impact of up to 9.27 ha of potential habitat including 2.49 ha of previously disturbed areas is not considered to constitute an impact that would lead to a long-term decrease in the size of this important population given the large area of predicted habitat within the adjacent NP estate (>17,000 ha according to the State Vegetation Type Map)
2)	reduce the area of occupancy of an important population	There is currently no estimate of the Area Of Occupancy (AOO) for this species, although its distribution is known from scattered sites on the NSW north coast from Hastings River northwards to Mount Nebo in Queensland (Forster 1996). The action is predicted to remove four (4) individuals and reduce the area of occupancy by9.27 ha within the

Criterion	Question	Response
		locality, inclusive of 2.49 ha of previously disturbed areas. According to the SVTM, it is estimated approximately >17,000 ha of potential suitable habitat for this species occurs in the adjacent NP estate.
3)	fragment an existing important population into two or more populations	Given the narrow nature of the proposal and proposed walking track width of up to 2 m the action will not form a barrier to the species considering pollen and seed transfer will not be impeded. Therefore, the proposal will not lead to the fragmentation of an existing important population.
4)	adversely affect habitat critical to the survival of a species	No critical habitat as defined under section 207A of the EPBC Act has been identified or included in the Register of critical habitat and there is no identified critical habitat within the conservation advice (DEWHA 2008). A total of 9.27 ha of potential habitat may be disturbed by the proposal, inclusive of 2.49 ha of previously disturbed areas. Considering >17,000ha extent of suitable habitat within and adjacent to the proposal area that will be retained, this impact is considered negligible.
5)	disrupt the breeding cycle of an important population	Activities that could harm the breeding cycle of this species include disturbances to seed dispersal, trampling of seedlings, and the removal of potential habitat. Within the study area, 24 individuals have been identified. The DEGW plans to preserve the majority of these individuals, with a predicted four (4) to be impacted occurring within the proposed walking track. As a result, it is unlikely that the breeding cycle of this significant population will be disrupted.
6)	modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The disturbance of 9.27 ha of potential habitat is unlikely to result in the decline of this species given that a large portion of the habitat has previously been disturbed and there are extensive areas (>17,000ha) of similar habitat present around the study area and in the wider NP estate.
7)	result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	Invasive species listed in the conservation advice (DCCEEW 2008) for this species includes weeds, particularly *Lantana camara*. *Lantana camara* was recorded across day four (4) of the DEGW. The proposal will incorporate a site-specific construction environmental management plan (CEMP) which will include measures to reduce the spread and introduction of weeds.
8)	introduce disease that may cause the species to decline, or	No threats from diseases are listed in the conservation advice for this species (DAWHE 2008), and it is unlikely that a disease would be introduced by the proposed works that may cause this species to decline.
9)	interfere substantially with the recovery of the species.	A national recovery plan for this species is not available at this time and recovery is guided by the conservation advice (DCCEEW 2008). Given the context of the proposal, the action is unlikely to interfere substantially with the recovery of this species.
Conclusion	**Is there likely to be a significant impact?**	**No. The DEGW is unlikely to have a significant impact on this vulnerable species.**

Table 7: Species profile - *Sarcochilus fitzgeraldii* (Ravine orchid)

Overview	Comment
EPBC Act Status	Vulnerable
Threat abatement plan	No
Recovery plan	No
Habitat and ecology	North-east NSW, north of the Macleay River, to Maleny in south-east Qld. On rocks or rarely on bases of trees, in subtropical rainforest, usually near streams, from 500-700 m.
Extent of local occurrence	334 individuals were recorded within the study area with >57 BioNet records within the wider NP estate.
Impacts	334 individuals were recorded within the study area. NPWS will undertake pre-clearance surveys prior to construction to ensure the recommended mitigation measures detailed in Table 39 of the ecological assessment are implemented to ensure the protection of each individual where practicably possible. Predicted direct impacts to 44 individuals occurring along the proposed walking track have been considered for this assessment. It is difficult to quantify the disturbance to potential habitat from the DEGW for this species given that it grows in niche microhabitats supported mostly by surface rock. Indirect impacts may occur during construction and operation through pedestrian trampling and potential for illegal poaching.
Important population	No definition of important population within the conservation advice. The MNES defines 'important population' is a population that is necessary for a species' long-term survival and recovery. This may include populations identified as such in recovery plans, and/or that are: • key source populations either for breeding or dispersal • populations that are necessary for maintaining genetic diversity, and/or • populations that are near the limit of the species range. There is potential that this species is an important population for either dispersal or for maintaining genetic diversity and therefore, the population in the study area has been precautionarily assumed to be important.

Table 8: Assessment of significance – Vulnerable flora: *Sarcochilus fitzgeraldii* (Ravine orchid)

Criterion	Question	Response
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:		
1)	lead to a long-term decrease in the size of an important population of a species	It is difficult to quantify the disturbance to potential habitat from the DEGW for this species given that it grows in niche microhabitats supported mostly by surface rock. An estimated 44 individuals will potentially be impacted, and 290 individuals avoided within the study area. Given the amount of potential habitat in the broader NP estate and the individuals estimated to be retained, the action is unlikely to lead to a long-term decrease in the size of this assumed important population.
2)	reduce the area of occupancy of an important population	There is currently no estimate of the AOO for this species in the conservation advice (DAWHE 2008b), however using the Atlas of Living Australia and a polygon of the records for northern NSW to south-east QLD, the AOO can be calculated as 208 km^2 (using 0.02-degree grid).

Criterion	Question	Response
		Its distribution is known in coastal subtropical rainforests and open forests of northern NSW north of the Macleay River to Maleny in south-east Queensland (Stanley & Ross, 1989; Weston, 1993). It is unlikely the DEGW will reduce the AOO of this assumed important population to the extent the population would be at risk given realignment of the track has been undertaken to avoid the larger populations (290 individuals) identified within the area. Specifically, this includes the avoidance of the *Sarcochilus fitzgeraldii* population at Tuckers Knob.
3)	fragment an existing important population into two or more populations	Given the context of the proposal, including the size and linear nature of the proposal, the action will not fragment this assumed important population.
4)	adversely affect habitat critical to the survival of a species	Critical habitat has not been identified for this species, although this habitat would likely constitute subtropical rainforest and open forest habitats at 500-700 m asl with sufficient microhabitats including cool moist areas with adequate surface rock. The action proposes to remove an area of the habitat described, however considering the surrounding habitat potential of approximately 8000 ha (based on SVTM and elevation) that has the potential to host these microhabitats, and is located in the adjacent NP estate, this impact is considered negligible.
5)	disrupt the breeding cycle of an important population	Activities likely to disrupt the breeding cycle of these species include interruptions to seed dispersal, the removal or alteration of rocky habitat and loss of micro habits such as shade due to removal of nearby vegetation and disturbance of growth strata on rock faces. Given the habitat to be disturbed is within a large contiguous patch of similar habitat (approx. 8000ha), and large populations of this species within the study area will be retained, it is unlikely that the breeding cycle of this assumed important population will be disrupted.
6)	modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal is not expected to decrease the availability or quality of habitat to the extent that the species is likely to decline.
7)	result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	Invasive weeds are a threat to this species (DAWHE 2008b). The proposal will incorporate a site-specific CEMP which will include measures to reduce the spread and introduction of weeds.
8)	introduce disease that may cause the species to decline, or	No diseases are listed as a threat to this species, and it is unlikely a disease would be potentially introduced as a result of the proposal.
9)	interfere substantially with the recovery of the species.	A national recovery plan for this species is not available, with recovery being guided by the conservation advice (DAWHE 2008b). The proposal is considered unlikely to interfere substantially with the recovery actions listed in the conservation advice.
Conclusion	**Is there likely to be a significant impact?**	**No. The DEGW is unlikely to have a significant impact on this vulnerable species.**

5.7.2. Vulnerable amphibians

Table 9: Species profile - Pouched frog (*Assa Darlingtoni*)

Overview	Comment
EPBC Act Status	Vulnerable
Threat abatement plan	Yes (chytridiomycosis)
Recovery plan	No
Habitat and ecology	Restricted to refugial closed forest communities (> 90% canopy cover), at elevations largely above 800 m. The species is mainly found in temperate and subtropical rainforests, but has also been recorded in wet sclerophyll forests.
Extent of local occurrence	Pouched frog were identified calling within the study area. Suitable habitat widely available with >120 BioNet records within the wider NP estate.
Impacts	Disturbance of 3.79 ha of potential habitat. Indirect impacts during construction through trampling and potential spread of Chytrid fungi causing the disease chytridiomycosis. An increase in ongoing indirect disturbance of adjacent habitat from increased human interaction and maintenance is anticipated.
Important population	The Dorrigo Plateau (NSW) subpopulation is considered an important population because it is the most southern limit of the species' range (DCCEEW 2023a).

Table 10: Assessment of significance – Vulnerable amphibians: Pouched frog

Criterion	Question	Response
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:		
1)	lead to a long-term decrease in the size of an important population of a species	It is considered unlikely that the disturbance of up to 3.79 ha of potential habitat, including 1.36 ha of previously disturbed area, would constitute an impact that would lead to a long-term decrease in the size of the important population given the large area of habitat immediately adjacent to the study area and wider NP estate. According to the SVTM, it is estimated >8,000 ha of potential suitable habitat that could host the microhabitats for this species occurs in the adjacent NP estate.
2)	reduce the area of occupancy of an important population	The AOO of the pouched frog is estimated to be 740 km^2 (DCCEEW 2023a), a portion of this estimate includes the important population that occurs on the Dorrigo Plateau with known sites occurring in the Dorrigo and Nymboi-Binderay NPs. The proposal will remove 3.79 ha of potential habitat, and therefore reduce the AOO of the pouched frog by up to 0.0379 km^2 or up to 0.0051%. The removal of 0.0051% of AOO is not considered a significant reduction in the AOO for this species.
3)	fragment an existing important population into two or more populations	The Dorrigo Plateau important population of this species occurs in the Dorrigo and Nymboi-Binderay NPs and the wider Dorrigo Plateau. Given the context of the proposal, including the location, size, primarily linear vegetation clearing and mobility of this species the proposal will not fragment this important population.
4)	adversely affect habitat critical to the survival of a species	No critical habitat as defined under section 207A of the EPBC Act has been identified or included in the Register of critical habitat. The conservation advice for this species lists habitat critical to the survival of this species as closed forest communities (> 90% canopy cover),

Criterion	Question	Response
		with an established layer of damp leaf litter (DCCEEW 2023a). A total of 3.79 ha of closed forest containing habitat for this species occurs within the proposal area. A proportion of this area (1.36 ha) has previously been impacted by the construction, operation and maintenance of existing dormant roads, formal walking tracks, informal historic trails, vehicle management trails and viewpoints. Lemckert (2000) observed that the pouched frog does not recolonise sites over at least the short term when the canopy is lost through disturbance, even after leaf litter is re-established. Considering the above and the overall context of the proposal, it is unlikely that the residual adverse impacts on this habitat would put the population at risk as the track will lead to minimal or no additional opening of the canopy over a narrow area through most of its length.
5)	disrupt the breeding cycle of an important population	Pouched frog eggs are laid under damp leaf litter, logs, rocks or anywhere on the forest floor (DPIE 2020) and despite year-round calling, breeding is mostly restricted to spring and summer (DCCEEW 2023a), however eggs have been recorded in autumn (F. Lemckert, personal comms, June 24, 2024). Given the variability in breeding seasons incidental impacts to eggs not observed during construction may occur, however in the context of the proposal it is considered unlikely that the breeding cycle for this species will be disrupted significantly.
6)	modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The disturbance of 3.79 ha of potential habitat is unlikely to result in the decline of this species given that a proportion of the habitat has previously been disturbed and there are extensive areas of similar habitat present immediately adjacent to the proposal area and wider NP estate (>8,000 ha of potential habitat that could host microhabitat for this species).
7)	result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	Invasive species listed in the conservation advice (DCCEEW 2023a) for this species includes weeds, given the potential habitat for this species contains little understorey growth and high amounts of leaf litter. The proposal will incorporate a site-specific CEMP which will include measures to reduce the spread and introduction of weeds.
8)	introduce disease that may cause the species to decline, or	Disease listed in the conservation advice (DCCEEW 2023a) for this species includes Chytridiomycosis caused by chytrid fungus. Chytrid fungi distribution is widespread in coastal eastern Australia and has previously been recorded on Dorrigo Plateau (Berger et al 1999, Kriger et al 2006). It is not known if natural populations of pouched frogs are susceptible to this disease as it is most associated with species that use permanent waterbodies (DCCEEW 2023a), however this transmission pathway is not essential and essentially every species tested for the fungus has had infected individuals and no species is known to be immune to its effects. It is considered unlikely that the disease would be further exacerbated in the study area to the extent that it causes the species to decline. The fungus is likely already widely established and use of existing tracks already provides a vector for its movement through the study area. A washdown station for visitors at different segments of the walk will also mitigate this risk.

Criterion	Question	Response
9)	interfere substantially with the recovery of the species.	A national recovery plan for this species is not available at this time and recovery is guided by the conservation advice. The primary conservation objective listed is to ensure that there is no further decline in the distribution of the pouched frog, and population size is stable or increasing, with existing habitat being protected and maintained (DCCEEW 2023a). Given the context of the proposal and very limited loss of habitat and impacts predicted to occur to this species, the proposal will not interfere substantially with the recovery of this species.
Conclusion	**Is there likely to be a significant impact?**	**No. The DEGW is unlikely to have a significant impact on this vulnerable species.**

Table 11: Species profile – Stuttering frog (*Mixophyes balbus*)

Overview	Comment
EPBC Act Status	Vulnerable
Threat abatement plan	Yes (Chytrid fungus)
Recovery plan	Yes
Habitat and ecology	Along the east coast of Australia from southern Qld to north-eastern Victoria. Rainforest and wet, tall open forest in the foothills and escarpment on the eastern side of the Great Dividing Range. Breeds in riffle zones in streams after rain events when water levels subside. Eggs are laid on rock shelves or shallow riffles in small, flowing streams.
Extent of local occurrence	The Dorrigo region appears to be a stronghold for this species. Suitable streams in rainforest and wet sclerophyll forest occur across the study area. A total of 19 BioNet records occur within the wider NP estate.
Impacts	Disturbance of 9.27 ha of potential foraging habitat and indirect impacts during construction and operation through trampling. Potential spread of Chytrid fungi and other pathogens. Impacts to breeding habitat will be limited through the construction of suspended walking bridges over streams.
Important populations	Currently, there is a lack of adequate information to accurately describe the spatial distribution of crucial populations of this species. Although the proposal is located at the core of its range and at typical altitude, until more accurate spatial distribution information becomes available, it is advisable to regard all populations of this species as important (DAWE 2021).

Table 12: Assessment of significance – Stuttering frog (*Mixophyes balbus*)

Criterion	Question	Response
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:		
1)	lead to a long-term decrease in the size of an important population of a species	It is considered unlikely that the disturbance of up to 9.27 ha of potential foraging and shelter habitat would constitute an impact that would lead to a long-term decrease in the size of the important population given the context of the proposal and abundance of habitat adjacent to the proposal area and wider NP estate. Breeding habitat will not be affected, and the species can be expected to use or be able to pass through any cleared areas.

Criterion	Question	Response
2)	reduce the area of occupancy of an important population	The AOO for this species is not stated within the conservation advice or Species Profile and Threats Database profile. 9.27 ha of potential habitat will be disturbed, but no breeding habitat is likely to be lost and the species can be expected to forage within the cleared areas of the track and camping grounds. In the context of the proposal the removal of foraging habitat and consequent AOO reduction is minimal given the available habitat within the surrounding areas. According to the SVTM, it is estimated up to 17,000 ha of available habitat could host these microhabitats such as permanent running streams for this species occur in the adjacent NP estate.
3)	fragment an existing important population into two or more populations	The stuttering frog is known to roam widely from the breeding streams and cross through more open habitats when doing so, including crossing smaller sealed roads. Given the context of the proposal, including the location, size, primarily linear vegetation and typically < 2 m width clearing and mobility of this species the proposal will not fragment this important population.
4)	adversely affect habitat critical to the survival of a species	No critical habitat as defined under section 207A of the EPBC Act has been identified or included in the Register of critical habitat. The conservation advice for this species suggests it is not practicable to describe habitat critical to the survival of this species due to large areas of unsurveyed potential habitat (DAWE 2021). Given that the impacts to the habitat of this species are primarily limited to non-breeding foraging and shelter habitat it is unlikely that the residual adverse impacts would put the population at risk.
5)	disrupt the breeding cycle of an important population	Impacts from the proposal that have the potential to disrupt the breeding cycle of an important population of stuttering frog include disturbances to breeding habitat through bridge construction and spread of Chytrid fungi. Operations will however, where possible, avoid breeding habitat (deep permeant pools of water) where the construction of suspended bridges will be installed over major crossings to reduce foot traffic through breeding habitat. To mitigate the potential spread of Chytrid fungi and other harmful pathogens, washdown stations will be installed at positions where the chemicals will not be able to directly enter the local waterways.
6)	modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The estimated disturbance of up to 9.27 ha of potential habitat is unlikely to result in the decline of this species given this species is known to forage in open areas and where possible breeding habitats will be avoided. Additionally, extensive areas of similar habitat occur adjacent to the proposal area and the wider NP estate.
7)	result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	Invasive weeds and feral species are listed as a threat to this species within the conservation advice (DAWE 2021). It is unlikely that the proposal will result in harmful species becoming more established than they currently are. Any risk will be managed through mitigation methods.
8)	introduce disease that may cause the species to decline, or	Disease listed in the conservation advice (DAWE 2021) for this species includes Chytridiomycosis caused by chytrid fungus.

Criterion	Question	Response
		Chytrid fungi distribution is widespread in coastal eastern Australia and has previously been recorded on Dorrigo Plateau (Berger et al 1999, Kriger et al 2006). Given the above, it is considered unlikely that the disease would be further exacerbated in the study area to the extent that it causes the species to decline as the disease is already present. A washdown station for visitors at different segments of the walk will also mitigate this risk.
9)	interfere substantially with the recovery of the species.	A national recovery plan has been adopted for this species (Hunter et al 2011). Given the mitigation recommendations aimed at invasive species and Chytrid fungi, it is considered unlikely that the proposal would interfere with a recovery objective or action of this plan.
Conclusion	**Is there likely to be a significant impact?**	**No. The DEGW is unlikely to have a significant impact on this vulnerable species.**

Table 13: Species profile – Sphagnum frog (*Philoria sphagnicolus*)

Overview	Comment
EPBC Act Status	Vulnerable
Threat abatement plan	No
Recovery plan	No
Habitat and ecology	Eastern escarpment of the Great Dividing Range in north-east NSW from Chaelundi State Forest south to Killabakh Nature Reserve near Comboyne. Rainforest (including Antarctic beech forest) and wet sclerophyll forests at high elevation, in sphagnum moss beds or seepages on steep slopes. *Philoria sphagnicola* is a habitat specialist typically found in wet sclerophyll forest or subtropical rainforest habitats at elevations above 600 m above sea level but can also occur at lower elevation (to about 250 m) in wet coastal foothills. Breeding habitat is located within permanently wet seepages. Eggs are laid in moist locations such as rock crevices, under logs or in burrows in sphagnum moss. They have direct development and there is no free-swimming tadpole stage.
Extent of local occurrence	Species known from the catchment and suitable freshwater stream habitat and soaks including sphagnum mosses occur within the study area. A total of 55 BioNet records occur within the wider NP estate.
Impacts	Direct removal of up to 3.24 ha of potential habitat (that could at time host suitable seepage habitat) for this species and indirect impacts during construction, through trampling and potential spread of Chytrid fungi causing the disease chytridiomycosis.
Important populations	No definition of important population is given in the conservation advice (TSSC 2023). The MNES significant impact guidelines defines 'important population' as a population that is necessary for a species' long-term survival and recovery. This may include populations identified as such in recovery plans, and/or that are: • key source populations either for breeding or dispersal • populations that are necessary for maintaining genetic diversity, and/or • populations that are near the limit of the species range. There is potential that this species is an important population for either dispersal or for maintaining genetic diversity and therefore, the population in the study area has been precautionarily assumed to be important.

Table 14: Assessment of significance – Sphagnum frog (*Philoria sphagnicolus*)

Criterion	Question	Response
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:		
1)	lead to a long-term decrease in the size of an important population of a species	It is considered unlikely that the disturbance of up to 3.24 ha of potential habitat, including 1.20 ha of previously disturbed areas would constitute an impact that would lead to a long-term decrease in the size of the important population given the abundance of habitat adjacent to the proposal area in the wider NP estate. According to the SVTM and mapped altitude, it is estimated approximately >8000 ha of potential suitable habitat that could host the microhabitats for this species occur in the adjacent NP estate.
2)	reduce the area of occupancy of an important population	The AOO of the sphagnum frog is estimated to be 820 km^2 (TSSC 2023). The proposal will remove 3.24 ha of potential habitat, and therefore reduce the AOO of the sphagnum frog by up to 0.0324 km^2 or up to 0.0040%. The removal of 0.0040% of AOO is not considered a significant reduction in the AOO for this species.
3)	fragment an existing important population into two or more populations	Given the context of the proposal, including the location, size and primarily linear vegetation clearing, the proposal will not fragment this important population.
4)	adversely affect habitat critical to the survival of a species	No critical habitat as defined under section 207A of the EPBC Act has been identified or included in the Register of critical habitat. Habitat likely to be important for sphagnum frog includes sphagnum moss beds or seepages on steep slopes above 600 m asl. The extent of area that may contain this habitat and that will be removed is 3.24 ha, of which the majority has been previously disturbed. This amount of habitat removal is considered unlikely to endanger the long-term survival of the species within the broader area given the amount of potential habitat available in the wider NP estate where it is considered >8000 ha of suitable habitat to host the required microhabitats for this species.
5)	disrupt the breeding cycle of an important population	Breeding pairs mate in concealed shallow burrows which the male excavates in mud, or under moss, rock or leaf litter (Knowles et al. 2004; Anstis 2017). Some populations of this species also utilize cracks in rock faces for their nests (Moore, 1958). Given the above, incidental impacts to eggs not observed during construction may occur, however in the context of the proposal it is considered unlikely that the breeding cycle for this species will be disrupted significantly and only for a short period during track construction.
6)	modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The disturbance of 3.24 ha of potential habitat is unlikely to result in the decline of this species given that the majority of the habitat has previously been disturbed and there are extensive areas of similar habitat present around the study area including the Dorrigo NP.
7)	result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	Feral pests and domesticated stock are recognised as a threat to this species (TSSC 2023). The proposal is unlikely to exacerbate these threats.
8)	introduce disease that may cause the species to decline, or	Disease listed in the conservation advice (TSSC 2023) for this species includes Chytridiomycosis caused by chytrid fungus.

Criterion	Question	Response
		Chytrid fungi distribution is widespread in coastal eastern Australia and has previously been recorded on Dorrigo Plateau (Berger et al 1999, Kriger et al 2006). Upland species living in wet environments have typically been quite susceptible to the fungus, but there are not clear recorded declines for this species that have been related to this disease. It is considered unlikely that the disease would be further exacerbated in the study area to the extent that it causes the species to decline as the disease is expected to already be present, widespread and active. A washdown station for visitors at different segments of the walk will also mitigate this risk.
9)	interfere substantially with the recovery of the species.	There is no current national recovery plan for the sphagnum frog. Conservation and management actions are listed in the conservation advice (TSSC 2023). The DEGW is unlikely to interfere with any of the listed actions.
Conclusion	**Is there likely to be a significant impact?**	**No. The DEGW is unlikely to have a significant impact on this vulnerable species.**

Table 15: Species profile – Giant barred frog (*Mixophyes iteratus*)

Overview	Comment
EPBC Act Status	Endangered
Threat abatement plan	Yes (Chytrid fungus, feral pigs)
Recovery plan	Yes
Habitat and ecology	Coast and ranges from Eumundi in south-east Qld to Warrimoo in the Blue Mountains. Freshwater permanent/semi-permanent streams, generally at lower elevation. Riparian rainforest or wet sclerophyll forest is favoured.
Extent of local occurrence	Species known from the catchment and suitable larger flowing permanent / semi-permanent stream habitat occur within the study area. A total of 28 BioNet records occur within the wider NP estate.
Impacts	Direct removal will occur of up to 1.20 ha of potential foraging habitat for this species and indirect impacts may also occur during construction, through trampling and potential spread of Chytrid fungi causing the disease chytridiomycosis.
Important populations	No identification of important populations is contained within the conservation advice for the giant barred frog (TSSC 2021). The MNES significant impact guidelines defines 'important population' is a population that is necessary for a species' long-term survival and recovery. This may include populations identified as such in recovery plans, and/or that are: • key source populations either for breeding or dispersal • populations that are necessary for maintaining genetic diversity, and/or • populations that are near the limit of the species range. There is potential that this species is an important population for either dispersal or for maintaining genetic diversity and therefore, the population in the study area has been precautionarily assumed to be important.

Table 16 Assessment of significance - Giant barred frog (*Mixophyes iteratus*)

Criterion	Question	Response
An action is likely to have a significant impact on a critically endangered or endangered species if there is a real chance or possibility that it will:		

Criterion	Question	Response
1)	lead to a long-term decrease in the size of an important population of a species	It is considered unlikely that the disturbance of up to 1.20 ha of potential habitat, including 0.18 ha of previously disturbed areas, will decrease the local and potentially important population given the abundance of habitat adjacent to the study area. The species is generally restricted to its breeding streams that will be protected by the use of bridges for crossings streams. The species can forage in cleared areas under canopies and often preferentially does so (Lemckert and Morse 1999) hence it should not show any decline in numbers as a result of the works.
2)	reduce the area of occupancy of an important population	The AOO of the giant barred frog is estimated to be 1908 km^2 (DCCEEW 2023a). The removal of 1.20 ha of potential habitat is not expected to lead to a decline in habitat occupancy by the frog as it is capable of using smaller cleared areas and remains closely tied to streams where the vegetation will be retained through the use of bridges. The proposal will remove up to 1.20 ha of potential habitat, and therefore reduce the AOO of the frog by up to 0.0120 km^2 or up to 0.00063%. The removal of 0.00063% of AOO is not considered a significant reduction in the AOO for this species.
3)	fragment an existing important population into two or more populations	Given the context of the proposal, including the location, size and proposed vegetation clearing, the proposal will not fragment this population.
4)	adversely affect habitat critical to the survival of a species	Critical habitat for this species has been included in the recovery plan and defines habitat critical for breeding as: • permanent freshwater streams from 0-700 m in altitude, in rainforest. Impacts to breeding habitat will be limited through the construction of suspended bridges and therefore, the DEGW will not adversely affect breeding habitat critical to the survival of a species.
5)	disrupt the breeding cycle of an important population	giant barred frog eggs are deposited above water in overhangs on banks. Larvae are bottom dwellers in still or slowly flowing pools or at the sides of streams. Breeding habitat is restricted to flowing streams which involves higher order drainage lines within the study area. Impacts to these areas will be limited given the design of the suspended bridges to avoid critical bank habitat. Therefore, it is considered unlikely that the breeding habitat will be disturbed and so disrupt the breeding cycle of a population.
6)	modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The disturbance of 1.20 ha of potential habitat is unlikely to result in the decline of this species given that the majority of the habitat has previously been disturbed and there are extensive areas of similar habitat present around the study area including the in the wider NP estate covering >17,000 ha.
7)	result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	Invasive species listed in the conservation advice (DCCEEW 2021) for this species includes threats from grazing, trampling and predation. This includes impacts from feral pigs and weeds. The proposal will also incorporate a site-specific CEMP which will include measures to reduce the spread and introduction of weeds and invasive pests.
8)	introduce disease that may cause the species to decline, or	Disease listed in the conservation advice (DCCEEW 2023a) for this species includes Chytridiomycosis caused by chytrid fungus. Chytrid fungi distribution is widespread in coastal eastern Australia and has previously been recorded on Dorrigo Plateau (Berger et al 1999, Kriger et al 2006).

Criterion	Question	Response
		Given the presence of the disease already, it is considered unlikely that the disease would be further exacerbated in the study area to the extent that it causes the species to decline. A washdown station for visitors at different segments of the walk will also mitigate this risk.
9)	interfere substantially with the recovery of the species.	The national recovery plan for stream frogs identifies objectives and actions to assist in the recovery of this species. The following recovery actions have been identified in the plan that are considered relative to the DEGW: • minimise spread of disease through implementation of most up to date protocols in the vicinity of frog populations • minimise the impact of recreational activities at all extant population sites and in headwater sub-catchments. Considering the proposed mitigations, including washdown stations to minimise spread of disease and the installation of suspended bridges to avoid disturbance to deep permanent pools of water (breeding habitat), the proposal will not interfere substantially with the recovery actions and objectives for this species.
Conclusion	**Is there likely to be a significant impact?**	**No. The DEGW is unlikely to have a significant impact on this vulnerable species.**

5.7.3. Vulnerable birds

Table 17: Species profile – South-eastern glossy black-cockatoo (*Calyptorhynchus lathami*)

Overview	Comment
EPBC Act Status	Vulnerable
Threat abatement plan	No
Recovery plan	No
Habitat and ecology	The species is uncommon although widespread throughout suitable forest and woodland habitats, from the central Queensland coast to East Gippsland in Victoria, and inland to the southern tablelands and central western plains of NSW, with a small population in the Riverina. Inhabits open forest and woodlands of the coast and the Great Dividing Range where stands of sheoak occur. *Allocasuarina littoralis* (black sheoak) and *A. torulosa* (forest sheoak) are important foods.
Extent of local occurrence	Suitable habitat including stands of feed trees (*Allocasuarina* species) identified within the study area. A total of 15 BioNet records occur within the wider NP estate.
Impacts	Disturbance of up to 3.56 ha of potential forest habitat which may present foraging for this species and up to six (6) HBTs that may provide roosting habitat. Incidental mortality during construction. Ongoing indirect disturbance of adjacent habitat from increased human interaction and maintenance.
Important populations	No definition of an important population within the conservation advice. The MNES defines 'important population' is a population that is necessary for a species' long-term survival and recovery. In regard to the population within the study area the population is not considered to be important due to the following: • key source populations either for breeding or dispersal ○ given that the predominant habitat type within the study area does not contain feed trees for this species it is unlikely that the population present is key for breeding or dispersal • populations that are necessary for maintaining genetic diversity

Overview	Comment
	○ a potential population that occurs within the study area would maintain genetic exchange with the population in the wider NP estate • populations that are near the limit of the species range ○ the population is not near a limit of this species range.

Table 18: Assessment of significance – South-eastern glossy black-cockatoo (*Calyptorhynchus lathami*)

Criterion	Question	Response
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:		
1)	lead to a long-term decrease in the size of an important population of a species	The population is not considered important.
2)	reduce the area of occupancy of an important population	The population is not considered important.
3)	fragment an existing important population into two or more populations	The population is not considered important.
4)	adversely affect habitat critical to the survival of a species	Habitat critical to the survival of this species refers to areas that are necessary: • for activities such as foraging, breeding, roosting, or dispersal • for the long-term maintenance of the species or ecological community (including the maintenance of species essential to the survival of the species or ecological community, such as pollinators) • to maintain genetic diversity and long-term evolutionary development • for the reintroduction of populations or recovery of the species or ecological community. Foraging habitat for this species includes nine species of sheoaks (*Allocasuarina* spp. and *Casuarina* spp.). The extent of this development footprint that contains habitat for this species is 3.56 ha, of which the majority has been previously disturbed. Additionally, up to six (6) HBTs with suitable roosting hollows for this species will be impacted. This amount of habitat removal is considered unlikely to endanger the long-term survival of the species given the habitat that will remain within the broader NP estate. According to the SVTM, it is estimated approximately >5,000 ha of wet sclerophyll forest occurs in the adjacent NP estate, hosting foraging and breeding habitat for this species.
5)	disrupt the breeding cycle of an important population	The population is not considered important. Additionally, pre-clearance surveys will be conducted of HBTs to avoid direct impacts to breeding individuals and reduce instances of possible mortality.
6)	modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The disturbance of 3.56 ha of potential habitat is unlikely to result in the decline of this species given that the majority of the habitat has previously been disturbed and there are extensive areas of similar habitat present around the study area and wider NP estate.

Criterion	Question	Response
7)	result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	Invasive species that could affect these species, such as weeds, are considered a minor impact to this species and are unlikely to become additionally established as a result of the proposal.
8)	introduce disease that may cause the species to decline, or	Psittacine Beak and Feather Disease (PBFD) is a potentially fatal disease to the south-eastern glossy black cockatoo, typically transferring between adults, nestlings and contaminated nests (DCCEEW 2022). However, this threat is considered low, and the removal of up to six (6) HBTs is unlikely to introduce or increase the transmission of this disease PBFD.
9)	interfere substantially with the recovery of the species.	There is currently no recovery plan for this species. The conservation advice (DCCEEW 2022) describes the priority recovery actions, which includes the protection and enhancement of the extent and quality of habitat for this species. Given the context of the proposal, the potential disturbance to 3.56 ha of foraging habitat and six (6) HBTs is unlikely to interfere substantially with the recovery of this species due to the available habitat of similar quality in the adjacent NP estate.
Conclusion	**Is there likely to be a significant impact?**	**No. The DEGW is unlikely to have a significant impact on this vulnerable species.**

Table 19: Species profile - White-throated needletail (*Hirundapus caudacutus*)

Overview	Comment
EPBC Act Status	Vulnerable, migratory
Threat abatement plan	No
Recovery plan	No
Habitat and ecology	All coastal regions of NSW, inland to the western slopes and inland plains of the Great Divide. Occur most often over open forest and rainforest, as well as heathland, and remnant vegetation in farmland.
Extent of local occurrence	Species is mostly aerial in Australia although it is known from the locality. A total of 20 BioNet records occur within the wider NP estate.
Impacts	Although this species is aerial it is mostly recorded flying over large tracts of native forest in which the proposed disturbance to is 9.34 ha of potential habitat. Indirect impacts during construction and operation through pedestrian activity and maintenance.

Important populations	No definition of an important population within the conservation advice. The MNES defines 'important population' is a population that is necessary for a species' long-term survival and recovery. In regard to the population within the study area the population is not considered to be important due to the following:
	• key source populations either for breeding or dispersal
	  ○ Australia does not contain breeding habitat for this species
	• populations that are necessary for maintaining genetic diversity, and/or
	  ○ the population is migratory and nomadic; thus, the proposal would not affect their genetic composition
	• populations that are near the limit of the species range

Overview	Comment
	○ the population is a migratory species, and the study area is not located in a limit of this distribution.

Table 20: Assessment of significance – White-throated needletail (*Hirundapus caudacutus*)

Criterion	Question	Response
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:		
1)	lead to a long-term decrease in the size of an important population of a species	The population is not considered important.
2)	reduce the area of occupancy of an important population	The population is not considered important.
3)	fragment an existing important population into two or more populations	The population is not considered important.
4)	adversely affect habitat critical to the survival of a species	No critical habitat has been defined under section 207A of the EPBC Act. In Australia, this species is known to almost always forage aerially, above habitats ranging from heavily treed forests to open habitats (Learmonth 1951; McDonald 1938; Tarburton 1993; Templeton 1991), however they occasionally feed much closer to the ground in open habitats. Roosting habitat for this species consists of trees in forests and woodlands, both among dense foliage in the canopy or in hollows (Corben et al. 1982; Day 1993; Quested 1982; Tarburton 1993). The extent of this habitat that will be disturbed is 9.34 ha, of which a large portion has been previously disturbed. This amount of habitat removal is considered unlikely to endanger the long-term survival of the species within the broader area given the high amount of contiguous potential habitat within the locality.
5)	disrupt the breeding cycle of an important population	The population is not considered important.
6)	modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The disturbance of 9.34 ha of potential habitat is unlikely to result in the decline of this species given that it is mostly aerial and that a large portion of this habitat will remain adjacent to the proposal area and in the wider NP estate totally >17,000ha.
7)	result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	Invasive species are not listed in the conservation advice for this species (TSSC 2019) however the proposal will incorporate a site-specific CEMP which will include measures to reduce the spread and introduction of weeds and invasive pests.
8)	introduce disease that may cause the species to decline, or	No threats from disease are listed within the conservation advice for this species (TSSC 2019). In lieu of this and the context of the proposal, it is considered unlikely that the proposal would introduce or exacerbate any disease that may cause the species to decline.
9)	interfere substantially with the recovery of the species.	There is currently no national recovery plan for the White-throated Needletail. Primary conservation actions are listed in the conservation advice (TSSC 2019). The proposed action is unlikely to interfere with any of the listed actions.
Conclusion	**Is there likely to be a significant impact?**	**No. The DEGW is unlikely to have a significant impact on this vulnerable species.**

Table 21: Species profile – Black-breasted button-quail (*Turnix melanogaster*)

Overview	Comment
EPBC Act Status	Vulnerable
Threat abatement plan	Yes (Feral cats, feral pigs, European red fox)
Recovery plan	Yes
Habitat and ecology	South-eastern Qld and far north-eastern NSW, mainly on and east of the Great Divide but extending inland to the inner western slopes. Very few NSW records in recent times. Dry rainforests, vine forest and vine thickets. May also occupy wetter subtropical rainforests, sometimes in association with moist eucalypt forest.
Extent of local occurrence	Suitable habitat occurs within the study area.
Impacts	Potential for disturbance of up to 9.27 ha of forest habitat which may present foraging and nesting habitat for this species. Incidental mortality during construction. Indirect impacts during construction and operation through pedestrian activity and maintenance.
Important population	Important population is any subpopulation or NSW populations in the southern distribution. All populations in New South Wales are important, especially those at the southern limit of the species' range near Dorrigo and Walcha. These are important source populations which are required to be maintained if the species is to persist in the long-term in New South Wales.

Table 22: Assessment of significance - Black-breasted button-quail (*Turnix melanogaster*)

Criterion	Question	Response
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:		
1)	lead to a long-term decrease in the size of an important population of a species	It is considered unlikely that the disturbance of 9.27 ha of potential habitat, including 2.49 ha of previously disturbed areas, would constitute an impact that would lead to a long-term decrease in the size of the important population given the abundance of habitat adjacent to the proposal area.
2)	reduce the area of occupancy of an important population	The total AOO is estimated to be approximately 750 km², but this estimate is of low reliability, and it is likely that the AOO is underestimated (DCCEEW 2024). Given this low reliability and considering there are no recorded sightings within the last 20 years, it is highly likely that the species no longer occurs in the Dorrigo locality. According to the SVTM, it is estimated approximately >17,000 ha of potential habitat in the form of Rainforest and Wet Sclerophyll Forest occurs in the adjacent NP estate. As such the disturbance of up to 9.27 ha of potential habitat constitutes a very small area (0.0005%) of habitat that is available in the adjacent vicinity and is unlikely the proposal will reduce the AOO of this important population.
3)	fragment an existing important population into two or more populations	Given the context of the proposal, including the location, size and proposed vegetation clearing, the proposal will not fragment this important population and it is reasonable to assume that any important population that may still occur within the locality would occur in the wider region. The

Criterion	Question	Response
		species should easily be able to move across the areas of clearing created by the proposed works and so it would not create any barrier to movement.
4)	adversely affect habitat critical to the survival of a species	No critical habitat has been defined under section 207A of the EPBC Act. Habitat critical to the survival of this species is given within the recovery plan (CoA 2022). Habitat critical to the survival of the species occurs within the study area as potential foraging and breeding habitat. The extent of this habitat to be removed is 9.27 ha. This amount of habitat removal is considered unlikely to endanger the long-term survival of a local population should the species still exist within the broader area given the high amount of contiguous potential habitat within the locality.
5)	disrupt the breeding cycle of an important population	The breeding season generally occurs from September to April-May, in which nests are created and consist of a scrape in the ground, lined with leaves, grass or moss (DCCEEW 2024). Pre-clearance surveys will aim to identify potential signs of nesting to limit impacts to this species. Given the shy nature of this species, it is considered unlikely that it will situate its nests close to the DEGW during its operation.
6)	modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The disturbance of 9.27 ha of potential habitat is unlikely to result in the decline of this species given that a large portion of the land to be impacted by the development has previously been disturbed and that there are extensive areas of similar habitat present around the study area and in the wider NP estate totalling >17,000 ha.
7)	result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	Currently, the main invasive threat to this species is weed invasion and predation. This includes weeds, particularly those that gradually smother the leaf litter layer. Cats and European foxes as feral predators are also an identified significant threat (CoA 2022). The proposal will incorporate a site-specific CEMP which will include measures to reduce the spread and introduction of weeds. The presence and extent of feral predators is not expected to increase with the minor additional clearing of lands and use of what are mainly already established walking tracks.
8)	introduce disease that may cause the species to decline, or	Disease transmission by feral pigs may be a threat for this species, however the proposed impacts are unlikely to exacerbate this threat within the locality.
9)	interfere substantially with the recovery of the species.	The national recovery plan for Black-breasted Button-quail identifies objectives and actions to assist in the recovery of this species. Given the context of the proposal and limited impacts predicted to occur to this species, the proposal will not interfere substantially with the recovery of this species.
Conclusion	**Is there likely to be a significant impact?**	**No. The DEGW is unlikely to have a significant impact on this vulnerable species.**

5.7.4. Vulnerable mammals

Table 23: Species profile – Parma wallaby (*Notamacropus parma*)

Overview	Parma wallaby
EPBC Act Status	Vulnerable
Threat abatement plan	Yes (feral cats, European red fox)
Recovery plan	No
Habitat and ecology	Their range is now confined to the coast and ranges of central and northern NSW from the Gosford district to south of the Bruxner Highway between Tenterfield and Casino. Preferred habitat is moist eucalypt forest with thick, shrubby understorey, often with nearby grassy areas, rainforest margins and occasionally drier eucalypt forest.
Extent of local occurrence	Suitable habitat occurs within the study area and 8 BioNet records are known from the wider NP estate.
Impacts	Disturbance of up to 9.27 ha of potential habitat. An increase in ongoing indirect disturbance of adjacent habitat from increased human interaction and maintenance is anticipated.
Important population	Populations important to the survival of the parma wallaby include populations at the limits of the species' range, outlying populations, stronghold populations, research populations and other populations where recovery actions, such as predator control and reintroductions, are being implemented (DCCEEW 2022a). Upper altitudinal sites include the Dorrigo Plateau and therefore the population in the study area has been precautionarily assumed to be important.

Table 24: Assessment of significance - Parma wallaby (*Notamacropus parma*)

Criterion	Question	Response
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:		
1)	lead to a long-term decrease in the size of an important population of a species	It is considered unlikely that the disturbance of 9.27 ha of potential habitat, including 2.49 ha of previously disturbed areas would constitute an impact that would lead to a long-term decrease in the size of the important population given the abundance of habitat adjacent to the proposal area.
2)	reduce the area of occupancy of an important population	The AOO for this species is estimated to be 590 km^2 (DCCEEW 2022a). The assumed important population's AOO for the locality is unknown. The proposal will remove up to 9.27 ha of potential habitat, and therefore reduce the AOO of the parma wallaby by up to 0.0927 km^2 or up to 0.00016%. The removal of 0.00016% of AOO is not considered a significant reduction in the AOO for this species.
3)	fragment an existing important population into two or more populations	Given the context of the proposal, including the location, size, proposed vegetation clearing and this species mobility, the proposal will not fragment this important population. The parma wallaby will be able to move around the outside of the development and also should not find the area of narrow open track or camping areas to form any barrier to movement, which they should easily be able to cross.
4)	adversely affect habitat critical to the survival of a species	The habitat critical to the survival of the parma wallaby includes: • occupied forested habitat

Criterion	Question	Response
		• unoccupied forested areas adjacent or near known occurrences, which can provide future habitat for natural range expansion, dispersal or translocation • areas of habitat that supported the species in the past, but from which they are now absent (DCCEEW 2022a). Potential habitat for parma wallaby was identified within the study area, with eight (8) records occurring within the wider NP estate. Given the context of the proposal as a small component of a much larger area of suitable habitat falling largely within reserves, the impact to this habitat is considered negligible.
5)	disrupt the breeding cycle of an important population	There are no predicted impacts to the breeding cycle of this important population.
6)	modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The disturbance of 9.27 ha of potential habitat is unlikely to result in the decline of this species given that a large portion of that habitat has previously been disturbed and there are extensive areas of similar habitat present around the study area and into the wider NP estate totalling >17,000 ha.
7)	result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	Invasive species including feral animals and weeds are a risk to this species. However, it is unlikely that the proposal will introduce any new invasive species that are a threat, and the proposal will incorporate a site-specific CEMP which will include measures to reduce the spread and introduction of weeds and already established invasive pests including the fox and the cat.
8)	introduce disease that may cause the species to decline, or	Disease that could affect these species is unlikely to be introduced as a result of the proposed works.
9)	interfere substantially with the recovery of the species.	The objectives within the recovery plan for this species is that population decline is arrested and reversed; geographic range is increased by reintroductions to parts of the range from which the species has disappeared; population connectivity is maintained/restored (DCCEEW 2022a). Given the context of the proposal and limited impacts predicted to occur to this species, the proposal will not interfere substantially with the recovery of this species.
Conclusion	**Is there likely to be a significant impact?**	**No. The DEGW is unlikely to have a significant impact on these vulnerable species.**

Table 25: Species profile - Long-nosed potoroo (*Potorous tridactylus*)

Overview	Long-nosed potoroo
EPBC Act Status	Vulnerable
Threat abatement plan	Yes (feral cats, European red fox)
Recovery plan	No
Habitat and ecology	In NSW it is generally restricted to coastal heaths and forests east of the Great Dividing Range, with an annual rainfall exceeding 760 mm. Coastal heaths and dry and wet sclerophyll forests.
Extent of local occurrence	Suitable wet sclerophyll forest occurs within the study area. Four (4) BioNet records occur within the wider NP estate.

Overview	Long-nosed potoroo
Impacts	Disturbance of up to 9.27 ha of suitable forest. Ongoing disturbance of adjacent habitat from increased human interaction and maintenance.
Important population	Populations important to the survival of the northern long-nosed potoroo include populations at the limits of the species' range, outlying populations, stronghold populations, island populations, research populations and other populations where recovery actions, such as predator control and reintroductions, are being implemented. The DNP and BNP are not listed as an important population (DAWE 2022). Thus, no important population occurs for the long-nosed potoroo within the study area.

Table 26: Assessment of significance - Long-nosed potoroo (*Potorous tridactylus*)

Criterion	Question	Response
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:		
1)	lead to a long-term decrease in the size of an important population of a species	The population is not listed as important.
2)	reduce the area of occupancy of an important population	The population is not listed as important.
3)	fragment an existing important population into two or more populations	The population is not listed as important.
4)	adversely affect habitat critical to the survival of a species	No critical habitat as defined under section 207A of the EPBC Act has been identified or included in the Register of critical habitat. As listed in the conservation advice, the habitat critical to the survival of the long-nosed potoroo includes: • occupied forested habitats larger than 0.1 km^2 • unoccupied forested areas (larger than 0.1 km^2), which are either adjacent or proximal to extant subpopulations, may also be considered critical if they have the potential to provide future habitat for the northern long-nosed potoroo as either a natural range expansion or as a translocation site for at-risk populations • areas of habitat that supported the northern long-nosed potoroo in the past, but from which they are now absent, for example, because of high predation following a bushfire event, are also habitat critical, as the species could be reintroduced to or recolonise these sites in the future (DAWE 2022). Potential critical habitat for the Long-nosed Potoroo was identified within the study area, with four (4) records occurring within the wider NP estate. Given the context of the proposal, the impact to this habitat is considered negligible.
5)	disrupt the breeding cycle of an important population	The population is not listed as important. Additionally, there are no predicted impacts to the breeding cycle of a population.
6)	modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The disturbance of 9.27 ha of potential habitat is unlikely to result in the decline of this species given that there are extensive areas of similar habitat present around the study area and into the wider NP estate. The species is mobile, and the narrowness of the tracks would not restrict movements across the landscape.

Criterion	Question	Response
7)	result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	Invasive species including feral animals and weeds are a risk to this species. In particular, cats and foxes are a likely serious threat to this critical weight range mammal but would already be present across the study area. However, it is unlikely that the proposal will introduce any new invasive species that are a threat or increase the threat from invasive species already present. The proposal will incorporate a site-specific CEMP which will include measures to reduce the spread and introduction of weeds and invasive pests.
8)	introduce disease that may cause the species to decline, or	Disease is not known to be a significant threat to this species. Disease that could affect these species is unlikely to be introduced as a result of the proposed works.
9)	interfere substantially with the recovery of the species.	The objectives within the recovery plan for this species is that population decline is arrested and reversed; geographic range is increased by reintroductions to parts of the range from which the species has disappeared; population connectivity is maintained/restored (DCCEEW 2022a). Given the context of the proposal and limited impacts predicted to occur to this species, the proposal will not interfere substantially with the recovery of this species.
Conclusion	**Is there likely to be a significant impact?**	**No. The DEGW is unlikely to have a significant impact on these vulnerable species.**

Table 27: Species profile – Grey-headed flying-fox (*Pteropus poliocephalus*)

Overview	Comment
EPBC Act Status	Vulnerable
Threat abatement plan	No
Recovery plan	Yes
Habitat and ecology	Along the eastern coast of Australia, from Bundaberg in Qld to Melbourne in Victoria. Subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops.
Extent of local occurrence	No flying-fox camps were recorded in the study area. However, suitable foraging habitat occurs within the study area.
Impacts	Direct impact of up to 9.27 ha of suitable foraging habitat. No roosting habitat is expected to be impacted given no camps were observed within the study area.
Important population	The grey-headed flying-fox is considered to be a single, mobile population with individuals distributed across Queensland, New South Wales, Victoria, South Australia, Tasmania and the ACT and therefore the entire population is considered important.

Table 28: Assessment of significance - Grey-headed flying-fox (*Pteropus poliocephalus*)

Criterion	Question	Response
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:		
1)	lead to a long-term decrease in the size of an important population of a species	The grey Headed flying Fox (GHFF) is considered one population due to the constant exchange of genetic material between individuals and its movement between camps throughout its entire geographic range (DAWE 2021). Maternity or another roosting habitat is considered important

Criterion	Question	Response
		habitat for this species. According to the national flying-fox monitoring program, no GHFF camps currently occur or have ever been recorded within the study area (DCCEEW 2024b). The nearest active GHFF camp occurs at Bellingen Island approximately 20 km southeast of the study area and is considered a nationally important camp. The DARC will impact 16.86 ha of potential foraging habitat for the GHFF. Given the proximity of other suitable habitat outside the study area, this removal would not constitute an impact that would lead to the long-term decrease in the size of an important population of GHFF.
2)	reduce the area of occupancy of an important population	There is currently no estimate of the AOO for this species, although its distribution occurs over most of eastern Australia. The proposal will reduce the extent of available foraging habitat for the GHFF (9.27 ha).
3)	fragment an existing important population into two or more populations	Given the context of the proposal, including the location, size, proposed limited vegetation clearing and this species' mobility, the proposal will not fragment this important population.
4)	adversely affect habitat critical to the survival of a species	Habitat critical to the survival of the GHFF is listed within the recovery plan for this species (DAWE 2021). Critical habitat may occur where the existence of important winter and spring flowering vegetation communities occur, of which none occur within the study area. Habitat critical to the survival of this species also includes vegetation that does not contain the tree species listed in the recovery plan, but which is used for roosting at a nationally important camp, or for foraging within 20 km of an important camp. The nearest active GHFF camp occurs at Bellingen Island approximately 20 km southeast of the study area and is considered a nationally important camp. However, given that vegetation for removal is mostly previously disturbed potential foraging habitat, it is not considered likely to adversely affect any critical habitat for this species to the extent that the species would decline.
5)	disrupt the breeding cycle of an important population	The proposed action will not disrupt the breeding cycle of GHFF given that no camps will be affected.
6)	modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The disturbance of 9.27 ha of potential foraging habitat is unlikely to result in the decline of this species given that the majority of the habitat has previously been disturbed and there are extensive areas of similar habitat present around the study area and in the wider NP estate totalling >17,000 ha of potential foraging habitat.
7)	result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	Invasive species are not listed as a threat within the recovery plan for this species (DAWE 2021), the proposal will incorporate a site-specific CEMP which will include measures to reduce the spread and introduction of weeds and invasive pests.
8)	introduce disease that may cause the species to decline, or	There is very little information available on the impact of disease on Australian flying-fox populations, including grey-headed flying-foxes (DAWE 2021). Given the context of this

Criterion	Question	Response
		proposal, disease that could affect this species is unlikely to be introduced.
9)	interfere substantially with the recovery of the species.	The disturbance of 9.27 ha of foraging habitat is unlikely to interfere substantially with the species' recovery as there has never been a camp within the study area and this foraging habitat represents a very minor proportion of available habitat in the immediate and broader area
Conclusion	**Is there likely to be a significant impact?**	**No. The DEGW is unlikely to have a significant impact on these vulnerable species.**

5.7.5. Vulnerable reptiles

Table 29: Species profile – Rainforest cool-skink (*Harrisoniascincus zia*)

Overview	Rainforest Cool-skink
EPBC Act Status	Vulnerable
Threat abatement plan	No
Recovery plan	No
Habitat and ecology	Generally, occur at high elevation in NSW and QLD ranging from > 500 m elevation, with most occurrences from > 700 m. Inhabit elevation areas with *Nothofagus moorei* (Antarctic beech).
Extent of local occurrence	Species distribution overlaps with study area and suitable habitat occurs. Five (5) BioNet records occur within the wider NP estate,
Impacts	Disturbance of 5.34 ha of potential habitat. An increase in ongoing indirect disturbance of adjacent habitat from increased human interaction and maintenance is anticipated however this is considered marginal given the already high volume of visitors and maintenance that currently occurs.
Important population	All populations are critical to the survival of the rainforest cool-skink. Populations that have the capacity to move to higher elevation or have an increased resilience to changes in climatic conditions due to their physiology (e.g., thermal / dehydration tolerances) and/or ecology (e.g., inhabiting boulder areas), may be more resilient to climate change impacts and are therefore important populations. However, such attributes have not been studied for populations and so it is assumed that that the population in the study area may have important attributes and so be an important population.

Table 30: Assessment of significance - Rainforest cool-skink (*Harrisoniascincus zia*)

Criterion	Question	Response
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:		
1)	lead to a long-term decrease in the size of an important population of a species	It is considered unlikely that the disturbance of 5.34 ha of potential habitat, including 1.18 ha of previously disturbed areas, would constitute an impact that would lead to a long-term decrease in the size of the important population given the abundance of habitat adjacent to the study area.

Criterion	Question	Response
2)	reduce the area of occupancy of an important population	The AOO for this species is estimated to be between 250–2000 km^2 (DCCEEW 2023b). The AOO of this important population is unknown. The proposal will remove up to 5.34 ha of potential habitat, and therefore reduce the AOO of the rainforest cool-skink by up to 0.0534 km^2 or up to 0.00021%. The removal of 0.00021% of AOO is not considered a significant reduction in the AOO for this species.
3)	fragment an existing important population into two or more populations	Given the context of the proposal, including the location, size, proposed vegetation clearing, the proposal is not expected to fragment this important population. The species is small, has a specialisation in habitat and would not have high levels of mobility, but the gaps created by the track and the expected still retained canopy over those gaps would not be expected to create any barriers to movement. Camping areas may be less able to be crossed, but movement can occur around those sites.
4)	adversely affect habitat critical to the survival of a species	No critical habitat as defined under section 207A of the EPBC Act has been identified or included in the Register of critical habitat. The Conservation advice lists critical habitat for rainforest cool-skink as all areas with habitat attributes and that occur above 500 m elevation within the species distribution (DCCEEW 2023b). In the absence of targeted survey, the habitat within the study area is considered critical habitat. The extent of this habitat to be removed is 5.34 ha, of which a large portion has been previously disturbed. This amount of habitat removal is considered unlikely to endanger the long-term survival of the important population within the study area.
5)	disrupt the breeding cycle of an important population	The rainforest cool-skink lays eggs in early January in shallow depressions under a surface structure of moss or bark (DCCEEW 2023b). The potential disturbance of up to 5.34 ha of potential habitat is considered unlikely to impact this breeding cycle of the important population given the extensive areas of habitat that will remain in and adjacent to the study area. According to the SVTM, it is estimated approximately >12,000 ha of rainforest or potential suitable habitat for this species occurs in the adjacent NP estate.
6)	modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The disturbance of 5.34 ha of potential habitat is likely to result in a decline of this species. However, this level of decline would be minimal considering the majority of the habitat has been subject to previous disturbance and the large extent of similar habitat present around the study area and the wider NP estate and would not be expected to cause a significant decline in the overall population.
7)	result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	No threats from invasive species are listed within the conservation advice for this species (DCCEEW 2023b). It is also unlikely that the proposal will introduce any new invasive species that are a threat, and the proposal will incorporate a

Criterion	Question	Response
		site-specific CEMP which will include measures to reduce the spread and introduction of weeds and invasive pests.
8)	introduce disease that may cause the species to decline, or	No threats from disease are listed within the conservation advice for this species (DCCEEW 2023b). In lieu of this and the context of the proposal, it is considered unlikely that the proposal would introduce or exacerbate any disease that may cause the species to decline.
9)	interfere substantially with the recovery of the species.	There is no national current recovery plan for rainforest cool-skink. Conservation and recovery actions are listed in the conservation advice (DCCEEW 2023b). The proposed action is unlikely to interfere with any of the listed actions.
Conclusion	**Is there likely to be a significant impact?**	**No. The DEWG is unlikely to have a significant impact on this vulnerable species.**

5.7.6. Endangered flora

Table 31: Species profile – *Parsonsia dorrigoensis* (Milky silkpod)

Overview	*Parsonsia dorrigoensis*
EPBC Act Status	Endangered
Threat abatement plan	No
Recovery plan	Yes - Northern Rivers
Habitat and ecology	Found only within NSW, in the north coast region between Kendall and Woolgoolga. Subtropical and warm-temperature rainforest, rainforest margins, and moist eucalypt forest up to 800 m, on brown clay soils.
Extent of local occurrence	Forty-four (44) individuals were recorded within the study area, with 22 individuals recorded within the wider NP estate.
Impacts	Forty-four (44) individuals were recorded within the study area. NPWS will undertake pre-clearance surveys and micrositing prior to and during construction to ensure the recommended mitigation measures detailed in Table 39 of the ecological assessment are implemented to ensure the protection of each individual where practicably possible. Predicted direct impacts of four (4) individuals and disturbance to up to 9.27 ha of potential habitat have been considered for this assessment. Indirect impacts may occur during construction and operation through pedestrian trampling.
Important populations	No definition of important population is provided within the conservation advice for *Parsonsia dorrigoensis*. The MNES significant impact guidelines defines 'important population' is a population that is necessary for a species' long-term survival and recovery. This may include populations identified as such in recovery plans, and/or that are: • key source populations either for breeding or dispersal • populations that are necessary for maintaining genetic diversity, and/or • populations that are near the limit of the species range. An assessment of significance is required for all populations of this endangered species, regardless of if they are considered important or not.

Table 32: Assessment of significance - *Parsonsia dorrigoensis* (Milky silkpod)

Criterion	Question	Response
An action is likely to have a significant impact on a critically endangered or endangered species if there is a real chance or possibility that it will:		
1)	Lead to a long-term decrease in the size of a population	*Parsonsia dorrigoensis* was identified within the study area during the field survey and 22 records occur within the wider NP estate. The DEGW will include the disturbance of up to 9.27 ha of potential habitat, including 2.49 ha of previously disturbed areas, and estimated to remove up to four (4) individuals. It is considered unlikely that this disturbance would constitute an impact that would lead to a long-term decrease in the size of a population of these species given the abundance of habitat adjacent to the study area. According to the SVTM, it is estimated approximately >17,000 ha of potential suitable habitat for this species occurs in the adjacent NP estate.
2)	Reduce the area of occupancy of the species	No AOO of this species is listed. *Parsonsia dorrigoensis* is likely to persist in the study area and surrounding area given the large areas of suitable habitat that will be retained (>17,000ha), therefore the AOO is unlikely to be reduced to the extent that this population would decline.
3)	Fragment an existing population into two or more populations	Given the context of the proposal, including the location, size, area of vegetation clearing and the primarily proposed linear development, the proposal would not fragment a population. It is expected that genetic material and seeds will be able to be transferred across any newly created gaps.
4)	Adversely affect habitat critical to the survival of a species	No critical habitat has been identified for this species within the conservation advice (DEWHA 2008c). The DEGW may disturb up to 9.27 ha of potential habitat and estimated to impact up to four (4) individuals.
5)	Disrupt the breeding cycle of a population	It is unlikely that the removal of four (4) individuals would impact the breeding cycle of this population to the extent that it would decline.
6)	Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The disturbance of 9.27 ha of potential habitat, including 2.49 ha of habitat with existing impact, is unlikely to result in the decline of this species given that a large portion of the habitat has previously been disturbed and there are extensive areas of similar habitat present around the study area and the wider NP estate.
7)	Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	Invasive weeds are a risk to this species through competition and shading. However, it is unlikely that the proposal will introduce any new invasive species that are a threat, and the proposal will incorporate a site-specific CEMP which will include measures to reduce the spread and introduction of weeds and invasive pests.
8)	Introduce disease that may cause the species to decline	Potential spread of *Phytophthora cinnamomic* is a threat to this species although Phytophthora is already known to occur within the study area. To mitigate the potential spread of

Criterion	Question	Response
		Phytophthora and other harmful pathogens, washdown stations will be installed at positions where the chemicals will not be able to directly enter the local waterways. Appropriate management actions will be implemented to control the spread of *Phytophthora cinnamomic*.
9)	Interfere with the recovery of the species	There is currently a Northern Rivers regional biodiversity management plan which lists recovery actions for threatened species in the Northern Rivers region and are not specific to *Parsonsia dorrigoensis*. The DEGW is unlikely to interfere with the recovery of this species.
Conclusion	**Is there likely to be a significant impact?**	**No. The DEGW is unlikely to have a significant impact on this endangered species.**

Table 33: Species profile - *Tylophora woollsii* (Cryptic forest twiner)

Overview	*Tylophora woollsii*
EPBC Act Status	Endangered
BC Act Status	Endangered
Threat abatement plan	No
Recovery plan	Yes – Northern Rivers
Habitat and ecology	Found from the NSW north coast and New England Tablelands to southern Queensland, although it is very rare within that range. Known on the Tablelands from the Bald Rock and Boonoo Boonoo areas north of Tenterfield. This species grows in moist eucalypt forest, moist sites in dry eucalypt forest and rainforest margins.
Extent of local occurrence	Six (6) individuals were recorded within the study area.
Impacts	Six (6) individuals were recorded within the study area. NPWS will undertake pre-clearance surveys and micrositing prior to and during construction to ensure the recommended mitigation measures detailed in Table 39 of the ecological assessment are implemented to ensure the protection of each individual where practicably possible. Predicted direct impacts of one (1) individuals and disturbance to up to 9.27 ha of potential habitat have been considered for this assessment. Indirect impacts during construction and operation through pedestrian trampling and potential spread of *Phytophthora cinnamomi*.
Important populations	No definition of important population within the conservation advice for *Tylophora woollsii.* The MNES significant impact guidelines defines 'important population' as a population that is necessary for a species' long-term survival and recovery. This may include populations identified as such in recovery plans, and/or that are: • key source populations either for breeding or dispersal • populations that are necessary for maintaining genetic diversity, and/or • populations that are near the limit of the species range. An AoS is required for all populations of this endangered species, regardless of if they are considered important or not.

Table 34: Assessment of significance - *Tylophora woollsii* (Cryptic forest twiner)

Criterion	Question	Response
An action is likely to have a significant impact on a critically endangered or endangered species if there is a real chance or possibility that it will:		

Criterion	Question	Response
1)	Lead to a long-term decrease in the size of a population	*Tylophora woollsii* was identified within the study area during the field survey. The DEGW will include the disturbance of up to 9.27 ha of potential habitat, including 2.49 ha of previously disturbed areas, and predicted impacts of up to one (1) individual. It is considered unlikely that this disturbance would constitute an impact that would lead to a long-term decrease in the size of a population of these species given the large areas of potential habitat adjacent to the study area. According to the SVTM, it is estimated approximately >17,000 ha of potential suitable habitat for this species occurs in the adjacent NP estate.
2)	Reduce the area of occupancy of the species	No AOO of this species is listed within the conservation advice (DEWHA 2008d). This species is likely to persist in the study area and surrounding area given the large areas of suitable habitat and individuals that would be retained through preclearance surveys, therefore the AOO is unlikely to be reduced to the extent that this population would decline.
3)	Fragment an existing population into two or more populations	Given the context of the proposal, including the location, size, proposed vegetation clearing and linearity, the proposal will not fragment a population. It is expected that gene flow and seed dispersal would continue across the gaps created by the construction of the track.
4)	Adversely affect habitat critical to the survival of a species	No critical habitat has been identified for this species. The DEGW may disturb up to 9.27 ha of potential habitat and may result in the removal of one (1) individual. Pre-clearance surveys will be undertaken prior to any vegetation clearing.
5)	Disrupt the breeding cycle of a population	It is unlikely that the removal of one (1) individual would impact the breeding cycle of this population to the extent that it would decline.
6)	Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The disturbance of 9.27 ha of potential habitat, including 2.49 ha of habitat with existing impact, is unlikely to result in the decline of this species given that a large portion of the habitat has previously been disturbed and there are extensive areas of similar habitat present around the study area and the wider NP estate (>17,000 ha).
7)	Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	Invasive weeds are a risk to this species. However, it is unlikely that the proposal will introduce any new invasive species that are a threat, and the proposal will incorporate a site-specific CEMP which will include measures to reduce the spread and introduction of weeds and invasive pests.
8)	Introduce disease that may cause the species to decline	*Phytophthora cinnamomic* is a threat to this species, but Phytophthora is already known to occur within the study area and so would not be introduced. Appropriate management actions will be implemented to control the spread of *Phytophthora cinnamomic*.
9)	Interfere with the recovery of the species	There is currently a Northern Rivers regional biodiversity management plan which lists recovery actions for threatened species in the Northern Rivers region and are not specific to *Tylophora woollsii*. The DEGW is unlikely to interfere with the recovery of the species
Conclusion	**Is there likely to be a significant impact?**	**No. The DEGW is unlikely to have a significant impact on this endangered species.**

5.7.7. Endangered birds

Table 35: Species profile – Rufous scrub-bird (*Atrichornis rufescens*)

Overview	Comment
EPBC Act Status	Vulnerable
Threat abatement plan	No
Recovery plan	No
Habitat and ecology	The northern subspecies (*A. r. rufescens*) occurs between the Mistake Range in Qld and the Gibraltar Range in northern NSW. The southern subspecies (*A. r. ferrieri*) is confined to NSW, from the Dorrigo Plateau to Barrington Tops in high-altitude (above 600m) subtropical, warm temperate and cool temperate rainforests and wet sclerophyll forests.
Extent of local occurrence	Species known from the locality and suitable habitat occurs within the study area. Three (3) BioNet records are known from the wider NP estate.
Impacts	Direct impact of up to 6.97 ha of forest habitat which may represent foraging and nesting habitat for this species. Incidental mortality during construction. Indirect impacts during construction and operation through pedestrian activity and maintenance.
Important populations	The rufous scrub-bird is found in isolated populations along the Great Dividing Range, spanning from Mistake Mountains in southern Queensland to Barrington Tops in New South Wales. Six key subpopulations include Gibraltar Ranges, Border Ranges, the northern McPherson Range, Barrington Tops, Hastings Range, and the Dorrigo/Ebor area (DoTE 2014).

Table 36 Assessment of significance - Rufous scrub-bird (*Atrichornis rufescens*)

Criterion	Question	Response
An action is likely to have a significant impact on a critically endangered or endangered species if there is a real chance or possibility that it will:		
1)	Lead to a long-term decrease in the size of a population	It is considered unlikely that the disturbance of 6.97 ha of potential habitat, would constitute an impact that would lead to a long-term decrease in the size of a population given the abundance of habitat adjacent to the study area.
2)	Reduce the area of occupancy of the species	The rufous scrub-bird species predicted AOO is 410 km^2 (DAWE 2014). The proposal will remove up to 6.97 ha of potential habitat, and therefore reduce the AOO of the rufous scrub-bird by up to 0.0697 km^2 or up to 0.00021%. The removal of 0.00017% of AOO is not considered a significant reduction in the AOO for this species. The rufous scrub-bird should still be able to use the study area after construction of the DEWG.
3)	Fragment an existing population into two or more populations	Given the context of the proposal, including the location, size, proposed vegetation clearing and this species mobility, the proposal will not fragment this population. The species should be able to traverse the areas included in the DEWG.
4)	Adversely affect habitat critical to the survival of a species	No critical habitat has been identified within the conservation advice (DAWE 2014) or the Register of critical habitat. However, the conservation advice suggests important habitat for rufous scrub-bird as rainforests above 600 m elevation, including subtropical, warm temperate and cool temperate rainforests, and nearby moist and wet eucalypt forests provide important habitat for the species. The DEWG

Criterion	Question	Response
		would impact 6.97 ha of potential important habitat for this species. This impact is not predicted to adversely impact this species to the extent that it would decline further, given the context of the proposal in an area of otherwise continuous suitable habitat.
5)	Disrupt the breeding cycle of a population	This action is unlikely to disrupt the breeding cycle of a population given the scale of the removal of potential habitat in the context of the additional habitat that will remain. The project will also incorporate pre-clearance surveys which will aim to identify any potential nests within the study area. Nests will be avoided and/or left undisturbed to allow breeding to be completed before works around them will be allowed to proceed.
6)	Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The disturbance of 6.97 ha of potential habitat is unlikely to result in the decline of this species given that the majority of the habitat has previously been disturbed and the extensive areas of similar habitat present around the study area including the wider NP estate. According to the SVTM and altitude mapping >8000 ha of potential suitable habitat occurs and will remain within the adjacent NP estate.
7)	Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	No threats from invasive species are listed within the conservation advice for this species (DAWE 2014). It is also unlikely that the proposal will introduce any new invasive species that are a threat, and the proposal will incorporate a site-specific CEMP which will include measures to reduce the spread and introduction of weeds and invasive pests.
8)	Introduce disease that may cause the species to decline	No threats from disease are listed within the conservation advice for this species (DAWE 2014). In lieu of this and the context of the proposal it is considered unlikely that the proposal would introduce or exacerbate any disease that may cause the species to decline.
9)	Interfere with the recovery of the species	There is no national current recovery plan for rufous scrub-bird. Conservation and recovery actions are listed in the conservation advice (DAWE 2014). The proposed action is unlikely to interfere with any of the listed actions.
Conclusion	**Is there likely to be a significant impact?**	**No. The DEGW is unlikely to have a significant impact on this endangered species.**

5.7.8. Endangered insects

Table 37: Species profile – Pink underwing moth (*Phyllodes imperialis* southern subspecies)

Overview	Comment
EPBC Act Status	Endangered
Threat abatement plan	No
Recovery plan	No
Habitat and ecology	In NSW it is known to occur in a small number of localities from the QLD border to Wardell, and there is a disjunct population in the Bellingen area. Subtropical rainforest below about 600 m elevation; breeding habitat is restricted to areas where the caterpillar's food plant *Carronia multisepalea* occurs.
Extent of local occurrence	*Carronia multisepalea* was recorded within the study area below 600 m in elevation. Thirty-six (36) BioNet records are known from the wider NP estate.

Overview	Comment
Impacts	Direct impact of up to 0.03 ha of suitable subtropical rainforest habitat where the host plant *Carronia multisepalea* was identified.
Important populations	No definition of important population is provided within the conservation advice for pink underwing moth (DEWHA 2008e). The MNES significant impact guidelines defines 'important population' as a population that is necessary for a species' long-term survival and recovery. This may include populations identified as such in recovery plans, and/or that are: • key source populations either for breeding or dispersal • populations that are necessary for maintaining genetic diversity, and/or • populations that are near the limit of the species range. An AoS is required for all populations of this endangered species, regardless of if they are considered important or not.

Table 38 Assessment of significance - Pink underwing moth (*Phyllodes imperialis* southern subspecies)

Criterion	Question	Response
An action is likely to have a significant impact on a critically endangered or endangered species if there is a real chance or possibility that it will:		
1)	Lead to a long-term decrease in the size of a population	It is considered unlikely that the disturbance of 0.03 ha of potential habitat, would constitute an impact that would lead to a long-term decrease in the size of a population of these species given the abundance of habitat adjacent to the study area.
2)	Reduce the area of occupancy of the species	There is currently no estimate of the AOO for this species, although it is known from five locations, of which Mary Cairncross Scenic Reserve, near Maleny (Queensland), contains the only confirmed breeding habitat (TSSC 2002). The proposal will reduce the extent of available habitat for the Pink Underwing Moth by 0.03 ha.
3)	Fragment an existing population into two or more populations	Given the context of the proposal, including the location, size, proposed vegetation clearing and this species' mobility, the proposal will not fragment this population. The moth should be able to disperse across any additional clearings created by the construction of the DEWG.
4)	Adversely affect habitat critical to the survival of a species	No critical habitat has been identified for the pink underwing moth. The pink underwing moth relies on the vine species *Carronia multisepalea* for food and habitat in order to breed. Currently, the only confirmed breeding habitat exists in the Mary Cairncross Scenic Reserve (TSSC 2002). The disturbance of 0.03 ha of potential foraging habitat and no disturbance to any confirmed breeding habitat is unlikely to adversely affect habitat critical to the survival of this species.
5)	Disrupt the breeding cycle of a population	The only confirmed breeding habitat for the pink underwing moth is found in the Mary Cairncross Scenic Reserve. The potential disturbance of up to 0.03 ha of potential habitat is considered unlikely to impact the breeding cycle of a population as it most likely forms only foraging habitat, and an extensive area of similar habitat will be retained adjacent to the study area and in the wider NP estate which covers >17,000 ha.
6)	Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent	The disturbance of 0.03 ha of potential habitat is unlikely to result in the decline of this species given the extensive areas of similar habitat present in the adjacent NP estate.

Criterion	Question	Response
	that the species is likely to decline	
7)	Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	No threats from invasive species are listed within the conservation advice for this species (DCCEEW 2008). It is also unlikely that the proposal will introduce any new invasive species that are a threat, and the proposal will incorporate a site-specific CEMP which will include measures to reduce the spread and introduction of weeds and invasive pests.
8)	Introduce disease that may cause the species to decline	No threats from disease are listed within the conservation advice for this species (DCCEEW 2008). In lieu of this and the context of the proposal, it is considered unlikely that the proposal would introduce or exacerbate any disease that may cause the species to decline.
9)	Interfere with the recovery of the species	There is currently no national recovery plan for pink underwing moth. Conservation and recovery actions are listed in the conservation advice (DEWHA 2008). The proposed action is unlikely to interfere with any of the listed actions.
Conclusion	**Is there likely to be a significant impact?**	**No. The DEGW is unlikely to have a significant impact on this endangered species.**

5.7.9. Endangered mammals

Table 39: Species profile – Spotted-tailed quoll (*Dasyurus maculatus*)

Overview	Spotted-tailed quoll
EPBC Act Status	Vulnerable
Threat abatement plan	Yes (feral cats, European red fox)
Recovery plan	Yes
Habitat and ecology	Found on the east coast of NSW, Tasmania, eastern Victoria and north-eastern Queensland. Rainforest, open forest, woodland, coastal heath and inland riparian forest, from the sub-alpine zone to the coastline.
Extent of local occurrence	Suitable habitat within the study area. Evidence of spotted-tailed quoll identified during site inspection. Fourteen (14) BioNet records are known from the wider NP estate.
Impacts	Disturbance of up to 9.34 ha of foraging habitat. Removal of eight (8) HBTs with suitable hollows and disturbance to large woody debris that may provide shelter habitat. No rocky outcrops that could provide shelter or latrine sites will be impacted. Indirect impacts may include incidental mortality during construction and ongoing disturbance of adjacent habitat from increased human interaction and maintenance.
Important populations	Northern Tablelands (Dorrigo Plateau) (DELWP 2016)

Table 40 Assessment of significance - Spotted-tailed quoll (*Dasyurus maculatus*)

Criterion	Question	Response
An action is likely to have a significant impact on a critically endangered or endangered species if there is a real chance or possibility that it will:		
1)	Lead to a long-term decrease in the size of a population	It is considered unlikely that the disturbance of up to 9.34 ha of potential habitat, would constitute an impact that would lead to a long-

Criterion	Question	Response
		term decrease in the size of a population of these species given the abundance of habitat adjacent to the study area.
2)	Reduce the area of occupancy of the species	The AOO for the spotted-tailed quoll is 2,512 km^2 (DAWE 2020). The DEWG will see the removal of 9.34 ha of potential habitat. The proposal will remove up to 9.34 ha of potential habitat, and therefore reduce the AOO of the spotted-tailed quoll by up to 0.0934 km^2 or up to 0.00003%. The removal of 0.00003% of AOO is not considered a significant reduction in the AOO for this species.
3)	Fragment an existing population into two or more populations	Given the context of the proposal, including the location, size, proposed vegetation clearing and noting the species' high mobility, the proposal will not fragment the local population.
4)	Adversely affect habitat critical to the survival of a species	Habitat that is critical to the survival of the spotted-tailed quoll includes large patches of forest with adequate denning resources and relatively high densities of medium-sized mammalian prey. The study area is part of a large contiguous patch of forest, likely with these suitable characteristics, however impacts are considered negligible given the scale of habitat removal proposed.
5)	Disrupt the breeding cycle of a population	Potential denning habitat was recorded within the study area. Mitigation methods will limit the impact to the breeding cycle of this species by mitigating the removal of den and HBTs as per Chapter 7, Table 39 of the ecological assessment report. Up to eight (8) HBTs may be impacted to satisfy safety risks that occur within the campsites.
6)	Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The disturbance of 9.34 ha of potential foraging habitat is unlikely to result in the decline of these species given that the majority of the habitat has previously been disturbed and there are extensive areas of similar habitat present around the study area including wider NP estate. According to the SVTM, it is estimated approximately >17,000 ha of suitable habitat for this species occurs in the adjacent NP estate.
7)	Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	Invasive threats, specifically European foxes, feral cats and dogs are harmful to this species (AGDE 2016, DCCEEW 2022b). However, these threats are already currently present and, as the track largely uses already existing paths, it is unlikely that the impacts of these feral predators will increase significantly as a result of the construction of the DEWG. Given the context of the proposal including existing threats from these species within the study area, it is considered unlikely that the proposal will exacerbate these threats. Additionally, the proposal will incorporate a site-specific CEMP which will include measures to reduce the spread and introduction these invasive pests.
8)	Introduce disease that may cause the species to decline	No threats from disease are known for this species. In lieu of this and the context of the proposal, it is considered unlikely that the proposal would introduce or exacerbate a disease that may cause the species to decline.
9)	Interfere with the recovery of the species	Recovery action for spotted-tailed quoll is listed in the national recovery plan (AGDE 2016). Impacts to these objectives are marginal with few denning resources to be removed. Bindarri NP is considered to host important habitat for this species and is proposed to be gazetted within the Great Koala National Park, which aims to protect populations of the spotted-tailed quoll on the mid north coast with a focus on creating and protecting existing habitat corridors.

Criterion	Question	Response
Conclusion	**Is there likely to be a significant impact?**	**No. The DEGW is unlikely to have a significant impact on this endangered species.**

Table 41: Species profile - Southern greater glider (*Petauroides volans*)

Overview	Southern greater glider
EPBC Act Status	Endangered
Threat abatement plan	No
Recovery plan	No
Habitat and ecology	Occurs in eastern Australia, in eucalypt forests and woodlands, where it has a broad distribution from around Proserpine in Queensland, south through NSW and the Australian Capital Territory into Victoria.
Extent of local occurrence	Suitable habitat within the study area. A total of twelve (12) BioNet records occur within the wider NP estate, and according to the SVTM >5000 ha of suitable habitat occurs within the wider NP estate.
Impacts	Disturbance of up to 3.56 ha of foraging habitat. Removal of one (1) HBT with suitable hollows (>300mm) that may provide shelter habitat. Incidental mortality during construction. Ongoing disturbance of adjacent habitat from increased human interaction and maintenance.
Important populations	All populations of the greater glider (southern and central) are considered important for the conservation of the species across its range. Due to the species' low reproductive rate and limited dispersal, recolonising areas where the species has become locally extinct is not rapid. Coastal populations are vital for preserving genetic diversity, as they differ geographically from inland populations (DCCEEW, 2022b).

Table 42: Assessment of Significance: Southern Greater Glider (*Petauroides volans*)

Criterion	Question	Response
An action is likely to have a significant impact on a critically endangered or endangered species if there is a real chance or possibility that it will:		
1)	Lead to a long-term decrease in the size of a population	It is considered unlikely that the disturbance of up to 3.56 ha of potential habitat, including 1.31 ha of previously disturbed areas, would constitute an impact that would lead to a long-term decrease in the size of a population of these species given the abundance of habitat adjacent to the study area. HBTs are to be retained along the proposed walking track with an estimated one (1) suitable HBT to be impacted. The canopy should remain sufficiently intact that any southern greater gliders present should be able to persist.
2)	Reduce the area of occupancy of the species	The AOO for the southern greater glider is 15,316 km^2 (DCCEEW 2022b). The proposal will remove up to 3.56 ha of potential habitat, and therefore reduce the AOO of the southern greater glider by up to 0.0356 km^2 or up to 0.00023%. The removal of 0.00023%. of AOO is not considered a significant reduction in the AOO for this species. Additionally, according to the SVTM >5,000 ha of potential habitat occurs and will remain within the adjacent NP estate.
3)	Fragment an existing population into two or more populations	Given the context of the proposal, including the location, size, proposed vegetation clearing and these species mobility, the proposal will not fragment a population.

Criterion	Question	Response
4)	Adversely affect habitat critical to the survival of a species	Habitat that is critical to the survival of southern greater glider can be defined as large contiguous areas of eucalypt forest, which contain mature hollow-bearing trees and a diverse range of the species' preferred food species in a particular region; and smaller or fragmented habitat patches connected to larger patches of habitat, that can facilitate dispersal of the species and/or that enable recolonization; and cool microclimate forest/woodland areas (e.g. protected gullies, sheltered high elevation areas, coastal lowland areas, southern slopes); and areas identified as refuges under future climate changes scenarios; and short-term or long-term post-fire refuges (i.e. unburnt habitat within or adjacent to recently burnt landscapes) that allow the species to persist, recover and recolonise burnt areas (DCCEEW 2022b). The 3.56 ha area of habitat to be removed may constitute this habitat. Impacts will be largely to the following growth forms: groundcover, vines, woody midstorey and canopy species that are <15cm DBH. Hence the impact to this habitat is not expected to adversely affect this species.
5)	Disrupt the breeding cycle of a population	Removal of one (1) HBT with suitable hollows that may provide shelter habitat is estimated to occur. However large numbers of these resources occur adjacent to the proposal area and wider NP estate, providing for suitable alternative shelter sites for any southern greater gliders present. It is considered that the potential for disruptions of the breeding cycle of this population is marginal. Pre-clearing surveys of suitable hollows will also limit the risk of disruption by ensuring that resident animals will be allowed to leave and take up shelter in alternate dens before the tree is removed.
6)	Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The disturbance of 3.56 ha of potential foraging habitat is unlikely to result in the decline of these species given that the majority of the habitat has previously been disturbed and there are extensive areas of similar habitat present within the adjacent NP estate. According to the SVTM, it is estimated approximately >5,000 ha of suitable habitat for this species occurs in the adjacent NP estate.
7)	Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	Invasive threats, specifically European foxes, feral cats and dogs are harmful to this species (AGDE 2016, DCCEEW 2022b). However, given the context of the proposal including existing threats from these species within the study area, it is considered unlikely that the proposal will exacerbate these threats. Additionally, the proposal will incorporate a site-specific CEMP which will include measures to reduce the spread and introduction of weeds and these invasive pests.
8)	Introduce disease that may cause the species to decline	No threats from disease are known for these species. In lieu of this and the context of the proposal, it is considered unlikely that the proposal would introduce or exacerbate any unknown disease that may cause the species to decline.
9)	Interfere with the recovery of the species	There is no national current recovery plan for southern greater glider, however the proposed action is unlikely to interfere with the recovery of the species. Bindarri NP is considered to host important habitat for this species and is proposed to be gazetted within the Great Koala National Park, which aims to protect populations of the southern greater glider on the mid north coast with a focus on creating and protecting existing habitat corridors.

Criterion	Question	Response
Conclusion	**Is there likely to be a significant impact?**	**No. The DEGW is unlikely to have a significant impact on this endangered species.**

Table 43: Species profile – Koala (*Phascolarctos cinereus*)

Overview	Comment
EPBC Act Status	Endangered
Threat abatement plan	No
Recovery plan	Yes
Habitat and ecology	In NSW it mainly occurs on the central and north coasts with some populations in the west of the Great Dividing Range. There are sparse and possibly disjunct populations in the Bega District, and at several sites on the southern tablelands. The species prefers eucalypt woodlands and forests.
Extent of local occurrence	Suitable eucalypt forest habitat occurs within the study area. A total of 64 records occur within the wider NP estate, and according to the SVTM >5000 ha of suitable eucalypt forest occurs within the wider NP estate.
Impacts	Disturbance of up to 3.56 ha of eucalyptus forest that contains feed tree species. Ongoing disturbance of adjacent habitat from increased human interaction and maintenance.
Important populations	In NSW, critical koala populations are recognised as 'areas of currently known high koala occupancy' (DPIE 2020). Genetically distinct koala management units have been identified nationwide and include the population located within the study area (south of the Clarence River Valley, New South Wales to north of the Sydney Basin) (Johnson et al. 2018; Eldridge & Lott 2020).

Table 44: Assessment of significance: Koala (*Phascolarctos cinereus*)

Criterion	Question	Response
An action is likely to have a significant impact on a critically endangered or endangered species if there is a real chance or possibility that it will:		
1)	Lead to a long-term decrease in the size of a population	It is considered unlikely that the disturbance of 3.56 ha of potential habitat, including 1.31 ha of previously disturbed areas would constitute an impact that would lead to a long-term decrease in the size of a population of these species given the abundance of habitat adjacent to the study area. Areas of retained vegetation should be sufficient to maintain adequate food and shelter for any resident individuals.
2)	Reduce the area of occupancy of the species	The AOO for the koala is 19,428 km^2 (DCCEEW 2022b). The proposal will remove up to 3.56 ha of potential habitat, and therefore reduce the AOO of the koala by up to 0.0356 km^2 or up to 0.00018%. The removal of 0.00018%. of AOO is not considered a significant reduction in the AOO for this species. Additionally, according to the SVTM >5,000 ha of potential habitat occurs and will remain within the adjacent NP estate.
3)	Fragment an existing population into two or more populations	Given the context of the proposal, including the location, size, proposed vegetation clearing and this known mobility of the koala and its ability to cross over cleared lands, the proposal will not fragment this population.

Criterion	Question	Response
4)	Adversely affect habitat critical to the survival of a species	Habitat critical for the survival of a species is defined as the areas that the species relies on to avoid or halt decline and promote the recovery of the species. However, in accordance with the conservation advice no critical habitat for koala is mapped or listed as further data is required (DAWE 2022). The habitat within the proposal area is assessed against factors listed under the EPBC Act that may be considered when identifying habitat critical to the survival of a species: • used during periods of stress • used to meet essential life cycle requirements • used by important populations • habitat which is necessary to maintain genetic diversity and long-term evolutionary development • habitat which is necessary to ensure the long-term future of the species or ecological community through reintroduction or re-colonisation. The DEGW would impact 3.56 ha of potential critical habitat for this species this will be largely to the following growth forms: groundcover, vines, woody midstorey and canopy species that are <15cm DBH and therefore given the limited impacts to adult feed trees, linear nature of the proposal and the extensive area of >5000ha of higher quality habitat adjacent to the study area and in the wider NP estate it is considered the impact to 3.56 ha of potential critical habitat is negligible.
5)	Disrupt the breeding cycle of a population	This action is unlikely to disrupt the breeding cycle of a population given the scale of the removal of potential habitat in the context of the additional habitat that will remain. The project will also incorporate pre-clearance surveys which will aim to identify any koalas within the study area.
6)	Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The disturbance of 3.56ha of potential habitat is unlikely to result in the decline of this species given that the majority of the habitat has previously been disturbed and there are extensive areas of similar habitat present around the study area including the wider NP estate.
7)	Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	No threats from invasive species are listed within the conservation advice. It is unlikely that the proposal will introduce any new invasive species that are a threat, and the proposal will incorporate a site-specific CEMP which will include measures to reduce the spread and introduction of weeds and invasive pests.
8)	Introduce disease that may cause the species to decline	Koala populations are also being impacted by diseases, specifically Koala Retrovirus and Chlamydia (*Chlamydia pecorum*). However, the proposed action is unlikely to introduce disease that would affect the koala.
9)	Interfere with the recovery of the species	Recovery actions for the koala are listed in the recovery plan for koala (DAWE 2022). The proposed action is unlikely to interfere with any of the listed actions. The NPWS Koala Conservation Action Plan (KCAP) identifies key risks and prescribes management and monitoring activities for the endangered koala in Bindarri National Park which falls within study area. The KCAP can be used to assist the proponent to assess key risks, undertake conservation activities, and requirements for measuring and reporting within the Bindarri NP area. Bindarri NP is considered to host important habitat for koala and is proposed to be gazetted within the

Criterion	Question	Response
		Great Koala National Park, which aims to protect koala populations on the mid north coast with a focus on creating and protecting existing koala corridors.
Conclusion	**Is there likely to be a significant impact?**	**No. The DEGW is unlikely to have a significant impact on this endangered species.**

5.7.10. Critically endangered flora

Table 45: Species profile – *Rhodamnia rubescens* (Scrub turpentine)

Overview	Comment
EPBC Act Status	Critically endangered
Threat abatement plan	No
Recovery plan	No
Habitat and ecology	Occurs in coastal districts north from Batemans Bay in New South Wales, approximately 280 km south of Sydney, to areas inland of Bundaberg in Queensland. Found in littoral, warm temperate and subtropical rainforest and wet sclerophyll forest usually on volcanic and sedimentary soils.
Extent of local occurrence	Eighteen (18) individuals were recorded within the study area. A total of 11 records occur within the wider NP estate, and according to the SVTM >17000 ha of suitable eucalypt forest occurs within the wider NP estate.
Impacts	Eighteen (18) individuals were recorded within the study area. Pre-clearance surveys will be undertaken prior to the construction of the track in accordance with Table 39 of the ecological assessment. Mitigation measures will be implemented prior to and during construction to avoid impacts to each individual, where practicably possible. The predicted impact of up to two (2) seedlings or juveniles and disturbance of up to 9.27 ha of potential habitat have been considered for this assessment. Indirect impacts during construction and operation through pedestrian trampling and potential spread of myrtle rust. No adult trees were recorded within the study area.
Important populations	No definition of important population within the conservation advice. The MNES significant impact guidelines defines 'important population' is a population that is necessary for a species' long-term survival and recovery. This may include populations identified as such in recovery plans, and/or that are: • key source populations either for breeding or dispersal • populations that are necessary for maintaining genetic diversity, and/or • populations that are near the limit of the species range. It is unlikely that the *Rhodamnia rubescens* is an important population as all individuals were identified to have myrtle rust.

Table 46 Assessment of significance - *Rhodamnia rubescens* (Scrub turpentine)

Criterion	Question	Response
An action is likely to have a significant impact on a critically endangered or endangered species if there is a real chance or possibility that it will:		
1)	Lead to a long-term decrease in the size of a population	It is considered unlikely that the disturbance of 9.27 ha of potential habitat, including 2.49 ha of previously disturbed areas, and predicted removal of two (2) seedlings or juveniles would constitute an impact that would lead to a long-term decrease in the size of this population given the abundance of habitat adjacent to the study area. According to

Criterion	Question	Response
		the SVTM, it is estimated approximately >17,000 ha of suitable habitat for this species occurs in the adjacent NP estate.
2)	Reduce the area of occupancy of the species	*Rhodamnia rubescens* has a large geographic distribution. The AOO for this species is estimated to be 3,360 km^2 (DCCEEW 2022a). The proposal will remove 9.27 ha of potential habitat, and therefore reduce the AOO of *Rhodamnia rubescens* by up to 0.0927 km^2 or up to 0.0028%. The removal of 0.0028% of AOO is not considered a significant reduction in the AOO for this species
3)	Fragment an existing population into two or more populations	Given the context of the proposal, including the location, size, proposed vegetation clearing and the extent of good quality habitat adjacent to the study area and in the wider NP estate (>17,000ha), the proposal will not fragment this population.
4)	Adversely affect habitat critical to the survival of a species	No critical habitat has been identified for this species. A total of 11 known records occurs within the wider NP estate. Given that the potential habitat that is estimated to be disturbed is 9.27 ha, including 2.49 ha of previously disturbed areas, and the extensive areas of suitable habitat adjacent to the study area and in the wider NP estate (>17,000ha), the proposed works are unlikely to have an adverse effect on habitat critical to the survival of this species.
5)	Disrupt the breeding cycle of a population	Activities likely to have an adverse effect on the breeding cycle of *Rhodamnia rubescens* include interruptions to seed dispersal, trampling on seedlings, spread of myrtle rust and removal of potential habitat. A total of 18 individuals were identified within the study area, all showing signs of myrtle rust. The DEGW has proposed to retain most of these individuals and no adult trees will be removed, therefore it is unlikely that the breeding cycle of this population will be disrupted.
6)	Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The disturbance of 9.27 ha of potential habitat is unlikely to result in the decline of this species given that a large portion of the habitat has previously been disturbed and there are extensive areas of similar habitat present around the study area and in the wider NP estate (>17,000ha).
7)	Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	No threats from invasive species are listed within the conservation advice for this species (TSSC 2020). It is also unlikely that the proposal will introduce any new invasive species that are a threat, and the proposal will incorporate a site-specific CEMP which will include measures to reduce the spread and introduction of weeds and invasive pests.
8)	Introduce disease that may cause the species to decline	The primary cause of threat to this species is myrtle rust. *Rhodamnia rubescens* is a known host of myrtle rust (Zauza et al. 2010) and is characterised as 'highly to extremely susceptible' to infection (Pegg et al. 2014). All age classes of trees and plant parts have been documented as being affected by myrtle rust, including leaves, stems, flowers and fruits (Pegg et al. 2014; Carnegie et al. 2016). A total of 18 individuals were identified within the study area and all showed signs of myrtle rust. Considering that myrtle rust is already present within the study area, it is considered unlikely that the disease would be exacerbated by the works and other diseases unlikely to be introduced and cause the species to decline. A washdown station for visitors will also mitigate this risk.

Criterion	Question	Response
9)	Interfere with the recovery of the species	A national recovery plan for this species is not available at this time and there is currently no NSW Saving our Species site-managed program, therefore the recovery actions are guided by the threat information, as listed in the conservation advice. Given the context of the proposal in an already disturbed environment and the known occurrence of myrtle rust in all identified individuals within the study area, the proposal will not interfere substantially with the recovery of this species.
Conclusion	**Is there likely to be a significant impact?**	**No. The DEGW is unlikely to have a significant impact on *Rhodamnia rubescens.***

5.7.11. Migratory species

The likelihood of occurrence identified six (6) species listed as migratory under the EPBC Act as having the potential to occur within the study area. Under the Matters of National Environmental Significance – Significant impact guidelines 1.1 (CoA 2013), an action is likely to have a significant impact on a migratory species if there is a real chance or possibility that it will:

- substantially modify, destroy or isolate an area of important habitat for a migratory species, or
- result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species, or
- seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species.

What is considered 'important habitat' for the migratory species under consideration here is presented within the draft referral guidelines for listed migratory species (DotE 2015) and below in Table 45 for the species with potential to occur within the study area.

Table 47: Species profile – Migratory birds

Species	Significant impact thresholds (DotE 2015)		Important habitat (DotE 2015)
	Area of habitat	Ecologically significant proportion of the population	
Oriental cuckoo (*Cuculus optatus*)	250,000	10,000	Found in coastal regions across northern and eastern Australia as well as offshore islands. The species uses a range of vegetated habitats such as monsoon rainforest, wet sclerophyll forest, open woodlands and appears quite often along edges of forests, or ecotones between forest types.
White-throated needletail (*Hirundapus caudacutus*)	No threshold area can be determined at this time or has identified given lack of knowledge or rarity. Research on White-throated needletail may reveal site	100	Non-breeding habitat only. Found across a range of habitats, more often over wooded areas, where it is almost exclusively aerial. Large tracts of native vegetation, particularly forest, may be a key habitat requirement for species. Found to roost in tree hollows in tall trees on ridge-tops, on bark or rock

Species	Significant impact thresholds (DotE 2015)		Important habitat (DotE 2015)
	Area of habitat	Ecologically significant proportion of the population	
	thresholds in tall forest used by roosting birds.		faces. Appears to have traditional roost sites.
Black-faced monarch *(Monarcha melanopsis*)	2,600	4,600	In NSW, occurs around the eastern slopes and tablelands of the Great Divide, inland to Coutts Crossing, Armidale, Widden Valley, Wollemi National Park and Wombeyan Caves. It is rarely recorded farther inland. Rainforest, open eucalypt forests, dry sclerophyll forests and woodlands, gullies in mountain areas or coastal foothills, Brigalow scrub, coastal scrub, mangroves, parks and gardens.
Satin flycatcher (*Myiagra cyanoleuca*)	4,400	17,000	In NSW, widespread on and east of the Great Divide and sparsely scattered on the western slopes, with very occasional records on the western plains. Eucalypt-dominated forests, especially near wetlands, watercourses, and heavily vegetated gullies.
Rufous fantail (*Rhipidura rufifrons*)	7,500	48,000	Coastal and near coastal districts of northern and eastern Australia, including on and east of the Great Divide in NSW. Wet sclerophyll forests, subtropical and temperate rainforests. Sometimes drier sclerophyll forests and woodlands.
Spectacled monarch (*Symposiachrus trivirgatus*)	2,100	6,500	Dense vegetation, mainly in rainforest but also in moist forest or wet sclerophyll and occasionally in other dense vegetation such as mangroves, drier forest and woodlands.

The second consideration in the process is whether an ecologically significant proportion of white-throated needletail occurs within the development footprint and could be impacted by the proposed works. Under the Matters of National Environmental Significance – Significant impact guidelines 1. 1 (CoA 2013), an 'ecologically significant proportion' for a migratory species differs between species. Some factors that should be considered include the species' population status, genetic distinctiveness and species-specific behavioural patterns.

Considering the information provided above, an assessment following the significant impact criteria for migratory species (CoA 2013) is provided below (Table 48).

Table 48: Assessment of significance - Migratory birds

Criterion	Question	Response
An action is likely to have a significant impact on a migratory species if there is a real chance or possibility that it will:		
1)	Will the proposal substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species?	The disturbance of 9.27 ha of potential habitat for these migratory species is unlikely to result in the decline of these species given there are extensive areas of similar habitat present in the wider NP estate. Additionally, the study area does not constitute known important habitat for these species.
2)	Will the proposal result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species?	Invasive threats for white-throated needletail and oriental cuckoo are unknown. The remaining potential migratory species are threatened by *Rattus rattus* (black rat) and by invasive vines of riparian habitat (e.g. rubber vine *Cryptostegia grandiflora*; CoA 2015). Given the context of the proposal including likely existing threats from black rat and that the study area does not contain riparian habitat, it is considered unlikely that the proposal will exacerbate these threats. Additionally, the study area does not constitute known important habitat for any of these migratory species.
3)	Will the proposal seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species?	No. An ecologically significant proportion of any of these species does not occur within the study area, as detailed in Table 45. Only non-breeding habitat for white-throated needletail and oriental cuckoo occurs in Australia. Potential impacts to the lifecycle of the remaining species will be minimised through pre-clearance surveys to record and avoid any nests.
Conclusion	**Is there likely to be a significant impact?**	**No. The DEGW is unlikely to have a significant impact on these listed migratory species.**

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Appendix A: PMST Tool search

EPBC Act Protected Matters Report

Australian Government

Department of Climate Change, Energy, the Environment and Water

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: 31-May-2024

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1. Summary

1.1. 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.

MNES category	Number
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:	7
Listed Threatened Species:	80
Listed Migratory Species:	**16**

1.2. 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.

Other matters	Number
Commonwealth Lands:	3
Commonwealth Heritage Places:	None
Listed Marine Species:	23
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

1.3. Extra Information

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

Name	Number
State and Territory Reserves:	6
Regional Forest Agreements:	1
Nationally Important Wetlands:	None
EPBC Act Referrals:	3
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

2. Details

2.1. Matters of National Environmental Significance

Name	State	Legal status
World Heritage Properties		
Gondwana Rainforests of Australia	QLD	Declared property
National Heritage Places		
Gondwana Rainforests of Australia	NSW	Listed place

2.2. Listed Threatened Ecological Communities

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 Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community may occur within area
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 likely to 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
New England Peppermint (Eucalyptus nova-anglica) Grassy Woodlands	Critically Endangered	Community may 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

2.3. Listed Threatened Species

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 known to occur within area
Atrichornis rufescens Rufous Scrub-bird [655]	Endangered	Species or species habitat known 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 canutus Red Knot, Knot [855]	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 known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat may occur within area
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat likely to occur within area
Cyclopsitta diophthalma coxeni Coxen's Fig-Parrot [59714]	Critically Endangered	Species or species habitat may occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat may 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
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat may occur within area
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 likely to occur within area
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat may occur within area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened category	Presence text
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
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat may occur within area
Turnix melanogaster Black-breasted Button-quail [923]	Vulnerable	Species or species habitat may occur within area
Crustacean		
Euastacus morgani Morgan's Crayfish [90715]	Critically Endangered	Species or species habitat may occur within area
Euastacus simplex Simple Crayfish, Small Mountain Crayfish [83156]	Endangered	Species or species habitat may occur within area
Fish		
Maccullochella ikei Clarence River Cod, Eastern Freshwater Cod [26170]	Endangered	Species or species habitat may occur within area
Frog		
Assa darlingtoni Pouched Frog [1965]	Vulnerable	Species or species habitat known to occur within area
Litoria subglandulosa New England Tree Frog, Glandular Frog [1807]	Vulnerable	Species or species habitat may occur within area
Mixophyes balbus Stuttering Frog, Southern Barred Frog (in Victoria) [1942]	Vulnerable	Species or species habitat known to occur within area
Mixophyes iteratus Giant Barred Frog, Southern Barred Frog [1944	Vulnerable	Species or species habitat known to occur within area
Philoria sphagnicola Sphagnum Frog [59709]	Vulnerable	Species or species habitat known to occur within area
Insect		
Argynnis hyperbius inconstans Australian Fritillary [88056]	Critically Endangered	Species or species habitat may occur within area

Scientific Name	Threatened category	Presence text
Phyllodes imperialis smithersi Pink Underwing Moth [86084]	Endangered	Species or species habitat known 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 known to occur within area
Petauroides volans Greater Glider (southern and central) [254]	Endangered	Species or species habitat known to occur within area
Petaurus australis australis Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat known 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
Potorous tridactylus tridactylus Long-nosed Potoroo (northern) [66645]	Vulnerable	Species or species habitat known to occur within area
Pseudomys novaehollandiae New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat known to occur within area
Pseudomys oralis Hastings River Mouse, Koontoo [98]	Endangered	Species or species habitat likely to occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Plant		
Acronychia littoralis Scented Acronychia [8582]	Endangered	Species or species habitat may occur within area
Arthraxon hispidus Hairy-joint Grass [9338]	Vulnerable	Species or species habitat likely to occur within area
Asperula asthenes Trailing Woodruff [14004]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened category	Presence text
Bertya sp. Clouds Creek (M.Fatemi 4) [84675]	Endangered	Species or species habitat may occur within area
Boronia umbellata Orara Boronia [56301]	Vulnerable	Species or species habitat may occur within area
Callistemon pungens [55581]	Vulnerable	Species or species habitat likely to occur within area
Coleus nitidus listed as Plectranthus nitidus Nightcap Plectranthus, Silver Plectranthus [91380]	Endangered	Species or species habitat likely to 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
Dichanthium setosum bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area
Endiandra hayesii Rusty Rose Walnut, Velvet Laurel [13866]	Vulnerable	Species or species habitat may occur within area
Eucalyptus nicholii Narrow-leaved Peppermint, Narrow- leaved Black Peppermint [20992]	Vulnerable	Species or species habitat may occur within area
Euphrasia arguta [4325]	Critically Endangered	Species or species habitat may occur within area
Gingidia rupicola Mountain Angelica, Broad-leafed Carrot [86880]	Endangered	Species or species habitat may occur within area
Haloragis exalata subsp. velutina Tall Velvet Sea-berry [16839]	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 known to occur within area
Leichhardtia longiloba listed as Marsdenia longiloba Clear Milkvine [91911]	Vulnerable	Species or species habitat known 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

Scientific Name	Threatened category	Presence text
Neoastelia spectabilis [6404]	Vulnerable	Species or species habitat likely to occur within area
Olearia flocktoniae Dorrigo Daisy-bush [2083]	Endangered	Species or species habitat known to occur within area
Owenia cepiodora Onionwood, Bog Onion, Onion Cedar [11344]	Vulnerable	Species or species habitat may occur within area
Parsonsia dorrigoensis Milky Silkpod [64684]	Endangered	Species or species habitat known to occur within area
Persicaria elatior Knotweed, Tall Knotweed [5831]	Vulnerable	Species or species habitat may occur within area
Phaius australis Lesser Swamp-orchid [5872]	Endangered	Species or species habitat may occur within area
Rhodamnia rubescens Scrub Turpentine, Brown Malletwood [15763]	Critically Endangered	Species or species habitat known to occur within area
Rhodomyrtus psidioides Native Guava [19162]	Critically Endangered	Species or species habitat known to occur within area
Samadera sp. Moonee Creek (J.King s.n. Nov. 1949) [86885]	Endangered	Species or species habitat may occur within area
Sarcochilus fitzgeraldii Ravine Orchid [19131]	Vulnerable	Species or species habitat known to occur within area
Syzygium hodgkinsoniae Smooth-bark Rose Apple, Red Lilly Pilly [3539]	Vulnerable	Species or species habitat may occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat likely to occur within area
Triplarina imbricata [64543]	Endangered	Species or species habitat may occur within area
Vincetoxicum woollsii listed as Tylophora woollsii [40080]	Endangered	Species or species habitat known to occur within area
Reptile		
Coeranoscincus reticulatus Three-toed Snake-tooth Skink [59628]	Vulnerable	Species or species habitat likely to occur within area
Harrisoniascincus zia Rainforest Cool-skink [84785]	Vulnerable	Species or species habitat known to occur within area
Myuchelys georgesi listed as Wollumbinia georgesi Bellinger River Snapping Turtle, Georges' Snapping Turtle, Georges Helmeted Turtle [88103]	Critically Endangered	Species or species habitat known to occur within area

2.4. Listed Migratory Species

Scientific Name	Threatened category	Presence text
Migratory marine bird		
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
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat known to occur within area
Migratory wetland species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	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
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	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
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area

3. Other matters protected by the EPBC Act

3.1. Commonwealth Lands

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land name	State
Commonwealth Land - Australian Postal Commission [11612]	NSW
Commonwealth Land - Australian Telecommunications Commission [11611]	NSW
Commonwealth Land - Australian Telecommunications Commission [11613]	NSW

3.2. Listed Marine Species

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
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area overfly marine 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
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	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 overfly marine area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known 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 likely to occur within area overfly marine area

Scientific Name	Threatened category	Presence text
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 known to occur within area overfly marine area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	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
Pterodroma cervicalis White-necked Petrel [59642]		Species or species habitat may occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known 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

4. Extra Information

4.1. State and Territory reserves

Protected area name	Reserve type	State
Bellinger River	National Park	NSW
Bindarri	State Conservation Area	NSW
Bindarri	National Park	NSW
Cascade	National Park	NSW
Dorrigo	National Park	NSW
Junuy Juluum	National Park	NSW

4.2. Regional Forestry Agreements

RFA name	State
North East NSW RFA	NSW

4.3. EPBC Act referrals

Title of referral	Reference	Outcome	Status
Controlled action			
Clarence Valley and Coffs Harbour Regional Water Supply Project	2005/2191	Controlled Action	Post approval
Not controlled action			
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not controlled action	Completed
Telecommunications Cable Installation	2001/223	Not controlled action	Completed

5. Caveat

5.1. PURPOSE

World and National Heritage properties; 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.

5.2. 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 are 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

5.3. 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

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

5.4. 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
- 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.

6. 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.

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Appendix B: Likelihood table

Threatened ecological community likelihood table

Scientific name	EPBC Act status	Distribution and habitat	Likelihood of occurrence	Impact assessment required	Comments
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	E	Occurs in sub-tropical, sub-humid and temperate climatic zones from Curtis Island, north of Gladstone, in Queensland to Bermagui in southern New South Wales. This ecological community is typically found where groundwater is saline or brackish but can occur in areas where groundwater is relatively fresh. It is typically found on coastal flats, floodplains, drainage lines, lake margins, wetlands, and estuarine fringes where soils are at least occasionally saturated, water-logged or inundated. Typically associated with low-lying coastal alluvial floodplains and alluvial flats. The canopy layer is dominated by *Casuarina glauca* (swamp oak, swamp she-oak). This often occurs as a relatively uniform upper layer of swamp oak, with height and density being dependent on the local environmental conditions.	None	No	TEC does not occur within the study area.
Dunn's white gum (Eucalyptus dunnii) moist forest in north-east New South Wales and south-east Queensland	E	Occurs in the NSW North Coast bioregion and adjacent bioregions in Southeastern Queensland and New England Tablelands, with a scattered distribution north from Dorrigo and Coffs Harbour in New South Wales to Warwick and Canungra in Queensland. This ecological community typically occurs on deep, fertile soils and is largely confined to fertile basaltic derived soils, or fine-grained sediments of colluvium or alluvium depending on upstream environments. Dunn's white gum moist forest, in its undisturbed state, is a structurally complex, layered wet sclerophyll forest that generally occupies areas of transition between rainforest and drier eucalypt forest. The ecological community is generally a tall, open forest with a multi-stratum understory of rainforest trees, shrubs and vines (typically mesic). The canopy of the ecological community may occur as pure stands of *Eucalyptus dunnii* (Dunn's white gum), though more often the canopy is co-dominated by Dunn's white gum with *E. saligna* (Sydney blue gum), *E. grandis* (Flooded gum), *E. microcorys* (Tallowwood) and/or *Lophostemon confertus* (Brush box).	None	No	TEC does not occur within the study area.
Grey box-grey gum wet forest of subtropical eastern Australia	E	This ecological community is limited to the New South Wales north coast and south-eastern Queensland IBRA Bioregions from near Coffs Harbour in NSW to the southern areas of southeast Queensland. Within these areas it occurs in the Moreton Basin, Scenic Rim, Woodenbong, Cataract, Rocky River Gorge, Washpool, Dalmorton, Clarence Sandstones and Chaelundi IBRA subregions. The ecological community typically occurs on escarpment slopes	None	No	TEC does not occur within the study area.

Scientific name	EPBC Act status	Distribution and habitat	Likelihood of occurrence	Impact assessment required	Comments
		and foothills, on inland hills and ranges between 100 m and 600 m altitude. It is mainly associated with areas where mean annual rainfall exceeds approximately 1000 mm and does not exceed 1260 mm. It may occur in areas with somewhat lower or higher rainfall than this where topography or other factors create a suitable microclimate. The Grey box-grey gum wet forest at maturity typically has a tall to very tall open canopy dominated by its characteristic Eucalyptus species with or without *Araucaria cunninghamii* (Hoop Pine).			
Lowland Rainforest of Subtropical Australia	CE	This ecological community primarily occurs from Maryborough in Queensland to the Clarence River (near Grafton) in New South Wales (NSW) but is also in isolated areas between the Clarence River and Hunter River such as the Bellinger and Hastings Valleys. This ecological community occurs on basalt and alluvial soils, including sand and old/elevated alluvial soils as well as floodplain alluvia. It also occurs occasionally on historically enriched rhyolitic soils and basaltically enriched metasediments. Lowland Rainforest mostly occurs in areas <300 m above sea level. Aspect can result in the community being found at >300 m altitude on north-facing slopes, but typically 300 m defines the extent of the lowlands. In addition, Lowland Rainforest typically occurs in areas with high annual rainfall (>1300 mm). The canopy comprises a range of tree species but in some areas a particular species may dominate e.g. palm forest, usually dominated by *Archontophoenix cunninghamiana* (Bangalow Palm) or *Livistona australis* (Cabbage Palm); and riparian areas dominated by *Syzygium floribundum* (syn. *Waterhousea floribunda*) (Weeping Satinash/Weeping Lilly Pilly).	Known	Yes	Associated PCT within study area where elevation is below 300m.
New England Peppermint (Eucalyptus nova-anglica) Grassy Woodlands	CE	This ecological community occurs from Dumaresq, Guyra, Inverell, Severn and Tenterfield Local Government Areas, but may occur elsewhere on the New England Tablelands. New England Peppermint is typically an open forest or woodland that occurs at high elevations on valley flats and depressions that are subject to cold air drainage. Soils are poorly drained loam-clays derived from basalt, fine-grained sedimentary or acid volcanic substrates. The tree layer, when present, is usually 8 to 20m tall and dominated by New England Peppermint (*Eucalyptus nova-anglica*), occasionally in association with other tree species including Mountain Gum (*E. dalrympleana subsp. heptantha*) and Blakely's Red Gum (*E. blakelyi*). The shrub layer is either sparse or absent. There is a dense ground layer of various grasses and herbs.	None	No	TEC does not occur within the study area.

Scientific name	EPBC Act status	Distribution and habitat	Likelihood of occurrence	Impact assessment required	Comments
Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions	E	Occurs in the New South Wales North Coast (NNC) and South Eastern Queensland (SEQ) IBRA bioregions and on Curtis Island in the Brigalow Belt North (BBN) IBRA Bioregion. This encompasses an area from just north of Newcastle, New South Wales (around Raymond Terrace) in the south, to just north of Gladstone in Queensland. The ecological community is found on alluvial landforms, including floodplains, the riparian zones of parent rivers and other order tributaries, alluvial flats, floodplain/alluvial terraces and periodically flooded depressions. It generally occurs below 50 m above sea-level (ASL), although it can occur up to 250 m ASL. The structure of this ecological community, in its undisturbed state, varies from tall open forest to woodland, although partial clearing may have reduced the canopy to scattered trees in some areas. Elsewhere, there may be localised areas of denser closed forest and/or low forest, often associated with other disturbance (including flooding). The tree canopy is dominated by eucalypts and/or other myrtaceous trees (specifically from the Angophora, Corymbia, Lophostemon and Syncarpia genera), often as a mixture of species.	None	No	TEC does not occur within the study area.
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	CE	Occurs on mainland islands within 20 km of the coast in the IBRA 2 Bioregions: South East Queensland, NSW North Coast, Sydney Basin and the Bateman subregion of the South East Corner. This ecological community typically occurs in low-lying coastal alluvial areas with minimal relief, such as swamps, floodplain pockets, depressions, alluvial flats, back-barrier flats, fans, terraces, and behind fore-dunes. Coastal Swamp Sclerophyll Forest most commonly occurs at elevations below 20 m above sea-level (ASL) but may occur occasionally up to 220 m ASL on hill slopes, for example in association with perched swamps and lakes, or a naturally high-water table. The frequency and duration of water inundation, salinity and nutrient content of the soil, and latitude influences the vegetation composition. This ecological community is found on hydric soils, which are either waterlogged or intermittently or episodically inundated for typically between one to three months per year, often seasonally. The soils on which the ecological community is found, are formed by unconsolidated sediments and include alluvial deposits, as well as soils that are primarily marine or aeolian sand in origin, but where silts, clays and organic matter have been incorporated, such as inter-barrier creek deposits, within or along the margins of, coastal barrier. They are often stained black or dark grey from humus.	None	No	TEC does not occur within the study area.

V = Vulnerable, E= Endangered Ecological Community, CE = Critically Endangered Ecological Community.

Flora species likelihood table

Scientific name	Common name	EPBC Act status	Distribution and habitat	Number of records within 5 km	Likelihood of occurrence	Impact assessment required	Justification
Acronychia littoralis	Scented acronychia	E	Found between Fraser Island in Queensland and Port Macquarie on the north coast of NSW. Occurs in transition zones between littoral rainforest and swamp sclerophyll forest; between littoral and coastal cypress pine communities; and margins of littoral forest.	0	No	No	No transition zones between littoral rainforest and sclerophyll or coastal cypress pine communities occur within the study area.
Arthraxon hispidus	Hairy jointgrass	V	Occurs over a wide area in south-east Queensland, and on the northern tablelands and north coast of NSW, but is never common. Also found from Japan to central Eurasia. Moisture and shade-loving grass, found in or on the edges of rainforest and in wet eucalypt forest, often near creeks or swamps.	0	Potential	No	No records occur within a 5km BioNet search and the species was not recorded from the study area during targeted surveys.
Asperula asthenes	Trailing woodruff	V	Occurs only in NSW. It is found in scattered locations from the Central Coast (Mandalong area) north to near Kempsey, with several records from the Port Stephens / Karuah / Wallis Lakes area / Forster (including Myall Lakes NP, New England NP, Wallingat NP and Darawank NR). Occurs in damp sites, often along riverbanks.	0	No	No	The distribution of this species does not overlap with the study area.
Bertya sp. Clouds Creek		E	Endemic to north-eastern New South Wales where it occurs from the Gibraltar Range, east of Glen Innes, to the Macleay Gorges, south-east of Armidale. *Berty asp. Clouds Creek* grows on steep, rocky slopes in shallow soil. The parent material is either granitic (at least three populations) or metasedimentary (most of the southern-most populations). It typically occurs within heath or low shrubland vegetation surrounded by	0	Unlikely	No	No records occur within a 5km BioNet search and the species was not recorded from the study area during the targeted surveys.

Scientific name	Common name	EPBC Act status	Distribution and habitat	Number of records within 5 km	Likelihood of occurrence	Impact assessment required	Justification
			stunted eucalypts. Altitudes range from 300-1000 m above sea level.				
Boronia umbellata	Orara boronia	V	Found at only a few locations between Glenreagh and Lower Bucca, north of Coffs Harbour, but it is locally common in the restricted area where it occurs. This Boronia grows as an understorey shrub in and around gullies in wet open forest. It appears to regenerate well after disturbance, but it is not known whether prolonged or repeated disturbance affects long-term persistence.	0	Unlikely	No	. The study area is not located within it's known geographic distribution.
Callistemon pungens		V	In NSW, the species occurs from near Inverell to the eastern escarpment in New England National Park. Habitats range from riparian areas dominated by *Casuarina cunninghamiana subsp. cunninghamiana* to woodland and rocky shrubland.	0	No	No	The distribution of this species does not overlap with the study area.
Cryptostylis hunteriana	Leafless tongue orchid	V	The Leafless Tongue Orchid has been recorded from as far north as Gibraltar Range National Park south into Victoria around the coast as far as Orbost. This species does not appear to have well defined habitat preferences and is known from a range of communities, including swamp-heath and woodland. The larger populations typically occur in woodland dominated by Scribbly Gum (*Eucalyptus sclerophylla*), Silvertop Ash (*E. sieberi*), Red Bloodwood (*Corymbia gummifera*) and Black Sheoak (*Allocasuarina littoralis*); appears to prefer open areas in the understorey of this community and is often found in association with the Large Tongue Orchid (*C. subulata*) and the Tartan Tongue Orchid (*C. erecta*).	0	No	No	The distribution of this species does not overlap with the study area.

Scientific name	Common name	EPBC Act status	Distribution and habitat	Number of records within 5 km	Likelihood of occurrence	Impact assessment required	Justification
Cynanchum elegans	White-flowered wax plant	E	Restricted to eastern NSW where it is distributed from Brunswick Heads on the north coast to Gerroa in the Illawarra region. The species has been recorded as far west as Merriwa in the upper Hunter River valley. *Cynanchum elegans* occurs on the edge of dry rainforest vegetation. Other associated vegetation types include littoral rainforest; *Leptospermum laevigatum* (Coastal Tea-tree) – *Banksia integrifolia subsp. integrifolia* (Coastal Banksia) coastal scrub; *Eucalyptus tereticornis* (Forest Red Gum) aligned open forest and woodland; *Corymbia maculate* (Spotted Gum) aligned open forest and woodland; and *Melaleuca armillaris* (Bracelet Honeymyrtle) scrub to open scrub.	0	Unlikely	No	Species was not recorded from the study area during the site inspection.
Dichanthium setosum	Bluegrass	V	Occurs on the New England Tableland, North West Slopes and Plains and the Central Western Slopes of NSW, extending to northern Queensland. It occurs widely on private property, including in the Inverell, Guyra, Armidale and Glen Innes areas. Often found in moderately disturbed areas such as cleared woodland, grassy roadside remnants and highly disturbed pasture.	0	No	No	The distribution of this species does not overlap with the study area.
Endiandra hayesii	Rusty rose walnut, Velvet laurel	V	A restricted distribution from Burleigh Heads in Queensland to the Richmond River in north-east NSW. It is locally abundant in some parts of its range in NSW. The species occurs in regrowth and highly modified forms of the habitats: sheltered moist gullies in lowland subtropical and warm temperate rainforest on alluvium or basaltic soils.	0	No	No	The distribution of this species does not overlap with the study area.
Eucalyptus nicholii	Narrow-leaved peppermint	V	This species is sparsely distributed but widespread on the NET from Nundle to north of Tenterfield, being most common in central portions of its range.	0	No	No	This species naturally occurs on the New England Tableland. The

Scientific name	Common name	EPBC Act status	Distribution and habitat	Number of records within 5 km	Likelihood of occurrence	Impact assessment required	Justification
			Found largely on private property and roadsides, and occasionally in conservation reserves. Planted as urban trees, windbreaks and corridors. Typically grows in dry grassy woodland, on shallow soils of slopes and ridges. Found primarily on infertile soils derived from granite or metasedimentary rock.				distribution of this species does not overlap with the study area.
Euphrasia arguta		CE	Known from Nundle State Forest and adjacent private land, in NSW, where it was rediscovered in 2008. These populations occur at the border between the NET and the NNC bioregions. *E. arguta* are found in eucalypt forests with a mixed grass and shrub understorey.	0	No	No	The distribution of this species does not overlap with the study area.
Euphrasia collina subsp. muelleri	Mueller's eyebright	E	In NSW it was recorded more than 100 years ago in the upper Murray and McIntyre Rivers and near Dorrigo and Cootamundra. The only NSW collections in the past 50 years were made in the vicinity of the Tinderry Range between Canberra and Cooma (1970) and between Uralla and Tamworth (1987).	0	No	No	The distribution of this species does not overlap with the study area.
Euphrasia orthocheila subsp. peraspera	Tenterfield eyebright	E	Currently only known from two swamps in the Tenterfield area. Recorded from moist open situations such as swamps.	1	Unlikely	No	Generally recorded in moist open situations such as swamps and from the Tenterfield area. Dorrigo records date back to 1893-1910. Not observed during the field survey.
Haloragis exalata subsp. velutina	Tall velvet sea-berry	V	This subspecies of Tall Sea-berry occurs on the north coast of NSW and south-eastern Queensland. It is plentiful in inaccessible areas of the upper Macleay River. Grows in damp places near watercourses.	0	No	No	The distribution of this species does not overlap with the study area.
Hicksbeachia pinnatifolia	Monkey boppel nut	V	Coastal areas of north-east NSW from the Nambucca Valley north to south-east Qld. Subtropical rainforest, moist eucalypt forest and Brushbox forest.	14	Potential	No	Species was not recorded from the study area during the field survey.

Scientific name	Common name	EPBC Act status	Distribution and habitat	Number of records within 5 km	Likelihood of occurrence	Impact assessment required	Justification
Macadamia integrifolia	Macadamia nut	V	Not known to occur naturally in NSW. Occurs in remnant rainforest.	0	No	No	This species does not occur naturally in NSW.
Macadamia tetraphylla	Rough-shelled bush nut	V	Confined chiefly to the north of the Richmond River in north-east NSW, extending just across the border into Queensland. Many records, particularly those further south, are thought to be propagated. Found in subtropical rainforest, usually near the coast.	0	Potential	No	Species is confined to the north of the Richmond River, all occurrences south of this area are thought to be propagated.
Marsdenia longiloba	Slender marsdenia	V	In NSW, occurs at scattered locations on the north coast north from Barrington Tops. Subtropical and warm temperate rainforest, lowland moist eucalypt forest adjoining rainforest, areas with rock outcrops.	6	Known	Yes	Populations of this species was recorded from the study area.
Neoastelia spectabilis	Silver sword lily	V	Restricted to NSW and has only been recorded in New England National Park, on the eastern edge of the NET. Grows in rock crevices near waterfalls and in seepage lines on rocky slopes in Antarctic Beech rainforest, between 900 - 1150 m altitude.	0	Unlikely	No	The distribution of this species does not overlap with the study area.
Olearia flocktoniae	Dorrigo daisy bush	E	Northern fall of the Dorrigo Plateau in north-east NSW. Occurs in disturbed locations, such as roadsides or timber plantations adjacent to wet eucalypt forest or rainforest.	28	Potential	No	Species was not recorded from the study area during the field survey.
Owenia cepiodora	Onion cedar	V	Occurs north from the Richmond River in north-east NSW extending just across the border into Queensland. Found in subtropical and dry rainforest on or near soils derived from basalt.	0	No	No	The distribution of this species does not overlap with the study area.
Parsonsia dorrigoensis	Milky silkpod	E	Found only within NSW, in the north coast region between Kendall and Woolgoolga. Occurs in subtropical and warm-temperature rainforest, rainforest margins, and moist eucalypt forest up to 800 m, on brown clay soils.	28	Known	Yes	A population of this species was recorded from the study area.

Scientific name	Common name	EPBC Act status	Distribution and habitat	Number of records within 5 km	Likelihood of occurrence	Impact assessment required	Justification
Persicaria elatior	Knotweed, Tall knotweed	V	Occurs in south-eastern NSW (Mt Dromedary (an old record)), Moruya State Forest near Turlinjah, the Upper Avon River catchment north of Robertson, Bermagui, and Picton Lakes. In northern NSW it is known from Raymond Terrace (near Newcastle) and the Grafton area (Cherry Tree and Gibberagee State Forests). This species normally grows in damp places, especially beside streams and lakes. It is occasionally found in swamp forest and can be associated with disturbance.	0	No	No	The distribution of this species does not overlap with the study area.
Phaius australis	Southern swamp orchid	E	Occurs in Queensland and north-east NSW as far south as Coffs Harbour. *P australis* inhabits swampy grassland or swampy forest including rainforest, eucalypt or paperbark forest, mostly in coastal areas.	0	No	No	Recent molecular studies have demonstrated that *Phaius australis* falls within the variation of the widespread and variable *Phaius tankervillae* which is known to grow in the NSW north coast North from Kempsey in paperbark Melaleuca species swamps and amongst grasses and low shrubs in damp to swampy sites in open forest at altitudes that range from 0-50 m (Copeland and Backhouse 2022). This habitat or altitude range does not occur within the study area.
Plectranthus nitidus	Nightcap Plectranthus	E	In NSW it was previously known only from Nightcap National Park near Terania Creek in northern NSW. However, the species has now been recorded as far south as Chaelundi National Park near Nymboida. Grows on rocky cliff-faces and boulders, in the shelter	0	No	No	Species currently occurs from the Nightcap to McPherson Ranges which is north of the study area. Historic records from Chaelundi to the west are still outside of the proposed DEWG.

Scientific name	Common name	EPBC Act status	Distribution and habitat	Number of records within 5 km	Likelihood of occurrence	Impact assessment required	Justification
			and shade provided by the adjacent rainforest and dry rainforest.				
Rhodamnia rubescens	Scrub turpentine	CE	Occurs in coastal districts north from Batemans Bay in New South Wales, approximately 280 km south of Sydney, to areas inland of Bundaberg in Queensland. Found in littoral, warm temperate and subtropical rainforest and wet sclerophyll forest usually on volcanic and sedimentary soils.	56	Known	Yes	This species was recorded from the study area.
Rhodomyrtus psidioides	Native guava	CE	Occurs from Broken Bay, approximately 90 km north of Sydney, New South Wales, to Maryborough in Queensland. Populations are typically restricted to coastal and sub-coastal areas of low elevation however the species does occur up to 120 km inland in the Hunter and Clarence River catchments and along the Border Ranges in NSW. Pioneer species found in littoral, warm temperate and subtropical rainforest and wet sclerophyll forest often near creeks and drainage lines.	26	Potential	No	Species was not recorded from the study area during the field survey.
Samadera sp. Moonee Creek	Moonee quassia	E	Scattered distribution from the Moonee Creek area north of Coffs Harbour to north-east of Grafton. Found in the shrubby layer below tall moist eucalypt forest and tall dry eucalypt forest, including forest edges, mostly at lower altitudes.	0	Unlikely	No	Species was not recorded from the study area during the site inspection.
Sarcochilus fitzgeraldii	Ravine orchid	V	Occurs in north-east NSW, north of the Macleay River, to Maleny in south-east Qld. Found on rocks or rarely on bases of trees, in subtropical rainforest, usually near streams, from 500-700 m.	7	Known	Yes	This species was recorded from the study area.
Syzygium hodgkinsoniae	Red lilly pilly	V	A restricted range from the Richmond River in north-east NSW to Gympie in Queensland. Usually found in	0	No	No	This species is restricted to a range that is north of the study area.

Scientific name	Common name	EPBC Act status	Distribution and habitat	Number of records within 5 km	Likelihood of occurrence	Impact assessment required	Justification
			riverine and subtropical rainforest on rich alluvial or basaltic soils.				
Thesium australe	Austral toadflax	V	Found in very small populations scattered across eastern NSW, along the coast, and from the Northern to Southern Tablelands. Occurs in grassland on coastal headlands or grassland and grassy woodland away from the coast.	0	No	No	No grassland or grassy woodland habitat occurs within the study area.
Triplarina imbricata	Creek Triplarina	E	Found only in a few locations in the escarpment ranges and near Tabulam in north-east NSW. Occurs along watercourses in low open forest with *Tristaniopsis laurina* (water gum) or in montane bogs, often with *Baekea amissa*.	0	Unlikely	No	Species' closest known population is in Nymboida which is outside of the study area. Additionally, this species was not recorded within the study area during the field survey.
Tylophora woollsii	Cryptic forest twiner	E	found from the NNC and NET to southern Queensland, but is very rare within that range. Known on the Tablelands from the Bald Rock and Boonoo Boonoo areas north of Tenterfield. This species grows in moist eucalypt forest, moist sites in dry eucalypt forest and rainforest margins.	2	Known	Yes	This species was recorded from the study area.
Total records				**274**			

Threatened fauna species likelihood table

Scientific name	Common name	EPBC Act status	Distribution and habitat	Number of records within 5 km	Likelihood of occurrence	Impact assessment required	Justification
Amphibia							
Assa darlingtoni	Pouched frog	V	Distributed between north-east NSW and far south-east Qld. There are three isolated populations in NSW:	55	Known	Yes	Recorded within the study area. Suitable habitat widely

Scientific name	Common name	EPBC Act status	Distribution and habitat	Number of records within 5 km	Likelihood of occurrence	Impact assessment required	Justification
			Dorrigo Plateau and Gibraltar Range, Border Ranges. The pouched frog inhabits cool, moist rainforest (including Antarctic beech), or moist eucalypt forest in mountainous areas, mostly above 800 m.				available and an abundance of records in a 5 km square radius of the study area.
Litoria booroolongensis	Booroolong frog	E	Restricted to NSW and north-eastern Victoria, predominantly along the western-flowing streams of the Great Dividing Range. Several populations have recently been recorded in the Namoi catchment. Permanent streams with some fringing vegetation cover such as ferns, sedges or grasses.	1	Unlikely	No	The species is rare throughout most of the remainder of its range and predominately in western flowing streams. The study area does not have western flowing streams.
Litoria subglandulosa	New England tree frog, Glandular frog		Occurs on the eastern escarpment of the Great Dividing Range from "The Flags" near Walcha north to Girraween National Park. Located along streams in rainforest, moist and dry eucalypt forest or in subalpine swamps.	4	Likely	Yes	Species known from the catchment and suitable stream habitat in rainforest and moist eucalypt forest occurs across the study area.
Mixophyes balbus	Stuttering frog	V	Along the east coast of Australia from southern Qld to north-eastern Victoria. Inhabits rainforest and wet, tall open forest in the foothills and escarpment on the eastern side of the Great Dividing Range.	27	Likely	Yes	The Dorrigo region appears to be a stronghold for this species. Suitable streams in rainforest and wet sclerophyll forest occur across the study area.
Mixophyes iteratus	Giant barred frog	V	The giant barred frog is distributed from Doongul Creek, Wongi State Forest, near Maryborough in south-eastern Queensland, south to Warrimoo in the Blue Mountains, New South Wales. The species is currently known from mid to low altitudes below 610 m above sea level. Found in freshwater permanent/semi-permanent streams. This species favours riparian rainforest or wet sclerophyll forest.	56	Likely	Yes	Species known from the catchment and suitable permanent and semi-permanent stream habitat occur within the study area.

Scientific name	Common name	EPBC Act status	Distribution and habitat	Number of records within 5 km	Likelihood of occurrence	Impact assessment required	Justification
Philoria sphagnicolus	Sphagnum frog	V	Occurs in the eastern escarpment of the Great Dividing Range in north-east NSW from Chaelundi State Forest south to Killabakh Nature Reserve near Comboyne. Inhabits rainforest (including Antarctic beech forest) and wet sclerophyll forests at high elevation, in sphagnum moss beds or seepages on steep slopes. They can also occur at lower elevation in wet coastal foothills.	42	Likely	Yes	Species known from the catchment and suitable freshwater stream habitat and soaks including sphagnum masses occur within the study area.
Birds							
Actitis hypoleucos	Common sandpiper	M	Occurs along all coastlines of Australia and in many areas inland. The common sandpiper utilises a wide range of coastal wetlands and some inland wetlands, with varying levels of salinity, and is mostly found around muddy margins or rocky shores and rarely on mudflats. These muddy margins are usually narrow and may be steep. The species is often associated with mangroves, and sometimes found in areas of mud littered with rocks or snags.	0	No	No	No suitable wetlands occur within the study area.
Anthochaera phrygia	Regent honeyeater	CE	In NSW the distribution is very patchy and mainly confined to the two main breeding areas and surrounding fragmented woodlands. Remaining breeding regions in NSW are located at Capertee Valley, Mudgee/Wollar, Lower Hunter Valley and the Bundarra-Barraba region. The species inhabits dry open forest and woodland, particularly box-Ironbark woodland, and riparian forests of river sheoak. These woodlands have significantly large numbers of mature trees, high canopy cover and abundance of mistletoes.	0	Unlikely	No	Species is not known to occur within a 5 km square radius and there is no key eucalypt species or riparian she-oak habitat within the study area.
Apus pacificus	Fork-tailed swift	M	Recorded in all regions of NSW. Occurs in riparian woodland, swamps, low scrub, heathland, saltmarsh,	2	No	No	Lack of suitable habitat and this species is almost exclusively aerial in Australia.

Scientific name	Common name	EPBC Act status	Distribution and habitat	Number of records within 5 km	Likelihood of occurrence	Impact assessment required	Justification
			grassland, spinifex sandplains, open farmland and inland and coastal sand-dunes.				
Atrichornis rufescens	Rufous scrub-bird	E	The northern subspecies (*A. r. rufescens*) occurs between the Mistake Range in Qld and the Gibraltar Range in northern NSW. The southern subspecies (*A. r. ferrieri*) is confined to NSW, from the Dorrigo Plateau to Barrington Tops. Found at high-altitude (above 600 m) subtropical, warm temperate and cool temperate rainforests and wet sclerophyll forests.	0	Potential	Yes	Suitable habitat occurs within the study area and species is known from the region.
Botaurus poiciloptilus	Australasian bittern	E	In NSW they may be found over most of the state except for the far north-west. This species favours permanent freshwater wetlands with tall, dense vegetation, particularly bullrushes (*Typha* spp.) and spikerushes (*Eleocharis spp*.).	0	No	No	No permanent freshwater wetlands with tall dense vegetation occur within the study area.
Calidris acuminata	Sharp-tailed sandpiper	V, M	Widespread in both inland and coastal locations. This species generally occupies littoral and estuarine habitats, and in New South Wales is mainly found in intertidal mudflats of sheltered coasts. It also occurs in non-tidal swamps, lakes and lagoons on the coast and sometimes inland.	0	No	No	No suitable habitat within the study area.
Calidris canutus	Red knot, Knot	V, M	Occurs along the coast of Australia. Inhabits intertidal mudflats, sandflats and sandy beaches of sheltered coasts, in estuaries, bays, inlets, lagoons and harbours; sometimes on sandy ocean beaches or shallow pools on exposed wave-cut rock platforms or coral reefs.	0	No	No	No suitable coastal marine habitat within the study area.
Calidris ferruginea	Curlew sandpiper	CE, M	In NSW, they are widespread east of the Great Divide, especially in coastal regions. This species occurs on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons, and also around non-	0	No	No	No suitable coastal marine habitat within the study area.

Scientific name	Common name	EPBC Act status	Distribution and habitat	Number of records within 5 km	Likelihood of occurrence	Impact assessment required	Justification
			tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms.				
Calidris melanotos	Pectoral sandpiper	M	In NSW, the species is widespread, but scattered. *C. melanotos* occurs in shallow fresh to saline wetlands. Found at coastal lagoons, estuaries, bays, swamps, lakes, inundated grasslands, saltmarshes, river pools, creeks, floodplains and artificial wetlands.	0	No	No	Species is not known from the locality.
Calyptorhynchus lathami	Glossy black-cockatoo	V	The species is uncommon although widespread throughout suitable forest and woodland habitats, from the central Queensland coast to East Gippsland in Victoria, and inland to the southern tablelands and central western plains of NSW, with a small population in the Riverina. *C. lathami* Inhabits open forest and woodlands of the coast and the Great Dividing Range where stands of sheoak occur. Black sheoak (*Allocasuarina littoralis*) and forest sheoak (*A. torulosa*) are important foods.	28	Likely	Yes	Suitable habitat including stands of feed trees (*Allocasuarina* species) identified within the study area.
Charadrius leschenaultii	Greater sand plover	V, M	In NSW, the species has been recorded between the northern rivers and the Illawarra, with most records coming from the Clarence and Richmond estuaries. *C. leschenaultii* is almost entirely restricted to coastal areas in NSW, occurring mainly on sheltered sandy, shelly or muddy beaches or estuaries with large intertidal mudflats or sandbanks.	0	No	No	No suitable coastal marine habitat within the study area.
Climacteris picumnus victoriae	Brown treecreeper (south-eastern)	V	Endemic to eastern Australia and occurs in eucalypt forests and woodlands of inland plains and slopes of the Great Dividing Range. This species is less commonly found on coastal plains and ranges.	0	Unlikely	No	This species generally inhabits open habitat and there are no records within the locality.

Scientific name	Common name	EPBC Act status	Distribution and habitat	Number of records within 5 km	Likelihood of occurrence	Impact assessment required	Justification
Cuculus optatus	Oriental cuckoo	M	Migratory bird that spends non-breeding season (Sept-May) in coastal regions across northern and eastern Australia as well as offshore islands. This species occurs in rainforest, vine thickets, wet sclerophyll forest or open casuarina, acacia or eucalyptus woodlands. Frequently at edges or ecotones between habitat types.	0	Potential	Yes	Suitable rainforest and wet sclerophyll forest occurs within the study area.
Cyclopsitta diophthalma coxeni	Coxen's fig-parrot	CE	Limited to about five populations scattered between Bundaberg in Queensland and the Hastings River in NSW. Coxen's fig parrot is usually recorded from drier rainforests and adjacent wetter eucalypt forest but rarely seen due to its small size and cryptic habits. Also found in the wetter lowland rainforests that are now largely cleared in NSW.	0	No	No	study area is south of the species' current known distribution.
Erythrotriorchis radiatus	Red goshawk	E	The species is very rare in NSW, extending south to about 30°S, with most records north of this, in the Clarence River Catchment, and a few around the lower Richmond and Tweed Rivers. Formerly, it was at least occasionally reported as far south as Port Stephens. The red goshawk inhabits open woodland and forest, preferring a mosaic of vegetation types, a large population of birds as a source of food, and permanent water, and are often found in riparian habitats along or near watercourses or wetlands. In NSW, preferred habitats include mixed subtropical rainforest, melaleuca swamp forest and riparian eucalyptus forest of coastal rivers.	0	Unlikely	No	This species is very rare and is found north of about 30°S which is the northern extent of the study area. There are no records of the species in the region since 2000.
Falco hypoleucos	Grey falcon	V	Occur in NSW, chiefly throughout the Murray-Darling Basin, with the occasional vagrant east of the Great Dividing Range. The Grey Falcon is usually restricted to shrubland, grassland and wooded watercourses of arid	0	No	No	The species known distribution is west of the study area.

Scientific name	Common name	EPBC Act status	Distribution and habitat	Number of records within 5 km	Likelihood of occurrence	Impact assessment required	Justification
			and semi-arid regions, although it is occasionally found in open woodlands near the coast.				
Gallinago hardwickii	Latham's snipe	V, M	Migrant to the east coast of Australia, extending inland west of the Great Dividing Range in NSW. This species inhabits freshwater, saline or brackish wetlands up to 2000 m above sea-level; usually freshwater swamps, flooded grasslands or heathlands.	0	No	No	No permanent and ephemeral wetlands within the study area.
Grantiella picta	Painted honeyeater	V	The painted honeyeater is nomadic and occurs at low densities throughout its range. The greatest concentrations of the bird and almost all breeding occurs on the inland slopes of the Great Dividing Range in NSW, Victoria and southern Queensland. During the winter it is more likely to be found in the north of its distribution. Inhabits boree/ weeping myall (*Acacia pendula*), Brigalow (*A. harpophylla*) and box-gum woodlands and box-ironbark forests.	0	No	No	Species distribution is west of the study area.
Hirundapus caudacutus	White-throated needletail	V, M	All coastal regions of NSW, inland to the western slopes and inland plains of the Great Divide. This species occurs most often over open forest and rainforest, as well as heathland, and remnant vegetation in farmland.	3	Potential	Yes	Species is mostly aerial in Australia however is known from the locality.
Lathamus discolor	Swift parrot	CE	In NSW mostly occurs on the coast and southwest slopes. Found in areas where eucalypts are flowering profusely or where there are abundant lerp (from sap-sucking bugs) infestations. Favoured feed trees include winter flowering species such as swamp mahogany (*Eucalyptus robusta*), spotted gum (*Corymbia maculate*), red bloodwood (*C. gummifer*a), forest red gum (*E. tereticornis*), mugga ironbark (*E. sideroxylon*) and white box (*E. albens*).	0	Unlikely	No	No favoured feed trees occur, and species is not known from a 5 km square radius.

Scientific name	Common name	EPBC Act status	Distribution and habitat	Number of records within 5 km	Likelihood of occurrence	Impact assessment required	Justification
Melanodryas cucullata cucullata	Hooded robin (south-eastern)	E	The south-eastern form (*subspecies cucullata*) is found from Brisbane to Adelaide and throughout much of inland NSW, with the exception of the extreme north-west, where it is replaced by *subspecies picata*. Two other subspecies occur outside NSW. The hooded robin requires structurally diverse habitats featuring mature eucalypts, saplings, some small shrubs and a ground layer of moderately tall native grasses.	0	Unlikely	No	Generally, occurs in open woodland, which is absent, and is not known from the region.
Monarcha melanopsis	Black-faced monarch	M	In NSW, the species occurs around the eastern slopes and tablelands of the Great Divide. Occurs in rainforest ecosystems.	0	Potential	Yes	Species occurs within the region and there are suitable rainforest ecosystems present within the study area.
Motacilla flava	Yellow wagtail	M	Migratory bird that inhabits well-watered open grasslands and the fringes of wetlands. This species roosts in mangroves and other dense vegetation.	0	Unlikely	No	No suitable habitat within the study area in the form of open grassy flats near water or open areas with low vegetation.
Myiagra cyanoleuca	Satin flycatcher	M	In NSW, they are widespread on and east of the Great Divide and sparsely scattered on the western slopes, with very occasional records on the western plains. This species inhabits heavily vegetated gullies in eucalypt-dominated forests and taller woodlands, and on migration, occur in coastal forests, woodlands, mangroves and drier woodlands and open forests	0	Potential	Yes	Species occurs within the region and there are suitable ecosystems within the study area.
Neophema chrysostoma	Blue-winged parrot	V	Migratory bird during non-breeding period, from autumn to early spring, birds are recorded from northern Victoria, eastern South Australia, south-western Queensland and western New South Wales, with some birds reaching south-eastern New South Wales and eastern Victoria. This species occurs in grasslands and grassy woodlands and are often found		Unlikely	No	The species distribution is typically west and south of the study area. Suitable grasslands, grassy woodlands and wetlands absent.

Scientific name	Common name	EPBC Act status	Distribution and habitat	Number of records within 5 km	Likelihood of occurrence	Impact assessment required	Justification
			near wetlands both near the coast and in semi-arid zones				
Numenius madagascariensis	Eastern curlew	CE, M	In NSW the species occurs across the entire coast but is mainly found in estuaries such as the Hunter River, Port Stephens, Clarence River, Richmond River and intermittent, closed/open, lake/lagoons (ICOLLS) of the south coast. It generally occupies coastal lakes, inlets, bays and estuarine habitats, and in New South Wales is mainly found in intertidal mudflats and sometimes saltmarsh of sheltered coasts.	0	No	No	No suitable wetland habitat occurs within the study area
Pandion haliaetus	Osprey	M	Migratory bird, occur in littoral and coastal habitats and terrestrial wetlands of tropical and temperate Australia and offshore islands.	0	No	No	No suitable coastal marine habitat within the study area
Rhipidura rufifrons	Rufous fantail	M	Occurs in coastal and near coastal districts of northern and eastern Australia. Mainly inhabits wet sclerophyll forests, often in gullies. They also occur in subtropical and temperate rainforests	0	Likely	Yes	Suitable habitat occurs within the study area.
Rostratula australis	Australian painted snipe	E	In NSW many records are from the Murray-Darling Basin including the Paroo wetlands, Lake Cowal, Macquarie Marshes, Fivebough Swamp and more recently, swamps near Balldale and Wanganella. Prefers fringes of swamps, dams and nearby marshy areas where there is a cover of grasses, lignum, low scrub or open timber.	0	No	No	No suitable habitat occurs within the study area.
Stagonopleura guttata	Diamond firetail	V	It is widely distributed in NSW, with a concentration of records from the Northern, Central and Southern Tablelands, the Northern, Central and South Western Slopes and the North West Plains and Riverina. Not commonly found in coastal districts, though there are records from near Sydney, the Hunter Valley and the Bega Valley. This species has a scattered distribution	0	No	No	Suitable woodland habitat does not occur within the study area.

Scientific name	Common name	EPBC Act status	Distribution and habitat	Number of records within 5 km	Likelihood of occurrence	Impact assessment required	Justification
			over the rest of NSW, though is very rare west of the Darling River. Found in grassy eucalypt woodlands, including box-gum woodlands and snow gum (*Eucalyptus pauciflora*) woodlands.				
Sternula nereis nereis	Australian fairy tern	V	Occurs along the coasts of Victoria, Tasmania, South Australia and Western Australia, occurring as far north as the Dampier Archipelago near Karratha. The subspecies has been known from New South Wales (NSW) in the past, but it is unknown if it persists there. found in embayment's of a variety of habitats including offshore, estuarine or lacustrine (lake) islands, wetlands and mainland coastline	0	No	No	No suitable coastal marine habitat within the study area.
Symposiachrus trivirgatus	Spectacled monarch	M	Occurs on the coast and eastern slopes of the Great Dividing Range to northern Hunter Region. Occasional records have been made further south at sites around Newcastle, Central Coast and Sydney	0	Potential	Yes	Suitable rainforest and wet sclerophyll habitat occur within the study area.
Turnix melanogaster	Black-breasted button-quail	V	Occurs in south-eastern Qld and far north-eastern NSW, mainly on and east of the Great Divide but extending inland to the inner western slopes. Very few NSW records in recent times. Inhabit dry rainforests, vine forest and vine thickets. May also occupy wetter subtropical rainforests, sometimes in association with moist eucalypt forest.	1	Potential	Yes	Suitable rainforest habitat occurs within the study area.
Insects							
Argynnis hyperbius inconstans	Australian fritillary	CE	Occur on the south-east Queensland and north-east NSW in open swampy coastal areas where the larval food plant arrowhead violet (*Viola betonicifolia*) occurs. Most recently known from a few widespread localities between Port Macquarie and Gympie.	0	No	No	This species is known from swampy habitat in coastal areas. This habitat is not present.

Scientific name	Common name	EPBC Act status	Distribution and habitat	Number of records within 5 km	Likelihood of occurrence	Impact assessment required	Justification
Phyllodes imperialis southern subspecies	Pink underwing moth	E	In NSW it is known to occur in a small number of localities from the QLD border to Wardell, and there is a disjunct population in the Bellingen area. Inhabits subtropical rainforest below about 600 m elevation; breeding habitat is restricted to areas where the caterpillar's food plant *Carronia multisepalea* occurs.	35	Likely	Yes	*Carronia multisepalea* was recorded within the study area and below 600 m in elevation within this species range.
Mammals							
Chalinolobus dwyeri	Large-eared pied bat	E	Found mainly in areas with extensive cliffs and caves, from Rockhampton in Queensland south to Bungonia in the NSW Southern Highlands. It is generally rare with a very patchy distribution in NSW. There are scattered records from the NET and North West Slopes.	0	Unlikely	No	Species is not known from the region and contains a patchy distribution.
Dasyurus maculatus	Spotted-tailed quoll	E	Found on the east coast of NSW, Tasmania, eastern Victoria and north-eastern Qld. Inhabits rainforest, open forest, woodland, coastal heath and inland riparian forest, from the sub-alpine zone to the coastline.	34	Known	Yes	Suitable habitat occurs within the study area abundance of records within the locality and species' scats were recorded during field survey.
Notamacropus parma	Parma wallaby	V	Their range is now confined to the coast and ranges of central and northern NSW from the Gosford district to south of the Bruxner Highway between Tenterfield and Casino. Preferred habitat is moist eucalypt forest with thick, shrubby understorey, often with nearby grassy areas, rainforest margins and occasionally drier eucalypt forest.	6	Likely	Yes	Suitable forest margin habitat occurs within the study area.
Petauroides volans	Southern greater glider	E	Occurs in eastern Australia, in eucalypt forests and woodlands, where it has a broad distribution from around Proserpine in Queensland, south through NSW and the Australian Capital Territory into Victoria.	8	Likely	Yes	Suitable forest habitat occurs within the study area and species is known from the locality.

Scientific name	Common name	EPBC Act status	Distribution and habitat	Number of records within 5 km	Likelihood of occurrence	Impact assessment required	Justification
Petaurus australis	Yellow-bellied glider	V	Occurs along the eastern coast to the western slopes of the Great Dividing Range, from southern Qld to Victoria. Inhabits tall mature eucalypt forest generally in areas with high rainfall and nutrient rich soils.	23	Likely	Yes	Suitable habitat within the study area. Records within a 5 km square radius of the study area.
Petrogale penicillata	Brush-tailed rock-wallaby	V	In NSW they occur from the Queensland border in the north to the Shoalhaven in the south, with the population in the Warrumbungle Ranges being the western limit. This species occupies rocky escarpments, outcrops and cliffs with a preference for complex structures with fissures, caves and ledges, often facing north.	1	Potential	No	Marginal rocky and cliff line habitat occurs within the study area.
Phascolarctos cinereus	Koala	E	In NSW it mainly occurs on the central and north coasts with some populations in the west of the Great Dividing Range. There are sparse and possibly disjunct populations in the Bega District, and at several sites on the southern tablelands. Inhabits eucalypt woodlands and forests.	235	Known	Yes	Suitable eucalypt forest habitat within the study area. Abundance of records occur within the locality and Koala scats were recorded within the study area.
Potorous tridactylus	Long-nosed potoroo	V	In NSW it is generally restricted to coastal heaths and forests east of the Great Dividing Range, with an annual rainfall exceeding 760 mm.	5	Likely	Yes	Suitable wet sclerophyll forest occurs within the study area.
Pseudomys novaehollandiae	New Holland mouse	V	Fragmented distribution across eastern NSW. Inhabits open heathlands, woodlands and forests with a heathland understorey, and vegetated sand dunes.	0	No	No	No records within the locality and lack of preferred habitat within the study area.
Pseudomys oralis	Hastings river mouse	E	A patchy distribution spanning the Great Dividing Range from the Hunter Valley, south of Mt Royal, north to the Bunya Mountains near Kingaroy in south-east Qld, at elevations between 300 m and 1100 m. Found in a variety of dry open forest types with dense, low ground cover and a diverse mixture of ferns, grass, sedges and herbs.	0	Unlikely	No	Marginal suitable habitat occurs however this species is not known from the locality.

Scientific name	Common name	EPBC Act status	Distribution and habitat	Number of records within 5 km	Likelihood of occurrence	Impact assessment required	Justification
Pteropus poliocephalus	Grey-headed flying-fox	V	Occurs along the eastern coast of Australia, from Bundaberg in Qld to Melbourne in Victoria. Inhabits subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops.	47	Likely	Yes	No flying-fox camps identified within the study area, however, suitable foraging habitat within the study area.
Reptiles							
Coeranoscincus reticulatus	Three-toed snake-tooth skink	V	The three-toed snake-tooth skink occurs on the coast and ranges from the Macleay valley in NSW to south-eastern Queensland. It is very uncommon south of Grafton. Inhabits rainforest and occasionally moist eucalypt forest, on loamy or sandy soils. The three-toed snake-tooth skink lives in loose soil, leaf litter and rotting logs, and feeds on earthworms and beetle grubs.	0	Unlikely	No	Species is very uncommon south of Grafton.
Harrisoniascincus zia	Rainforest cool-skink	V	Generally, occurs at high elevation in NSW and QLD ranging from > 500 m elevation, with most occurrences from > 700 m. This species inhabits elevation areas with *Nothofagus moorei* (Antarctic beech).	0	Potential	Yes	Species distribution overlaps with study area and suitable habitat occurs.
Myuchelys georgesi	Bellinger river snapping turtle	CE	Endemic to the Bellinger Catchment on the north coast of NSW. Habitat preference is for moderate to deep pools with a rocky substrate.	89	No	No	Species distribution does not overlap with the study area. No suitable stream habitat present.
Crustaceans							
Euastacus morgani	Morgan's crayfish	CE	Endemic to a single known highland site at Bindarri National Park in the coastal mountains of the mid north coast of eastern New South Wales.	0	Unlikely	No	The species is only known to occur northwest of the study area at a highland site in Bindarri National Park.
Euastacus simplex	Simple crayfish, Small	E	The simple crayfish is endemic to the headwater reaches (typically between approximately 1100 and 1400 m above sea level) of the New England region of New	0	Unlikely	No	Species distribution does not overlap with the study area.

Scientific name	Common name	EPBC Act status	Distribution and habitat	Number of records within 5 km	Likelihood of occurrence	Impact assessment required	Justification
	mountain crayfish		South Wales. This species was once considered to be widespread, occurring in various drainage systems including the Styx River (Macleay River Basin) and Nymboida and Guy Fawkes rivers (Clarence River Basin) in the north and the Hastings River Basin in the south. However, the southern extent of what was thought to be their range is now considered to be that of other *Euastacus* species. The species has been collected from a range of streams (small and medium sized), both in vegetated (dry sclerophyll forest and heath) and areas cleared for pasture.				
Fish							
Maccullochella ikei	Clarence River cod, Eastern freshwater cod	E	The only breeding population of the species is in the Mann-Nymboida sub-catchment of the Clarence River. There is thought to be less than 100 mature individuals in the wild. The Clarence River cod prefers clear rocky streams and rivers with low flow velocity and abundant instream cover of rocks, timber or tussocks. Research indicates that Clarence River cod are associated with deeper parts of the river near cover, especially around rocky islands, large boulders and pools in fast-flowing water. Large woody debris and rocky overhangs may provide shelter and important spawning sites.	0	No	No	Species distribution does not overlap with the study area.
Total records				**703**			

BC Act Key: V = vulnerable, E = endangered, E = endangered population, CE= critically endangered
EPBC Act Key: V = vulnerable, E = endangered, CE = critically endangered, X = extinct, M = Migratory, Mar = Marine

Appendix C: Field survey

Ecology

Dates	Staff	Sections	Season	Methods
28 June 2023	Andrew Winter, Lachlan Copeland, Phoebe Smith.	Day 3 of DEGW targeting *Sarcochilus fitzgeraldii* (Ravine orchid) habitat and vegetation mapping	Winter	Targeted threatened flora surveys for *S. fitzgeraldii* in microhabitats. Opportunistic surveys for threatened flora and fauna, and fauna habitats. Validation of existing vegetation mapping, determining type, and extent of PCTs and other vegetation types through the collection of rapid data points.
17 – 20 July 2023	Andrew Winter, Liam Scanlon, Ronnie Hill, Tom Denman, Phoebe Smith.	Orientation survey of segments of days 1 to 4 of DEGW	Winter	Opportunistic surveys for threatened flora and fauna, and fauna habitats. Preliminary validation of existing vegetation mapping, determining type, condition, and extent of PCTs and other vegetation types through the collection of rapid data points.
9 – 13 October 2023	Andrew Winter, Claire Peacock, Liam Scanlon, Phoebe Smith, Ronnie Hill, Samantha Patch, Tom Denman.	Entire length of days 1 to 2 of DEGW	Spring	Targeted threatened flora surveys for potential or likely threatened flora species similar to the parallel field traverse method described in Surveying threatened plants and their habitats (DPIE 2020). Fauna habitat assessment including the identification and use assessment of habitat features which included foraging resources, HBTs, dens/burrows, nests, hollow logs and large woody debris, leaf litter, flaking bark, sphagnum moss, foraging habitat, rocky habitat and aquatic habitat. Opportunistic fauna surveys including opportunistic sightings for threatened and common fauna. Validation of existing vegetation mapping, determining type, and extent of PCTs and other vegetation types through the collection of rapid data points.
16 – 20 October 2023	Andrew Winter, Jack O Sullivan, Liam Scanlon, Phoebe Smith, Ronnie Hill.	Entire length of days 3 to 4 of DEGW	Spring	Targeted threatened flora surveys for potential or likely threatened flora species similar to the parallel field traverse method described in Surveying threatened plants and their habitats (DPIE 2020). Fauna habitat assessment including the identification and use assessment of habitat features which included foraging resources, HBTs, dens/burrows, nests, hollow logs and large woody debris, leaf litter, flaking bark, sphagnum moss, foraging habitat, rocky habitat and aquatic habitat. Opportunistic fauna surveys including opportunistic sightings for threatened and common fauna. Validation of existing vegetation mapping, determining type, and extent of PCTs and other vegetation types through the collection of rapid data points.

Dates	Staff	Sections	Season	Methods
19 January 2024	Andrew Winter, Clara Friswell, Phoebe Smith.	Waygarrgala remote camp, Baliiga picnic area and camp.	Summer	Targeted threatened flora surveys for potential or likely threatened flora species similar to the parallel field traverse method described in Surveying threatened plants and their habitats (DPIE 2020). Fauna habitat assessment including the identification and use assessment of habitat features which included foraging resources, HBTs, dens/burrows, nests, hollow logs and large woody debris, leaf litter, flaking bark, sphagnum moss, foraging habitat, rocky habitat and aquatic habitat. Opportunistic fauna surveys including opportunistic sightings for threatened and common fauna. Validation of existing vegetation mapping, determining type, and extent of PCTs and other vegetation types through the collection of rapid data points.
8 February 2024	Andrew Winter, Sam Patch, Phoebe Smith.	Tuckers Knob area.	Summer	Targeted threatened flora surveys for potential or likely threatened flora species similar to the parallel field traverse method described in Surveying threatened plants and their habitats (DPIE 2020). Fauna habitat assessment including the identification and use assessment of habitat features which included foraging resources, HBTs, dens/burrows, nests, hollow logs and large woody debris, leaf litter, flaking bark, sphagnum moss, foraging habitat, rocky habitat and aquatic habitat. Opportunistic fauna surveys including opportunistic sightings for threatened and common fauna. Validation of existing vegetation mapping, determining type, and extent of PCTs and other vegetation types through the collection of rapid data points.
14 February 2024	Tom Denman, Phoebe Smith	Urumbilum camp and area.	Summer	Targeted threatened flora surveys for potential or likely threatened flora species similar to the parallel field traverse method described in Surveying threatened plants and their habitats (DPIE 2020). Fauna habitat assessment including the identification and use assessment of habitat features which included foraging resources, HBTs, dens/burrows, nests, hollow logs and large woody debris, leaf litter, flaking bark, sphagnum moss, foraging habitat, rocky habitat and aquatic habitat. Opportunistic fauna surveys including opportunistic sightings for threatened and common fauna. Validation of existing vegetation mapping, determining type, and extent of PCTs and other vegetation types through the collection of rapid data points.

Heritage

Dates	Staff	Sections	Methods
17 – 20 July 2023	Andrew Winter, Tom Denman, Barbara Webster, Jessica Horton, Jennifer Norfolk	Orientation survey of Day 4 of DEGW, Slingsbys track and	Assess the historical heritage potential form the end of the walk to the first creek crossing. Focussing on identifying elements of the historical logging activities. The majority of the survey was along the old logging tracks.

Dates	Staff	Sections	Methods
		heritage items surrounding the national parks.	Survey along Slingsbys trail to assess the historical elements of the old tramway and road cuttings. Survey around historical items at Dairyville, Gleniffer, Bellinger and along Waterfall Way.
16 – 20 October 2023	Andrew Winter, Liam Scanlon, Ronnie Hill, Tom Denman Jennifer Norfolk	Entire length of days 3 and portion of Day 2 DEGW	Investigating the presence of Aboriginal objects and potential archaeological deposits Assessing landforms, geology, biodiversity and potential impacts to the geological processes. Investigating the potential for historical heritage values. Gather any cultural knowledge from the Aboriginal representatives of Gumbaynggirr.
5 – 8 February 2024	Andrew Winter, Tom Denman Jennifer Norfolk	Temporary rainforest centre location, DARC, Day 1 sections and Days 2 sections DEGW	Investigating the presence of Aboriginal objects and potential archaeological deposits Assessing landforms, geology, biodiversity and potential impacts to the geological processes. Investigating the potential for historical heritage values. Gather any cultural knowledge from the Aboriginal representatives of Gumbaynggirr.