



NSW National Parks and Wildlife Service

Dorrigo Escarpment Great Walk

Draft review of environmental factors



Acknowledgement of Country

Department of Climate Change, Energy, the Environment and Water acknowledges the Traditional Custodians of the lands where we work and live.

We pay our respects to Elders past, present and emerging.

This resource may contain images or names of deceased persons in photographs or historical content.

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Artist and designer Nikita Ridgeway from Aboriginal design agency – Boss Lady Creative Designs, created the People and Community symbol.

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Terms and definitions

Term	Description/Definition
Ancillary facilities	These include site offices, site compounds, stockpile sites, laydown areas, and temporary access tracks, including creek crossings.
Compound site	Facilities used to support the operation of a construction site including site offices, workshops, delivery areas, storage areas, sheds, staff vehicle parking, materials, plant and equipment.
Cumulative impacts	Impacts that, when considered together, have different and/or more substantial impacts than a single impact assessed on its own.
DARC	Dorrigo Arc Rainforest Centre is the new visitor centre on the footprint of the existing Dorrigo Rainforest Centre. The DARC includes an elevated skywalk platform.
DEGW (the proposal)	<p>The Dorrigo Escarpment Great Walk (DEGW) is a single direction 4-day, 3-night walk starting at the new Dorrigo Arc Rainforest Centre in Dorrigo National Park and finishing at the Bindarray picnic area in the Bindarri National Park.</p> <p>The DEGW includes:</p> <ul style="list-style-type: none"> • approximately 44.1 km of 600 to 900 mm wide walking track (in accordance with <i>Australian Standard 2156: Walking tracks classification and signage</i>, where possible) • approximately 8.6 km upgraded management trails and dormant roads • 3 new camps • 1 upgraded remote camping area • 1 future upgrade to an existing day use area • 43 waterway crossings (including 5 single-span pedestrian bridges and one vehicle bridge) • 14 scenic viewpoints • wayfinding and interpretation components • temporary access • temporary construction sites. <p>The DEGW will accommodate up to 48 people at Camp 1 – Baliiga, and 24 at Camp 2 – Never Never and Camp 3 – Bindarri with an estimated maximum 96 hikers plus day walkers at any one time.</p> <p>The existing remote camp on Wild Cattle Creek adjacent to Slingsbys Trail is to be upgraded and named Waygarrgala, which is Gumbaynggirr for 'at the Antarctic beech'. The upgrade will provide an improved camping experience and manage impacts of anticipated increased use once the DEGW is operating. The camp will provide hikers, including those not walking the full 4-day walk, with overnight hiking options using sections of the DEGW and Syndicate track.</p>
Direct impacts	Direct impacts affect the habitat of species and ecological communities and affect individual plants and animals using the study area. They include, but are not limited to, death through predation, trampling, poisoning of the animal/plant itself and the removal of suitable habitat. When applying each factor in the test of significance (section 7.3 of the <i>Biodiversity Conservation Act 2016</i>), consideration must be given to all of the likely direct impacts of the proposed activity or development. When applying each factor, both long-term and short-term impacts are to be considered.

Term	Description/Definition
Environment	As defined within the <i>Environmental Planning and Assessment Act 1979</i> (NSW), all aspects of the surroundings of humans, whether affecting any human as an individual or in their social groupings.
Hollow-bearing tree (HBT)	<p>A hollow-bearing tree that is alive or dead and has at least one hollow. A hollow-bearing tree is considered to contain a hollow if:</p> <ul style="list-style-type: none"> • the entrance can be seen • the entrance width is at least 5 cm • the hollow appears to have depth (that is, you cannot see solid wood beyond the entrance) • the hollow is at least 1 m above the ground.
Indirect impact	Indirect impacts occur when activities affect species or ecological communities within the subject site. Indirect impacts may sterilise or reduce the habitability of adjacent or connected habitats. Indirect impacts can include loss of individuals, starvation, exposure to predators, loss of breeding habitat or disruption, loss of shade/shelter, reduction in habitat, weed invasion, noise, light spill, or increased human activity within or directly adjacent to sensitive habitat areas.
Local population	<p>Local population comprises those individuals known or likely to occur in the study area, as well as any individuals occurring in adjoining areas (contiguous or otherwise) that are known or likely to utilise habitats in the study area and includes the following definitions:</p> <ul style="list-style-type: none"> • The local population of a threatened plant species comprises those individuals occurring in the study area or the cluster of individuals that extend beyond the study area that could reasonably be expected to be cross-pollinating with those in the study area. • The local population of resident fauna species comprises those individuals known or likely to occur in the study area, as well as any individuals occurring in adjoining areas (contiguous or otherwise) that are known or likely to utilise habitats in the study area. • The local population of migratory or nomadic fauna species comprises those individuals that are likely to occur in the study area from time to time or return year to year.
The 'proposal area'	<p>Refers to the area that may be directly impacted by construction and operation of the proposal. The proposal area includes both the:</p> <ul style="list-style-type: none"> • construction footprint, which is the area where construction activities would occur for the proposal and includes land that would be temporarily impacted for the construction including compound sites • operational footprint, which includes the areas that would be permanently impacted by the proposal including the tracks, camps, maintenance accessways, and supporting infrastructure.
Study area	<p>The study area is the area consisting of land in the vicinity of, and including, the proposal area. The study area is the wider area surrounding the proposal area, including land that has the potential to be indirectly impacted by the proposal beyond the immediate works area. For the purposes of this assessment the study area includes a 2 m wide track and a 12 m buffer (6 m either side of the track centre line). Bridges or water crossings have been nominated a 10 m wide buffer and camp sites have been nominated a 15 m wide buffer.</p> <p>The study area also includes a 5 km or 10 km radius associated with threatened entity searches.</p>

Summary

The proposal

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 a distance of 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.

Need for the proposal

NPWS is creating a network of spectacular multi-day walks across New South Wales. These extraordinary walking experiences give people a chance to connect with nature in some of the state's most breathtaking landscapes. More and more people are looking for opportunities to go walking in national parks. Bushwalking is fun and supports good physical and mental health. Along with the new DARC, the proposal has the potential to deliver a range of environmental, social and economic benefits.

Dorrigo Escarpment Great Walk objectives

The DEGW objectives are:

- create a new multi-day walking experience of international standing that showcases the dramatic Dorrigo Escarpment
- protect, respect and promote the parks' environmental and cultural heritage
- create nature-based experiences that grow awareness of Australia's ancient landscapes and foster future conservation advocacy and stewardship
- provide opportunities for Aboriginal communities to rightfully share their culture, participate in and benefit from the regional visitor economy

- offer opportunities to connect to nature which provide ongoing health and wellbeing benefits for participants
- generate economic benefit for the local community and sustainable growth of the regional economy
- create safe and durable walking tracks and camps which are designed for minimal impact and long-term sustainability with climate change resilience
- support participation of a diverse cross-section of the community
- build strong partnerships with business, government and local communities
- contribute to ongoing maintenance costs and ensure financial sustainability.

Options considered

NPWS has carried out multiple investigations and a range of visitor research projects to identify options for a multi-day walk in the area, including considering community proposals. The proposed DEGW was identified as the preferred option.

NPWS reviewed the options to identify a preferred route, considering the aims of the walk, the overall walk experience, and technical, social, environmental and economic factors. The final preferred route was informed by expert advice from track designers, ecologists and Aboriginal organisations, along with wider consultation with community and interest groups.

Statutory and planning framework

The DEGW has been considered under *Division 12 Parks and other public reserves* of the *State Environmental Planning Policy (Transport and Infrastructure) 2021* as an activity on land reserved under the *National Parks and Wildlife Act 1974* to be carried out on behalf of NPWS. The DEGW requires assessment under Division 5.1 of the *Environmental Planning and Assessment Act 1979*. The DEGW is classified as '**permissible without consent**' under clause 2.73. As NPWS is also the determining authority within the meaning of this planning policy, the duty in section (s) 5.5 of the *Environmental Planning and Assessment Act* is triggered. This duty requires a determining authority to 'examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment'.

Based on the assessment undertaken as documented within this review of environmental factors (REF), the proposal is not likely to have a significant impact on the environment, and as such an environmental impact statement would not be required.

A matters of national environmental significance (MNES) assessment under *Environment Protection and Biodiversity Conservation Act 1999* (Cth) was undertaken. This REF has been prepared to meet the requirements of this Act with respect to potential impacts on the relevant MNES which are nationally listed threatened species, ecological communities and migratory species, and World Heritage and National Heritage places (Gondwana Rainforests of Australia).

Community and stakeholder consultation

Consultation with adjacent landowners, interest groups and others in the local community has occurred as the activity is likely to affect sites of importance for recreational or other values, and access to the parks. Since 2022, NPWS has facilitated over 100 face-to-face meetings, group briefings and field trips, and the project webpages have received over 24,000 views. NPWS has undertaken extensive and ongoing consultation with agencies, local governments and local businesses, as part of the project development and as required under the *State Environmental Planning Policy (Transport and Infrastructure) 2021*.

Environmental impacts

The main environmental impacts of the proposal are summarised here.

Biodiversity

An ecological assessment has been prepared to assess the potential biodiversity impacts associated with the proposal. The assessment identified and considered the following ecological matters:

- native vegetation comprised of 19 plant community types (PCTs)
- Lowland Rainforest in NSW North Coast and Sydney Basin bioregion endangered ecological community (EEC) listed under the *Biodiversity Conservation Act 2016*, and the *Lowland Rainforest of Subtropical Australia* listed on the Commonwealth Environment Protection and Biodiversity Conservation Act as critically endangered ecological community (CEEC).
- 7 threatened flora species and 5 threatened fauna species were recorded within the study area and an additional 44 threatened fauna species are likely to inhabit directly impacted native vegetation
- 10 types of fauna habitats that may support local populations.

Fifty tests of significance were undertaken:

1. a test of significance under the Biodiversity Conservation Act – refer to the ecological assessment report by Eco Logical Australia (ELA 2024a, supporting document A)
2. an assessment of significance under the Environment Protection and Biodiversity Conservation Act – refer to the matters of national environmental significance report by Eco Logical Australia (ELA 2024b, supporting document B).

These assessments identified that no significant impact is likely to result from the proposal, and the DEGW does not meet the threshold for entry into the NSW Biodiversity Offset Scheme or referral to the Federal Minister for the Environment and Water for impacts to these species.

Residual impacts included both 'direct' and 'indirect' impacts which have been assessed in Section 6 and measures are provided in Section 7 of the ecological assessment report by Eco Logical Australia (ELA 2024a, supporting document A), to mitigate potential impacts related to sediment and erosion control, hollow-bearing trees, pathogen and invasive weeds, and construction, which must be implemented otherwise additional assessment may be required. Importantly, it is imperative that strict hygiene protocols are implemented prior to and during construction, and during operation to prevent the spread of known pathogens occurring within the locality by humans and vehicles including *Phytophthora cinnamomi*, chytrid fungus, myrtle rust and invasive weeds.

Given the design of the DEGW mitigation proposed, the potential adverse cumulative impacts of the proposal are expected to be negligible. The proposal:

- is not likely to significantly impact threatened species or ecological communities or their habitats, within the meaning of the *Fisheries Management Act 1994* or Biodiversity Conservation Act and as such neither a species impact statement nor a biodiversity development assessment report needs to be prepared, and entry into the Biodiversity Offset Scheme is not required
- is not likely to significantly impact threatened species, ecological communities or migratory species, within the meaning of the Environment Protection and Biodiversity Conservation Act, therefore, no biodiversity offsets are required for threatened biota listed under that Act and a referral to the Minister for these entities is not required.

Aboriginal heritage

The construction of the DEGW will not impact on the cultural, social, historic or aesthetic values of the Dorrigo NP and Bindarri NP, as summarised in Section 8.4 and outlined in the Aboriginal cultural heritage assessment (ACHA) report by Eco Logical Australia (ELA 2024c, supporting document C). While the ACHA is a supporting document to this REF it will not be published due to cultural sensitivities and confidentiality. Any requests to view the ACHA report will need to be reviewed by the participating registered Aboriginal parties.

NPWS acknowledges the importance of the cultural values of the landscape and environment as a whole (including intangible values) and the importance of protecting and managing these values. Avoiding harm to Aboriginal objects or places of cultural significance is a primary objective of the DEGW. Aboriginal objects or areas of archaeological potential have generally not been identified within the study area and where some are in close proximity, they are avoided. The potential harm to artefact scatters and isolated finds is considered negligible. There is always the potential for unexpected Aboriginal objects to be found during the construction of the DEGW. However, if artefacts are encountered during construction activities and cannot be avoided, work will stop, and a permit may be required and will form part of the assessment process.

Ongoing consultation with registered Aboriginal stakeholders will take place throughout the life of the project. Wherever possible, it is recommended NPWS engage with Aboriginal contractors during construction. There are no current known impacts to the scientific values.

Non-Aboriginal heritage

The study area partially falls within the curtilage of following heritage areas:

- 'Gondwana Rainforests of Australia' in Dorrigo NP – included on the World Heritage List (WHL #368), National Heritage List (NHL #105704), State Heritage Register (SHR #01002)
- 'Escape Road' in Dorrigo NP – listed in *Bellingen Local Environment Plan* (LEP #A50)
- 'High Conservation Value Old Growth Forest' (SHR #01487) – small areas in the curtilage within Bindarri NP.

Aside from these 3 areas there are no further heritage listed items within 100 m of the study area.

The outstanding universal values of the Gondwana Rainforests of Australia comprise evolutionary history, ongoing geological and biological processes, exceptional biological diversity and habitat for many threatened species of plants and animals.

The DEGW would result in a negligible direct (physical) and indirect (visual) impact to the outstanding universal values of Gondwana Rainforests of Australia as ascribed on the World Heritage List. The impact to the known heritage value of High Conservation Value Old Growth Forest is also assessed as being negligible. This assessment is due to the expansive size of the areas, the low-impact construction methodology, and the restricted-use policies. There would likewise be a negligible direct or indirect impact to the heritage value of Escape Road as there is unlikely to be a historical archaeological resource within the section of the study area in the item's curtilage, and any subsurface impact is restricted to areas outside of the LEP listing. No further built heritage or historical archaeological items have been identified within the study area in either national park.

The works have the potential to impact unrecorded heritage values, however, several mitigation measures have been recommended to reduce risks associated with the activity. As the impact of the project is considered negligible, no referral to the Minister under the Environment Protection and Biodiversity Conservation Act to manage the World Heritage aspect of the project is required. A section (s) 60 works application under the *Heritage Act*

1977 is required. A statement of heritage impact has been prepared by Eco Logical Australia (ELA 2024d; supporting document D).

Surface water, hydrology and flooding

The walking track passes through numerous drainage features, from ephemeral depressions to 5 permanent river crossings which require bridge spans greater than 20 m to enable crossing of the river.

Hydrology will be largely unaffected and there will be no significant change in catchment runoff.

Wild Cattle Creek, Never Never River, Urumbilum River and Rosewood River are recognised as 'key fish habitat' (DPI 2013). Within the study area, these waterways are considered Class 1 watercourses and have well-defined banks, permanent water and pools; they contain freshwater aquatic vegetation; and include microhabitats such as rocks, snags and gravel. Most other waterways within the study area are typical of the area and are largely ephemeral. These other waterways were either not classified as 'key fish habitat' (DPI 2013) and/or based on observations were likely to align to Class 4 (unlikely key fish habitat).

No threatened aquatic species listed under the Fisheries Management Act are considered likely to be impacted within any of the identified aquatic habitat.

Waterway crossings will be designed to have minimal impact on water quality and aquatic ecology, with high-level suspended swing bridges over larger rivers, and natural stepping stones and/or low-level crossings where needed at other crossings points.

Social values

Dorrigo NP is a major attraction for outdoor enthusiasts and provides significant opportunities for a range of recreational activities. There are currently 3 main bushwalking track systems within Dorrigo NP: the Wonga Walk (near the rainforest centre and The Glade picnic area); the Rosewood and Blackbutt walking tracks at Baliiga picnic area; and the Slingsbys Trail and Syndicate Ridge track in the central section of the park. Bindarri NP offers a range of low-key recreational opportunities including short walks, picnic facilities and a 4-wheel drive (4WD) touring route.

The parks offer distinct opportunities to explore the natural environment, from interpretation focused all-ability experiences to self-reliant adventures. Once completed, the DEGW will provide one of the few opportunities in New South Wales for extended walking within a Gondwana Rainforests of Australia area, providing an improved social experience.

Justification and conclusion

Overall, there would be minor negative impacts to the local environment and some parts of the community during construction in the vicinity of the DEGW alignment. During operation, there would be negligible environmental and community impacts. Impacts nonetheless have been avoided and/or minimised wherever possible through design and site-specific and project-specific safeguards. The study area has been subject to detailed environmental investigation and outlines the maximum area or subject site within which the proposed DEGW and its associated construction works will be located. This provides as much clarity and certainty as possible during the DEGW's early design, but retains flexibility during construction to avoid, minimise and manage any potential environmental impacts and indirect impacts. The findings of the REF include:

- The proposed DEGW is not likely to have a significant impact on the environment and therefore the necessity for an environmental impact statement to be prepared and

approval to be sought from the Minister for Planning under Division 5.2 of the Environmental Planning and Assessment Act is not required.

- The proposal is not likely to significantly impact threatened species or ecological communities or their habitats, within the meaning of the Biodiversity Conservation Act or Fisheries Management Act, and therefore neither a species impact statement nor a biodiversity development assessment report is required.
- The significance of any impact on native vegetation and species is negligible, and no offsets are required.
- The proposed DEGW works will have negligible impact on nationally listed biodiversity matters, other MNES or Commonwealth land and the need to make a referral under the Environment Protection and Biodiversity Conservation Act is not considered to be required.

The REF has examined and taken into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the proposed DEGW. This has included consideration of plans of management under the *National Parks and Wildlife Act 1974*, the Biodiversity Conservation Act, wilderness areas, areas of outstanding value, impacts on threatened species, ecological communities and their habitats as well as other protected fauna and native plants. It has also considered potential impacts to matters of national environmental significance listed under the Environment Protection and Biodiversity Conservation Act.

The potential environmental impacts identified from the proposal have been avoided or reduced during the concept design development and options assessment. The proposal as described in the REF best meets the project objectives but would still result in some minor impacts on biodiversity, hydrology and create temporary noise, odour and dust impacts during construction. Safeguards and management measures as detailed in this REF will ameliorate or minimise these expected impacts. On balance the proposed DEGW is considered justified.

Have your say

Public exhibition of the review of environmental factors is your opportunity to identify ways to improve what is proposed. Your feedback helps the determining authority to decide whether an activity should be approved and assists in the development of appropriate conditions should approval be given.

Printed copies of the documents and maps are available to be viewed at the Dorrigo Rainforest Centre on request.

Submissions may be lodged via:



the online form at <https://www.environment.nsw.gov.au/consult>



email to npws.dagwp@environment.nsw.gov.au



post to NPWS Project Team, Dorrigo Escarpment Great Walk, PO Box 170, Dorrigo NSW 2453.

Written submissions must be received by the advertised closing date.

Your submission on the review of environmental factors will be provided to Eco Logical Australia and relevant NPWS advisory bodies.

See the department's [Privacy and security](#) webpage for information on how we will treat any personal information you provide.

What happens next?

NPWS will collate and consider the submissions received during public display of the REF.

After this consideration, NPWS will determine whether or not the proposal should proceed as proposed and will inform the community and stakeholders of this decision.

If the proposal is determined to proceed, NPWS will publish the final REF and its decision statement and keep the community informed about the project's delivery.

1. Brief description of the proposed activity

1.1 The Dorrigo Escarpment Great Walk

The Dorrigo Escarpment Great Walk (DEGW) is a single direction 4-day, 3-night walk starting at the new Dorrigo Arc Rainforest Centre (DARC) in Dorrigo National Park (NP) and finishing at the Bindarray picnic area in the Bindarri NP. The DEGW is located on the Dorrigo Escarpment near the regional township of Dorrigo on the NSW Mid North Coast, near the towns of Bellingen and Coffs Harbour. The walk traverses Dorrigo NP and Bindarri NP.

The DEGW includes the construction of:

- an approximate 44.1 km single direction grade 4 walking track
- a shorter overnight 2-day loop walk between the DARC and DEGW Camp 1 – Baliiga
- an approximate 8.6 km length of upgraded vehicle management trails (8.1 km) and dormant roads (634 m)
- 3 new hiker camps incorporating hut accommodation, a camping area and communal buildings
- 1 upgrade to an existing remote camping area, Waygarrgala Remote Camp
- 1 future upgrade to an existing day use area, Baliiga picnic area
- 43 waterway crossings, including 5 single-span pedestrian bridges greater than 20 m long
- 1 upgrade replacement of an existing vehicle bridge
- 14 scenic viewpoints along the DEGW
- wayfinding and interpretation components
- temporary construction sites.

The location of the proposed DEGW is shown in Figure 1 to Figure 5.

The DEGW has the following off-park components:

- Tuckers Knob Road (Forestry Corporation NSW) – road upgrade
- lots 55, 61, 62, 64 and 65 DP 752842 (private property) – upgrade to parts of Whitneys Trail (works within the existing trail alignment)
- parts of Jersey Bull Road, Dome Road, Whitneys Road, Slingsbys Road – managed by Crown Lands NSW
- parts of Jersey Bull Road, Whitneys Road – managed by Coffs Harbour City Council
- parts of Dome Road – managed by Bellingen Shire Council.

The DEGW is within the following administrative areas:

- NSW National Parks and Wildlife Service (NPWS) Coffs Coast Area
- Bellingen Shire Council and Coffs Harbour City Council
- NSW State electorates of Oxley electorate (Dorrigo NP) and Coffs Harbour electorate (Bindarri NP).

Dorrigo Escarpment Great Walk: Review of environmental factors

Project specifications are:

- estimated capital cost of project is \$22.1 million, which triggers publication requirements subject to section (s) 171(4)(a) of the *Environmental Planning and Assessment Act 1979* (that is, greater than \$5 million)
- estimated duration of project is 2 to 3 years
- proposed commencement date is 2025
- proposed completion date is 2027–28.

Dorrigo Escarpment Great Walk: Review of environmental factors

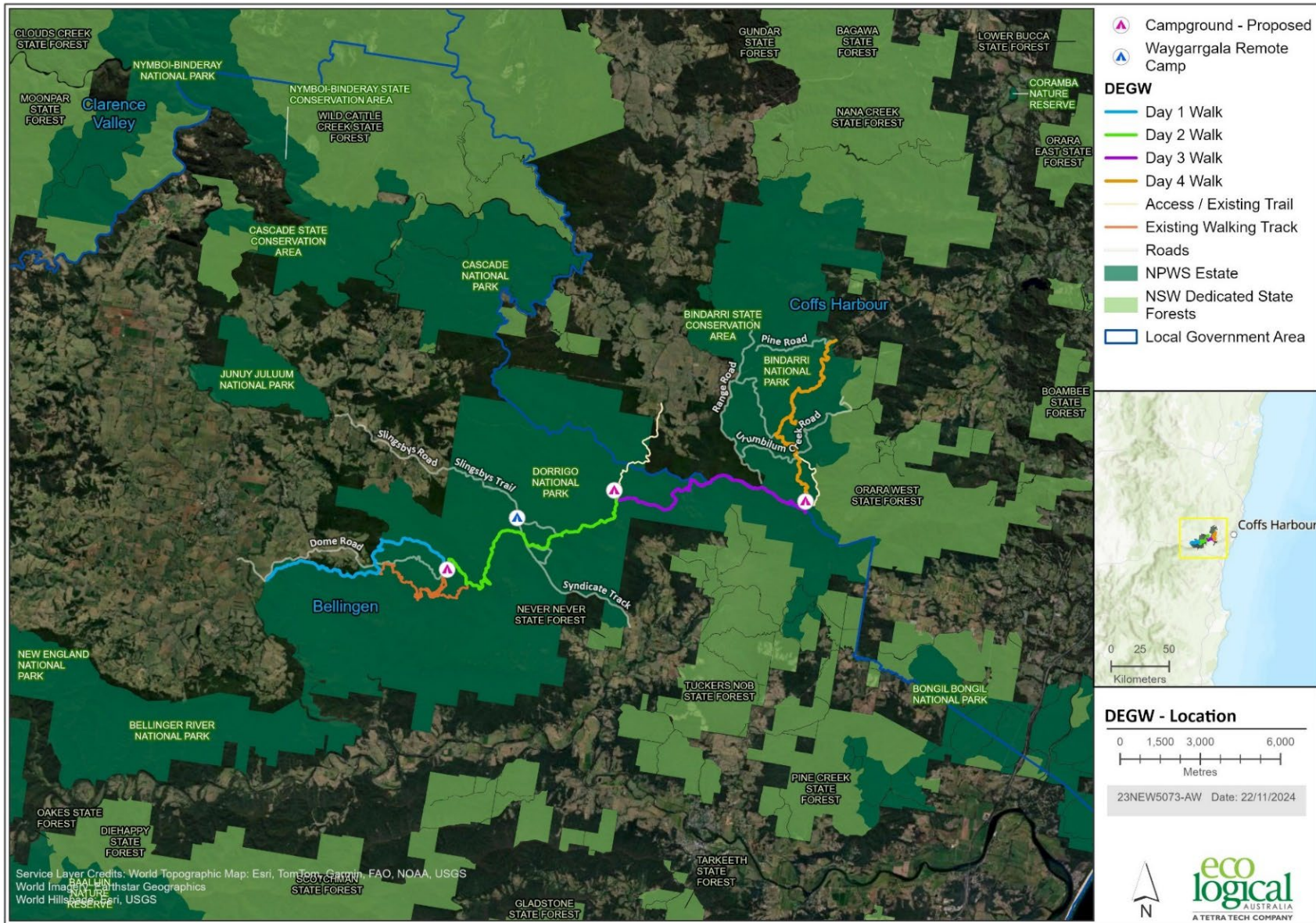


Figure 1 Location of the activity

Dorrigo Escarpment Great Walk: Review of environmental factors

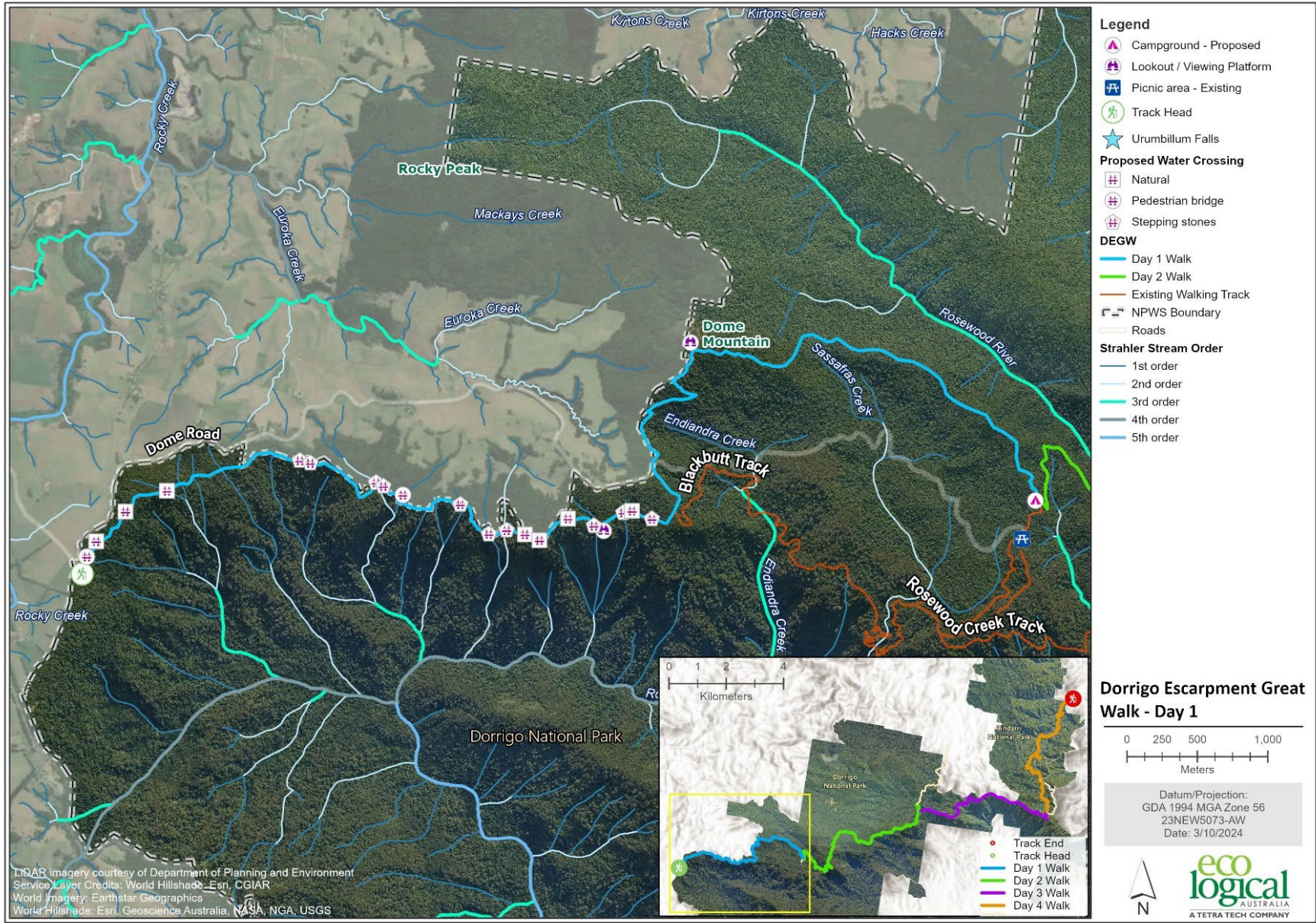


Figure 2 Location of the activity (Day 1 walk)

Dorrigo Escarpment Great Walk: Review of environmental factors

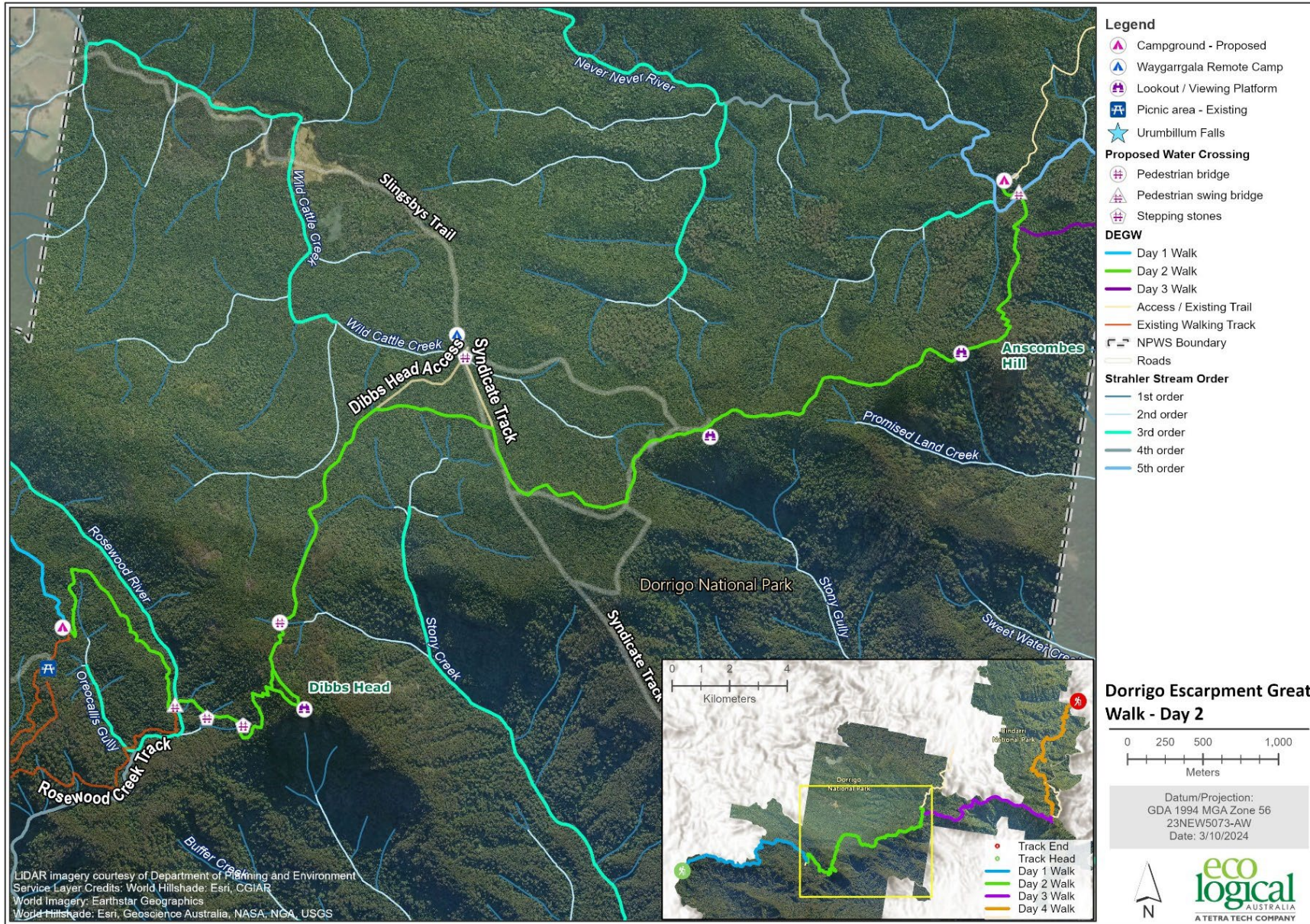


Figure 3 Location of the activity (Day 2 walk)

Dorrigo Escarpment Great Walk: Review of environmental factors

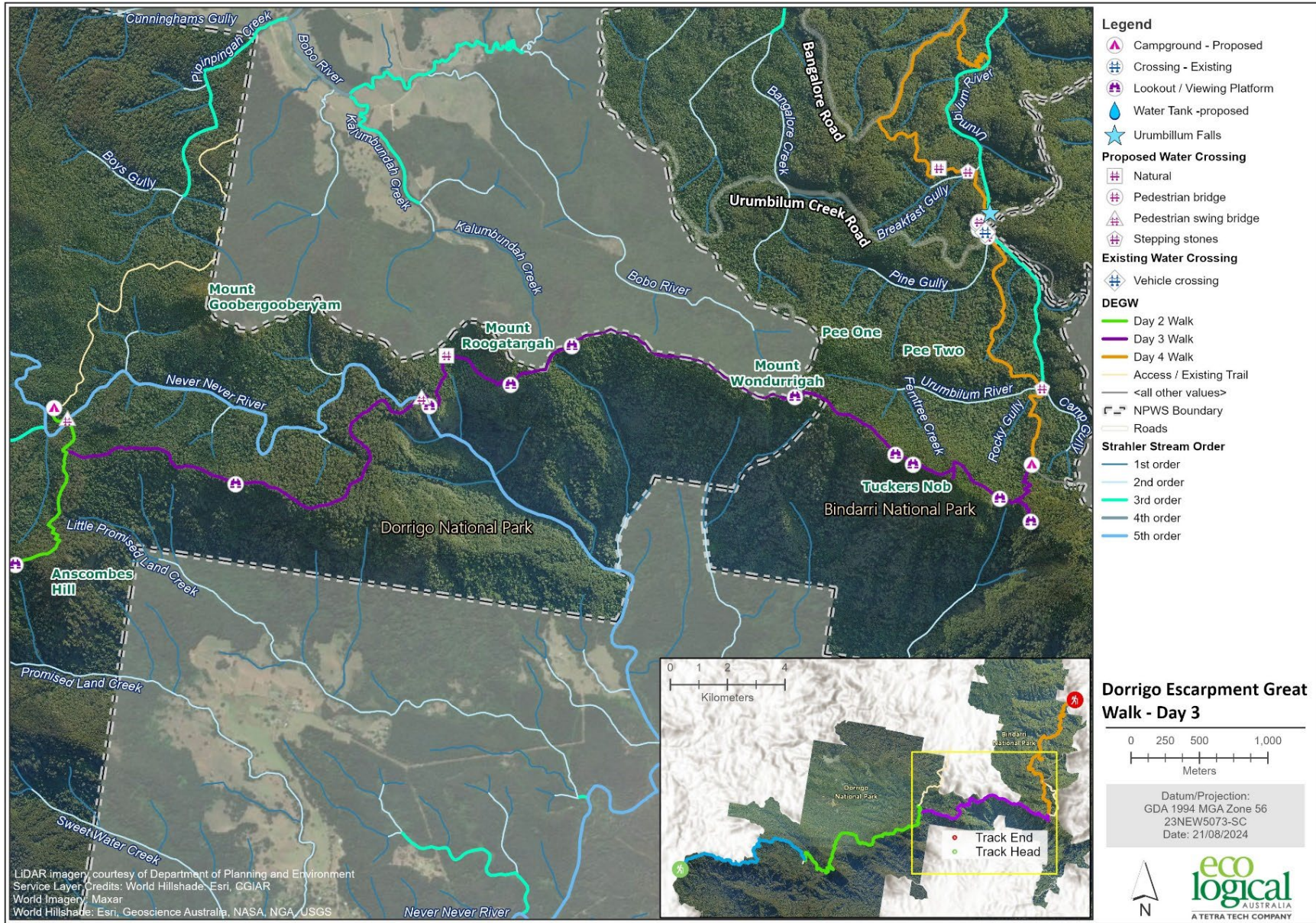


Figure 4 Location of the activity (Day 3 walk)

Dorrigo Escarpment Great Walk: Review of environmental factors

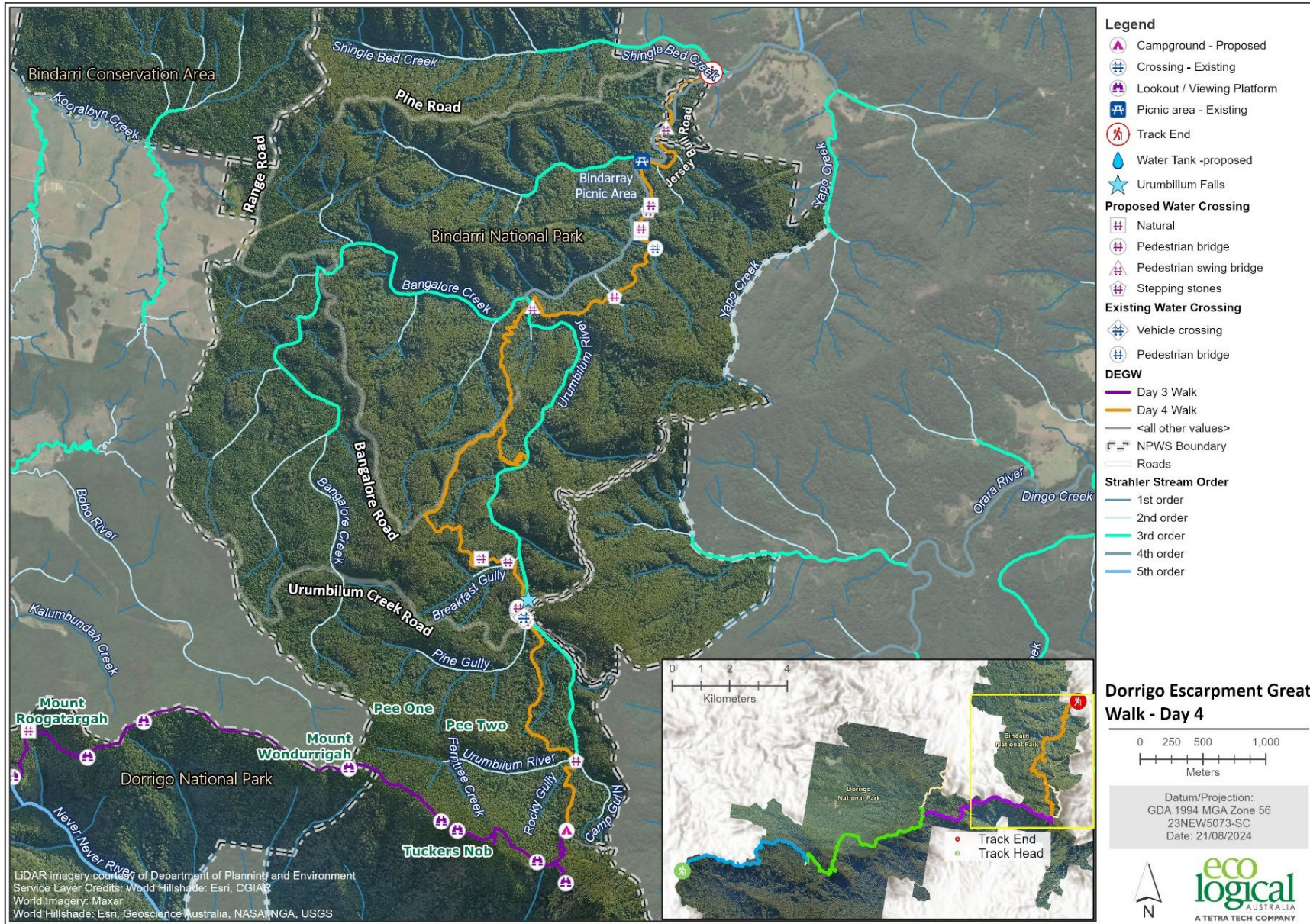


Figure 5 Location of the activity (Day 4 walk)

2. Proponent's details

Contact name: Glenn Storrie

Position: Manager, Coffs Coast Area

Street address: 4/32 Edgar St, Coffs Harbour NSW 2450

Postal address (if different to above): PO Box 200, Coffs Harbour Jetty NSW 2450

Contact phone number: Coffs Harbour office: 02 6652 0900; contact hours: Monday to Friday, 8.30 am to 4.30 pm.

Email: npws.coffscoast@environment.nsw.gov.au

3. Permissibility and assessment pathway

3.1 Permissibility under NSW legislation

The following sections outline how the proposed activity is permissible under applicable NSW legislation.

3.1.1 National Parks and Wildlife Act 1974 and Regulation

The project is located on and will directly affect Dorrigo NP and Bindarri NP as land reserved under the *National Parks and Wildlife Act 1974*.

On land reserved or acquired under the National Parks and Wildlife Act 1974

Objects of the Act (s 2A)

The *National Parks and Wildlife Act 1974* establishes the NPWS as the representative of the park authority, which is responsible for the care, control and management of all land reserved and acquired under that Act in New South Wales. The main object of the Act is to conserve the natural and cultural heritage for which that land was reserved or acquired under the Act for the people of New South Wales.

The objects of the National Parks and Wildlife (s 2A.1) are as follows:

- (1) The objects of this Act are as follows—
- a. the conservation of nature, including, but not limited to, the conservation of:
 - i. habitat, ecosystems and ecosystem processes
 - ii. biological diversity at the community, species and genetic levels
 - iii. landforms of significance, including geological features and processes
 - iv. landscapes and natural features of significance, including wilderness and wild rivers
 - b. the conservation of objects, places or features (including biological diversity) of cultural value within the landscape, including, but not limited to:
 - i. places, objects and features of significance to Aboriginal people
 - ii. places of social value to the people of New South Wales
 - iii. places of historic, architectural or scientific significance
 - c. fostering public appreciation, understanding and enjoyment of nature and cultural heritage and their conservation.
 - d. providing for the management of land reserved under this Act in accordance with the management principles applicable for each type of reservation.
- (2) The objects of the Act are to be achieved by applying the principles of ecologically sustainable development.'

Object 1.a

The DEGW is in accordance with object 1.a of the National Parks and Wildlife Act, as it has been prepared in a manner that places emphasis on the minimisation, avoidance or mitigation of potential environmental risks and impacts. To ensure potential impacts to biodiversity have been assessed, an ecological assessment has been undertaken by Eco

Logical Australia (ELA 2024a, supporting document A). The assessment evaluates the impacts of the DEGW, specifically to threatened ecological communities (TECs), threatened species and their habitat, and provides suitable recommendations to minimise and mitigate potential issues. Additionally, landforms and natural features of significance have been assessed.

Object 1.b

The DEGW is consistent with object 1.b. The proposal would be managed to reduce, avoid and mitigate potential risks to cultural and historic heritage. Impacts to biodiversity have been avoided and minimised through detailed investigations of a number of proposed trail alignments, analysis of environmental values and potential impacts, consultation with experts, and extensive on-ground micro-siting to avoid significant impacts on threatened species and communities.

The study area has been assessed as having low overall archaeological potential and has been subject to an Aboriginal cultural heritage assessment (ACHA) (ELA 2024c, supporting document C). No specific areas require further archaeological investigation or approvals under the National Parks and Wildlife Act.

Social values related to the parks will be upheld through the proposed DEGW, as they aim to support the expected increase in visitation numbers and provide managed facilities.

Object 1.c

The DEGW and associated facilities aim to foster the public's appreciation, understanding and encourage conservation of the natural and cultural heritage values through education, information and access to Dorrigo NP and Bindarri NP and the Gondwana Rainforests of Australia. The DEGW will improve visitor access and enjoyment related to these natural and cultural values. The proposed DEGW would foster public appreciation, understanding and enjoyment of nature by providing and promoting increased access to rainforest landscapes and enable visitors to immerse themselves in the remnants of the ancient supercontinent of Gondwana.

Trail construction and materials have been chosen to minimise impacts and ongoing maintenance and will ensure sustainable use by increased numbers of visitors planned for the area.

As such, the DEGW is consistent with object 1.c of the Act.

Object 1.d

The DEGW is consistent with object 1.d of the National Parks and Wildlife Act and has been designed in consideration of the management principles applicable to all national parks under the Act and consistent with the plan of management for the parks. Additional details are outline below in Table 1.

The purpose of reserving land under Part 4 of the Act is to conserve outstanding or representative natural and cultural values. This includes significant ecosystems, natural or cultural features or landscapes, or natural phenomena. NPWS manages the land not only to protect the values but to provide direct opportunities for the public to engage with those values, to increase appreciation and inspire participation in conservation, allowing for sustainable visitor or tourist use and enjoyment, so as to enable those areas to be managed in accordance with s 30E(2) of the Act. The proposal is permissible under s 30E(2) as it facilitates the following management principles:

- the conservation of places, objects, features and landscapes of cultural value
- the promotion of public appreciation and understanding of the national park's natural and cultural values

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- provision for sustainable visitor or tourist use and enjoyment that is compatible with the conservation of the national park's natural and cultural values.

Table 1 Consistency with management principles for national parks (s 30E(2) of the National Parks and Wildlife Act)

Section 30E(2)	Relevance to project
a. The conservation of biodiversity, the maintenance of ecosystem function, the protection of geological and geomorphological features and natural phenomena and the maintenance of natural landscapes	<p>The proposal does not entirely align with the conservation of biodiversity, the maintenance of ecosystem function, the protection of geological and geomorphological features and natural phenomena, or the maintenance of natural landscapes. This is based on the potential for the proposal to remove or disturb native vegetation, create a formed track in a predominantly natural habitat, disturb threatened species habitat and increase opportunities for introduced species such as weeds and feral predators such as cats and foxes.</p> <p>Detailed surveys and habitat assessments have been undertaken to inform the current proposal design and have enabled NPWS to ensure project planning aligns with this principle by avoiding impacts and conserving values, applying mitigation where required. NPWS has demonstrated consideration of this principle via strategic micro-siting of tracks, exploration of alternative alignments, and by proposing construction methods and materials which minimise vegetation removal and habitat fragmentation. Further mitigation and minimisation of impacts can be achieved by implementing project-specific management controls during construction and operation of the DEG, including ensuring appropriate hygiene controls, and weed and pathogen minimisation.</p>
b. The conservation of places, objects, features and landscapes of cultural value	<p>The proposal does align and will conserve and protect any physical/material evidence of Aboriginal occupation and places of cultural significance to the Aboriginal community.</p> <p>The assessment undertaken considers the existing environment and reviews the potential impacts and how this relates to the reasons for conservation, maintenance and protection of the parks, and recommends mitigation measures to avoid or minimise impacts.</p> <p>Impacts to Aboriginal heritage and sites have been considered with mitigation measures identified. An Aboriginal cultural heritage assessment report has been prepared (ELA 2024c¹).</p> <p>Protection of natural heritage sites also forms part of the conservation function of the park. This is addressed through the preparation of a statement of heritage impact (ELA 2024d, supporting document D).</p>
c. The protection of the ecological integrity of one or more ecosystems for present and future generations	<p>The DEG will not directly protect ecological integrity but does include mitigations and has been designed to not impact the existing ecological integrity of ecosystems. This REF assessment considers the existing environment, reviews the potential impacts and how these relate to the biodiversity within the parks and recommends mitigation measures to avoid or minimise impacts to the parks.</p> <p>The DEG will provide opportunities for future generations to observe and maintain the ecosystems within the parks.</p>

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Section 30E(2)	Relevance to project
d. The promotion of public appreciation and understanding of the national park's natural and cultural values	The DEGW will provide opportunities for the promotion of public appreciation and understanding of the national parks, and their natural and cultural values. The proposal is in accordance with the plan of management to upgrade and improve the promotion of public appreciation and understanding of the parks. The REF recommends mitigation measures to avoid or minimise impacts to the parks.
e. Provision for sustainable visitor or tourist use and enjoyment that is compatible with the conservation of the national park's natural and cultural values	<p>The DEGW provides for the provision of a multi-day walk with camping and hiker hut accommodation. The proposed walk links existing precincts and provides additional day and overnight options within the parks that are compatible with the conservation of the area. The DEGW increases the opportunities for a range of walk experiences. A key objective of the DEGW is to avoid vegetation removal and large cut-and-fill construction. The walking track and camps will nestle into the landscape and be compatible with the conservation of the national parks' natural and cultural values. Management of visitor numbers will allow for the sustainable use and improved enjoyment of the parks' values.</p> <p>The proposed activities are in accordance with the plan of management and are to ensure ongoing use and enjoyment of the parks. The REF recommends mitigation measures to avoid or minimise impacts to the parks.</p>
f. Provision for the sustainable use (including adaptive reuse) of any buildings or structures or modified natural areas having regard to the conservation of the national park's natural and cultural values	The DEGW will use sustainable practices at the core of the construction and operation. Adaptive reuse of materials along the DEGW will ensure less waste and need for imported materials. These practices will also save on energy consumption, putting fewer greenhouse gases into the atmosphere. Materials for the buildings and structures associated with the walking track and camps will be compatible with the conservation of the national parks' natural and cultural values. The proposal is in accordance with the plan of management and are to ensure ongoing use and enjoyment of the parks. The REF recommends mitigation measures to avoid or minimise impacts to the parks.
f. (a) Provision for the carrying out of development in any part of a special area (within the meaning of the <i>Hunter Water Act 1991</i>) in the national park that is permitted under s 185A having regard to the conservation of the national park's natural and cultural values	Not applicable.
g. Provision for appropriate research and monitoring	The DEGW will provide opportunities for appropriate research and monitoring within the parks. The proposal is in accordance with the plan of management and would not remove or reduce opportunities for research and/or monitoring. The REF recommends specific monitoring measures to avoid or minimise impacts to the parks.
1. The ACHA report (ELA 2024c, supporting document C) has not been published due to cultural sensitivities. Any requests to view the ACHA report will need to be reviewed by the participating registered Aboriginal parties.	

Object 2

Object 2 states that ‘The objects of the Act are to be achieved by applying the principles of ecologically sustainable development.’

The principles of ecologically sustainable development include:

- the precautionary principle
- intergenerational equity
- conservation of biological diversity and ecological integrity
- appropriate valuation of environmental factors.

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* adopted the above definition of ecologically sustainable development and added a fifth principle:

- decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations.

This REF has been guided by these principles when assessing the potential impact of the proposal. Where uncertainty exists, a precautionary approach has been taken to mitigate potential impacts. Environmental factors are valued in this assessment. The proposal is considered to be ecologically sustainable within the meaning of the above principles.

The **precautionary principle** states:

if there are threats of serious or irreversible damage, lack of scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

Environmental assessments have been undertaken to prepare this REF to fully understand the potential environmental impacts. The project has been designed to avoid environmental impact where practicable. Potential for environmental impacts during construction and operation have been assessed, and mitigation measures and safeguards are proposed to protect the environment. Mitigation measures can be implemented that would minimise impacts. No mitigation measures have been deferred due to a lack of scientific certainty.

The project would meet the requirements of this principle.

The principle of **intergenerational equity** states that:

the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations.

The project is unlikely to impact on natural or cultural features to a level that would compromise the health, diversity or productivity of the surrounding environment for future generations. The project would improve the access to the surrounding area, thereby positively benefiting future generations by allowing them to gain an understanding of the environment. While the increased visitation may increase the chances of impacts to the health of the environment through the introduction or transportation of pathogens, these impacts have been considered and addressed through appropriate mitigation and management measures (refer Section 9 and ELA 2024a, supporting document A).

The project would meet the requirements of this principle.

The **conservation of biological diversity and ecological integrity** principle states:

the diversity of genes, species, populations and communities, as well as the ecosystems and habitats to which they belong, must be maintained and improved to ensure their survival.

Biodiversity surveys and assessments of the existing local environment were undertaken to identify and manage any potential impacts of the project on local biodiversity. The project would not have a significant impact on biological diversity and ecological integrity. Terrestrial

and aquatic biodiversity assessments have been undertaken and appropriate site-specific safeguards are provided.

The project would meet the requirements of this principle.

The **appropriate valuation of environmental factors** principle states:

that environmental factors should be included in the valuation of assets and services.

This principle relates to giving monetary values to environmental resources. The cost of environmental resources includes costs incurred to protect the environment. The safeguards imposed are to minimise adverse impacts and protect biodiversity. The project has been designed to minimise adverse environmental impacts by a thorough route selection process that included the consideration of environmental factors and avoidance or minimisation of environmental impacts, as well as implementing appropriate mitigation measures where impacts are likely.

The project helps to provide access to Gondwana Rainforests of Australia in a sustainable way for human appreciation, education and enjoyment. The project design has been developed with the objective of minimising potential impacts on the surrounding environment. This indicates that the project is being developed with an appropriate valuation of the environmental factors.

The proposal has taken into consideration valuation of assets and services to ensure the proposal is developed in a cost-effective way.

The project would meet the requirements of this principle.

Overall, the proposal will encourage a greater diversity of visitors to Dorrigo NP and Bindarri NP. The current facilities and walks already provide for appreciation, an understanding and enjoyment of nature and cultural heritage and their conservation albeit for relatively limited periods of time. The proposed Dorrigo Escarpment Great Walk (DEWG) would enhance this and would be consistent with the management principles applicable to national parks and items of heritage significance, and the relevant plan of management for Dorrigo and Bindarri NPs (NPWS 2024a).

Plan of management for Dorrigo and Bindarri national parks

The National Parks and Wildlife Act s 81 states where the Minister has adopted a plan of management for a national park, historic site, nature reserve, karst conservation reserve, Aboriginal area or wildlife refuge, it shall, be carried out and given effect to by the Chief Executive. No operations shall be undertaken in relation to the lands to which the plan relates unless the operations are in accordance with that plan of management.

The DEGW will be undertaken in line with Section 4 of the *Dorrigo National Park, Bindarri National Park and Bindarri State Conservation Area plan of management* (NPWS 2024a) whereby the parks will be managed to ensure that it is appropriate and consistent with the Act, including use for 'promotion of natural and cultural heritage conservation and environmental education' and 'recreation in a natural setting'. The plan of management for Dorrigo NP and Bindarri NP was adopted in 2024 to provide for improvements to the parks to cater for increasing visitation and to provide for a broader and increased range of visitors to engage in a variety of nature-based experiences that the parks can offer. The DEGW is considered a permissible activity under Section 5 of the plan being 'multi-day walk, and associated camps' identified in Table 2 and Figure 2 of the plan.

Asset of intergenerational significance

Bindarri NP park was declared an asset of intergenerational significance in 2021 for its critical role in protecting the endangered koala (*Phascolarctos cinereus*). Impacts to koala under the Biodiversity Conservation Act and Environment Protection and Biodiversity

Conservation Act have been assessed. No significant impacts to koala are expected from the proposal and therefore no impacts to the asset of intergenerational significance are expected.

Leasing, licensing and easement provisions (Part 12)

Not applicable to this proposal

NPWS management powers and responsibilities (s 8 and s 12)

Section 8(3) of the National Parks and Wildlife Act requires that the Secretary shall: (a) promote such educational activities as the Secretary considers necessary and, (b) arrange for the carrying out of such works as the Secretary considers necessary for or in connection with the management and maintenance of a national park. Section 8(7) of the Act requires that the Secretary: (a) may promote such educational activities as the Secretary considers necessary to awaken and maintain an appreciation of the value of and the need to conserve animal and plant life, including to conserve threatened species, populations and ecological communities, and their habitats.

Section 12 of the Act sets out the objectives for management powers and functions of internal NPWS projects including: (f) the provision of facilities and opportunities for sustainable visitor or tourist use and enjoyment on land reserved under this Act.

The DEGW is appropriate under the scope of power for NPWS as it would enhance the provision of facilities and opportunities for use of the park, consistent with the objectives of the National Parks and Wildlife Act.

3.1.2 Wilderness Act 1987 (for activities in wilderness areas)

Not applicable to Dorrigo NP and Bindarri NP as they do not form part of any declared wilderness areas.

3.1.3 Biodiversity Conservation Act 2016

The *Biodiversity Conservation Act 2016* seeks to:

- conserve biological diversity at bioregional and state scales
- improve, share and use knowledge, including local and traditional Aboriginal ecological knowledge, about biodiversity conservation
- maintain the diversity and quality of ecosystems and enhance their capacity to adapt to change and provide for the needs of future generations
- assess the extinction risk of species and ecological communities and identify key threatening processes through an independent and rigorous scientific process
- regulate human interactions with wildlife by applying a risk-based approach
- establish a framework to avoid, minimise and offset the impacts of proposed development and land use change on biodiversity.

The Biodiversity Conservation Act regulates the clearing of native vegetation in New South Wales. Under Part 7 of the Act, an assessment of the potential impacts of the proposed activity on threatened species, populations, ecological communities and critical habitat listed in the Biodiversity Conservation Act must be undertaken. This includes assessment of the potential for a significant impact under s 7.3 (the so-called '5-part test') and whether an impact is likely on an area of outstanding biodiversity value.

The REF has assessed impacts to threatened species and communities in Section 8.3 and the ecological assessment report (ELA 2024a, supporting document A). No significant impacts to threatened species, populations or ecological communities will occur because of

this proposal as justified by this REF and the ecological assessment report. Therefore, the proposed DEGW is not considered to be inconsistent with the objectives of the Act.

3.1.4 Rural Fires Act 1997

Under the *Rural Fires Act 1997*, NPWS is a prescribed fire authority and is responsible for the control and suppression of all fires on lands that it manages. Bushfire suppression and management is regulated by the Act. Both the Environmental Planning and Assessment Act and the Rural Fires Act were modified by the *Rural Fires and Environmental Assessment Legislation Amendment Act 2002* to enhance bushfire protection through the development assessment process.

Under s 63 of the Rural Fires Act it states that it is the duty of a public authority to take steps and any other practicable steps to prevent the occurrence of bushfires on, and to minimise the danger of the spread of a bushfire on or from any land vested in or under its control or management.

Overall, the DEGW is considered to be in a low fire impact area due to the subtropical rainforest nature. As a fire authority NPWS will comply with the objectives of the Act.

3.1.1 Roads Act 1993

The *Roads Act 1993* provides for the operation, maintenance and use of roadways in New South Wales, including identifying managing authorities, rites of passage and classification of roads. Section 138 of the Roads Act states that the surface of a public road may not be dug up or disturbed without prior approval from the Roads authority.

The proposal will establish a walking track over a public road, however, is likely to generate a negligible temporary impact as this area is not used for local traffic. In the operational phase, there would be no increase or change compared to the current condition.

Coffs Harbour City Council would be advised of proposed temporary road closures and if required a road occupancy licence will be obtained prior to construction commencing.

3.2 Environmental Planning and Assessment Act 1979

This proposal will be assessed under Part 5 of the *Environmental Planning and Assessment Act 1979*, which applies to activities undertaken by or on behalf of a public authority or that require the approval of such an authority. NPWS are undertaking the work in a national park and are the approval authority. Where off-park activity is proposed by NPWS, approval from private property owners, such as Crown Lands, Bellingen and Coffs Harbour Shire councils, will be obtained.

3.2.1 Assessment pathway

It is confirmed that a REF is the applicable assessment pathway because each of the following apply:

- The activity is not declared to be state significant infrastructure under s 2.13 of the *State Environmental Planning Policy (Planning Systems) 2021*.
- The activity may be undertaken without development consent under the provisions of s 2.73(1)(a) of the *State Environmental Planning Policy (Transport and Infrastructure) 2021* (Transport and Infrastructure SEPP) as it:
 - is on land reserved under the National Parks and Wildlife Act or acquired under Part 11 of the Act, **and**

- is for a purpose authorised under the National Parks and Wildlife Act.
- The activity is **not** identified as requiring development consent under another environmental planning instrument that prevails over the Transport and Infrastructure SEPP. In particular:
 - The activity is not in a coastal wetland or littoral rainforest, or it does not otherwise meet the criteria for development requiring consent outlined in s 2.7(2) of the *State Environmental Planning Policy (Resilience and Hazards) 2021* (Resilience and Hazards SEPP).
 - The activity is not coastal protection works or, if coastal protection works, the activity is one of the types of coastal protection works that may be carried out by or on behalf of a public authority without development consent.
 - The activity is not a type of development requiring development consent under s 2.9 of the *State Environmental Planning Policy (Resources and Energy) 2021*.
- The activity is not declared to be exempt development under an environmental planning instrument or fails to fully meet the requirements for exempt development.

3.2.2 Strategic plans

The activity proposed is on land covered by a local strategic planning statement, regional strategic plan or district strategic plan made under Division 3.1 of the Environmental Planning and Assessment Act.

North Coast Regional Plan 2041

The proposal aligns with several goals within the *North Coast regional plan 2041* (DPE 2022):

- Goal 1: Liveable, sustainable and resilient. Objective 4: Understand, celebrate and integrate Aboriginal culture
- Goal 2: Productive and connected. Objective 12: Create a diverse visitor economy
- Goal 3: Growth Change and Opportunity. Objective 19: Public spaces and green infrastructure support connected and healthy communities.

The Bellingen Shire narrative notes that ‘more than half of the shire is national park or state forest and managing this unique natural environment appropriately will be key to delivering a sustainable future.’

The plan has a regional priority to ‘identify opportunities to enhance natural and cultural tourism through the creative industries sector, the World Heritage-listed national parks, and coastal and heritage assets.’ The proposal is consistent with the objectives of the *North Coast regional plan 2041*.

Bellingen Shire local strategic planning statement

The *Bellingen Shire local strategic planning statement 2020–2040* (LSPS) (Bellingen Shire Council 2020) acknowledges:

world significant areas of remnant rainforest that attract in the order of 120,000 visitors annually to the acclaimed Rainforest Centre.

Development and changes to land zoning to facilitate tourism are likely to be approved as specified in page 56 of the LSPS:

Projects that may not be permissible in a certain area but would deliver significant benefits for Dorrigo will be considered on merit by Council, noting the relative lack of opportunities for economic stimulus that present in Dorrigo.

The proposal is consistent with planning priority 3 in the LSPS:

To provide meaningful opportunities for local employment, sustainable business establishment and growth. ... Council will seek to encourage new businesses that preserve the natural resource base by building new opportunities for nature-based tourism.

The proposal is considered consistent with the outcome of the Bellingen Shire LSPS.

3.3 Other relevant NSW legislation

3.3.1 Coal Mine Subsidence Compensation Act 2017

The proposal is not located within the mapped mine subsidence area, so referral is not required to the Mine Subsidence Advisory.

3.3.2 Fisheries Management Act 1994

The *Fisheries Management Act 1994* sets out to conserve fish stocks and key fish habitats, threatened species, populations and ecological communities of fish and marine vegetation and biological diversity. Further, it aims to promote viable commercial fishing, aquaculture industries and recreational fishing opportunities.

Certain works carried out on 'water land', as defined under the Act, require approval under the Act. The proposal to construct the DEGW would be undertaken partly on land that meets the definition of water land.

NPWS is proposing to construct a number of elevated structures over river crossings to ensure impacts of increased access to the aquatic habitat are minimised. To avoid impacts on aquatic species/communities, it is intended that all waterways/drainage features will have some form of crossing protection. Five key waterways will be crossed using single-span elevated structures greater than 20 m long. This will avoid disturbance to the bed, banks and instream habitat features such as woody debris, rocks and pools. These structures will be single span in most instances and are unlikely to change water flow, velocity, turbidity or seasonality. Construction of these crossings has potential to impact waterways by mobilising sediment, which will be mitigated through pre-fabrication off site and by the use of simple wire suspension-style structures minimising disturbance. Impacts to localised sections of riparian vegetation are required in order to facilitate the project works such as track clearing and structure installation.

A number of other smaller waterways will also be crossed with a range of different options, such as stepping stones and culverts to small, elevated platforms.

Consultation for the proposed activities with relevant agencies is addressed in Section 4.1. As the DEGW passes through water land, the Department of Primary Industries (DPI) Fisheries has been notified as per s 199 of the Fisheries Management Act.

3.3.3 Heritage Act 1977

The *Heritage Act 1977* (NSW) provides protection of the environmental heritage of the state which includes places, buildings, works, relics, movable objects or precincts that are of state or local heritage significance.

The NSW State Heritage Register is the statutory register under Part 3A of the NSW Heritage Act. Listing on the register means that any proposed works or alterations (unless exempted) to listed items must be approved by the Heritage Council or its delegates under s 60.

Section 57(2) of the Heritage Act provides for a number of potential exemptions to s 57(1) approval requirements to reduce the need for approval of minor or regular works such as maintenance. Exempted development does not require prior Heritage Council approval. Standard exemptions do not apply to the disturbance, destruction, removal or exposure of archaeological relics.

Archaeological features and deposits are afforded statutory protection by the 'relics provision'. Section 4(1) of the Heritage Act (as amended 2009) defines 'relic' as any deposit, artefact, object, or material that relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and is of state or local heritage significance. The 'relics provision' requires that no archaeological relics be disturbed or destroyed without prior consent from the Heritage Council of NSW.

Archaeological sites that are not located within a state heritage curtilage are protected under ss 139 and 140 of the Heritage Act. A person must not disturb or excavate any land knowing or having reasonable cause to suspect that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed, unless the disturbance or excavation is carried out in accordance with an excavation permit.

The Heritage Council must be notified on the discovery of a relic under s 146 of the Heritage Act.

- The study area is a state-listed heritage item. Approvals are required from the Heritage Council.

The Gondwana Rainforests of Australia are listed on the State Heritage Register. It is noted that the rainforests are also listed on the National Heritage and World Heritage lists. Under the Heritage Act the project will follow approvals under s 60.

- Gondwana Rainforests of Australia – State Heritage Register listing ID 01002.

The following statement of significance was taken, and amended where necessary, from the State Heritage Inventory listing for Gondwana Rainforests of Australia:

The Gondwana Rainforests of Australia, comprising several protected areas, is situated predominantly along the Great Escarpment on Australia's east coast. The outstanding geological features displayed around shield volcanic craters and the high number of rare and threatened rainforest species are of international significance for science and conservation.

An outstanding example representing major stages of the earth's evolutionary history; an outstanding example representing significant ongoing geological processes and biological evolution; and containing important and significant habitats for the in-situ conservation of biodiversity.

Figure 6 shows the location of heritage items listed on World Heritage List (WHL), National Heritage List (NHL), State Heritage Register (SHR) and Bellingen and Coffs Harbour local environment plans (LEP – Local Heritage Listing) including:

- 'Escape Road' in Dorrigo NP – listed in *Bellingen Local Environment Plan* (LEP #A50) – noting that 'Escape Road' is labelled 'Escarp Road' on old State Forest maps
- 'High Conservation Value Old Growth Forest' (SHR #01487) – small areas in the curtilage within Bindarri NP.

3.3.4 Marine Estate Management Act 2014

The proposal does not affect or directly adjoin a marine park or aquatic reserve.

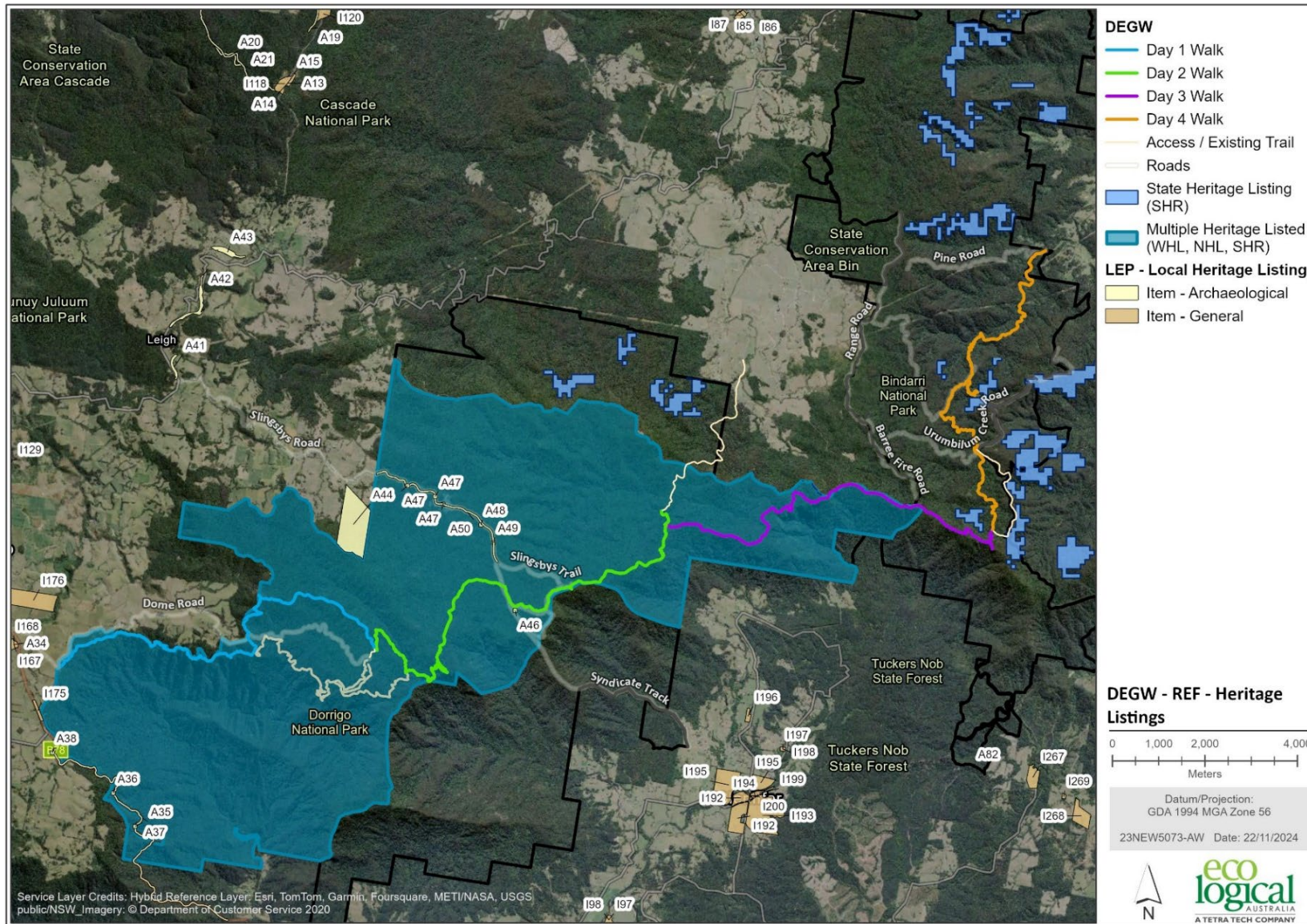


Figure 6 Heritage listings

3.3.5 Biosecurity Act 2015

The *Biosecurity Act 2015* is administered by NSW Department of Primary Industries (DPI). The Biosecurity Act deals with biosecurity risks (feral animals, plant and animal diseases, and weeds) and how they are managed in New South Wales. In relation to weeds, the Act:

- contains the principle of shared responsibility for weed risk across government, community and industry
- contains provisions that apply equally to all land and waterways in the state, regardless of whether ownership is public or private
- is premised on the concept of risk, so that weed management investment and response is commensurate with the risk posed
- supports regional planning and management for weeds.

The Biosecurity Act includes a number of mechanisms (regulatory tools) that can be used to manage weed risks. The Act and Regulations provide specific legal requirements for high-risk activities and state-level priority weeds. The Biosecurity Act introduces a general biosecurity duty: that all plants are regulated with a general biosecurity duty to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as reasonably practicable.

A total of 12 weed species were recorded within the study area. Two exotic species identified, lantana (*Lantana camara*) and fireweed (*Senecio madagascariensis*), are listed as Weeds of National Significance (WoNS). Three other species, large-leaved privet (*Ligustrum lucidum*), camphor laurel (*Cinnamomum camphora*) and small-leaved privet (*Ligustrum sinense*), are identified as additional species of concern and are listed for asset protection.

The construction and operation of the proposal may result in the introduction and distribution of pathogens, such as viruses and fungus. Pathogens detrimental to biodiversity within the study area include:

- chytridiomycosis or chytrid fungus (caused by *Batrachochytrium dendrobatidis*) which impacts amphibians
- phytophthora (*Phytophthora cinnamomic*) which causes dieback in plants
- disease-causing rusts (basidiomycete fungi of the order Pucciniales) which affect Myrtaceae plant species through myrtle rust.

There is evidence that both chytrid fungus and myrtle rust exist in the locality. Phytophthora and associated dieback have also been recorded in visitor precincts and remote walking tracks in both Dorrigo and Bindarri NPs in 2018–19 and 2024.

Sections 8.3.10 and 8.3.11 outline the priority pathogens and weeds that were recorded during field survey for the proposal and their associated duties under the Biosecurity Act 2015. Section 9 includes safeguards and management measures to manage these weeds in accordance with the Biosecurity Act during construction and operation of the proposal.

3.3.6 Local Land Services Act 2013

The *Local Land Services Act 2013* regulates the clearing of native vegetation on rural land in New South Wales. However, the Act does not apply to any clearing that is authorised under other legislation, including an activity carried out by a determining authority within the meaning of Part 5 of that Act. As this project would be an activity within the meaning of Part 5 of the Environmental Planning and Assessment Act, the Local Land Services Act does not apply to regulate the clearing of native vegetation assessed as part of the project.

3.4 Commonwealth legislation

3.4.1 Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* applies because the activity is on land that contains or may affect matters of national environmental significance (MNES). Environmental approvals under the Act may be required for an 'action' that has, would have or is likely to have a significant impact on:

- MNES
- nationally listed threatened species and ecological communities or listed migratory species
- World Heritage or National Heritage values of a place on the World Heritage List or National Heritage List.

Predicted known or likely impacts to MNES arising from the project will require referral to the Commonwealth as they have the potential to be considered significant. Threatened species and ecological communities listed under the Act that may be affected by the proposal have been assessed in the ecological assessment report (ELA 2024a, supporting document A) and the MNES assessment report (ELA 2024b, supporting document B).

The 'likelihood of occurrence' analysis identified 25 flora and fauna MNES that require impact assessments, including 11 vulnerable species, 8 endangered species, and one critically endangered species. In addition, 5 migratory species were assessed due to their potential as a migratory species. The likelihood of occurrence is presented in supporting document B. An assessment of significance has also been carried out for nationally threatened species and ecological communities that are likely to occur in the impact area and study area. Based on the assessments it was concluded that the proposal is not likely to significantly impact on threatened species, ecological communities or migratory species, within the meaning of the Act, for the following reasons:

- the overall impact area is relatively small at 9.61 ha (see Section 6.3.6) and is spread over 44.1 km
- large amounts of similar and higher quality habitat are available within and adjacent to the impact and study areas
- the DEGW has been designed to avoid and minimise impacts as far as practicable, and impacts are concentrated where possible on existing disturbed areas within the parks
- the DEGW is unlikely to significantly affect the ability of local populations, if present, to persist in the study area in the long term or to self-relocate.

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

Although the proposal spans over 44.1 km, it has a very small overall footprint of only 9.61 ha (a study area of ~16 ha). This represents less than 0.07% of the Gondwana Rainforests within Dorrigo NP (7,885 ha) and 0.0008% of the Gondwana Rainforests World Heritage property (11,733 ha).

Accordingly, the preparation of a referral under the Act is not considered to be required in relation to MNES. NPWS may, at their discretion, undertake consultation under the Act to confirm if the activity is considered a controlled action by the Minister for the Environment and Water.

3.5 Consistency with NPWS policy

Table 2 lists NPWS policies and describes how the proposed activity is consistent with current policy.

Table 2 National Parks and Wildlife Service (NPWS) policies

Policy name ¹	How proposal is consistent
Landslides and rockfalls policy	<p>The NPWS priority in managing landslides and rockfalls in parks is to protect life and property, consistent as far as possible with conserving the natural and cultural values of parks.</p> <p>NPWS follows accepted risk management and safety practices; conforms with international and Australian standards; and follows corporate risk management procedures and the work, health and safety system in its management of risk from landslides and rockfalls.</p> <p>Implementation of the landslides and rockfalls policy is supported by NPWS <i>Landslides and rockfalls procedures</i> (NPWS 2024b) that provide more detailed guidance on how the policy will be applied to the DEGW construction, to assess risk, record and respond to landslide and rockfall incidents and hazards in parks.</p>
Visitor accommodation policy	<p>The National Parks and Wildlife Act permits accommodation in parks for some purposes. The DEGW includes accommodation and facilities including:</p> <ul style="list-style-type: none"> • new hut accommodation for up to 24 people and camping facilities for up to 24 people at Camp 1 • new hut accommodation for up to 12 people and camping facilities for up to 12 people at Camps 2 and 3. <p>The visitor accommodation policy guides accommodation development within parks. Visitor accommodation is permissible in parks where it is consistent with the objects and management principles of the National Parks and Wildlife Act and the relevant plan of management. The DEGW proposed accommodation is consistent with the plan of management as amended (NPWS 2024a).</p> <p>Other components of the DEGW include improvements to facilities at the Waygarrgala Remote Camp (formerly known as Wild Cattle Creek camp), and upgrades to Baliiga picnic area (formerly known as Never Never picnic area).</p> <p>While final visitor accommodation is yet to be fully planned and designed, the future construction of the accommodation will be in accordance with the policy objectives at each of the 5 locations.</p>
Visitor safety policy	<p>The visitor safety policy outlines NPWS’s legal duty of care towards people in parks. It also provides guidance about how NPWS can address safety issues and reduce risk to park visitors while maintaining park values.</p> <p>Prior to finalisation of track location and commencement of works, visitor safety risks would be assessed through the NPWS’s risk management system. The DEGW will adopt grade 4 walking track standards and consistent elevated structure designs including appropriate fall height protection. Appropriate warning and risk mitigation information will form a key part of managing visitor safety. An emergency management plan will be developed for the ongoing operation of the walk that will guide track closures, search and rescue response coordination, and evacuation procedures.</p>
Walking tracks policy	<p>The DEGW will comply where possible with the <i>Walking tracks policy</i> and more broadly the <i>Park facilities manual</i> (NPWS 2016a). All DEGW signage will be consistent with the <i>Park signage manual</i> (NPWS 2016b) and that identified within the plan of management (NPWS 2024a). The DEGW has been developed to be appropriately located and will be designed to minimise environmental impacts and be appropriate to the setting as per the <i>Sustainability assessment criteria for visitor use and tourism in NSW national</i></p>

Policy name ¹	How proposal is consistent
	<p><i>parks</i> (OEH 2011a). The planning, development and management of the DEGW also considers:</p> <ul style="list-style-type: none"> • public safety • how the DEGW augments other existing walking opportunities and facilities (DEGW is not designed for entire disability access given the nature of the terrain and location) • the resources needed to construct and maintain the DEGW. <p>In accordance with the <i>Walking tracks policy</i>, the proposed DEGW is consistent with the relevant plan of management, and is located and designed to minimise environmental impacts. The DEGW will be managed in accordance with national park guidelines which allow for the closure of the parks to protect the safety of visitors when required. The proposed DEGW will ensure public safety is maintained even in remote locations and will be accessible for management and emergency response purposes. The design will also be in accordance with relevant signage design standards to ensure clear communication, patron safety and the track/camp longevity.</p> <p>The DEGW will link and upgrade a number of existing walks within the parks. The track will provide a significant enhancement to the existing facilities.</p> <p>The existing day use areas at the Dorrigo Rainforest Centre and proposed upgrades to Balliga picnic area will cater for all abilities. The DEGW and accommodation will be designed with long-lasting materials to minimise maintenance costs.</p> <p>The activity is consistent with this policy.</p>

1. Refer to the 'More information' section for a link to all NPWS park policies.

3.6 Summary of licences and approvals

3.6.1 Approval required from National Parks and Wildlife Service

Internal NPWS approval or authorisation, including expenditure, is required.

3.6.2 Other approval

No other approval is required.

3.6.3 Publication triggers

The REF must be published following determination in accordance with the Environmental Planning and Assessment Regulation 2021 before it may be carried out. Refer Table 3. Noting that section 171(4)(a) of the Regulation (development costs greater than \$5 million) has already triggered publication requirements.

Table 3 Triggers for publication of the review of environmental factors

Permit or approval	Applicable?
Fisheries Management Act, sections 144, 200, 205 or 219	No
Heritage Act, section 57(1) (commonly known as a section 60 and not an exemption under section 57(2))	Yes
National Parks and Wildlife Act, section 90 (AHIP)	No
<i>Protection of the Environment Operations Act 1997</i> , sections 47–49 or 122	No

4. Consultation – general

4.1 Statutory consultation

4.1.1 State Environmental Planning Policy (Transport and Infrastructure) 2021

The Transport and Infrastructure SEPP requires consultation with relevant authorities as identified in Table 4.

Table 4 Consultation triggers under the Transport and Infrastructure State Environmental Planning Policy

Authority (SEPP section)	Trigger	Applicable to proposal?
Consultation with local council (s 2.10)	Development with impacts on council infrastructure or services (such as stormwater, sewer, water, roads and footpaths)	Yes
Consultation with local council (s 2.11)	Development with impacts on heritage items listed under the local environmental plan (LEP)	Yes
Consultation with local council (s 2.12)	Development that will change flood patterns on flood-labile land	No
Consultation with State Emergency Service (s 2.13)	Development on flood-labile land	No
Consultation with local council (s 2.14)	Development that is inconsistent with a certified coastal management program affecting land within the mapped coastal vulnerability area	No
Consultation with NPWS (s 2.15(2)(a))	Development adjacent to land reserved or acquired under the National Parks and Wildlife Act	No
Consultation with NPWS (s 2.15(2)(b))	Development on land in Zone C1 that is yet to be reserved under the National Parks and Wildlife Act	No
Consultation with Transport for NSW (s 2.15(2)(c))	Development comprising a fixed or floating structure in or over navigable waters	No
Consultation with the Director of the Siding Spring Observatory (s 2.15(2)(d))	Development that may increase the amount of artificial light in the night sky and that is on land within the mapped dark sky region	No
Consultation with the Cth Department of Defence (s 2.15(2)(e))	Development located within the buffer around the defence communications facility near Morundah as mapped under the Lockhart, Narrandera or Urana LEPs	No
Consultation with the Subsidence Advisory NSW (s 2.15(2)(f))	Development on land in a mine subsidence district.	No
Consultation with the Willandra Lakes Region World Heritage Advisory	Development on, or reasonably likely to have an impact on, a part of the Willandra Lakes Region World Heritage Property	No

Authority (SEPP section)	Trigger	Applicable to proposal?
Committee and Heritage NSW (s 2.15(2)(g))		
Consultation with the Western Parkland City Authority (s 2.15(2)(h))	Development within a Western City operational area (<i>Western Parkland City Authority Act 2018</i> , Schedule 2) with a capital investment value of \$30 million or more	No
Consultation with Transport for NSW (s 2.221)	Traffic-generating development listed in Schedule 3	No

4.1.2 National Parks and Wildlife Act for leases and licences

Not applicable; no leases or licences under s 151 or s 151H of the National Parks and Wildlife Act are proposed as part of the project.

4.2 Targeted consultation

Consultation with adjacent landowners, interest groups and others in the local community has occurred as the activity is likely to affect sites of importance for recreational or other values, or access to the parks.

NPWS has developed a community and stakeholder engagement plan to guide communications for the proposal, to enable feedback to inform the concept plans and environmental assessment, and to ensure stakeholder views are considered.

In all communications about the proposal, people were invited to register their interest in the project to receive project information updates by direct email.

4.2.1 Adjacent landowners

Adjacent landowners (see Table 5) were the first stakeholders to be identified and contacted about the DEGW proposal.

Table 5 Consultation with adjacent landowners

Date	Stakeholder	Channel	Topic
May 2022 to May 2023	10 key neighbours in Dorrigo, Brooklana and Dairyville areas	Face-to-face (F2F) meetings	Project outline, impacts and opportunities
Ongoing	Adjacent landowners	Phone, email, formal correspondence, F2F	Ongoing communication in response to questions and concerns (including ministerial correspondence)
Ongoing	Adjacent landowners in the Upper Bobo Brooklana areas	F2F meetings and ongoing consultation	Local knowledge, concerns, access agreements
2023	Forestry Corporation of NSW	Meetings and emails	Proposed walk route and access arrangements
April 2023	Gleniffer Community Association and Never Never Catchment Group	F2F briefing	Project outline for 50 neighbours and community at Gleniffer Hall

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Date	Stakeholder	Channel	Topic
March 2023	Landowners near Dairyville	Letterbox drop	Project outline and register of interest (ROI)
May 2023	Dome Road landowners	Letterbox drop	Project update, ROI, traffic, surveyors, walk route map
June 2023	Dome Road neighbours	Email	Boundary survey outcomes
Nov 2022 and ongoing	Project update newsletter	Email	7 project updates sent to all known neighbours

4.2.2 Wider community consultation

While community concept planning workshops were held in 2019, wider consultation on the current proposal commenced in June 2022 when funding was announced (Table 6). Since 2022, NPWS has attended around 100 face-to-face meetings, group briefings and field trips, and the project webpages have had over 20,000 views.

Table 6 Consultation with wider community

Date	Stakeholder	Channel	Topic
June 2022	Wider community	Website	Project outline, timeline, maps, FAQs and updates (24,000 page views)
June 2022	Register of interest (ROI) (currently 1,500 contacts)	Online form	Provide initial comments and sign up to receive regular project updates
June 2022	Local community	Printed flyer and posters	Project outline and invite to ROI
June 2022	Social media including Facebook	Posts and videos	Monitor hundreds of comments in response to project announcement
June 2022 to October 2023	Community groups	F2F briefings	Numerous briefings and meetings for local community groups
July 2022	Local community	Info stall	Provide outline of proposal and opportunity to meet NPWS staff at Made in Dorrigo Market Day
October 2023 to January 2024	All stakeholders and wider community	Draft master plan PDFs and video on website	Public exhibition of draft master plans with high engagement levels: <ul style="list-style-type: none"> • 87,000 Facebook posts reach • 8,000 people viewed webpages • 4,900 people viewed video • over 1,000 downloads of PDF • 162 submissions received
November 2023	Public information sessions	F2F drop-in and online	Presentation outlining project proposal and master plans with opportunity for questions
Ongoing	Enquiries about the project from public	Email and letters	Numerous responses to specific enquiries via website or email
Ongoing	Register of interest	Email newsletters (7 to date)	Project updates and milestones, other works in the parks, consultation opportunities

4.2.3 Interest groups

During the development of the draft master plan in 2023, NPWS conducted extensive stakeholder consultation and engagement to refine the concepts in the plan and has continued to meet with interest groups during the development of the REF (Table 7).

Table 7 Consultation with interest groups

Date	Stakeholder	Channel	Topic
Summer 2022–23	Park visitors (x 450)	Visitor surveys	Understanding visitor motivations and expectations
February 2023 and ongoing	NPWS community advisory committees	Meetings and field trips	Project proposals and plan of management consultation
2022; ongoing	Conservation and bushwalking groups	Meetings and field trips	Project proposals, environmental impacts and plan of management
2022; ongoing	Business and tourism groups	Briefings and field trips	Visitor economy opportunities with business group forums, tourism organisations and business owners
2022; ongoing	Other government agencies	Meetings	Emergency response, roads and traffic, planning and infrastructure

4.2.4 Forestry Corporation of NSW

NPWS have consulted with Forestry Corporation of NSW regarding works on Tuckers Knob Fire Trail in Orara West State Forest. The corporation provided written confirmation of no concerns.

5. Consultation – Aboriginal communities

5.1 Native title notification requirements

1. Is the land subject to an Indigenous land use agreement (ILUA)?

No, there is no registered ILUA over Dorrigo NP or Bindarri NP.

2. Has native title been extinguished?

Components of the proposed works occur within the footprint of existing public works that would have extinguished native title. In addition, a small component of the walking track is proposed on freehold with an easement agreement. Native title is assumed to have been extinguished in those locations. For the remaining land, it is assumed that native title exists.

3. Has there been a determination of native title applicable to the land or is there a native title claim pending?

There are no native title determinations or registered native title claims over Dorrigo NP or Bindarri NP.

4. If native title is not confirmed as extinguished, is the activity occurring on land reserved on or before 23 December 1996 and is an act in accordance with the purpose of the reservation and:

- a. is either a public work as per subdivision 24J of the *Native Title (New South Wales) Act 1974* (for example, a building or other structure that is fixed to the landscape, a road or bridge, a well or a bore, or involves major earthworks) or
- b. involves the grant of a lease?

The proposed works include works occurring on public land reserved on or before the 23 December 1996 that are acts in accordance with the reservation of the land and include public works.

To validate the proposed 'public works', a native title notification letter has been sent to NTSCorp (as the NSW native title representative body or service provider, on behalf of any future native title holders or claimants).

NPWS is also consulting with the local Aboriginal community regarding Aboriginal cultural heritage assessment requirements to fulfil obligations under the National Parks and Wildlife Act. An Aboriginal cultural heritage assessment has been completed (ELA 2024c).

5. Not applicable. See question 4 for required native title future acts procedure.

5.2 Parks under other joint management arrangements

The parks' management is not subject to another joint management arrangement such as a memorandum of understanding.

5.3 Other parks

Not applicable.

6. Proposed activity (or activities)

6.1 Location of activity

Table 8 provides details on the activity's location.

Table 8 Summary of activity location

Description of location	<p>The proposed DEGW will traverse the rugged escarpment of the Great Dividing Range, west of Coffs Harbour, New South Wales (Figure 7).</p> <p>Dorrigo NP is part of the Gondwana Rainforests of Australia World Heritage property. The DEGW is a linear corridor approximately 44.1 km in length starting at the new Dorrigo Arc Rainforest Centre, following the escarpment sitting between Bellingen and Dorrigo townships, eventually extending down into the Upper Orara Valley within the Coffs Harbour hinterland. It includes existing access roads to 3 new camp precincts and existing camp upgrade. The altitude ranges from about 150 m metres near Bindarray picnic area to 990 m at Dome Mountain, see Figure 7 and Figure 8.</p>
Site commonly known as	Dorrigo National Park and Bindarri National Park
Park name	Dorrigo National Park and Bindarri National Park in the North Coast region
Other tenures	<ul style="list-style-type: none"> • Tuckers Knob Road (Forestry Corporation NSW) • Lots 55, 61, 62, 64 and 65 DP 752842 (private property) • Parts of Jersey Bull Road, Dome Road, Whitneys Road, Slingsbys Road (Crown Lands NSW) • Jersey Bull Road, Whitneys Road (Coffs Harbour City Council) • Dome Road (Bellingen Shire Council)
Lot/DP	Lot 49 DP 752848 and Lots 40, 41, 45 and 46 DP 752852
Street address	142 Dome Road Dorrigo Mountain NSW 2453
Site reference	<p>Easting: 483351.306011</p> <p>Northing: 6643295.07277</p> <p>MGA zone: 56</p>



Figure 7 DEGW regional location

Dorrigo Escarpment Great Walk: Review of environmental factors

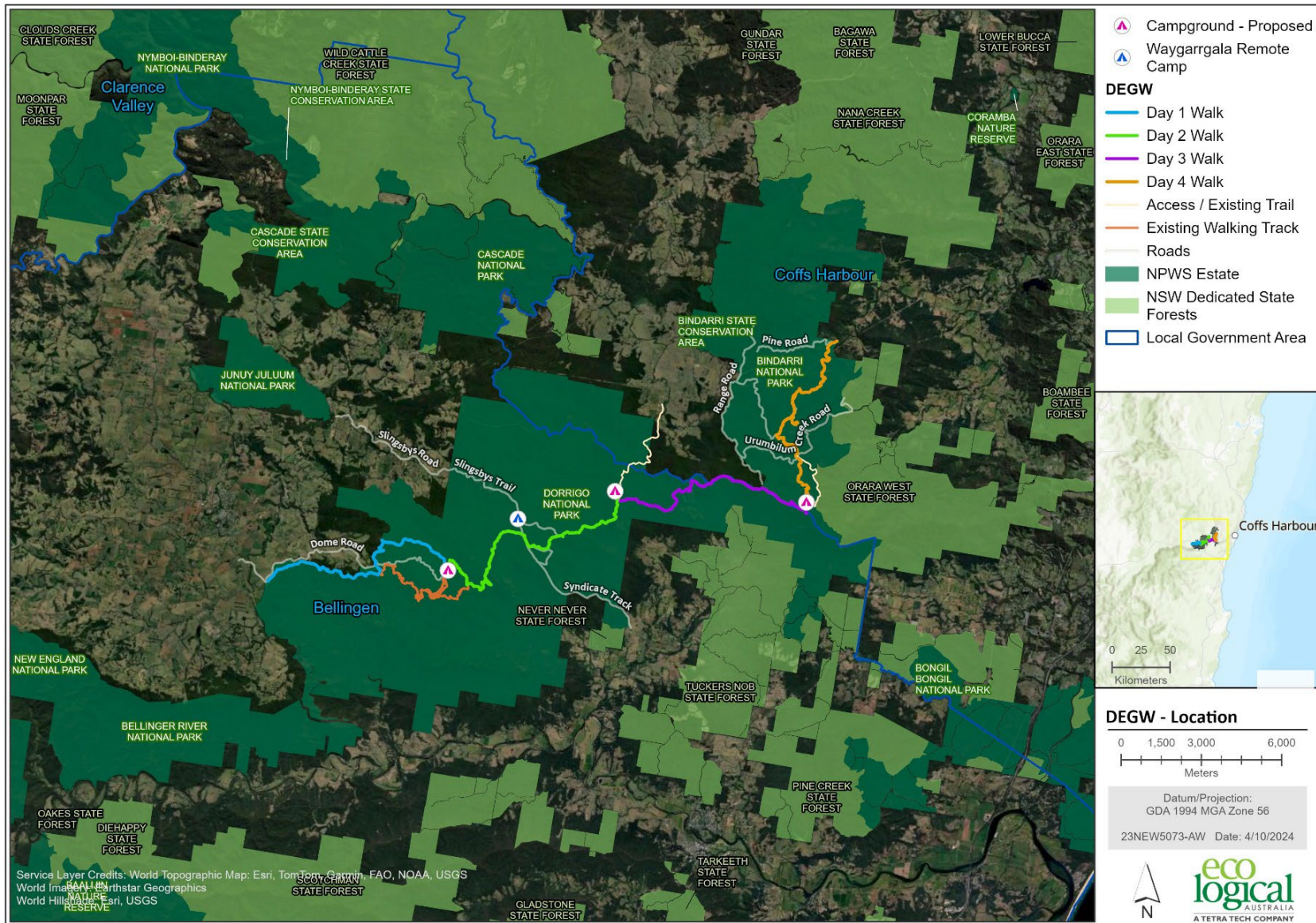


Figure 8 DEGW Location

6.2 Description of the proposed activity

6.2.1 The proposal

The proposal involves the construction of the DEGW, a multi-day walk exploring Dorrigo and Bindarri national parks.

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, a distance of approximately 44.1 km. A shorter overnight 2-day loop walk is proposed between the DARC and Camp 1 – Baliiga, with the return leg following the existing Rosewood Creek and Blackbutt tracks.

The existing remote camp on Wild Cattle Creek adjacent to Slingsbys Trail is to be upgraded and named Waygarrgala, which is Gumbaynggirr for ‘at the Antarctic beech’. The upgrade will provide an improved camping experience and manage impacts of anticipated increased use once the DEGW is operating. The camp will provide hikers, including those not walking the full 4-day walk, with overnight hiking options using sections of the DEGW and Syndicate track.

The proposed track route 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 for 43 river and creek crossings. A total 14 viewpoints and rest locations will be established, including 2 small lookout platforms. A design principle is to manage the walk alignment to ensure minimal impacts, both to natural surface level and vegetation, in order to maintain a sustainable outcome ecologically and culturally.

The proposal included the construction/development of 3 new hiker camps and the upgrading of an existing remote camp on previously disturbed sites with existing access roads. The camps will accommodate up to 24 people on the 4-day walk and 48 people on the 2-day walk.

The DEGW 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 of road upgrades, including management trails (8.1 km) and dormant roads (634 m)
- 3 new hiker camps
- 1 upgraded remote camping area, Waygarrgala Remote Camp
- 1 future upgrade to an existing day use area, Baliiga picnic area
- 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 of the track will mainly occur using hand track building techniques, with the use of small mechanical tools and machinery using natural materials from the construction footprint (2 m) where possible. Some small excavator machine work may be required on some sections, along with stonework in fragile and steeper areas. Where imported materials are required, the use of sling loads under helicopter may be used. Experienced specialist track builders will be used on new and sensitive sections that require experience in detailed alignment and construction to manage erosion control and safety, and to reduce direct and indirect impacts to the ecology.

This REF has been prepared based on the concept design and an indicative construction methodology for the project. The final design and construction methodology would be further developed by NPWS, and the contractor(s) appointed to deliver the project. Any changes to the design and/or construction of the project that are deemed to change impacts to an extent that triggers further assessment would be managed through the provision of supplementary assessment information by the design and construction contractor.

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

Construction footprint

The **construction footprint** is the area where construction activities would occur for the proposal and includes land that would be temporarily impacted for the construction including compound sites.

For the purpose of assessing potential impacts, the area of disturbance for the project was assumed to be a 2 m wide corridor along the concept alignment as well as additional disturbed areas associated with the access and ancillary facility locations (such as laydown and storage areas). The 2 m wide corridor has been reviewed in detail to identify key environmental constraints and these were avoided where possible. This area is termed the impact footprint.

Study area

The technical assessments for the REF were informed by an approximately 12 m wide study area along the length of the proposed DEGW route, including an expanded study area around camp sites and potential ancillary facility locations such as bridges. The technical assessments identified a number of environmental constraints within this study area where avoidance would be required during construction (for example, threatened vegetation that could be avoided). The study area did not contain significant constraints requiring avoidance in terms of the activity. Where the alignment has been refined during concept design, the project generally conforms with existing trails, natural slope of the land or natural viewpoints.

The study area has been assessed such that if the final construction footprint is required to be modified by the contractor, it may be sited anywhere within the study area without an increase in impacts, provided that:

- the change does not impact more native vegetation
- an assessment of clearing numbers/area is undertaken.

Access arrangements and agreements

Existing roads and management trails proposed to be used for temporary and ongoing access for the purpose of track construction and ongoing management, that do not require works include: Dome Road, Urumbilum Road, Bangalore Fire Trail, Barree Fire Road and Jersey Bull Road.

Trails that require work are assessed as part of the REF and include: Whitneys Trail, Tuckers Knob Road, dormant trail extension of Tuckers Knob Road and dormant trail extension to Dome Road (refer to Section 6.3.5).

The use of Slingsbys Trail (currently not accessible by vehicle) to access sections of the walk and remote camp for construction access and ongoing management will be dependent on the replacement of several damaged timber bridges (subject to a separate existing REF process). In the interim, access for track construction crews will be by foot. Delivery of materials for the remote camp and walk construction will be via helicopter.

Other walk-in-only temporary access arrangements using existing pathways that require no works are subject to signed access agreements.

Temporary access for the purpose of construction only will occur from locations identified in Section 6.4.2 (refer Figure 52).

Where land is required to be accessed for works associated with the REF assessment, individual landowners and/or occupiers have been consulted. Consultation on land access with the individual landowners is to address access, safety, expectations, land use, liability and concerns or questions individual to each affected piece of land and landowner.

An access agreement will be signed with the landowner that documents the matters agreed between the landowner and NPWS. These agreements will be for a fixed period. Where agreement periods have ended and access is still required, consultation will be repeated, and a new agreement signed.

6.2.2 Project aims

The DEGW aims to inspire future conservation advocacy and stewardship by providing a hiking experience that allows a greater number of people to spend time in the Gondwana Rainforests of Australia World Heritage property. Both parks contain extensive areas of subtropical rainforest, large areas of warm temperate rainforest, and Antarctic beech cool temperature rainforest. These extraordinary areas will become more readily within reach. The driving philosophy is to provide an experience that allows more people to connect to nature, culture and landscapes within the parks.

The aims for the DEGW are:

- to create inspiring experiences that connect people with the Gondwana Rainforests of Australia and Gumbaynggirr Aboriginal culture for generations to come
- to provide ongoing protection of our natural and cultural heritage, new opportunities for visitors to explore and connect with nature, increased contribution to the regional economy through visitor expenditure and employment, and health and wellbeing benefits for visitors and local communities.

The project aims to deliver on the following objectives:

- create a new multi-day walking experience of international standing that showcases the dramatic Dorrigo Escarpment
- protect, respect and promote the parks' environmental and cultural heritage
- create nature-based experiences which grow awareness of Australia's ancient landscapes and foster future conservation advocacy and stewardship
- provide opportunities for Aboriginal communities to rightfully share their culture, participate in and benefit from the regional visitor economy
- offer opportunities to connect to nature which provide ongoing health and wellbeing for participants
- generate economic benefit for the local community and sustainable growth of the regional economy
- create safe and durable walking tracks and camps which are designed for minimal impact and long-term sustainability with climate change impacts in mind
- support participation of a diverse cross-section of the community
- build strong partnerships with business, government and local communities
- contribute to ongoing maintenance costs and ensure financial sustainability.

6.2.3 Key design principles

The following broad principles have been used for the design and alignment of the track and facilities:

- reduce the impacts on the environmental and cultural values as far as possible by using existing tracks and previously disturbed areas
- built infrastructure (such as track surface, camp facilities and viewing platforms) are designed in a manner that minimises its footprint and accounts for climate change resilience, with best practice design, material choice and construction methods
- options for camping with hard-roofed shelter and platforms for independent hikers
- a communal philosophy of shared facilities that promotes connections
- overnight camps and huts are managed by NPWS and are not for exclusive or private use
- each day is between 10 and 15 km in length at a class 4 standard with a natural surface, providing a 6 to 8 hours daily walk time
- the walk provides a level of challenge at moderate difficulty for experienced walkers
- all designs and construction methods suitable for the extremes of conditions including very high rainfall, humid summers and cool winters
- hiker camps have a maximum capacity between 12 and 24 people/day, with the exception of Camp 1 – Baliiga which has a maximum capacity of 48 people/day
- the camping precincts are to be accessible by management vehicles for construction purposes and ongoing maintenance and emergency access to reduce costs and improve overall sustainability.

6.3 DEGW design elements

Key features of the proposal are described and shown below.

6.3.1 Walking track details

Day 1 and Day 2 return walk option

Day 1 (10.66 km) commences at the DARC and traverses along the park boundary on the escarpment edge via a new track which joins up with the existing Blackbutt track before crossing Dome Road and climbing up to Dome Mountain. The track then follows a ridge down to the new Camp 1 – Baliiga. Day 2 of the 2-day overnight walk option will return following the existing Rosewood Creek and Blackbutt walking tracks back to where it retraces the new track back to the DARC.

Day 2 walk

Day 2 (12.57 km) commencing at Camp 1, crosses the Rosewood River, climbs up to Dibbs Head then follows existing tracks past Lanes lookout before following the escarpment edge around Anscombes Hill down to the Never Never River. The river is crossed via a swing bridge before finishing at Camp 2 – Never Never on Whitneys Road above the river.

Day 3 walk

Day 3 (10.02 km) retraces the walk over the Never Never River then continues east along the escarpment over the Never Never River via a swing bridge near Gleniffer Falls then follows the steep escarpment edge under Mt Roogatargah, over Mt Wondurriyah and around Tuckers Knob before descending into the upper catchment of the Urumbilum River in Bindarri NP and Camp 3 – Bindarri.

Day 4 walk

Day 4 (10.91 km) commences at Camp 3, traverses down to Urumbilum picnic area before following the western side of the Urumbilum gorge via a steep ridge to a river crossing just above the junction of the Urumbilum River and Bangalore Creek. The track then traverses the southern side of the Urumbilum River leading down to the Bindarray picnic area before following the Jersey Bull Fire Trail out to where the hike finishes at the park entrance on Dairyville Road.

Track alignment and construction

The design and construction of the walking track will be undertaken in accordance with *Australian Standard 2156: Walking tracks classification and signage*, where possible.

Track alignment and construction will aim to use techniques, natural features and materials that create a low-impact, grade 4 walking experience using the principle of avoiding first by working around trees, sensitive areas and cultural sites. Imported materials and raised structures will be used for environmental protection or significant safety works. A key focus will be establishing effective drainage to ensure track sustainability in terms of longevity, maintenance liabilities and ongoing environmental impacts.

The DEGW alignment has been selected to avoid the need to remove trees, reduce the need to import a lot of material and to use existing historical tracks as far as possible. The proposed walking track consists of approximately:

- 13% (5.7 km) on existing walking tracks (refer Figure 9)
- 46% (20.3 km) on historic logging and snig tracks (refer Figure 10)
- 41% (18.1 km) new track.

The historic tracks generally have existing benching to provide a level surface, with only minor vegetation and drainage works required to establish the track. Existing walking tracks require minor maintenance only.



Figure 9 Example of existing Rosewood Creek walking track



Figure 10 Example of existing track near Tuckers Knob (Day 3)

Track construction will aim to establish:

- A natural track walking surface, fully benched (cut only) construction, where possible.
- A rolling contour character utilising rolling grade dips, grade reversal, without slope drainage and to minimise steps where possible.
- Where possible the fall line will be avoided.

The following sections of the NPWS *Park facilities manual* (NPWS 2016a) would also be used to guide the design:

- tracks and related structures planning – Class 4 Hiking Track
- natural surface track
- stone tread steps
- sleeper steps
- cross drains
- water bars
- viewing platforms
- elevated boardwalk.

The track will mostly be a natural surface track between 600 and 900 mm wide, with a 2 m-wide construction corridor that includes:

- Stairs, where required, will be timber or stone/cement with basic drainage, and track hardening as required in key locations using local rock material.
- Small grate/boardwalk segments will be required for difficult rock platforms or sensitive environmental areas or culturally significant sections (if required).
- Small viewing locations using natural clearings on natural surfaces will be provided at key locations.

- Drainage features and river crossings will range from natural crossings to engineered single-span suspension bridges.
- Installation of wayfinding, directional and interpretative signs.

6.3.2 River crossings

The walking track passes through several rivers as well as numerous small drainage lines, creeks, gullies and minor depressions, many of which only flow during periods of heavy rainfall. Crossing points are sensitive areas ecologically and are a key focus area for environmental impacts and mitigation. A key objective is to reduce the impacts from people crossing waterways as much as possible. Other factors considered are ensuring that crossings are in keeping with the remote setting and nature of a grade 4 remote walk experience. Sustainability in terms of location, design, materials used and ongoing maintenance requirements, as well as ensuring visual impacts are minimised are also key objectives.

Crossing construction type will depend on a number of factors including:

- the nature of water flow, that is perennial, intermittent or ephemeral
- the nature of the crossing bed
- the risk of creating environmental impacts that impact water quality and habitat
- the risks to walkers in terms of water flow during storm events.

Each crossing will be constructed using one of the following 5 types of methods to protect the environment as well as ensuring track sustainability:

Type 1: Natural crossing using minimal interference, such as embedded walking stones where walkers can cross safely with minimal impacts, for example, small ephemeral depressions with existing rocks/bedrock or wide depressions with no sign of regular water movement. Generally small catchment with limited flows.

Type 2: Small culvert pipe or designed stepping stones or natural features that allow walkers to traverse safely, crossing in higher flows that prevent mud holes developing and allow water to flow through, around or over during wet periods.

Type 3: Low level standard narrow pedestrian bridge for crossing streams and gullies greater than 3 m width. (Handrail to be installed only where fall risk is considered high.)

Type 4: Engineered long-span (single-span) pedestrian bridges – 1 person capacity for larger rivers. Designed in accordance with *Australian Standard 2156.2 – Walking track infrastructure design* and *Australian Standard 5100.1 – Bridge design*.

Type 5: Engineered long-span vehicle bridge. Designed in accordance with NPWS standards.

There are 43 water crossing locations identified (42 pedestrian and 1 vehicle bridge) including:

- 12 natural crossings (type 1)
- 17 small culvert pipe (type 2)
- 8 low-level narrow bridges (type 3)
- 5 engineered single-span pedestrian bridges ranging from 20 to 40 m in length (type 4)
- 1 engineered long-span vehicle bridge (type 5).

Table 9 lists the proposed pedestrian and vehicle crossing type by day of walk, and Table 10 provides details on the types of river/creek crossings. Figure 11 to Figure 17 show examples of bridge designs, and Figure 18 to Figure 22 show crossing locations on each day of the walk.

Table 9 River and creek crossing type and location

Proposed crossing by type						
Day	1	2	3	4	5	Total
1	7	10	2	0	0	19
2	0	3	1	2	0	6
3	1	0	0	1	0	2
4	4	4	5	2	1	16
Total	12	17	8	5	1	43

Table 10 River and creek crossing type and detail

Crossing no.	Day	Stream type	Crossing type	Description of area and proposed crossing type
1	1	Ephemeral gully - road runoff	3	Track head on forest edge; walking track entry point; low level
2	1	Ephemeral flat depression	1	Water flow in extreme events only; level flat rock / harden
3	1	Ephemeral flat depression	1	Water flow in extreme events only; level flat rock / harden
4	1	Ephemeral rocky area	1	Water flow in extreme events only; level flat rock / harden
5	1	Intermittent incised	2	Stepping stones or low-risk structure
6	1	Intermittent incised	2	Stepping stones or low-risk structure
7	1	Perennial stream - rock bed	2	Stepping stones anchored to rock bed
8	1	Perennial stream - rock bed	2	Stepping stones anchored to rock bed
9	1	Perennial stream - steep access	3	Narrow incised gully; steep exit; structural bridge 4 to 5 m
10	1	Intermittent - rock bed	2	Stepping stones; small waterfall downstream
11	1	Perennial stream - steep access	2	Anchored stepping stones
12	1	Perennial stream - steep access	2	Anchored stepping stones
13	1	Ephemeral gully - incised	1	Natural rock stepping stones
14	1	Ephemeral gully - incised	1	Natural rock stepping stones
15	1	Ephemeral flat depression	1	Harden; embed flat rock
16	1	Perennial stream - rock bed	2	Stepping stones anchored to rock bed
17	1	Intermittent stream - rock bed	2	Stepping stones anchored to rock bed

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Crossing no.	Day	Stream type	Crossing type	Description of area and proposed crossing type
18	1	Ephemeral flat depression	1	Harden; embed flat rock
19	1	Intermittent stream - rock bed	2	Stepping stones anchored to rock bed
20	2	Rosewood River	4	Pedestrian swing bridge, 40 m
21	2	Perennial stream - rock bed	2	Stepping stones anchored to rock bed
22	2	Perennial stream - rock bed	2	Stepping stones anchored to rock bed
23	2	Intermittent stream - flat open	3	Low level fixed bridge
24	2	Perennial creek - rock bed	2	Wild Cattle Creek; existing natural crossing; stepping stones
25	2	Never Never River	4	Pedestrian swing bridge, 40 m, Whitneys Trail
26	3	Never Never River	4	Pedestrian swing bridge, 50 m, Gleniffer Falls
27	3	Ephemeral flat depression	1	Open wide depression; stepping stones low level embedded
28	4	Perennial stream - rock bed	2	Camp Falls Urumbilum River; rocky crossing stepping stones
29	4	Perennial stream - Wide bed	3	Pine Creek; old bridge
30	4	Intermittent incised gully	3	Low level fixed bridge
31	4	Intermittent incised gully	3	Low level fixed bridge
32	4	Intermittent incised gully	3	Low level fixed bridge
33	4	Perennial creek - rock bed	2	Stepping stones anchored
34	4	Ephemeral flat depression	1	Harden; embed flat rock
35	4	Urumbilum River	4	Pedestrian fixed bridge, 40 m, The Junction
36	4	Perennial creek - rock bed	2	Existing track; eroded; stepping stones
37	4	Intermittent wide stream	3	Existing bridge; no work required
38	4	Intermittent gully	1	Natural depression
39	4	Intermittent gully	1	Natural depression
40	4	Intermittent incised gully	2	Narrow small gully; stepping stones or small low-level bridge
41	4	Intermittent gully	1	Natural depression

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Crossing no.	Day	Stream type	Crossing type	Description of area and proposed crossing type
42	4	Urumbilum River - Jersey Bull	4	Pedestrian swing bridge, 40 m, over Urumbilum River exit
43	4	Urumbilum River	5	Vehicle bridge, 40 m, over Urumbilum River



Figure 11 Example stepping stone waterway crossing



Figure 12 Example of type 4 pedestrian fixed bridge (Photo: Tasmanian PWS)



Figure 13 Example of type 4 pedestrian suspension bridge (Photo: NZ DOC)



Figure 14 Type 4 crossing location on the Rosewood River on Day 2

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Figure 15 Type 4 crossing location on the upper Never Never River on Day 2



Figure 16 Type 4 crossing location near Gleniffer Falls on Day 3



Figure 17 Type 4 crossing location on the Urumbilum River on Day 4

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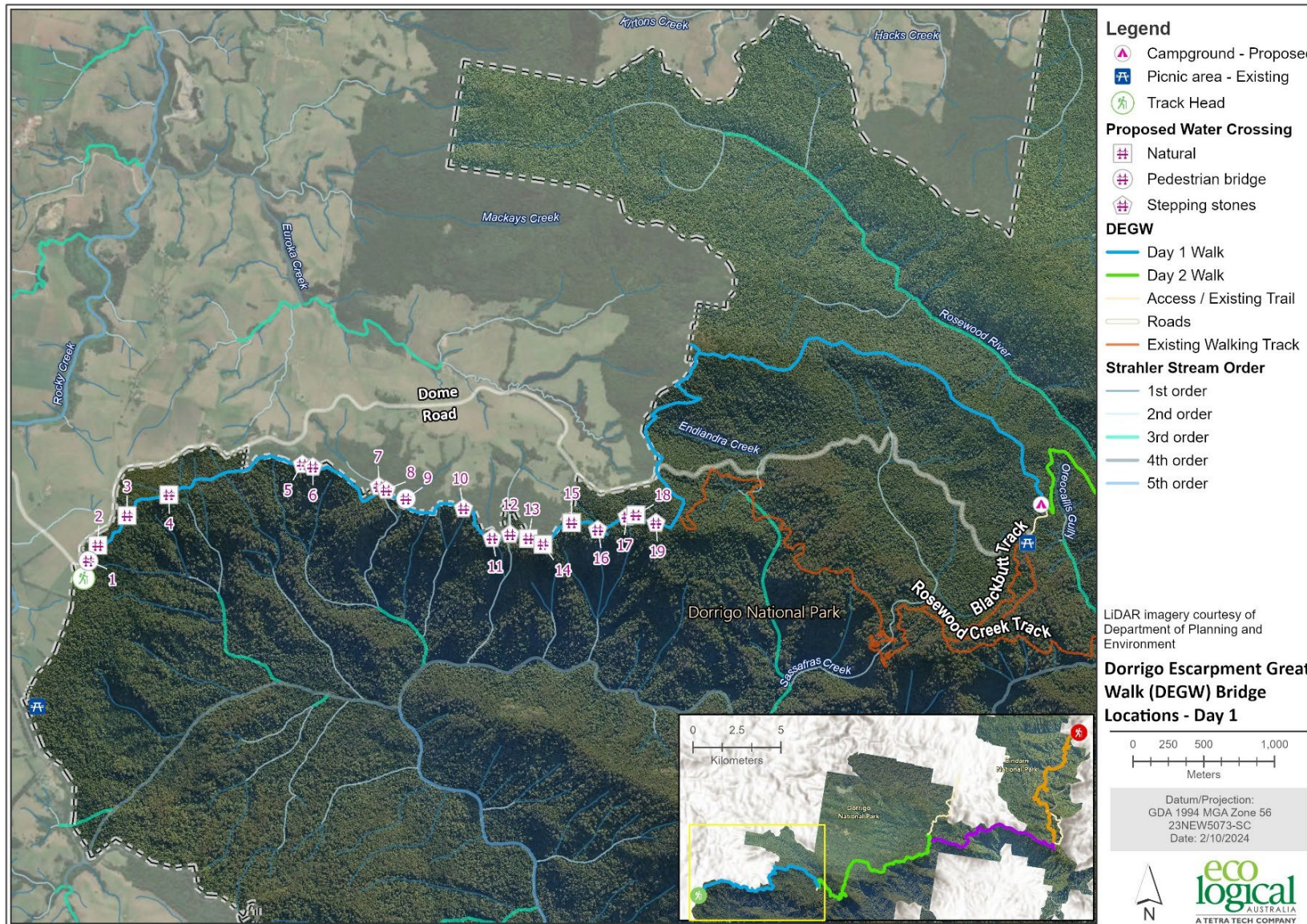


Figure 18 Waterway crossings – Day 1

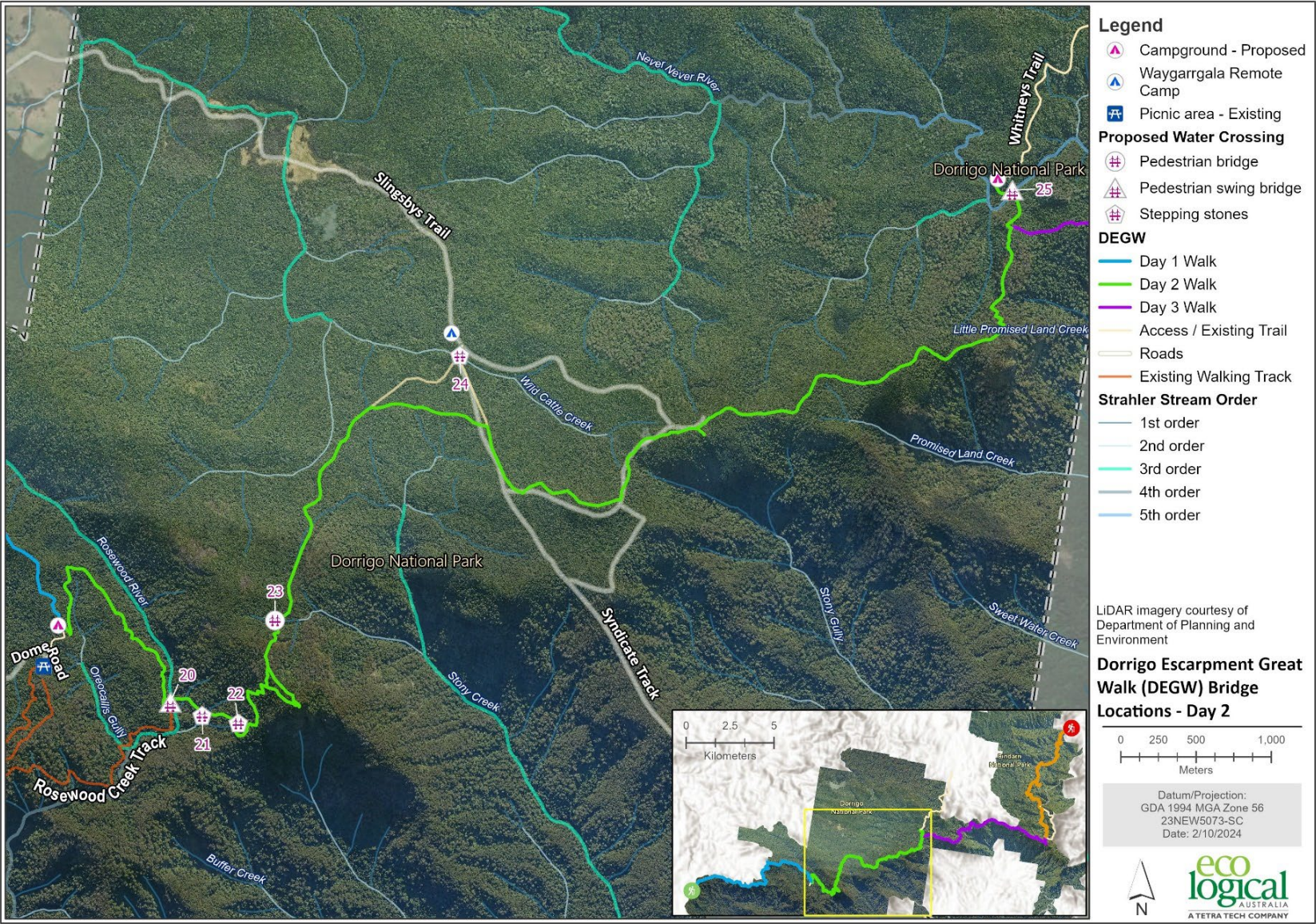


Figure 19 Waterway crossings – Day 2

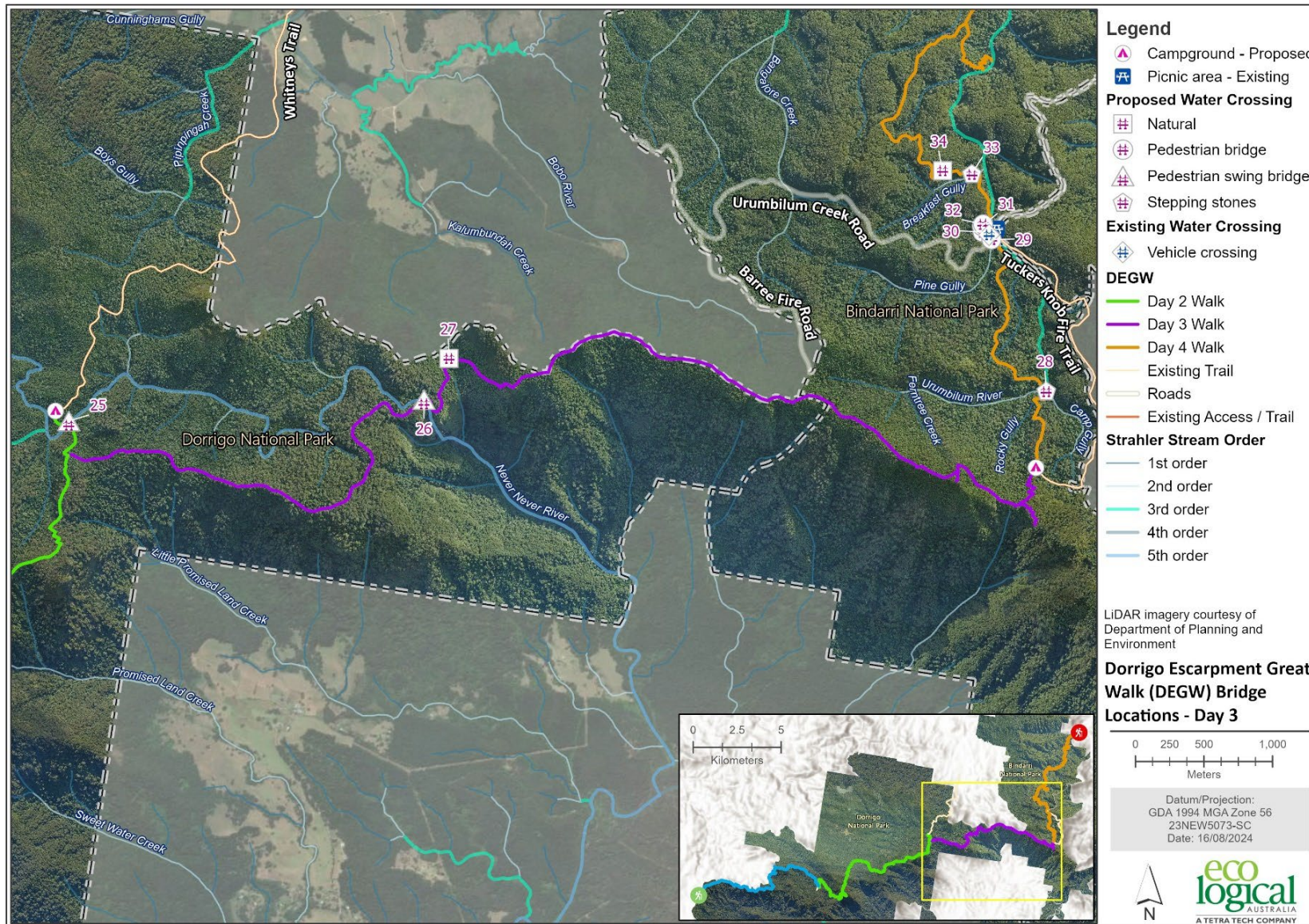


Figure 20 Waterway crossings – Day 3

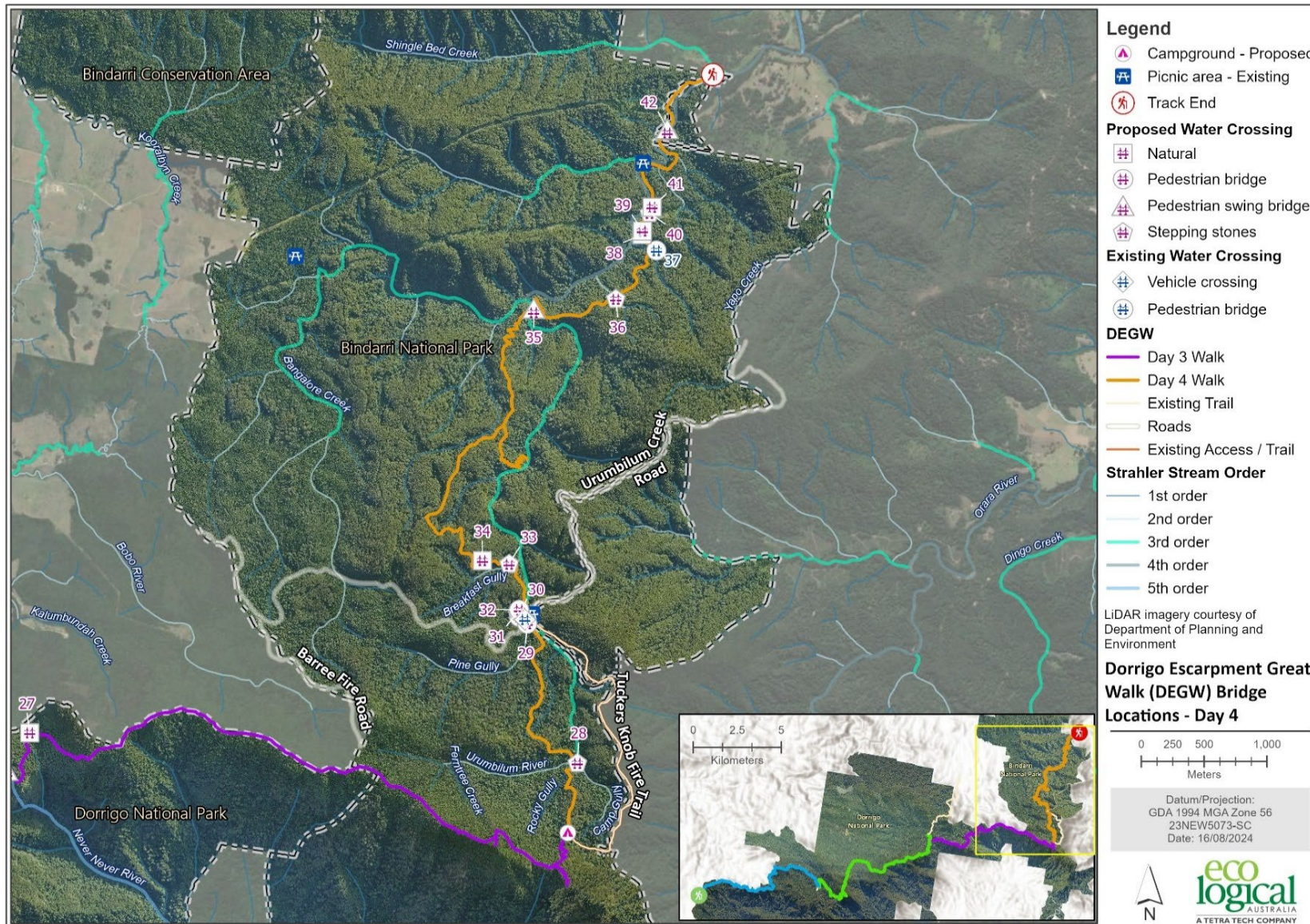


Figure 21 Waterway crossing – Day 4



Figure 22 Urumbilum River bridge crossings – Day 4

6.3.3 Viewpoints

The walk has several key vantage points on each day which provide vistas over the valleys and waterfalls. A total of 14 viewpoints/lookouts are located on the walking route including 2 proposed new constructed platforms. The works required at each will vary but the following principles will be applied:

- A safe place to put a pack down, rest and enjoy the view.
- Establishment of a level area that permits a small group of people to rest, including the establishment of a seat/bench using either natural or built elements.
- Selective vegetation pruning to manage the viewscape.
- Viewpoint capacity will be dictated by the site. In general, capacity for up to 6 people should be designed for. Several viewpoints require very little work, and some can only accommodate 1 to 2 people given the nature of the location.
- Fall risks to be managed by careful design and placement of natural features such as a low rock wall to define the safe area.
- Where fall risk can't be managed effectively using natural features then an appropriate handrail may be required.

The viewpoints have been classed into 3 types:

Type 1 – natural viewpoint with little to no built structures required. May have some low-key bench type seating preferably using natural materials such as rock or timber. Intent is to keep as natural feel as possible with little to no interference. Risks are low to moderate and can be managed through design.

Type 2 – a location that requires some management of risk, such as cliff faces, however, through careful positioning back from the hazard and creating a hardened level surface to provide a low-level area from which hikers have a safe viewpoint while negating the need for designed fence standards. A briefing prior to the walk together with a booklet that outlines these risks allows effective management.

Type 3 – a more formal handrail platform viewpoint in an area that has higher visitor numbers and or risks that can't be managed appropriately without an artificial barrier. An example of this may be the location near Gleniffer Falls.

Figure 23 and Figure 24 show 4 current viewpoints. Table 11 and Figure 25 to Figure 28 identify the type and position of the viewpoints along the DEG.W.

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Table 11 Viewpoints proposed (Note: names of viewpoints may change)

Point no.	Location	Existing /New	Type/Infrastructure
1	Claras Rock lookout; natural at grade	New	Seat, vegetation work and fall protection
2	Dome Mt lookout, natural at grade, rock clearing	Existing	Low seat
3	Dibbs Head lookout; natural at grade; rocky spur	New	Seating, vegetation work, steps and safety works
4	Lanes lookout; natural at grade; rocky spur	Existing	Future upgrade to a platform
5	Anscombes lookout; natural at grade; top of cliff	New	Seating, vegetation work, step and safety works
6	Gleniffer Ridge viewpoint; natural at grade	New	Seating, vegetation work, step and safety works
7	Gleniffer Falls lookout viewing platform	New	Future small viewing platform
8	Below Roogatargah lookout/viewpoint; natural at grade	New	Ground and vegetation work, natural or engineered fall protection
9	Below 800 lookout/viewpoint; natural at grade	New	Ground and vegetation work, natural or engineered fall protection
10	Mt Wondurrigah lookout viewpoint; natural at grade	New	Seat and groundwork
11	Rock Shelf lookout (1); natural at grade	New	Groundwork, natural fall protection
12	Rock Shelf lookout (2); natural at grade	New	Groundwork, natural fall protection
13	Peregrine lookout; natural at grade	New	Seat groundwork, natural fall protection
14	Triple Peak View lookout; at grade minimal	New	Seat groundwork, natural fall protection



Figure 23 Viewpoints 1 and 5



Figure 24 Viewpoints 10 and 14

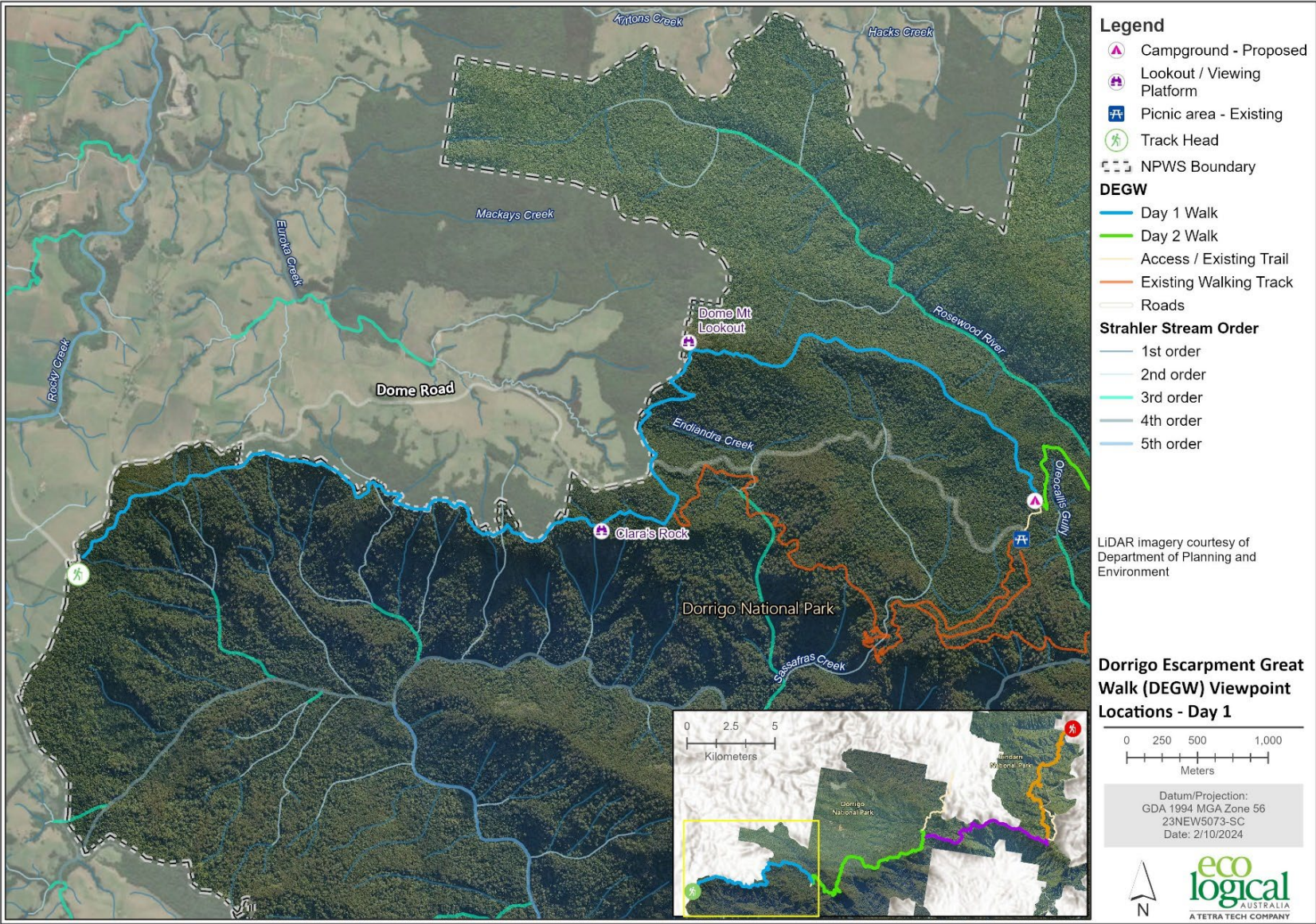


Figure 25 Day 1 walk viewpoints

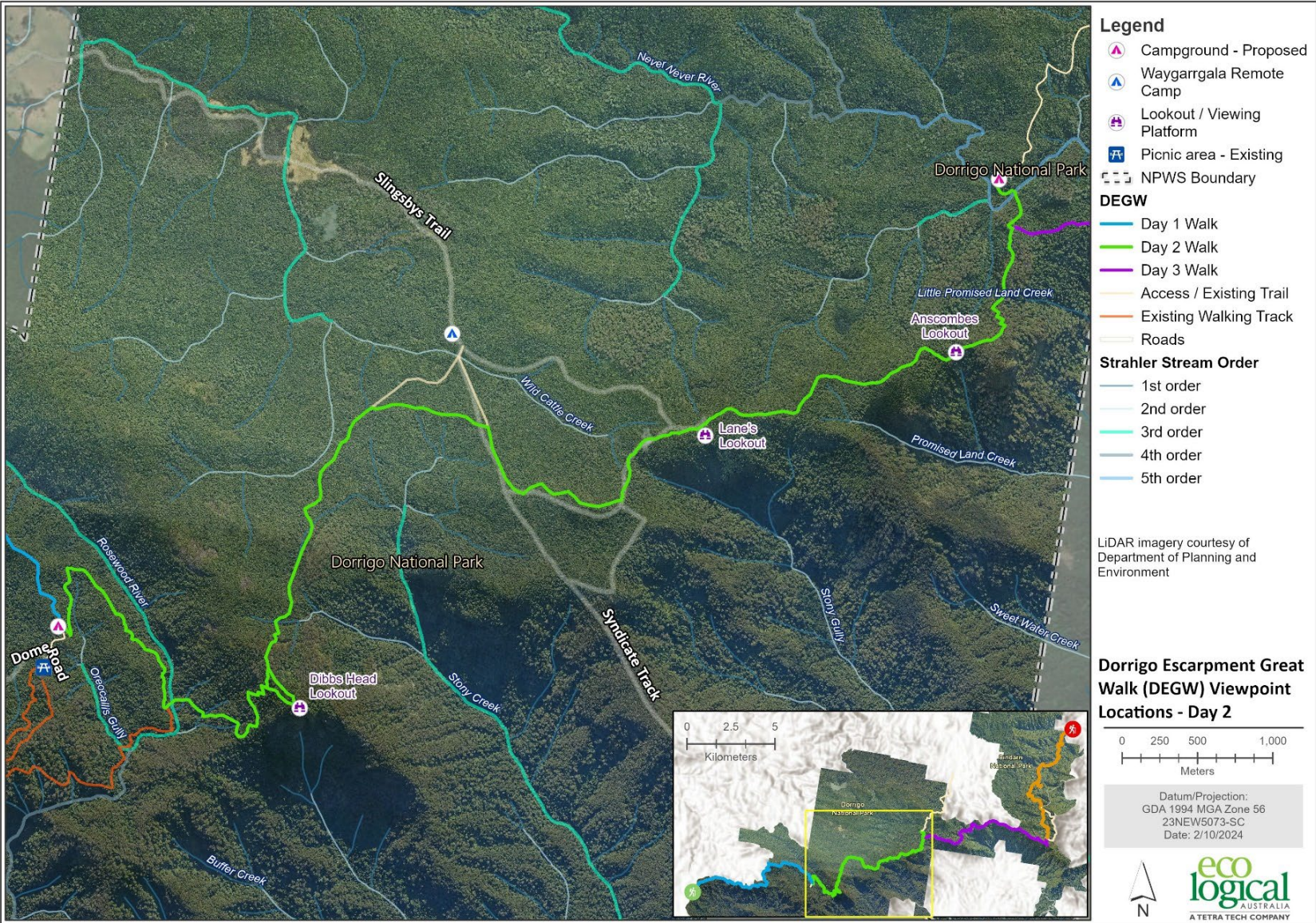


Figure 26 Day 2 walk viewpoints

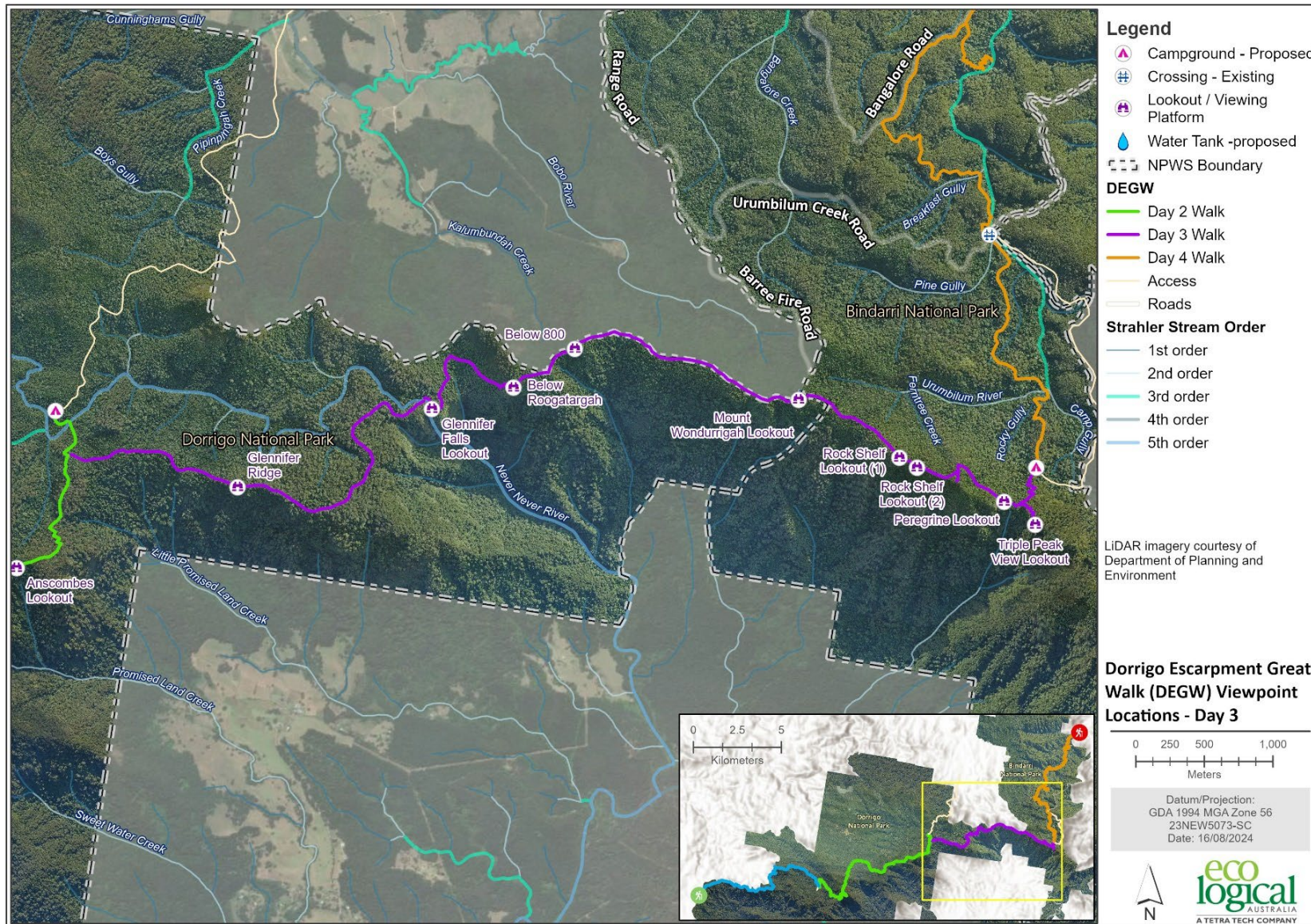


Figure 27 Day 3 walk viewpoints

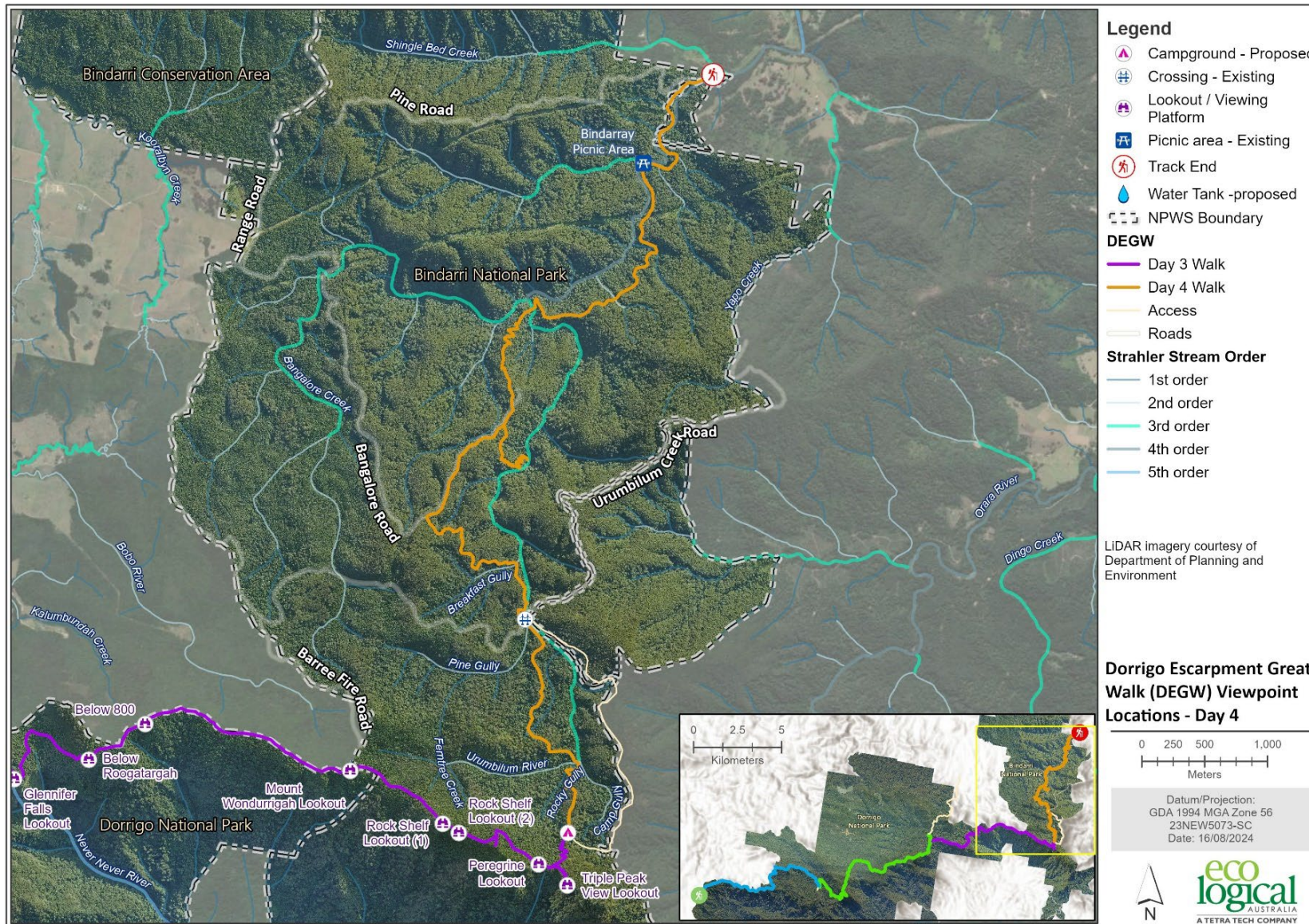


Figure 28 Day 4 walk viewpoints

6.3.4 Camps

DEGW camp principles

The 3 new DEGW camps are located on existing management trails or former logging trails, which will facilitate initial construction and ongoing servicing. The sites chosen are on previously disturbed sites with regrowth forest such as old logging dumps/camps. The designs will utilise existing roads and disturbed areas as much as possible. Vegetation clearing will be restricted to the minimum area required. Figure 29 to Figure 33 provide photographs of example facilities.

The camp layout, flow and structures will be designed by a selected design consultant in cooperation with NPWS to deliver the following outcomes:

- camps are separated from other vehicle-based park users
- located within lower tree risk areas
- designed to minimise footprints, with a focus on respecting environmental, cultural and heritage sensitivities
- structures to be minimalistic, providing basic levels of comfort and amenity
- structures to integrate with the environment
- style, form and materials of structures reflect the local environment and are simple modular designs that are efficient and effective
- structures are designed to be removable, relocatable and reusable (where possible), and renewable/recycled resources would be utilised where possible
- structures are to be designed to be modularly built in sections offsite then transported and assembled onsite to reduce the onsite build time requirement, while considering the height and width restrictions of access trails
- utilisation of alternative footing systems to minimise concrete requirements and ground disturbance
- designs enhance the walker experience and adhere to best practice sustainable development, including lifecycle considerations
- designs maximise operating efficiency with innovative approaches to energy efficiency to minimise cost and carbon footprints
- ability to be connected to solar/renewable energy and battery storage to minimise impacts
- designed with consideration of the environmental conditions and challenges of the area, including high rainfall, mould and leaf matter
- materials selected are to be durable, low maintenance and easy to clean
- consideration of interpretative elements to be included within the camps
- structures to be designed in accordance with relevant sections of the *National construction code*, 'Section J Energy Efficiency' and BAL reporting guidelines (see 'More information' section).

Camp structures

Each of the 3 camps will consist of a communal shelter hut, roofed accommodation, raised camping platforms, interlinking raised walkways and toilets.

The communal shelter hut will consist of:

- basic meal preparation/dining area
- renewable power capacity for basic lighting

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- rainwater collection tanks for supply of non-potable water for food preparation and hygiene
- stainless steel benchtops for hygiene and easy cleaning
- double-glazed windows and glazing for energy efficiency
- efficient form of non-combustion heating
- drying racks
- sufficient covered deck area to allow for drying and undercover seating
- grey water filtration system.

The roofed accommodation will include:

- basic bunk-style spaces, either attached or in separate huts
- constructions using materials that are durable and easy to clean
- storage shelves and wall hooks for packs and gear
- bench seats
- covered entry
- separate bunk rooms and storage areas for track ranger staff and guides may be provided.

The camping area will:

- include raised tent platforms in a configuration that allows for multiple tent options including opportunities for larger groups
- be constructed from long-lasting, low-maintenance building materials including steel members and composite decking
- be designed based on the proposed material sizes to minimise waste
- incorporate a long step or bench seat
- possibly be roofed, considering the wet environment.

Amenity stalls will be comprised of:

- 2-stall pod system toilet allowing removal and transportation offsite via management vehicles
- non-potable water supply with full waste capture in a pod system
- water tank for rainwater collection for hand washing
- stainless steel sink
- servicing deck to allow safe removal and replacement of waste pods
- located so that they are readily accessible by a service vehicle.

Interconnecting walkways will be comprised of:

- 600 mm wide FRP nonslip grated walkway
- steel framing.



Figure 29 Example of a communal area within accommodation hut – Overland Track Tasmania



Figure 30 Example of bunk style accommodation – Overland Track Tasmania



Figure 31 Example communal hut external water/dish washing facility



Figure 32 Example toilet facilities – Tasmania (Photo: Tasmanian PWS)



Figure 33 Example of elevated camp boardwalks and camping platforms – Walls of Jerusalem, Tasmania

Proposed camps

Camp 1 – Baliiga (Dome Road)

The proposed site for Camp 1 utilises a flat saddle area with regenerating rainforest previously disturbed by logging in the 1950s. Refer Figure 34 and Figure 35 for concept area and layout. The new accommodation and facilities at Camp 1 are designed to accommodate up to 48 people (24 in bunks and 24 on camping platforms) and will include a large communal share hut, a bunk-style hut, an amenity hut and multiple raised tent platforms.

Camp 2 – Never Never (Whitneys Trail)

The proposed site for Camp 2 utilises a previously disturbed ridge area and Whitneys Road. The new accommodation and facilities at Camp 2 are designed to accommodate up to 24 people (12 in bunks and 12 on camping platforms) and will include a communal share hut with bunk accommodation, an amenity hut and multiple raised tent platforms. Refer Figure 36 and Figure 37 for concept area and layout.

Camp 3 – Bindarri (Tuckers Knob)

The proposed site for Camp 3 utilises a previously disturbed ridge area and an old road. The new accommodation and facilities at Camp 3 are designed to accommodate up to 24 people (12 in bunks and 12 on camping platforms) and will include a communal share hut with bunk accommodation, an amenity hut and multiple raised tent platforms. Refer Figure 38 and Figure 39 for concept area and layout.

Other visitor area upgrades

Baliiga picnic area – future upgrades (existing former Never Never picnic area)

The Baliiga picnic area is proposed to have several upgrades to cater for increased day use visitors, including increasing car parking configuration, wayfinding improvements and overall amenity improvements. The provision of limited camping facilities is also proposed with multiple tent platforms. Refer Figure 40 and Figure 41 for area and concept layout.

Waygarrgala Remote Camp

The existing remote camp on Wild Cattle Creek adjacent to Slingsbys Trail is to be upgraded and named Waygarrgala, which is Gumbaynggirr for 'at the Antarctic beech'. The upgrade will provide an improved camping experience and manage impacts of anticipated increased use once the DEGW is operating. The camp will provide hikers, including those not walking the full 4-day walk, with overnight hiking options using sections of the DEGW and Syndicate track. The camp will be upgraded with new facilities to accommodate self-sufficient walkers and include:

- 1 standard NPWS remote amenity hut comprising 1 stall and full waste pod removal
- multiple raised tent platforms to cater for up to 12 people.

The configuration of platforms will be designed to minimise impacts while improving the camping experience. Some removal of selected trees after assessment by an arborist will be required. Refer Figure 42 and Figure 43 for concept area and layout.

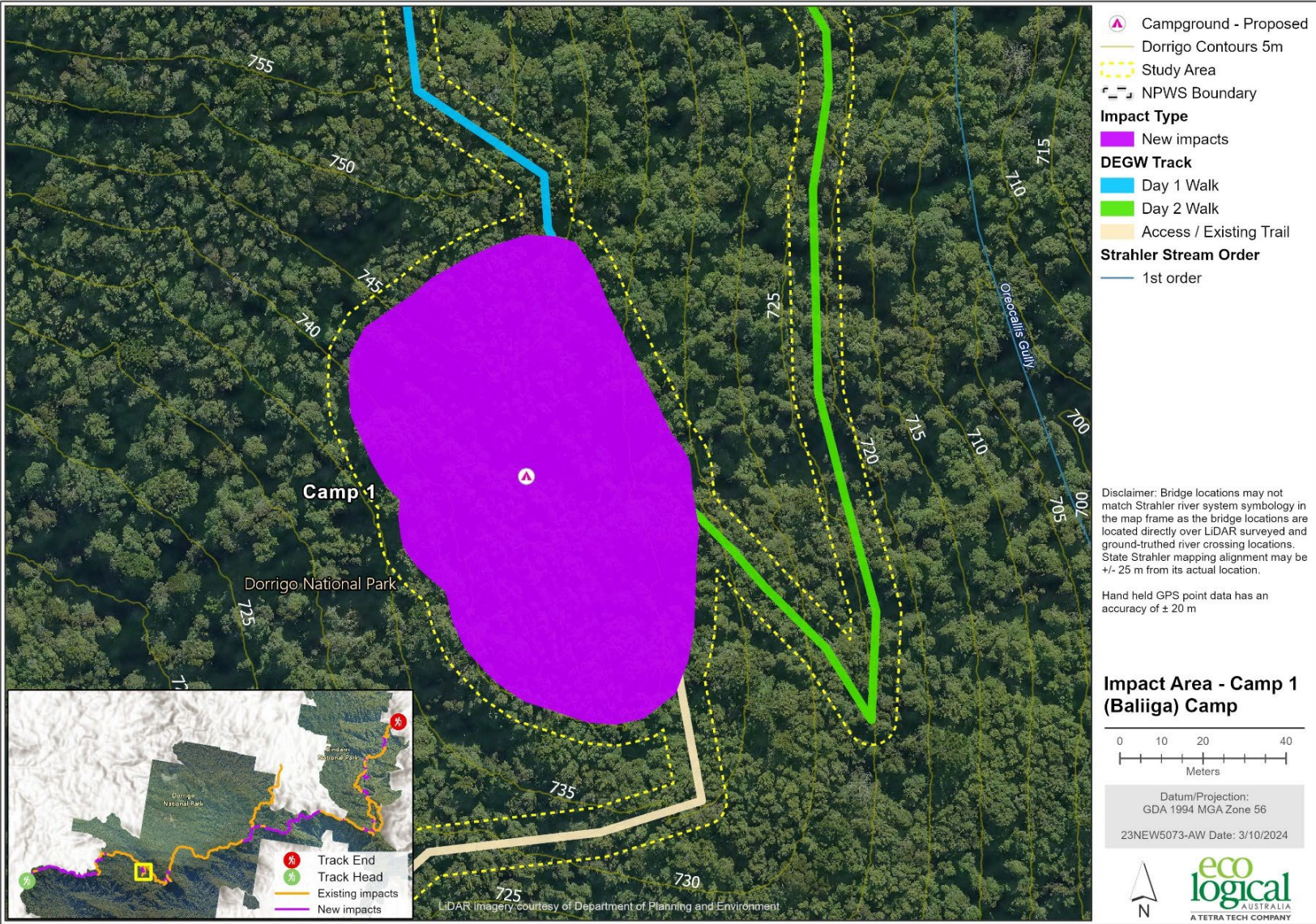


Figure 34 Camp 1 – Baliiga (new)

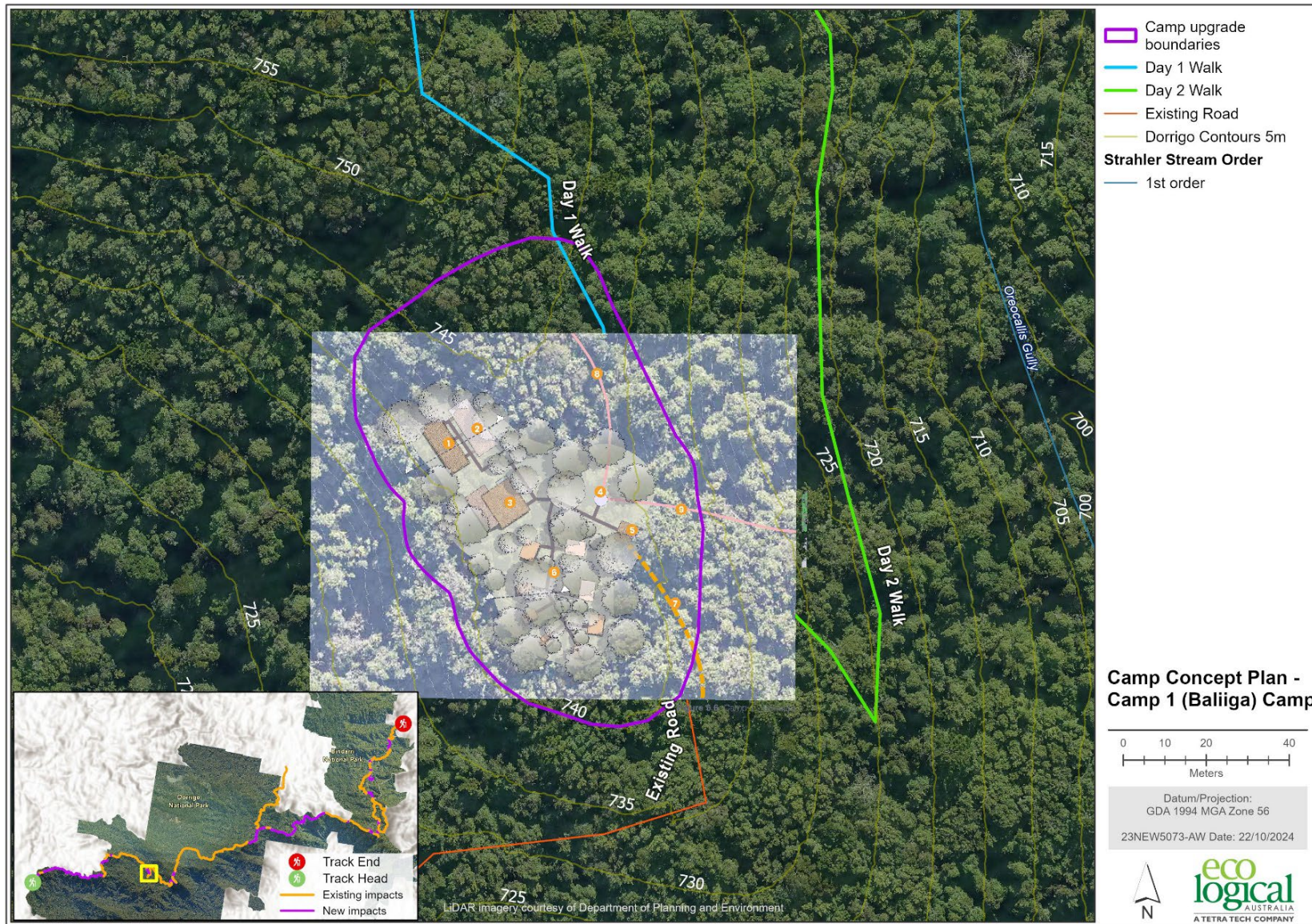


Figure 35 Example Camp 1 layout

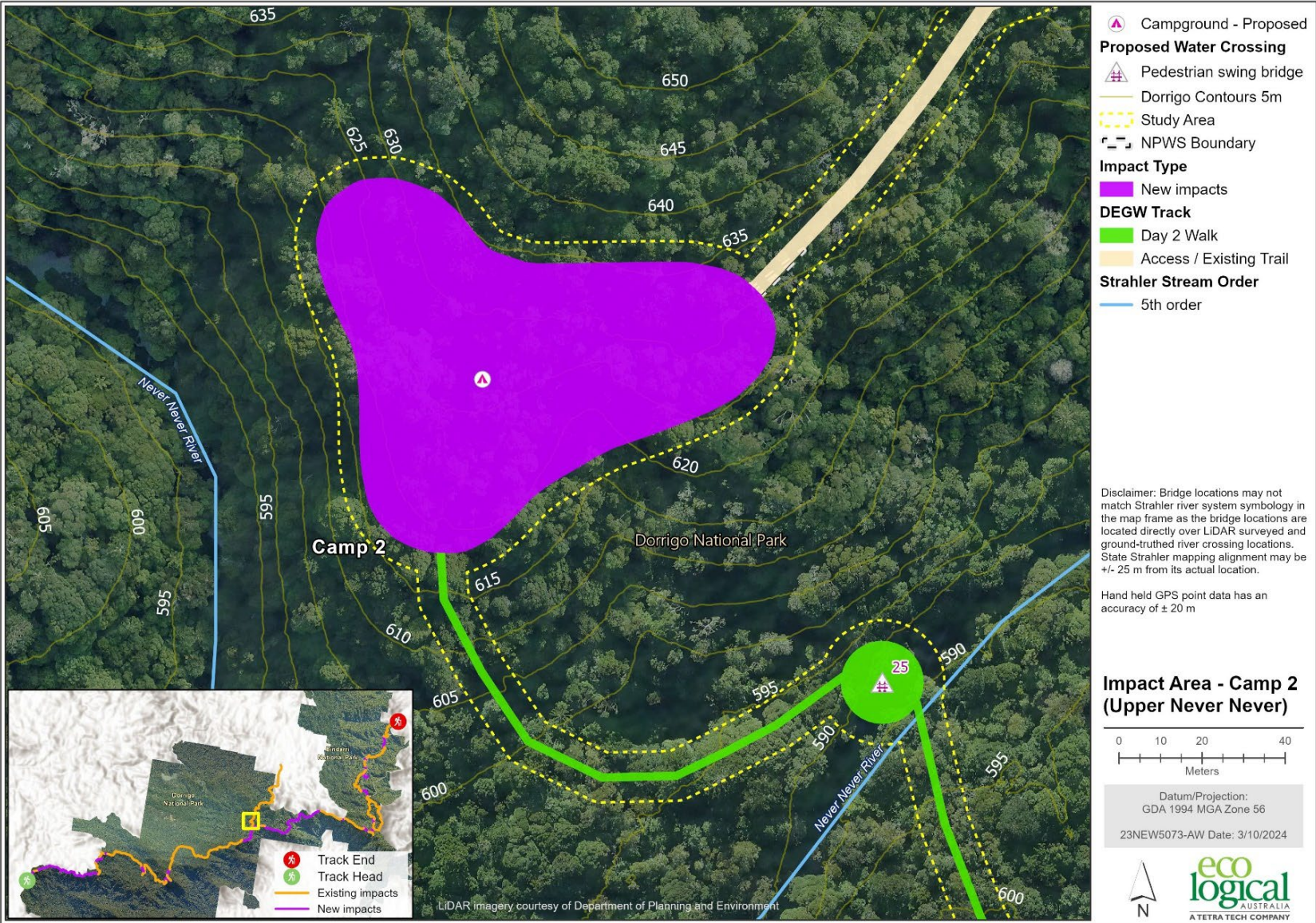


Figure 36 Camp 2 – Never Never (new)

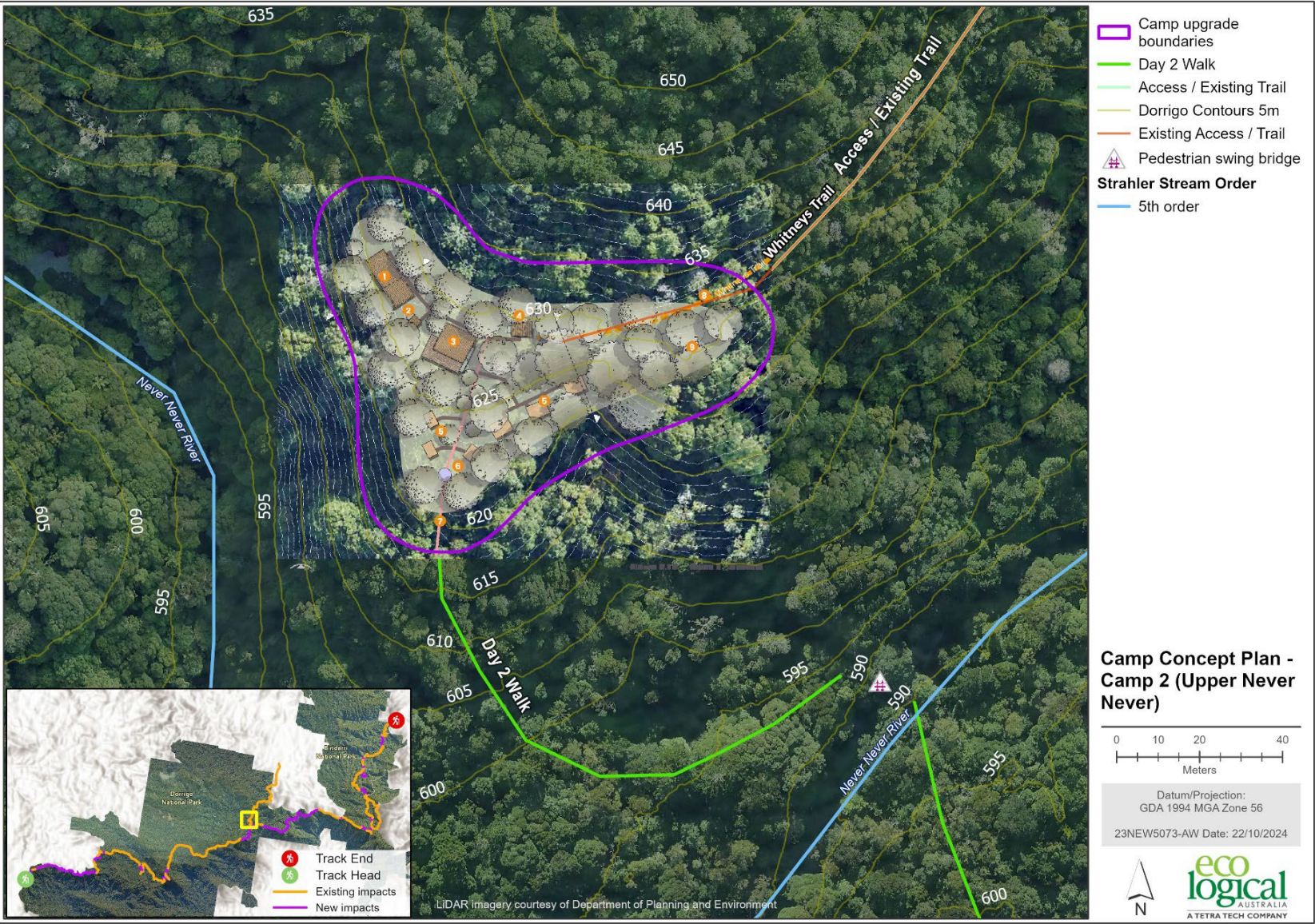


Figure 37 Example Camp 2 layout

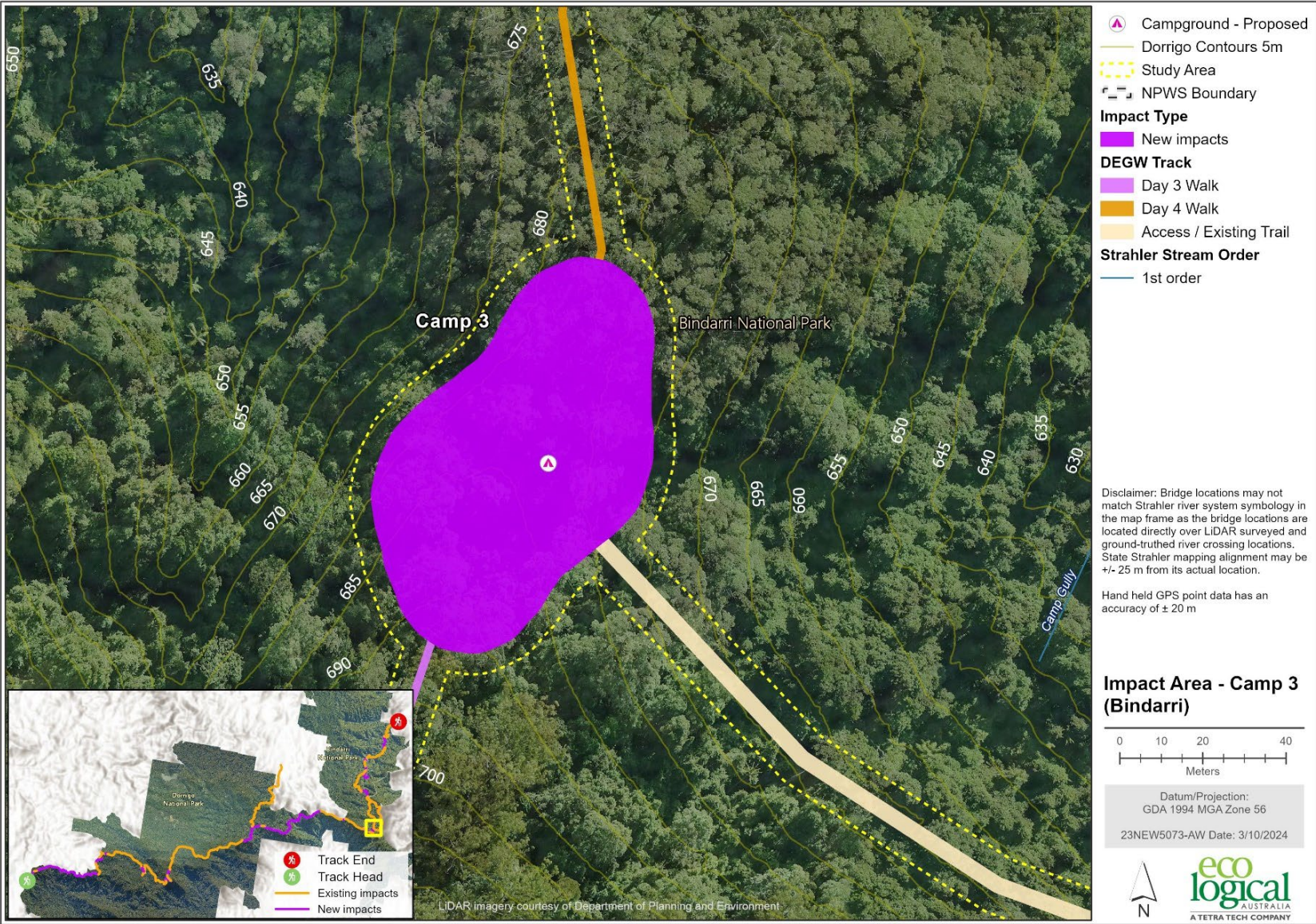


Figure 38 Camp 3 – Bindarri (new)

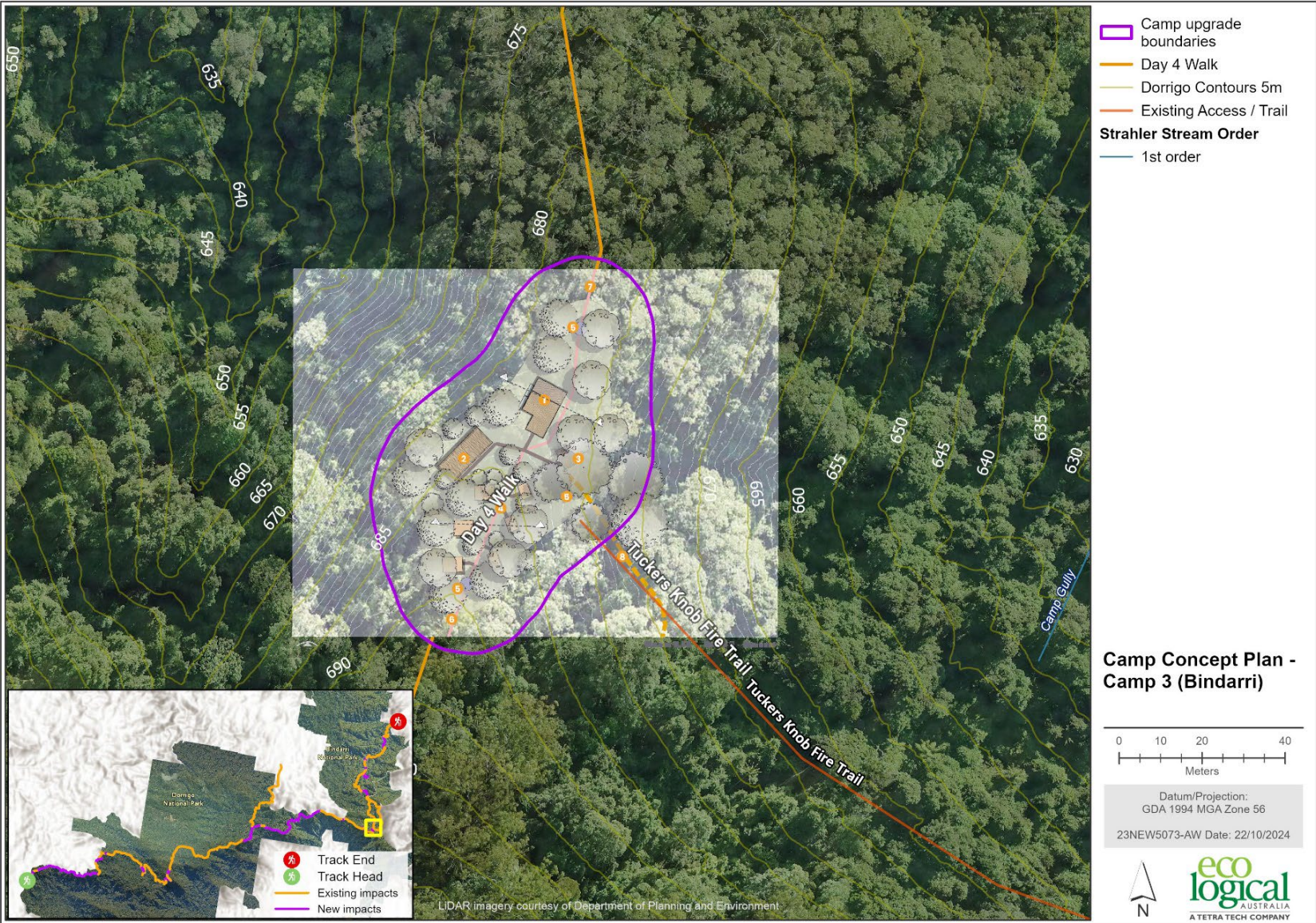


Figure 39 Example Camp 3 layout

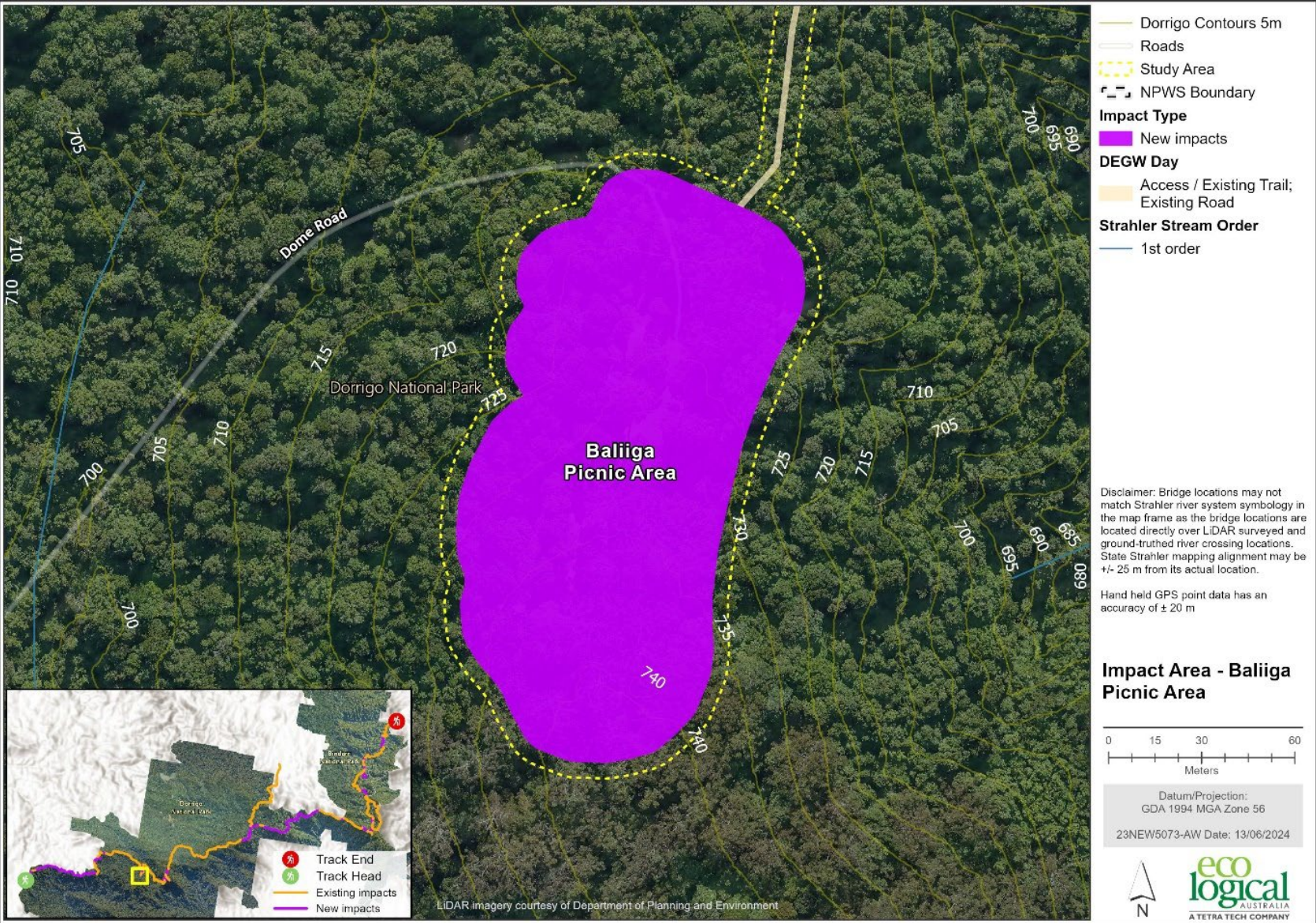


Figure 40 Baliiga picnic area

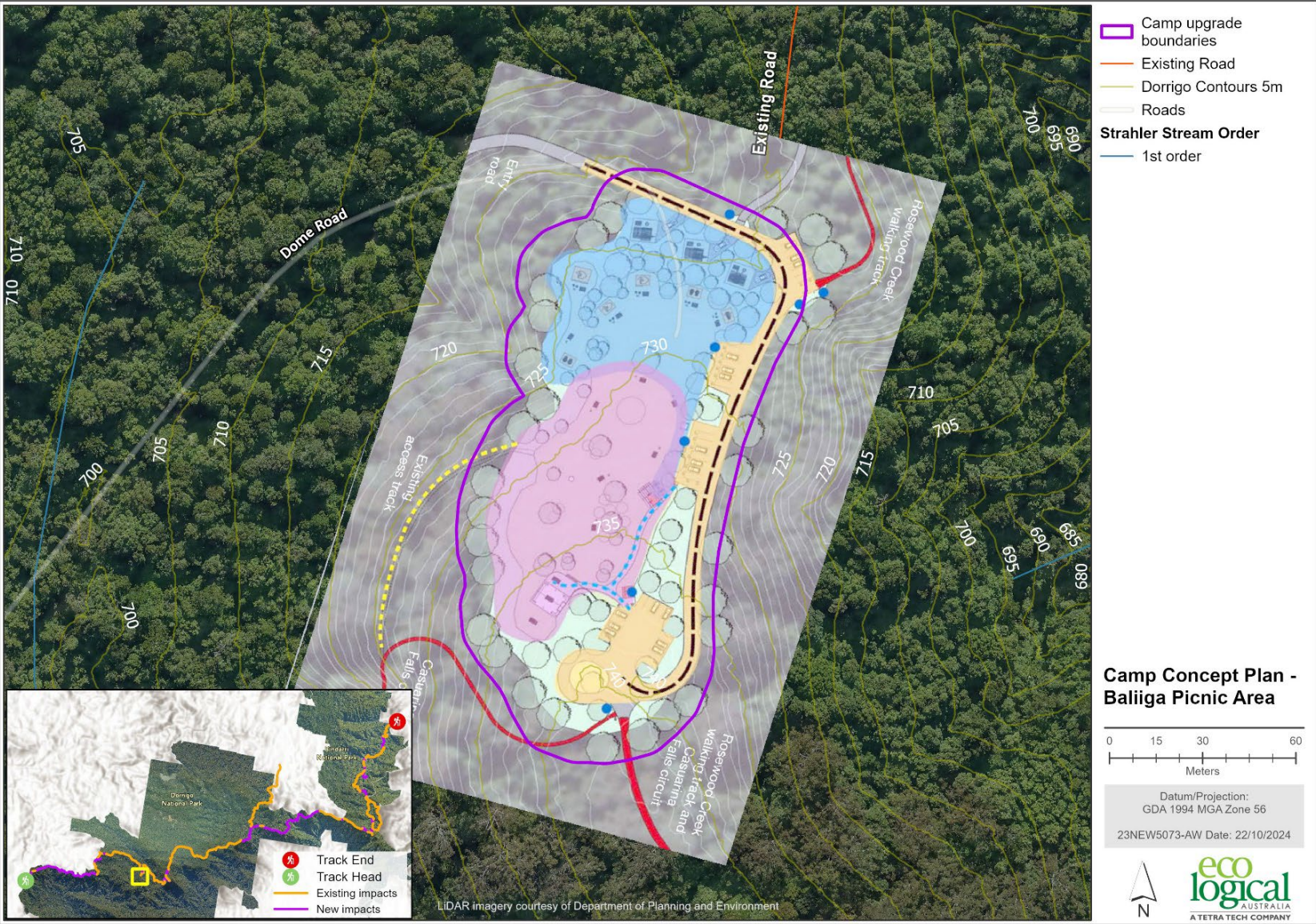


Figure 41 Baliiga picnic area concept plan

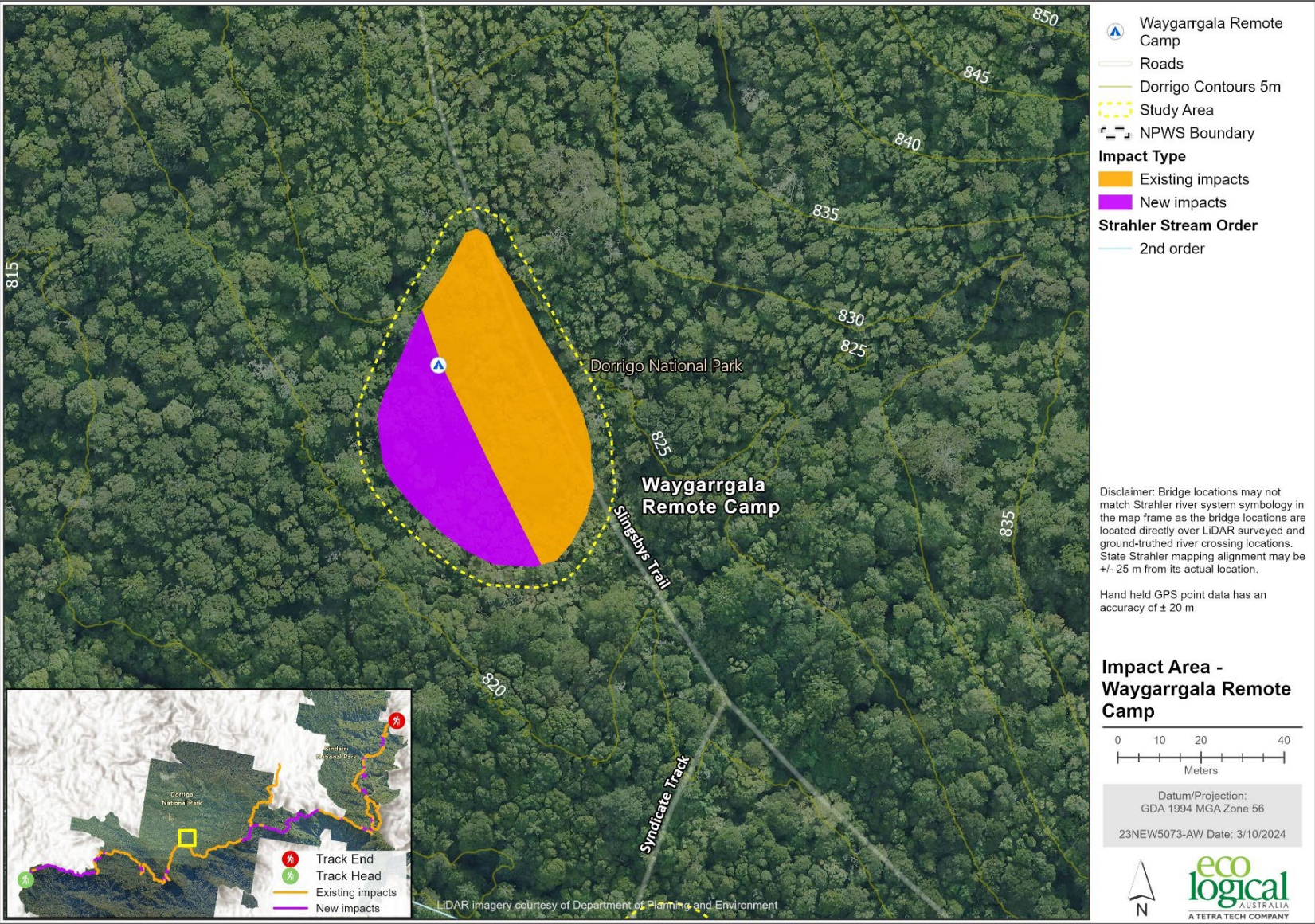


Figure 42 Waygarrala Remote Camp



Figure 43 Example Waygarrgala Remote Camp layout

6.3.5 Management trails and camp access

The DEGW has a number of existing and historical roads/trails that will require works to enable their use for construction and ongoing operations associated with the walk and camps.

All road upgrades that access the 3 camps are required to be to the equivalent of a category 7 standard, as per the RFS *NSW Fire trail standards*.

Access trail to Camp 1 – Baliiga

An existing historical dormant road leads from Dome Road to the new Camp 1 location (Figure 44). Approximately 300 m requires maintenance, and some minor upgrade works are needed to facilitate construction and ongoing management of Camp 1. These works include:

- vegetation management within the existing road prism
- surface grading, shaping and hardening using imported gravel
- minor improvements and or replacements of drainage structures
- creation of vehicle turn-around areas at key locations
- installation of a locked gate and signage at the track entrance to Dome Road.



Figure 44 Entry of existing track from Dome Road to Camp 1

Whitneys Trail

Whitneys Trail is an existing management trail which accesses the remote part of the upper Never Never River catchment in Dorrigo NP via Brooklana. Approximately 5.6 km will be upgraded, including sections on Crown road and private property, to ensure safe access and to mitigate impacts during the construction phase of the Camp 2 – Never Never and the subsequent ongoing management operations of the camp and days 2 and 3 of the walk.

Works will include:

- vegetation management within the existing road corridor
- surface grading, shaping and hardening using imported gravel
- minor improvements and or replacements of drainage structures including concrete culverts (see example in Figure 45)
- creation of turn-around areas at key locations
- installation of gates, cattle grids and signage at park boundaries.



Figure 45 Damaged log gully crossing requiring replacement

Tuckers Knob Fire Trail

Maintenance works and minor improvements/replacements of drainage structures on the existing management trail are required to facilitate management access for construction and ongoing servicing of Camp 3 – Balliga, walking track construction of sections of days 3 and 4, and general park management activities including emergency response. Sections of this road traverse state forest tenure before moving back into park.

An additional 300 m of historical dormant track leads on from the end of Tuckers Knob Fire Trail to the new Camp 3 location. Maintenance and some minor upgrade works are required to facilitate construction and ongoing management of Camp 3. These works include:

- vegetation management within the existing road prism
- surface grading, shaping and hardening using imported gravel
- minor improvements and or replacements of drainage structures
- creation of turn-around areas at key locations including at camp 3
- repositioning of a locked gate and signage at the Urumbilum picnic area entrance following the construction of a new bridge (see below).

Urumbilum Bridge

The construction of a new bridge is required to cross the Urumbilum River at the location of an existing historical bridge (50 m upstream from the ford) (Figure 46). Currently a ford crossing (Figure 47) is used to access Tuckers Knob Fire Trail just above Urumbilum Falls at

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the day use area car park. The bridge will improve environmental outcomes in terms of water quality and river habitat, as well as providing improved access for ongoing park management operations and, in particular, ongoing management of Camp 3 – Baliiga. The ford crossing will be closed and rehabilitated once the new bridge is complete.



Figure 46 Existing Bridge at Urumbilum picnic area



Figure 47 Existing ford crossing on Tuckers Knob Fire Trail

6.3.6 The activity footprint (size of the area of impact)

The DEGW would have an approximate direct impact of 9.61 ha. The approximate proposed footprint is outlined in Table 12. Impacts to each plant community type, threatened species and habitat feature are provided in the ecological assessment report (ELA 2024a, supporting document A).

The DEGW walking track footprint is 2 m wide, with an assessed 12 m buffer (6 m either side of the track centre line) to allow for micro-siting. For area of impact assessment, a 2 m corridor has been used over the full 44.1 km of track with a ratio applied depending on the existing impacts. This assessment approach followed the initial micro-siting within the intended walking route corridor and allows for further micro-siting during construction design.

It is important to note that the direct impacts for walking track construction would be restricted to on average 900 mm width. Final track pavement will be 600 to 900 mm. Indirect impact area once complete during operation would be between 1 to 1.5 m wide footprint of the track including benching and drainage.

Road and access upgrades would be restricted to the existing road formation and some maintenance trimming of vegetation would be undertaken. No realignment is proposed.

As many of the walking tracks are existing, a ratio of impact has been used to calculate the overall impact or disturbance. Based on a walking track footprint of 2 m, the ratios applied are identified in Table 12 and demonstrated in Figures 48, 49 and 50. Figure 48 illustrates an example for new walking track construction, where a 100% impact area is applied to the 2 m footprint. The actual impact will be closer to 600 to 900 mm for much of the track. Therefore, the total impact for new walking track construction can be considered a worst-case scenario. Figure 49 demonstrates where an existing track occurs, and construction will require management of the edge vegetation and Figure 50 illustrates clearing where an existing trail/road exists.



Figure 48 Example illustrating 100% impact for new walking track construction



Figure 49 Example illustrating a 50% impact area for a walking track along an existing informal historic walking trail



Figure 50 Example illustrating a 40% impact area for an existing access road

Table 12 Impacts associated with the proposal

Project component	Activity type	Impact summary				
		Width (m)	Length (km)	Total area (ha)	Impact* ratio (%)	Max. actual impact area (ha)
Walking tracks	New walking track construction	2	18.715	3.743	100	3.743
	Existing informal historic trail - walking	2	18.495	3.699	50	1.850
	Existing informal historic track - vehicle	2	2.775	0.555	25	0.139
	Existing formal walking track - no works	2	4.635	0.927	0	0
	Subtotal		44.620	8.924		5.731
Bridges and viewpoints	New waterway crossings (37) (Section 6.3.2)	2	0.370	0.074	100	0.074
	New pedestrian bridges (5) (Section 6.3.2)	3	0.100	0.030	100	0.030
	New vehicle bridges (1) (Section 6.3.5)	4	0.030	0.012	100	0.012
	New viewpoints (12) (Table 11)	-	-	0.313	70	0.219
	Existing viewpoints - No works (2) (Table 11)	-	-	0.063	0	0
	Subtotal			0.491		0.335
DEGW camps	Camp 1 - Baliiga (Figure 34)	-	-	0.689	70	0.482
	Camp 2 - Never Never (Figure 36)	-	-	0.585	70	0.409
	Camp 3 - Bindarri (Figure 38)	-	-	0.432	70	0.302
	Subtotal			1.706		1.194
Other precincts	Existing remote camp (Waygarrgala) (Figure 42)	-	-	0.274	50	0.137
	Existing Baliiga picnic area (Figure 40)	-	-	1.448	40	0.579
	Subtotal			1.722		0.716
Access roads	Dormant roads (634 m)	4.5	0.634	0.285	60	0.171
	Existing vehicle management trails (8.1 km)	4.5	8.120	3.654	40	1.462
	Subtotal		8.754	3.939		1.633
Total (ha)			16.783		9.610	

6.4 Construction activities

Construction activities will be guided by a construction environmental management plan to ensure work is carried out according to the requirements of the REF as well as NPWS specifications.

Detailed work methodologies would be determined during detailed design and construction planning. The indicative work methodology is described below, however, activities may vary to suit the construction staging plans, which would be determined by the construction contractor and NPWS. The proposal is anticipated to involve the following general work methodologies and sequencing:

- site establishment involving set up of temporary ancillary facilities, including site offices, site compounds, stockpile sites, laydown areas, and temporary access tracks including creek crossings
- vegetation clearing
- access works, trail earthworks and drainage
- track construction
- bridge construction including approaches
- viewpoint construction
- camp construction including landscaping and finishing work
- upgrade remote camp
- progressive site reinstatement to pre-construction conditions
- removal of ancillary facilities and site rehabilitation.

6.4.1 Pre-construction activities

The proposed construction methods will vary depending on the nature of the activity (walking track, bridges, accommodation or road access). Construction methods and materials and designs have been selected to minimise the impact on biodiversity, heritage and the natural landscape, while ensuring safety requirements are met and the work can be undertaken efficiently.

Pre-construction

Pre-construction activities are aimed at avoiding and minimising biodiversity and cultural impacts. Detailed work methodologies will be determined during detailed design and construction planning relevant to the work package. In general, the pre-construction phase for all work includes the transportation of machinery and materials, establishing any temporary access, the site compounds and preparing the following mitigation measures:

- Establishing hygiene facilities at work site entry points to ensure protocols for washing down tools, equipment and people can be implemented prior to machinery entering the site. Also:
 - Measures must be implemented during pre-construction works and will be ongoing into operations to ensure hygiene protocols for minimising the introduction and spread of myrtle rust, chytrid fungus or phytophthora are in accordance with current best practice and/or NPWS policies or guidelines (for example, Saving Our Species hygiene guidelines (DPIE 2020a)).
 - To minimise transmission of phytophthora or myrtle rust, materials must be sourced from clean sites where these pathogens are absent.

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- All construction materials and plant/equipment must be certified to come from areas free of any known pests such as yellow crazy ants.
- For ongoing operations, the installation of shoe cleaning stations (with signage and information provided both onsite and on the DEGW website) to reduce the spread of weeds and pathogens is proposed.
- Inductions and installation of bunting to ensure no vehicle access beyond formed roads, trails and accesses.
- Any machinery being used during construction and going beyond formed roads will be subject to best practice hygiene methods prior to entering the park to prevent introduction of weeds and pathogens.
- When not in use, all project machinery, equipment and construction materials must be parked in established site storage and temporary stockpile areas, including amenities, contractor vehicle parking. Strategies for equipment storage will be put in place to ensure the following:
 - All potential pollutants will be managed with control measures so they will not enter waterways or highly sensitive areas. Bunding around areas will be established for any machinery and fuel onsite.
 - Installation of any sediment and erosion protection measures will be in accordance with the project's erosion and sediment control plan, which will be developed using the 'the Blue book' *Managing urban stormwater: soils and construction* (Landcom 2004) with reference to Chapter 5 'Erosion control: management of water' and 'NSW Office of Environment and Heritage, erosion and sediment control on unsealed tracks'.
 - *Best practice erosion and sediment control* volumes 1 to 3 (the 'White Book') (IECAA 2008) will also be applied.
- Progressive identification and installation of protection and exclusion fencing around vegetation (threatened species), scar trees or other sensitive habitats that are to be protected and to delineate area of works.

Contractor temporary camps and temporary access

The primary storage area and compound for all activities will be dependent on the location of construction. In general, compounds will be established on existing roads and disturbed sites or at camp site locations. Due to the nature of the landscape, for days 1 and 2 of the track construction, contractors will use Dorrigo as the main access town, and for days 3 and 4 they will come via Brooklana and Dairyville areas from Coffs Harbour.

Walking track contractors may opt to establish temporary base camps during construction of the more remote sections of track. These temporary camps will only be established in existing disturbed areas with existing access by roads, tracks or trails. Camps may also be established within the footprint of the new hiker camps. All temporary camps must have fully contained portable toilet and waste facilities and suitable removal plans in place. NPWS will advise on appropriate locations where a camp can be established and will consider factors such as impacts to the general public.

Temporary access for the purpose of construction only will occur from multiple identified locations (Figure 51). Where land is required to be accessed for works associated with the REF assessment, individual landowners and/or occupiers have been consulted. Consultation on land access with individual landowners is to address access, safety, expectations, land use, liability and nature of use through a consent agreement.

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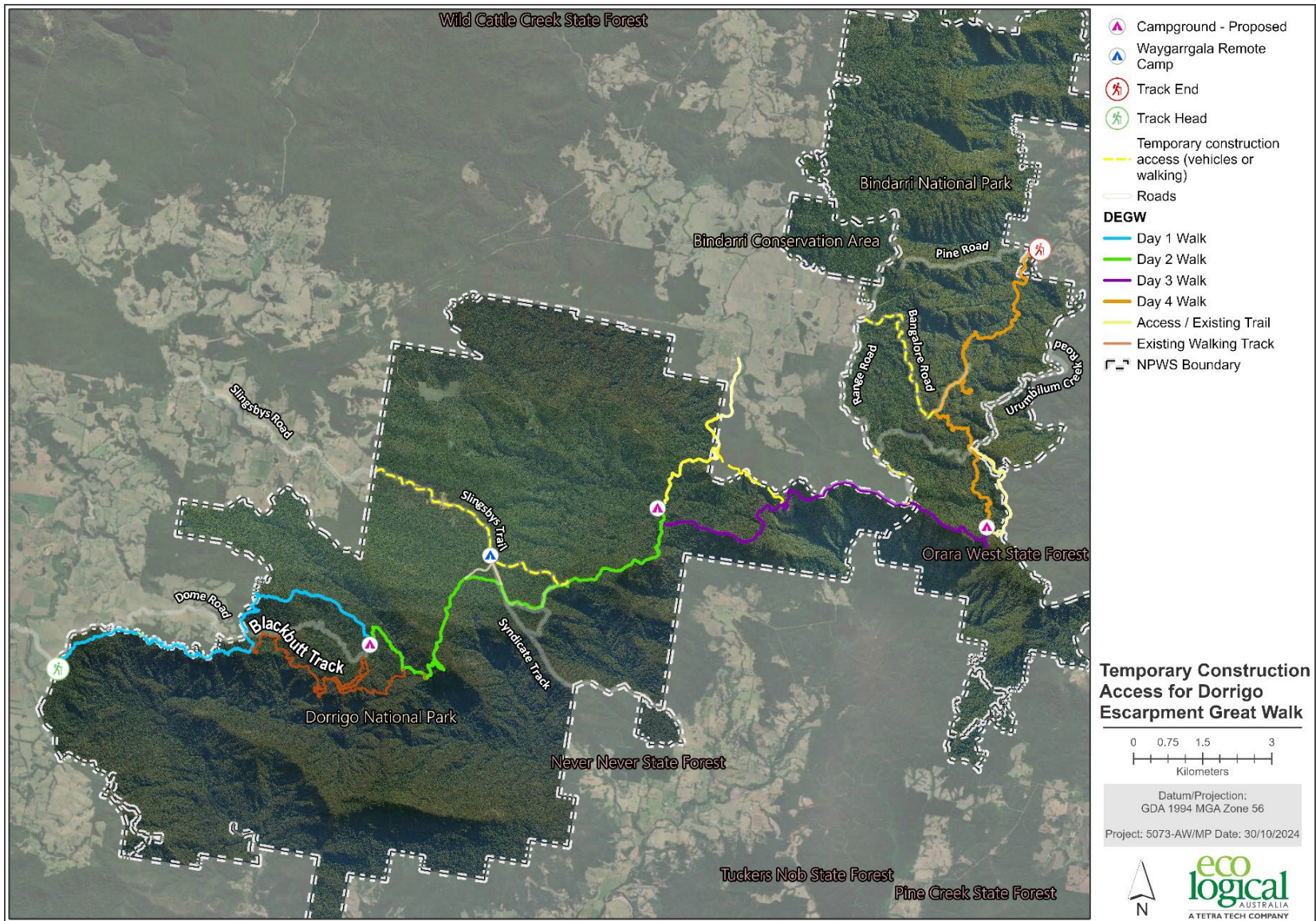


Figure 51 Temporary construction access points

Track construction – contractor's compounds

In general, for track construction activities contractors will establish a compound at one of the following locations (existing roads or cleared areas) with materials walked in via the track route or supplied to opportunistic locations along the track via helicopter sling loads (Figure 52):

- Day 1 – Baliiga picnic area and locations along Dome Road
- Day 2 – Baliiga picnic area and Slingsbys Trail at Wild Cattle Creek camp (Waygarrgala Remote Camp)
- Day 3 – Whitneys Trail at Camp 2, Tuckers Knob Trail at Camp 3 and Urumbilum picnic area
- Day 4 – Urumbilum picnic area, Bangalore Fire Trail and Bindarray picnic area.

6.4.2 Proposed construction materials and equipment

Proposed construction equipment may include:

- small 4WD
- small trucks for delivery of materials
- small maneuverable crane for camp construction
- light vehicles (road access only)
- trailer to carry small machinery – mini excavator
- jackhammer
- hand tools – rakes, mattocks, spades, crowbars, chainsaws
- helicopter and associated sling equipment
- road graders and compactors
- small dozers
- mulchers, chippers.

Proposed materials include:

- gravel
- stepping stones and stone steps
- timber steps, concrete steps
- retaining wall, causeway rock
- steel or aluminium pedestrian bridges
- steel wire suspension bridges
- ground screw piers, micro-piles
- concrete for vehicle bridges and culverts
- bridge components
- modular buildings and associated infrastructure
- services and fittings including water, electrical and solar panels
- FRP or similar for boardwalks and decking at camps
- gates, cattle grids
- signage for interpretation and risk management.

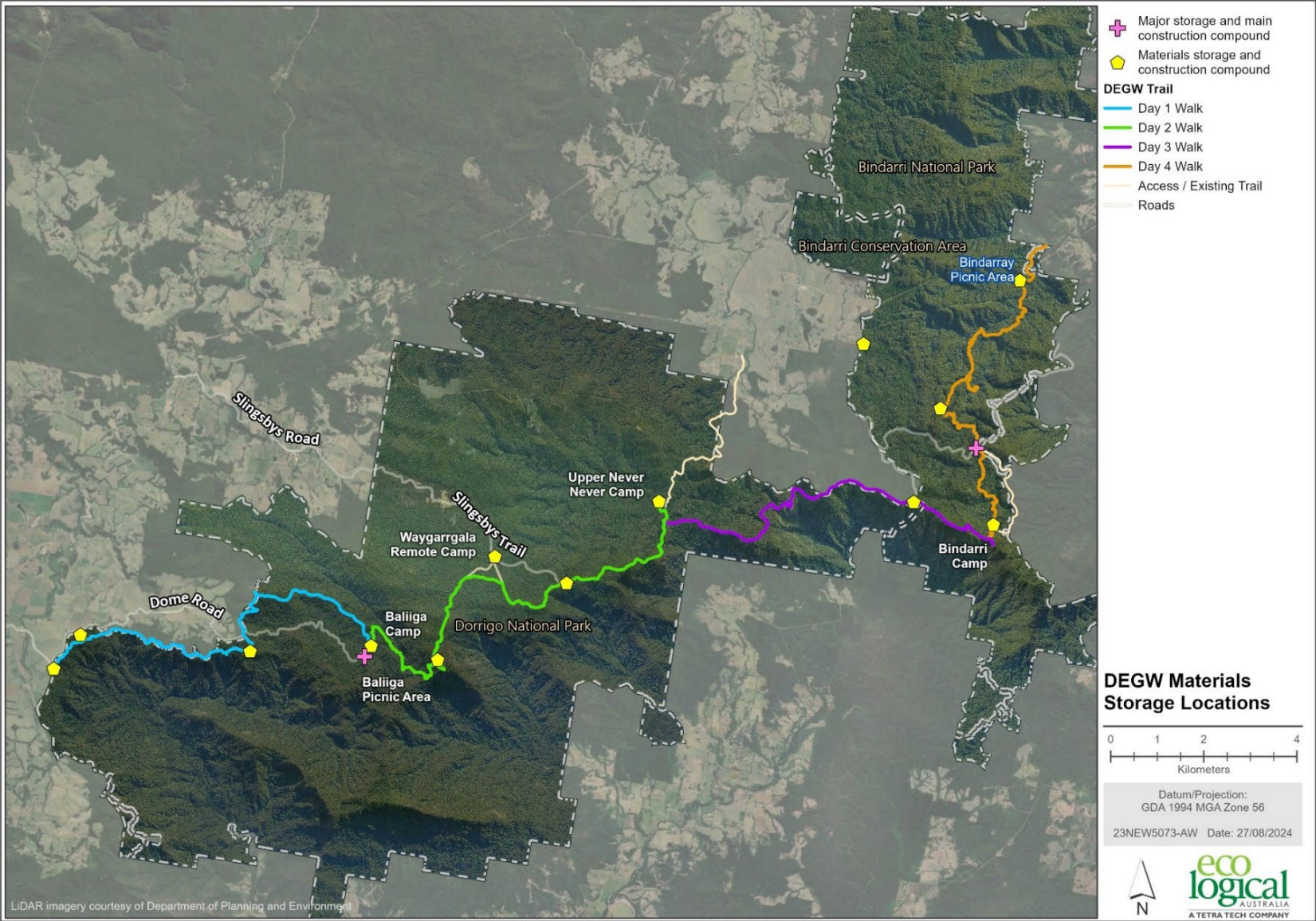


Figure 52 Construction compound, major storage (including helicopter pick-up) sites and other storage locations

6.4.3 Construction

Access road works

Standard road works to existing and dormant trails will be required to access the 3 camp sites. The works in general will involve the following activities:

- mulching and removing vegetation within the road prism to re-establish safe road access to category 7 standard – arborists to be used on access road to Camp 1 and Camp 3
- establishing passing bays at existing suitable locations and a turn-around area near each camp
- grading, shaping and re-establishing surface crown and drainage structures
- importing rock and gravel where required
- replacing old culverts as needed and constructing effective roll-over drainage features
- repairing heavily eroded sections of track, including rock wall protection where required
- installing gates, cattle grids and signage at identified locations to establish effective management control.

Pedestrian bridge construction – helicopter sling sites

For large-span pedestrian bridge construction, the following locations will be used for transport of materials via helicopter sling to the site:

- bridge 1 – Baliiga picnic area via Dome Rd, Dorrigo NP
- bridge 2 – Baliiga picnic area via Dome Rd, and Whitneys Road, Dorrigo NP
- bridge 3 – intersection of Range Road and Urumbilum Road, Bindarri NP
- bridge 4 – Jersey Bull Road or Range Road, Bindarri NP
- bridge 5 – Jersey Bull Road, Bindarri NP.

Once onsite, materials will be stored in locations that are secure and prevent exposure to waterways.

For locations that helicopter sling operations will be using to lift materials, the area will be on park and at a location that can be closed to the public and that permits truck access. For delivery locations the areas will be large enough to lower bulka bags through the forest canopy and incrementally store all building and track construction material.

Existing roads are to be used to transport larger items to the primary compound site. Existing roads will also be used to transport work crews and smaller lighter materials by light vehicle or small truck. Some material and equipment will be transported via vehicle to the day use areas and existing camp sites, or as close to the required location as possible, and then carried by hand. Stockpiled materials to be stored only on existing disturbed ground within the proposal area. The sites will include erosion and sediment controls. Alternative ancillary facilities, either compounds, stockpile sites or sling load locations, would satisfy the following requirements:

- existing disturbed areas with no vegetation clearing required
- at least 40 m away from the nearest waterway
- at least 100 m from any site of heritage conservation significance
- on relatively level ground.

Major storage sites (identified in Figure 52) will be used as helicopter pickup sites.

Walking track construction and controls

The construction methodology will be defined by the construction contractor, however, mitigation measures and guidelines provided in Section 9 of this REF must be adhered to in order to reduce potential environmental impacts. Works in and adjacent to watercourses will be undertaken during dry periods where possible. Works will stop once water starts to run to reduce erosion and siltation impacts. Construction includes:

- Final micro-siting of the walking track location with NPWS, the track contractor, project ecologists, project archaeologist and registered Aboriginal parties where required.
- Marking of final route with flagged tape on stakes in the ground.
- Threatened species to be avoided and or tagged for protection if within the footprint.
- A plan of threatened flora locations is to be provided to contractors prior to clearing and where aggregations of threatened flora occur signage is to be installed stating 'threatened flora location' (or words of similar intention) to alert construction personnel. A threatened species photo guide will be developed with images of the flora species that need to be protected.
- Methods will be developed when stairs are constructed, and for drainage requirements and cut embankment works (track widths to generally be 600 mm).
- Vegetation clearing to be restricted to the immediate track corridor (2 m) by trimming vegetation along the confirmed track alignment with hand tools and cutting logs with chainsaws. Track alignment to avoid tree removal unless there are safety risks that cannot be avoided. In general, no mature trees or trees greater than 100 mm diameter at breast height (dbh) would require removal.
- Track alignment to avoid large tree roots where possible.
- Large fallen trees on trails to have stairs cut into them to deter potential motorbike use, especially on days 1 and 4 of the walk.
- Vegetation removed to be placed onsite and spread in a manner that does not smother retained vegetation, and it can be used to protect exposed soils to prevent erosion.
- Some smaller plant species within the corridor may be easily directly transplanted to assist with regeneration of exposed sites where appropriate.
- Progressive erosion and sediment controls to be incrementally established along the track footprint and temporary controls put in place prior to rain events and at the end of each workday.
- Track sections will be progressively completed. The track will be cut and benched (Figure 53) primarily using hand tools such as mattocks, crowbars, shovels, rake-hoes and rakes to dig the soil to build new track. All excess soil will be dispersed evenly among the adjoining forest in locations which have low erosion risk.
- If the location is suitable, small machinery capable of travelling along the narrow track width (less than 1 m) may be used to transport materials and assist with construction.
- Equipment and larger materials to be helicopter dropped via sling to nominated points along the track. Due to the heavy forest along the entire track, there are limited sling load drop points. Drop points will be located in existing cleared areas and/or areas having an open canopy.
- Track sections where the route follows rock outcrops will require natural steps to be constructed using suitable material from the footprint. Some sections of new track will require engineered timber or steel steps to be built in order to navigate steep sections and avoid unnecessary side cut impacts to habitat. The use of chain handrailing may be required in steeper sections.
- Some sections may require technical stone cutting, and stone stairways (Figure 54) using local rock. If suitable material is not available in sufficient quantities within the

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allowable footprint, then a suitable clean rock material may be imported via helicopter sling loads.

- Stepping stones or culverts will be installed at a number of gully and waterway crossings.
- Low-level prefabricated small bridges to be installed at short-span crossings where culverts or stepping stones are not appropriate. Larger materials to be helicopter dropped via sling to nominated points along the track.
- Existing tracks will undergo basic maintenance to ensure good track surface.
- Basic directional signage and interpretive features to be installed at appropriate locations.
- Natural style seating to be incorporated at key rest locations such as viewpoints.

Figure 55 shows a section of the Rosewood Creek walking track in Dorrigo NP to illustrate the indicative final track standard.

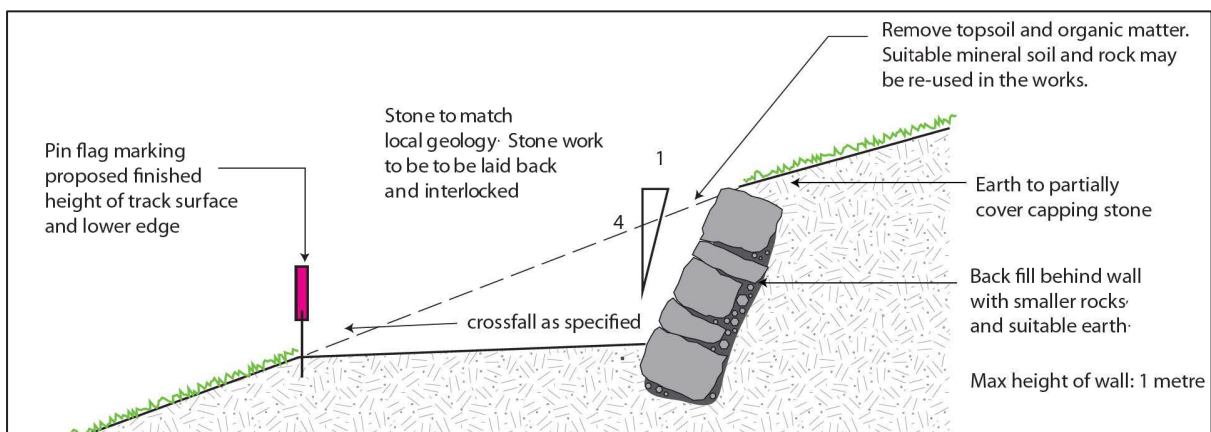
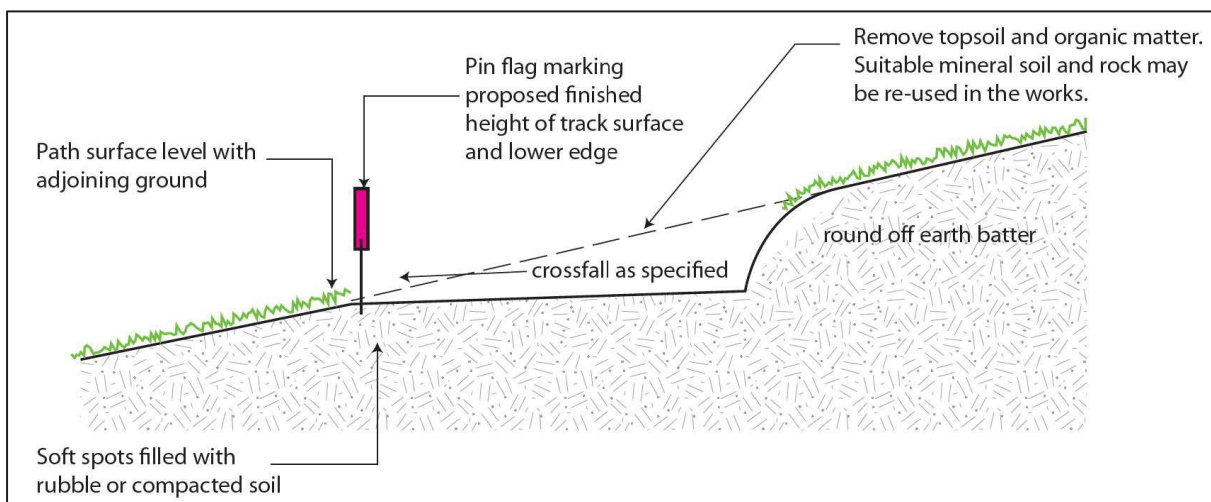


Figure 53 Example medium benching: full bench with earth batter (top), full bench with dry stone wall batter (bottom) (illustration by Mountain Trails)



Figure 54 Indicative track step construction example – Blue Mountains NP



Figure 55 Indicative final track standard, Rosewood Creek walking track

Pedestrian bridge construction

A number of single-span bridges greater than 20 m in length will be constructed for the proposal. Four of the 5 bridges are considered remote and will require helicopter sling load delivery of materials. Design requirements for the bridges are to minimise overall environmental impacts through appropriate design, one-person capacity rating and using an innovative approach to construction. The construction methodology for the bridges will be the requirement of the contractor, however, the following approach will generally be taken:

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- Remove identified vegetation within the construction footprint.
- Strip, stockpile and manage topsoil and material for the bridge supports.
- Establish erosion control and site safety exclusion fencing.
- Establish minimal impact footings and supports appropriate to the geology.
- Deliver materials to site via helicopter and unload in a location away from the watercourse.
- Establish wire spans and follow construction methods that minimise impacts to waterways.
- Contain and remove all waste from site, including concrete.
- Establish appropriate landscaping and remediation, including erosion control of exposed soils.
- Ensure bridge construction methodology results in minimal impacts to riverbank and water habitat by establishing systems that remove the need and risk of people and materials impacting the waterway.
- Undertake construction works only during low flow periods (seasons) to reduce siltation impacts.

Vehicle bridge construction

A new vehicle bridge structure is proposed to cross Urumbilum River to replace the existing ford crossing. Standard bridge replacement procedures will be used including all sedimentation and erosion risk controls. In general, road works will only be undertaken during dry periods to minimise erosion and sediment movement.

Viewpoint and lookout construction

The majority of viewpoints will be constructed with the track construction program. The majority of the viewpoints are at grade with the following works anticipated:

- Minor vegetation clearing to create viewpoint.
- Levelling of ground surface to create a pad that is sufficient to cater for 2 to 6 people.
- The creation/installation of a natural timber or stone bench-style seat that blends into the site and acts as a resting place for walkers.
- Placement and use of natural materials that clearly identifies the safe boundary of the viewpoint for higher fall risk sites or sites with sensitive ecology. The establishment of a built barrier to contain walkers may be required dependent on risk assessment.
- Installation of low-key safety signage and interpretive elements where required.
- Two small, engineered platforms are proposed at Lanes lookout and at Gleniffer Falls to provide safe viewing area in high-risk locations in a contained platform.
- Materials that require importing will be delivered by helicopter sling loads.

Camp accommodation and facilities

The NPWS *Construction assessment procedures* (OEH 2011b) will be used to guide the design associated with new camp infrastructure construction. Construction includes:

- Site delineation establishment using a taping system along with flagging of all trees and vegetation to be protected. This includes identified hollow-bearing trees and identification of suitable habitat nearby for release of fauna that may be encountered.
- Vegetation trimming and removal to allow for construction of buildings, tent platforms and facilities to be conducted by arborists following detailed tree risk assessments to

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establish a risk profile to visitors through falling limbs. Trees outside the footprint of the infrastructure that pose a risk that cannot be adequately managed will be removed.

- Checking for the presence of fauna species onsite and relocate if there is the potential for the animal to be disturbed or injured.
- Where trees are removed checking tree hollows for fauna before removal of the habitat trees.
- All vegetation removed to be chipped/mulched and retained onsite for landscaping purposes. Stumps to be ground onsite.
- Site establishment as per standard contractor requirements including hygiene protocols and temporary toilet and waste facilities.
- Vegetation removed will only be sufficient to enable construction and establishment of infrastructure, while maintaining a natural forest outlook and aesthetically appealing camp. This includes possible solar power generation infrastructure which would be positioned to gain enough solar exposure without the need for vegetation removal. Some upper tree limbs may be removed where required.
- Erosion and sediment controls to be established around the entire camp site. Excavation works for site levels and footings, and establishment and installation of the accommodation structures' locations. Screw piers for huts and camping platform footings or a similar system is proposed to minimise soil disturbance and to greatly reduce the requirements for concrete.
- Building components to be prefabricated offsite in consistent, sustainable sizes and be driven to site. Where components are not able to be delivered or for logistical reasons a helicopter may sling loads to site.
- The camps to be progressively re-landscaped and revegetated using a combination of stockpiled local mulch, jute mesh, collected woody debris and local native species.
- Rehabilitation in accordance with the construction environmental management plan and landscape rehabilitation plan.
- Upon completion of construction, all advisory signage and ancillary facilities would be removed, and areas disturbed during construction would be rehabilitated. Once disturbed areas are established, erosion and sediment control measures such as sediment fencing would be removed.

Unexpected finds during pre-construction and construction activities

Given the sensitive nature of the area, an 'unexpected finds' procedures will be included in the construction environmental management plan and will form part of all site inductions. Details will include the following:

Non-Aboriginal heritage

- If any non-Aboriginal items of significance are located during the works, all work would cease and NPWS would be contacted immediately.

Aboriginal heritage

- Aboriginal site monitors are engaged to support the unexpected finds procedure during construction activities at regular intervals.
- If suspected Aboriginal material has been uncovered because of development activities within the study area:
 - work in the surrounding area is to stop immediately
 - a temporary fence is to be erected around the site, with a buffer zone of at least 10 m (unless otherwise impractical) around the known edge of the site

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- an appropriately qualified archaeological consultant is to be engaged to identify the material
- if the material is found to be of Aboriginal origin, the Aboriginal community is to be consulted in a manner as outlined in the *Aboriginal cultural heritage consultation requirements for proponents* (DECCW 2010a)
- should the works be deemed to have harmed the Aboriginal object(s), Heritage NSW should be notified immediately via the NSW Environment Line.

Although it is unlikely that Aboriginal human remains will be located at any stage during earthworks within the study area, should this event arise it is recommended that all works must halt in the immediate area to prevent any further impacts to the remains. The site is to be cordoned off and the remains themselves are to be left untouched. The nearest police station at Dorrigo and the Heritage NSW Regional Office (Coffs Harbour) are both to be notified as soon as possible. If the remains are found to be of Aboriginal origin and the police do not wish to investigate the site for criminal activities, the Aboriginal community and Heritage NSW should be consulted as to how the remains should be dealt with. Work may only resume after agreement is reached between all notified parties, provided it is in accordance with all parties' statutory obligations.

All NPWS staff and contractors would be made aware of their responsibilities under the National Parks and Wildlife Act and made aware of appropriate procedures in the event of Aboriginal objects or remains being discovered during the construction process.

Other

Noise impacts

Construction activities associated with the proposal will have periodic noise impacts associated with standard building work and road and trail construction. Noise impacts on the walking track itself will be limited to hand tools and small machinery. All camps are intentionally located on management trails to reduce the need for ongoing helicopter servicing during ongoing management of the walk, thereby reducing the associated impacts.

There will be periodic use of helicopters during the construction of the walking track route for delivery of materials for bridges, steps and other engineered materials. For ongoing operations there may be periodic needs for track infrastructure maintenance using helicopters, however, these are considered to be low impact.

Noise impacts of vehicles entering the access roads to maintain camps will be the main ongoing impact as well as periodic standard hand tool maintenance of the walking track by track rangers.

Pest and weed management

Ongoing pest and weed management and monitoring would be undertaken as part of the operation of the walk, including at the key visitor locations. Monitoring for fox (*Vulpes vulpes*) and cat (*Felis catus*) predator impacts and targeted control programs will be developed if this becomes an issue to address. See Section 9 for further details on the assessed impacts and mitigation.

Monitoring for signs of pathogen impacts through dieback and water quality impacts will be a key part of responding to new and emerging risks.

Threatened species monitoring

The ecological assessment report (ELA 2024a, supporting document A) recommends that monitoring and management activities are included to maintain and, where possible, enhance biodiversity values. The results obtained from the assessment are a valuable and useful tool that should be used to guide future decision-making regarding these conservation

issues. See supporting document A and Section 9 for full details and mitigation recommendations.

Fire management

Fire risk over large sections of the walk is generally considered low to moderate given the wetter forest types. However, there are several locations in drier forest types, particularly on Day 2 and Day 4, where dry heavy fuels on ridgelines in eucalypt forests have the potential to create higher risks for walkers.

Open fires that are not in designated fire locations are not permitted within the parks (as per the plan of management). Ongoing monitoring will be required to ensure fire risks are managed through visitor education, surveillance during high risk periods and closures during extreme to catastrophic fire danger rated days, according to policies and procedures in the NPWS *Fire management manual 2024–25* (NPWS 2024c, or subsequent annual updates).

Reserve fire management strategies for the parks will be updated to include risk management procedures for the management of the walk, including fuel management programs, fire preparedness, fire response arrangements and triggers for part or full closures. Cultural burning practices are to be supported.

An operational management plan will be developed that includes relevant information from the reserve fire strategy, emergency management plan and the REF to guide the ongoing operation of the walk.

6.4.4 Sustainability measures – including choice of materials and water/energy efficiency

The DEGW master plan has outlined the planning and design principles that will guide the development of the walk, including infrastructure. Some of the key areas are:

- Consistent look and feel – facilities should create a consistent look and feel for national parks and reserves in New South Wales.
- Heritage – protection of natural and cultural heritage values, as part of the park experience, is to be achieved in all facilities provision.
- Harmony with nature – natural features in the landscape should predominate and facilities should harmonise with their setting, including being resilient to the climate.
- Enhancing the visitor experience – facilities should enhance and not detract from the visitor experience and should be fit for the purpose intended.
- Genuine materials – materials are to be genuine and true to character.

Wherever possible, topsoil, woody debris and rock would be recovered for reuse on site. Where new track construction produces material, such as cut vegetation, rock or spoil, this could be used on other sections of the track. Suitability of material and locations will be determined via a detailed management plan and construction environmental management plan.

In areas where stonework is recommended, stone would be sourced from the local area first. Local stone would be used for stepping stones at gully/stream crossings as well as rocky sections requiring low retaining walls.

Local timber will be sourced from a certified sustainable source, as per NPWS requirements, and used for stairs, boardwalks, seating and signage to meet the NPWS *Park facilities manual* (NPWS 2016a) requirements.

It is expected that minimal sections of track will require imported material for stabilisation, with the majority using natural soils as the track surface.

Where native vegetation is removed, it will be mulched onsite and used to rehabilitate sections and disturbed areas following construction. Non-native introduced plant species will be treated prior to construction and will not be included in mulch.

The camps have been designed to be self-sufficient, with roof-harvested rainwater, renewable power and contained pod toilets. Heaters will be used to heat communal areas during cooler months. Where possible building materials, furniture, fittings and other loose items will be sourced from sustainable suppliers and have been designed to minimise resource usage. Accommodation will be designed around the following principles:

- climate resilience design and durability of materials to support change of use and circularity
- passive design for local climatic conditions to inform building design and optimise energy consumption – for example, balancing daylight and solar gain, cross-ventilation, thermal mass and evaporative cooling – with design to meet thermal efficiency requirements in Section J of the *National construction code*
- water management
- rainwater collection for non-potable end uses
- waste cycle collection for onsite use.

Camp infrastructure will be designed to be modular and repeatable to maximise efficient use of materials and buildability.

6.4.5 Construction timetable, staging and hours of operation

The works are expected commence in early 2025 and take approximately 24 to 48 months to complete. The proposal would be undertaken during standard works hours. These hours include:

- Monday to Friday: 7 am to 6 pm
- Saturday: 8 am to 1 pm
- Sunday and public holidays: no work.

Should works be required outside of the standard working hours, consultation would be undertaken with NPWS regarding the alternate construction hours.

6.4.6 Operation

Ongoing management – general

Once the walk transitions into an operational phase, areas disturbed during the construction phase will continue to be inspected and managed to encourage revegetation and ensure mitigation works are working effectively.

A key aspect of the operation of the DEGWS will be track ranger staff who walk the track on a regular basis and perform multiple roles, including maintenance, monitoring, weed and pest management as well as education and law enforcement. Track rangers who can address emerging threats will play an important role in managing and mitigating the impacts of the DEGWS proposal. A weed and pathogen management plan will be developed and be incorporated into the operational management plan.

The operational management plan will include all relevant information from various sources, including weed and pathogen management, reserve fire management strategy, emergency management plan and the REF to guide the ongoing operation of the walk. The plan would cover the following procedures:

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- management of priority weeds under the Biosecurity Act during and after construction
- weed hygiene protocol in relation to plant, machinery and non-local material
- monitoring, research, treatment and reporting of pathogens such as myrtle rust and phytophthora
- procedures for bush regeneration activities
- maintaining disinfecting facilities – wash-down bays at primary entrance/exit points for foot traffic
- ongoing maintenance of DEGW signage to assist in reducing impacts of off-track disturbance by minimising users walking off-tracks
- incorporating messaging into walker information briefings and interpretation material and guides
- identifying targeted revegetation areas that may be susceptible to weed development following construction activities
- track closure triggers under various severe weather conditions including fire
- evacuation arrangements under various scenarios
- search and rescue procedures.

NPWS will also consider a broad range of management strategies to identify track closures and shutdown requirements (partial and/or full) to manage the landscape including sustainable climate resilience. Track closure strategies allow for ecological recovery periods and are an established cultural practice.

It is suggested track closures should be considered in the January to February period when hot and humid conditions along with frequent storm activity increase risks to walkers and reduce the overall experience. A summary of seasons for the DEGW landscape is:

- March to October (9 months) – walking season. Drier, cooler months with peak season being the school holidays in autumn, winter and early spring.
- August to December (4 to 5 months) – fire risks. Potential short-notice closures. Although not a highly fire-prone environment, there are areas on the walk which present risks. During this period there will be increased potential for short-term closures associated with fire danger rating triggers. This may involve partial or full track section closures in more fire-prone areas, both proactive and reactive.
- December to February (2 to 3 months) – summer storm season. Increased humidity and temperatures, unstable atmosphere, rapid and intense storm build-up on the escarpment edge increasing risks associated with tree fall, lightning, winds and floods. Increased erosion impacts from increased rainfall and associated water quality impacts.

With a rapidly changing climate an agile approach is needed to manage the operation of the track. Depending on seasonal trends the following strategies should be implemented where possible:

- Partial/full track closures (2 months) – generally between January and February to reduce people impacts and allow time for track recovery. Benefits include:
 - reduced impacts on aquatic habitats from swimming and increased human activity
 - reduced impacts on water quality through not having people swimming more often during the hot summer periods
 - reduced pathogen transport risk, as higher risk during wet periods
 - reduced track use and associated erosion/sedimentation during wet season
 - reduced management vehicle traffic resulting in reduced risk of sedimentation from management trails.
- Proactive partial track closures based on fire risk modelling when the fire danger rating forecasts along with fuel state condition meet set triggers. Focus will be on track

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sections with fire-prone vegetation and fuels. Allows for continued use of track while addressing wildfire risk. Benefits include:

- improved safety with reduced human activity during elevated fire danger days, particularly in remote areas.

DEGW track

Once completed the DEGW will become part of a cyclical asset maintenance program. The DEGW will be developed to minimise maintenance requirements. Access for maintenance of the track will be via foot from existing management trails that access the camps. Vegetation maintenance within the identified corridor adjacent to the formed track would be undertaken using hand tools or small power tools. Cut vegetation would be dispersed locally or used in high-use areas for rehabilitation (mulch).

Management of the new walk will be guided by the broad strategies in the Dorrigo and Bindarri NPs plan of management (NPWS 2024a).

Management and maintenance of the DEGW management trails will be incorporated into existing track and trail maintenance regimes, pest and animal control, and pathogen monitoring programs.

The establishment of a Track Ranger Program that maintains the track and associated facilities and addresses emerging environmental and safety issues is a key aspect of the ongoing operation of the DEGW. The program will generally involve vegetation pruning, weed control and repairs to stairs, drains, signs and other track features that require periodic maintenance. This would generally be done by hand, with some support from helicopters or small vehicles where required.

A track walking guide booklet will detail walker protocols for protection of the environment and will be included as part of the walker registration package.

A compulsory briefing at the start of the walk at the DARC will cover the expectations and risks associated with the walk. The DEGW website will also provide information. This information would form part of an information kit supplied to all walkers.

Signage may also be required as part of an adaptive approach to management. An interpretation plan is to be developed that will aim to embed key messages around the environment, culture and expectations. Interpretation elements will mainly be based at the camps where people will have more time to engage with them. Key messages may be delivered by signage at key locations.

Annual monitoring of threatened flora prone to myrtle rust, that is, scrub turpentine (*Rhodamnia rubescens*), and flora prone to phytophthora, hoop pine (*Araucaria cunninghamii*), will be completed. In addition, frog chytrid fungus impacts will be monitored and recorded, and walkers will be provided with education material. Ongoing monitoring will be included within the operational management plan to ensure a dynamic response can be implemented.

Monitoring of erosion and sediment control post construction will occur until staff are satisfied that controls can be safely removed.

Information regarding reducing impacts to water quality from washing and swimming in rivers, particularly the Never Never River and Urumbilum River, is to be outlined in the guidebook and at walk briefings.

Walkers will be encouraged to use low-impact repellents and sunscreens, and advice will be provided about how to wash away from streams in order to protect water quality.

Shoe cleaning stations are monitored and maintained appropriately, and emerging technology is adopted in terms of cleaning stations and pathogen controls.

Camps

Once the walk is operating, primary access to the camps would be by walking. Access by vehicle will be for management purposes only, such as camp maintenance, toilet waste removal and emergency response. All DEGW hiker camp access trails will be maintained for small 4WDs and small 4WD truck (category 7) access. Vehicle movements would be minimised where possible.

Baliiga Camp trail access, Whitneys Trail and Tuckers Knob Road would provide access for management vehicles only. Slingsby Trail would provide management access for category 9 only standard light vehicles to the existing remote camp and Lanes lookout. Dome Road, Urumbilum Road and Jersey Bull Road are the only public road access points.

Camps will be designed to be simple to maintain and clean and expectations on users will be to 'leave them as you found them', with basic cleaning the responsibility of the user. Camps will need to be regularly maintained by NPWS Area staff and or dedicated track ranger staff. Dedicated cleaning and maintenance storage rooms and a room for staff will be provided at each of the 3 DEWG camps.

The 3 camps and walk would be shut down periodically for general maintenance and servicing, vegetation maintenance and other work. Other seasonal closures may be prescribed based on impacts of operating the walk during heavy rainfall periods and the need to 'rest' Country.

Once the camps and buildings are established, the vegetation immediately around each building, tent platform and site will be maintained to ensure ongoing tree risks are managed and understorey vegetation is managed to enable access between buildings and platforms. An ongoing tree risk assessment process will be established as per standard practices.

Toilets will be maintained more regularly, with removal of waste pods done by vehicle.

Public use and unintended impacts

The pattern of use of the walk by walkers will develop over time. There are many new day walking and overnight walking opportunities that will be created by the construction of the DEGW. How people use these opportunities, and the level of use may be different to what is anticipated for a variety of reasons.

Track ranger staff will monitor and recommend actions if necessary to manage impacts. Some of these may include:

- impacts of people remote camping near the track in sensitive locations, for example, Gleniffer Falls area
- parking impacts at the various day use areas caused by cars parked by people undertaking various sections of the walk
- unauthorised use of fires and associated impacts/risks
- other user impacts of the track such as runners and canyoners
- illegal use of sections of the track by mountain bikers or motorbikes
- creation of additional unauthorised tracks as shortcuts.

Monitoring and adapting management responses to undesirable impacts will be required for the successful ongoing operation of the DEGW.

7. Reasons for the activity and consideration of alternatives

7.1 Objectives and reasons for the proposal

NPWS is creating a network of multi-day walks across New South Wales. These walking experiences give people a chance to connect with nature in some of the state's most breathtaking landscapes. More and more people are looking for opportunities to go walking in national parks. Bushwalking is fun and supports good physical and mental health. Along with the new Dorrigo Arc Rainforest Centre (DARC), the proposal has the potential to deliver a range of environmental, social and economic benefits.

The vision for the DEGW is:

- to create inspiring experiences that connect people with the Gondwana Rainforests of Australia and Gumbaynggirr Aboriginal culture for generations to come
- to provide ongoing protection of our natural and cultural heritage, new opportunities for visitors to explore and connect with nature, increased contribution to the regional economy through visitor expenditure and employment, and health and wellbeing benefits for visitors and local communities.

The project aims to deliver on the following objectives:

- create a new multi-day walking experience of international standing that showcases the dramatic Dorrigo Escarpment
- protect, respect and promote the parks' environmental and cultural heritage
- create nature-based experiences which grow awareness of Australia's ancient landscapes and foster future conservation advocacy and stewardship
- provide opportunities for Aboriginal communities to rightfully share their culture, participate in and benefit from the regional visitor economy
- offer opportunities to connect to nature which provide ongoing health and wellbeing for participants
- generate economic benefit for the local community and sustainable growth of the regional economy
- create safe and durable walking tracks and camps which are designed for minimal impact and long-term sustainability with climate change impacts in mind
- support participation of a diverse cross-section of the community
- build strong partnerships with business, government and local communities
- contribute to ongoing maintenance costs and ensure financial sustainability.

7.2 Consideration of alternatives

7.2.1 Methodology for selection of preferred option

NPWS has carried out multiple investigations to identify various options for the DEGW.

Initial broad concept planning commenced in 2021, and a detailed walking track scoping report was prepared by professional track construction and planning consultants in 2022. Wider community consultation included numerous face-to-face briefings with community and interest groups, as well as meetings with Aboriginal organisations and park neighbours.

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Further ground truthing with surveying, ecological and geotechnical specialists and Aboriginal representatives informed the draft concept designs that were exhibited as part of the *Dorrigo Escarpment Great Walk draft master plan* in 2023. Feedback received on the preferred option was considered to further refine the proposal and prepare this environmental assessment.

The preferred option considered technical, social, environmental and economic factors along with design elements.

7.2.2 Design refinements

Table 13 provides a summary of key design refinements that have occurred during the concept design and detailed survey phases to identify the preferred option. Refinements have occurred to enhance the walk experience; to improve track grade, safety and resilience; to avoid sensitive locations and to reduce environmental impacts.

Table 13 DEGW design refinements

Design refinement	Reasons
Overall	
Numerous adjustments to route to utilise historic tracks, other previously disturbed areas, natural benches, stable crossing points.	<ul style="list-style-type: none"> Reduce environmental and cultural impacts, construction costs and improve walker experience and safety.
Day 1	
Create new track from DARC to Blackbutt track on park estate as opposed to walking on Dome Road or starting at the Baliiga picnic area (previously Never Never picnic area).	<ul style="list-style-type: none"> Create improved walking experience, improve safety, reduce walker traffic on Dome Road. Improved logistics of the key starting point being the DARC where existing transport options are focused. Reduce vehicle traffic on Dome Road and parking pressures at Baliiga picnic area. Offers an overnight return walking option using existing track network at the Never Never.
Boundary survey work. Track alignment adjacent to private property boundaries.	<ul style="list-style-type: none"> Establish actual park boundary to ensure best route is utilised while keeping facilities on park. Reduce steepness of track grade in order to improve track longevity and walking experience.
Utilise existing informal track to Dome Mt and ridge back to Camp 1 rather than using the existing Blackbutt track and Rosewood Creek walking track to Camp 1.	<ul style="list-style-type: none"> Allow improved management of informal walking route and popular lookout point. Create improved walking experience with access to views from Dome Mt high point and create an overnight return walk option from Camp 1 without having to use Dome Road. Increase day walking options from Baliiga and the DARC. Builds on existing opportunities from established visitor node.
Sections close to Dome Road moved about 60 m to avoid protected vegetation.	<ul style="list-style-type: none"> To provide greater protection of protected species.
Section from Dome Mt to Camp 1 moved to align with existing snig track.	<ul style="list-style-type: none"> To avoid sensitive areas and reduce impacts.

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Design refinement	Reasons
Grade improvement approaching Camp 1	<ul style="list-style-type: none"> • Improve grade and reduce maintenance liability by moving track off steep, heavily eroded ridgeline historical track and entry into Camp 1. Allow rehabilitation of highly eroded area.
Camp 1 location moved approximately 200 m further north away from the day use area and sensitive vegetation.	<ul style="list-style-type: none"> • Increase separation from day visitors to improve experience of both user types.
Day 2	
Adjusted grade and alignment of new track link to the existing Rosewood Creek walking track from Camp 1	<ul style="list-style-type: none"> • Improve track maintenance liability and keep DEGW walkers away from the day use area. • Avoid steep eroded historical track and allow rehabilitation.
Rosewood Creek bridge design adjustment	<ul style="list-style-type: none"> • Changed from stepping stones to suspension bridge as a result of hydrology study to improve resilience of infrastructure, walker safety as well as reducing environmental impacts.
Dibbs Head climb – numerous adjustments	<ul style="list-style-type: none"> • Improve grade, avoid orchids and sensitive rocky habitat. • Utilise existing cuttings, reduce amount of track to be built by increasing grade in selected locations.
Utilising existing Syndicate track links and Slingsbys Trail	<ul style="list-style-type: none"> • Reduce impacts and need for new construction by linking into the existing walking tracks in this area.
Adjusted track route	<ul style="list-style-type: none"> • Avoid natural and culturally sensitive locations.
Upgrade existing Wild Cattle Creek camp	<ul style="list-style-type: none"> • Help manage the current impacts of visitors and prepare the site for increased use by day and overnight visitors by providing toilet and camping platforms. • Manage the increase in use that the DEGW route provides in terms of overnight walk opportunities without having to complete the full 4-day walk. • Build flexibility into DEGW.
Camp 2 location moved 500 m from Whitneys Bridge on the Never Never River east up Whitneys Road.	<ul style="list-style-type: none"> • Reduce environmental impacts of having camp near river at Whitneys Bridge. • Reduce risks associated with flooding. • Increase buffer to river from impacts of permanent camp.
Track alignment moved from Whitneys Trail to the escarpment edge from Lanes lookout to Camp 2	<ul style="list-style-type: none"> • Improve overall walking experience and access to giant old-growth forest and escarpment viewpoint. • Utilise existing ridge line track. • Reduce need for extra river crossing at Whitneys Bridge and associated heritage impacts.
Adjust track alignment behind Anscombes Hill	<ul style="list-style-type: none"> • Improve grade and reduce track construction distance and elevation climbed.
Day 3	
Adjust alignment at various locations between Camp 2 and Gleniffer Falls	<ul style="list-style-type: none"> • Improve grade of track, walker experience and track longevity.
Never Never crossing near Gleniffer Falls	<ul style="list-style-type: none"> • Improve walker safety and reduce risk of isolation during floods. • Reduce visual impacts by moving crossing location from the top of the falls area and reducing span of bridge.

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Design refinement	Reasons
Track alignment from Gleniffer Falls to 800 m contour	<ul style="list-style-type: none"> Manage grade of climb to 800 m high point to improve walk experience and track longevity and to keep route on park.
Boundary survey work – track alignment adjacent to private property boundaries	<ul style="list-style-type: none"> Establish actual park boundary for optimal alignment within park.
Track alignment up to Mt Wondurrigah	<ul style="list-style-type: none"> Establish improved grade to reduce erosion risks, improve walker experience including impacts associated with walking under telecommunications facility.
Track alignment around Tuckers Knob	<ul style="list-style-type: none"> Reduce impacts on natural and cultural values by avoiding sensitive habitat and safety risks associated with steep rocky sections.
Viewpoint side trip – Triple Peak	<ul style="list-style-type: none"> Reduce distance of side trip walk to viewpoint near Triple Peak Reduced by 1 km. Reduce walking distance, costs and associated impacts.
Track alignment from Tuckers Saddle to Camp 3	<ul style="list-style-type: none"> Improve grade of track for walker experience and track longevity.
Camp 3 location	<ul style="list-style-type: none"> A number of locations were considered including Mt Wondurrigah and Tuckers Knob Fire Trail, and areas near Urumbilum picnic area. Bangalore Fire Trail was also considered. Location is a balance between Day 3 total distance, keeping facilities all on-park as well as Day 4 total distance.

Day 4

Camp 3 to Urumbilum Falls route	<ul style="list-style-type: none"> Change route from connecting onto Tuckers Knob Fire Trail on the eastern side of valley to utilising historic tracks on the western side of Urumbilum River crossing above Camp falls. Maintain walk within park. Improve walker experience and reduce need to walk on management trail.
Alternate finish points via Triple Peak	<ul style="list-style-type: none"> Not feasible to keep track wholly on park estate.
Formalising Urumbilum picnic area access on the western bank	<ul style="list-style-type: none"> Improve visitor access to Urumbilum Falls. Reduce environmental impacts and increase walker safety by not crossing Urumbilum River and reducing track braiding.
Alternate route utilising eastern side of Urumbilum valley route to Bindarray picnic area – not preferred	<ul style="list-style-type: none"> Use of existing management trails and roads reduces walking experience. Considered crossing Urumbilum River near Mirrong Falls and using the eastern side of valley to reach the finish point. However, this would result in increased distance and very steep terrain and increased environmental impacts.
Western route alignment selection – preferred	<ul style="list-style-type: none"> Provision for future side trips to waterfalls and points of interest in an efficient way while reducing costs and environmental impacts.
Urumbilum Falls to Falls Trail	<ul style="list-style-type: none"> Alternate routes investigated to link with Falls Trail and Bangalore Fire Trail. Option not adopted due to reduced walker experience and increased grades resulting in higher erosion risks.
Bangalore Ridge decent to Junction crossing	<ul style="list-style-type: none"> Utilising historic track network to achieve improved walker experience, grade and reduced environmental impacts. Utilises optimal access to crossing point.

Design refinement	Reasons
Junction crossing point	<ul style="list-style-type: none"> Moved crossing point upstream to reduce crossing span, improve utilisation of existing cutting and links into existing tracks.
Adjusted final section of track linking into picnic area	<ul style="list-style-type: none"> Moved track off historic trail to improve walker experience and reduce erosion, improve grade and visual aesthetics of not walking under major powerline easement. Manage informal walking tracks up Urumbilum River from Bindarray picnic area.

The DEGW option was selected as the preferred option, as it provided the best functional, social, environmental and economic outcomes including:

- maximises usage and benefits of the parks' features without having significant impacts
- maximises safety and usability for all users and hikers on the DEGW
- minimises impacts through micro-siting and flexibility
- reduces property impacts with the design to remain on park wherever possible
- minimises biodiversity impacts
- minimises impact on Aboriginal heritage
- minimises visual impact
- meets optimal daily distance of between 10 km and 12 km each day over a 4-day length.

7.3 Justification for preferred option

The DEGW proposal is part of NPWS's long-term strategy to deliver unique visitor experiences in regional New South Wales and increase tourism-based recreation. The proposal meets the objectives that:

- provide access to the iconic Gondwana Rainforests of Australia World Heritage property (Gondwana Rainforests)
- transform the way visitors interact with the location
- provide commercial and other partnership opportunities with Gumbaynggirr People as custodians of their Country
- have the capacity to deliver regional economic benefits.

The objectives for the DEGW proposal are consistent with the NPWS opportunity to engage with a broader audience by providing authentic and transformative nature-based experiences to:

- meet demand for nature-based tourism and walking tracks, including visitation growth of recreational activities
- increase participation in visitor activities and promotion of park and environmental education
- support national and state policies to increase international and domestic tourism in New South Wales
- align with the vision to inspire everyone to enjoy and engage with their national parks.

8. Description of the existing environment

8.1 Overview of the study area

Dorrigo NP and Bindarri NP are in the traditional Country of the Gumbaynggirr People. Located in the Mid North Coast region of New South Wales, the parks have a combined area of over 17,500 ha. The name Dorrigo is believed to have derived from Dun Durriga, the Gumbaynggirr word for the tallowwood trees (*Eucalyptus microcorys*) that grow in the area. The naming of Bindarri NP is derived from the Gumbaynggirr word Bindarray, meaning 'many creeks'.

These parks protect values that are of World Heritage and National Heritage significance. Parts of Dorrigo NP are included in the series of reserves that comprise the Gondwana Rainforests of Australia World Heritage property. First inscribed in 1986 and extended in 1994, the Gondwana Rainforests were added to Australia's National Heritage List in 2007. The remaining parts of Dorrigo NP together with Bindarri NP and Bindarri State Conservation Area are part of proposed extensions to the existing World Heritage property and are on Australia's World Heritage Tentative List.

These parks are valued for their rich biodiversity, cultural significance, diversity of landscapes, protected water catchments, scenic values and nature-based recreation and tourism opportunities. The diversity of landscapes ranges from high, cool, windswept and often mist-shrouded plateaus, to warm, sheltered, low-altitude river valleys with highly significant gorge systems and spectacular waterfalls.

There has been a long history of interest that culminated in the protection of Dorrigo Mountain and continues to support the protection of these parks. Part of Dorrigo Mountain was first protected in 1901, becoming known as Dorrigo Mountain Reserve. The reserve was managed by passionate community leaders and neighbours as part of a trust. In 1976, after 6 decades of dedicated volunteer services by the trust, management was transferred to NPWS. In response to rising community concern for rainforest protection in the 1970s, the park doubled in size with the protection of parts of Killungoondie, Brooklana and Never Never state forests. Further additions to the park were made in 1999, including part of Never Never State Forest and the remaining sections of Brooklana and Killungoondie state forests (including Mount Moombil).

Bindarri NP was reserved in 1999 and was previously part of the Orara West, Never Never and Tuckers Nob state forests. The park adjoins Dorrigo NP on its south-western boundary. The park was declared an asset of intergenerational significance in 2021 for its critical role in protection of the endangered koala.

Figure 56 shows the location of Mitchell landscape boundaries, IBRA bioregion boundaries (Chaelundi and Coffs Coast and Escarpment bioregions), national park estate and state forests.

8.2 Natural values

8.2.1 Geology, geomorphology and topography

Dorrigo NP is situated on the eastern edge of the Dorrigo Plateau landform, part of the Great Dividing Range, and represents a significant area of escarpment and gorge country in the transitional area between the New England Tablelands to the west, and the coastal slopes of the North Coast to the east.

Significant landscape features and topography

The study area is located within the World Heritage-listed Gondwana Rainforests of Australia and encompasses parts of Dorrigo NP and Bindarri NP. The study area is located primarily along the Dorrigo Escarpment sitting between Bellingen and Dorrigo townships. It also extends downslope into the Upper Orara Valley within the Coffs Harbour hinterland. The altitude within the study area ranges from about 150 m near Bindarray picnic area to 990 m at Dome Mountain. The study area encompasses a diversity of rough terrain and significant landscape features, including mountains, steep escarpments, rivers, creeks, gorges and waterfalls. Important landform features from west to east of the study area include Dome Mountain, Rosewood River, Dibbs Head, Wild Cattle Creek, Never Never River, Gleniffer Falls, Mount Wondurriyah, Triple Peak, Tuckers Knob, Urumbilum River gorge and Urumbilum Falls.

Geology

The study area occurs primarily on the eastern edge of the Dorrigo Plateau which is a remnant of the Ebor Volcano and basalt outcrops of that volcano occur in the south-western part of Dorrigo NP. Much of the plateau region of the park is made up of Carboniferous metamorphic rocks, comprised mainly of argillite and slates of the Moombil beds. Igneous rocks of Permian age outcrop in the southern part of Dorrigo NP (NPWS 1998). The study area extends through Bindarri NP within the Orara Escarpment and Orara Valley where the geology is predominantly metasedimentary rocks.

Along much of the high country and escarpments are unnamed basic volcanics, tertiary basalt, dolerite, andesite, trachyte and minor volcanoclastics, plus minor polymictic conglomerate, quartzose and ferruginous sandstone, and mudstone. An assumed layer of basic tuff estimated at up to 80 m thick outcrops in the south-eastern part of the plateau around Maynards Plains and Whisky Creek, and also crosses the Dorrigo–Ebor Road about 8 km west of Dorrigo.

Further into Bindarri NP towards Upper Orara there are clayey, silty and gravelly alluvials of the Quaternary period, with layered gravels, cobbles and stones in some soils. The surrounding higher elevations are late Carboniferous Coffs Harbour Association metasediments of the Coramba and Brooklana beds and the Moombil Siltstone comprising siliceous mudstone, lithofeldspathic wacke and siltstone with minor meta basalt, felsic volcanics, chert and jasper. The local geology could dictate the type of lithic artefacts occurring in the area, including common lithic types for stone implements which are fine-grained volcanics, quartz, cherts and silicious mudstone.

The area is characterised by steep to very steep mountains with narrow rounded crests (less than 100 m), moderately long to long simple slopes (up to 2,000 m) and narrow streamlines or drainage lines (less than 100 m). Slopes vary from 30% to occasionally over 65.

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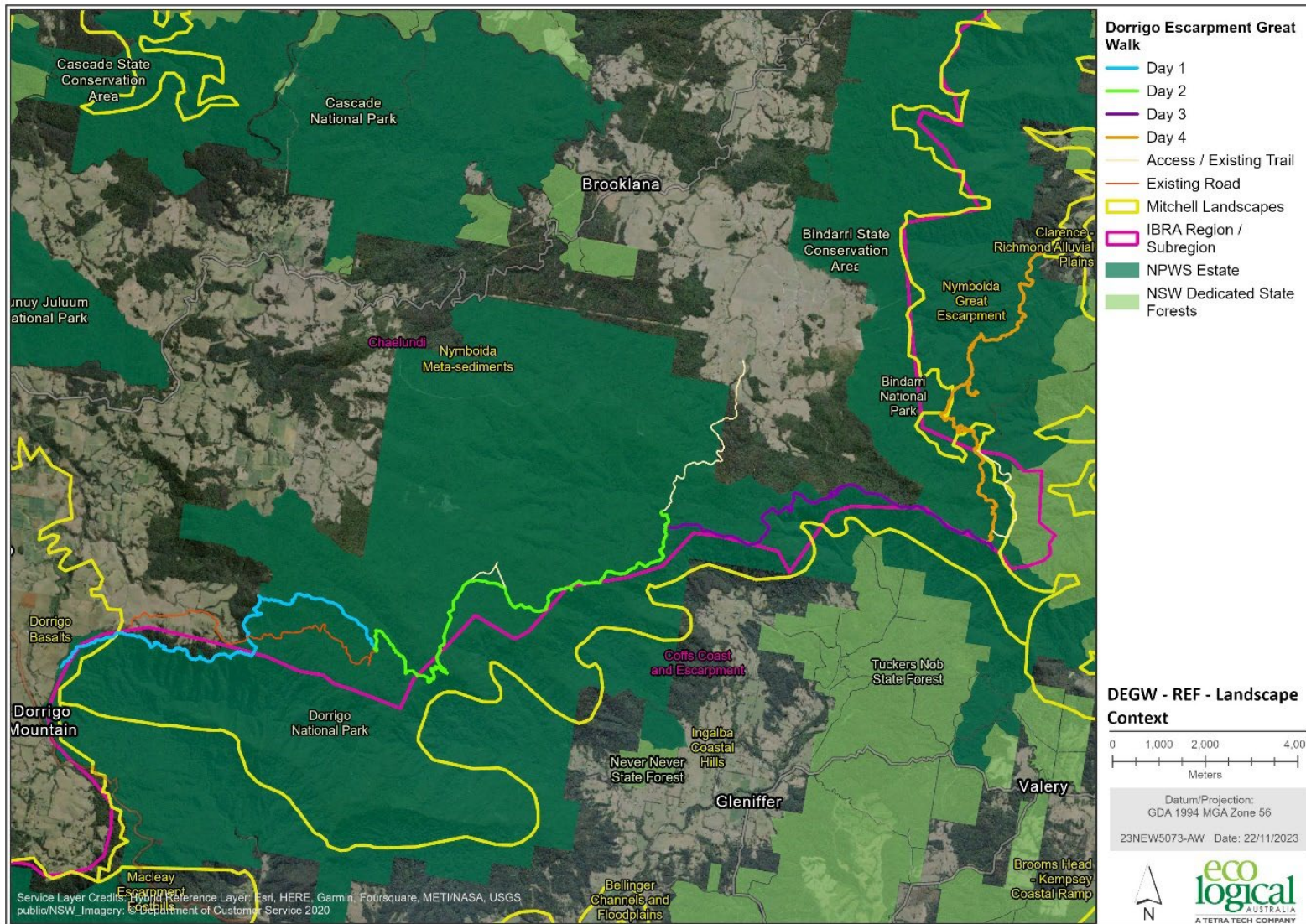


Figure 56 Landscape context

8.2.2 Hydrology and waterways

The first 3 days of the DEGW are mainly in Dorrigo NP, which contains 3 larger waterways and a series of smaller tributaries that are often ephemeral and flow only after rain. Rosewood River and Never Never River are clear streams that flow eastward into the Bellinger River and predominantly contain riparian zones of subtropical rainforest. Wild Cattle Creek flows north and west into the Nymboida River. Despite being headwater catchments without extensive drainage areas, Wild Cattle Creek, Never Never River and Rosewood River are significant water systems due to the region's considerable rainfall. Dorrigo NP is home to several impressive and prominent waterfalls, including Gleniffer, Red Cedar, Coachwood and Casuarina falls.

Numerous watercourses drain from the plateau within the park (see Figure 57). Most are intermittent. The catchment systems of the parks are generally in good condition as almost all the contributing watercourses are located within the park or surrounding state forests. As such, the catchment systems are not exposed to a high level of pollution. The largest source of pollutant material originates from existing public roads (including Waterfall Way), management trails and walking tracks throughout the park. Adjacent forestry operations to the west and south are a source of increased pollution in the form of sediment runoff.

Dorrigo NP's northern part lies on elevated, undulating land at the edge of the Dorrigo Plateau. The Never Never River drains eastward, and Wild Cattle Creek flows westward. An impressive escarpment forms in the north-east within the Never Never River catchment. The headwaters of Rosewood River are located in the central area of the park. The river is moderately entrenched, with local relief reaching 940 m above sea level (asl). The south of the park encompasses the eastern Dorrigo Plateau's escarpment. The Rosewood River's headward erosion has formed a deep valley, with steep slopes ranging from 16 to 33 degrees. Numerous streams descend over cascades to the Rosewood River, with the prominent McGraths Hump (853 m asl) nearly isolated due to Rosewood River's erosion.

The main waterways in Bindarri NP, at the eastern end of the walk, are Urumbilum River and Bangalore Creek. Urumbilum River is a fourth order Strahler stream after its junction with third order Bangalore Creek, and flows into Orara River, then the Clarence River. The catchment and riparian zones of both waterways and their upper tributaries are relatively intact and vegetated with subtropical rainforest. Coffs Harbour's water supply is supplemented directly from the Orara River and stored at Karangi Dam.

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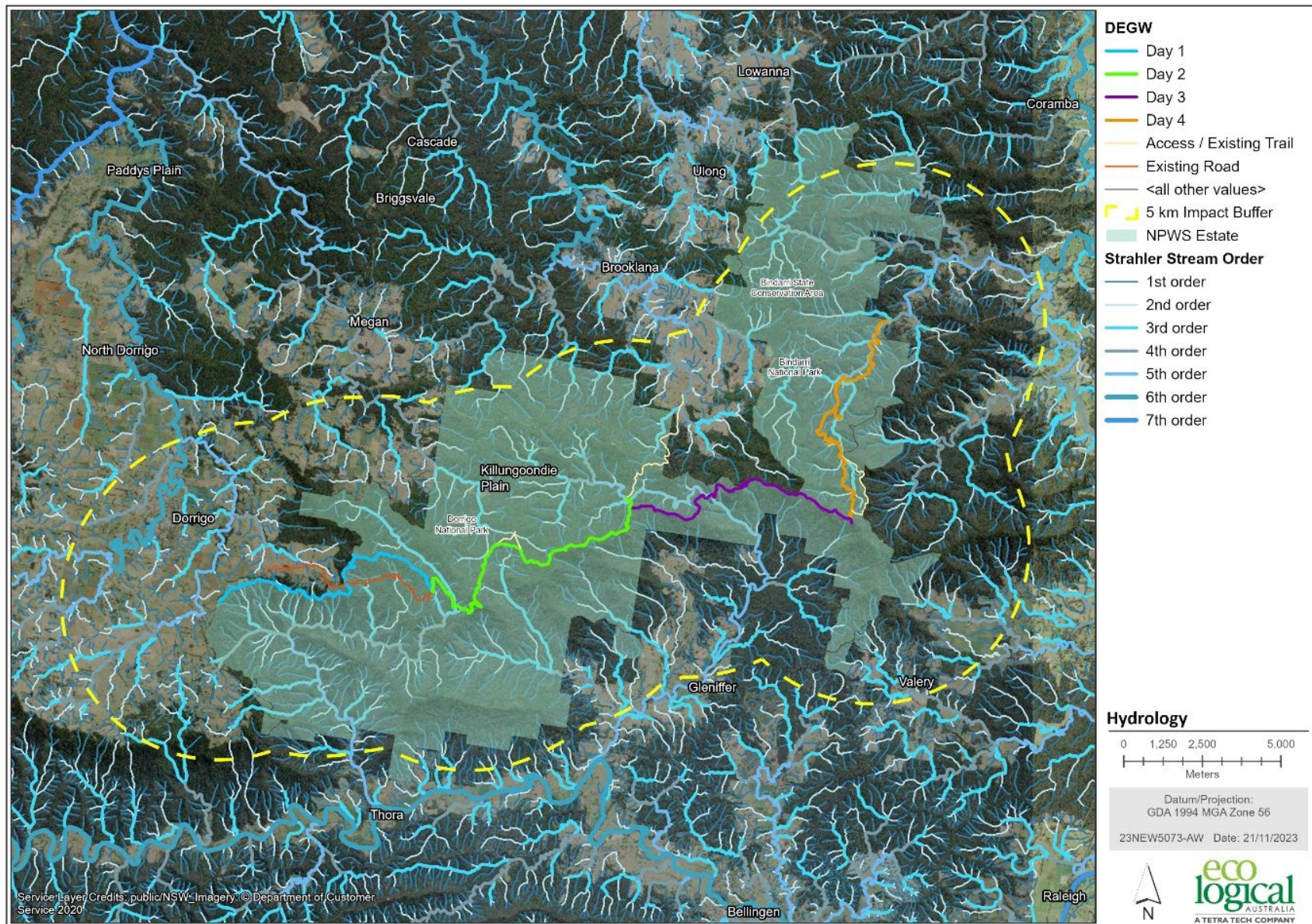


Figure 57 Hydrology

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The DEGW construction will involve 5 new single-span pedestrian bridges greater than 20 m long over key waterways, and one new vehicle bridge. Three waterways are mapped as a key fish habitat area at the crossing location: Urumbilum River, Rosewood River and Never Never River (refer Figure 58 to Figure 61). The waterways are not listed as an important fisheries resource nor identified as having a poor fish community status (NSW Fisheries Spatial Data Portal).

No threatened aquatic species under the Fisheries Management Act, populations or communities are mapped or were observed in the study areas. No threatened aquatic flora listed under the Fisheries Management Act or Environment Protection and Biodiversity Conservation Act are likely to occur near the works, therefore, the works are not expected to directly impact threatened fish or their habitats.

Works would temporarily obstruct fish passage during construction when a silt curtain is suspended parallel to the bank excavation. This impact will be minimal and temporary, given the channel widths and unlikely chance of trapping many fish. Fish passage adjacent to the construction areas will be restored post construction.

DPI Fisheries' *Policy and guidelines for fish habitat conservation and management* (Fairfull 2013) outlines requirements for assessing the impact of waterfront development to ensure the sustainable management, and 'no net loss', of key fish habitats in New South Wales. The proposed works require consultation with DPI Fisheries under the Fisheries Management Act.

There are no declared wild or scenic rivers located within or within the vicinity of the study area.

For the installation of bridges over third order streams, environmental safeguards (such as silt curtains, sediment fences, booms) are to be installed consistent with *Managing urban stormwater: soils and construction* (4th edition Landcom 2004, also known as the 'Blue book') to ensure that there is no escape of turbid plumes into the adjacent aquatic environment.

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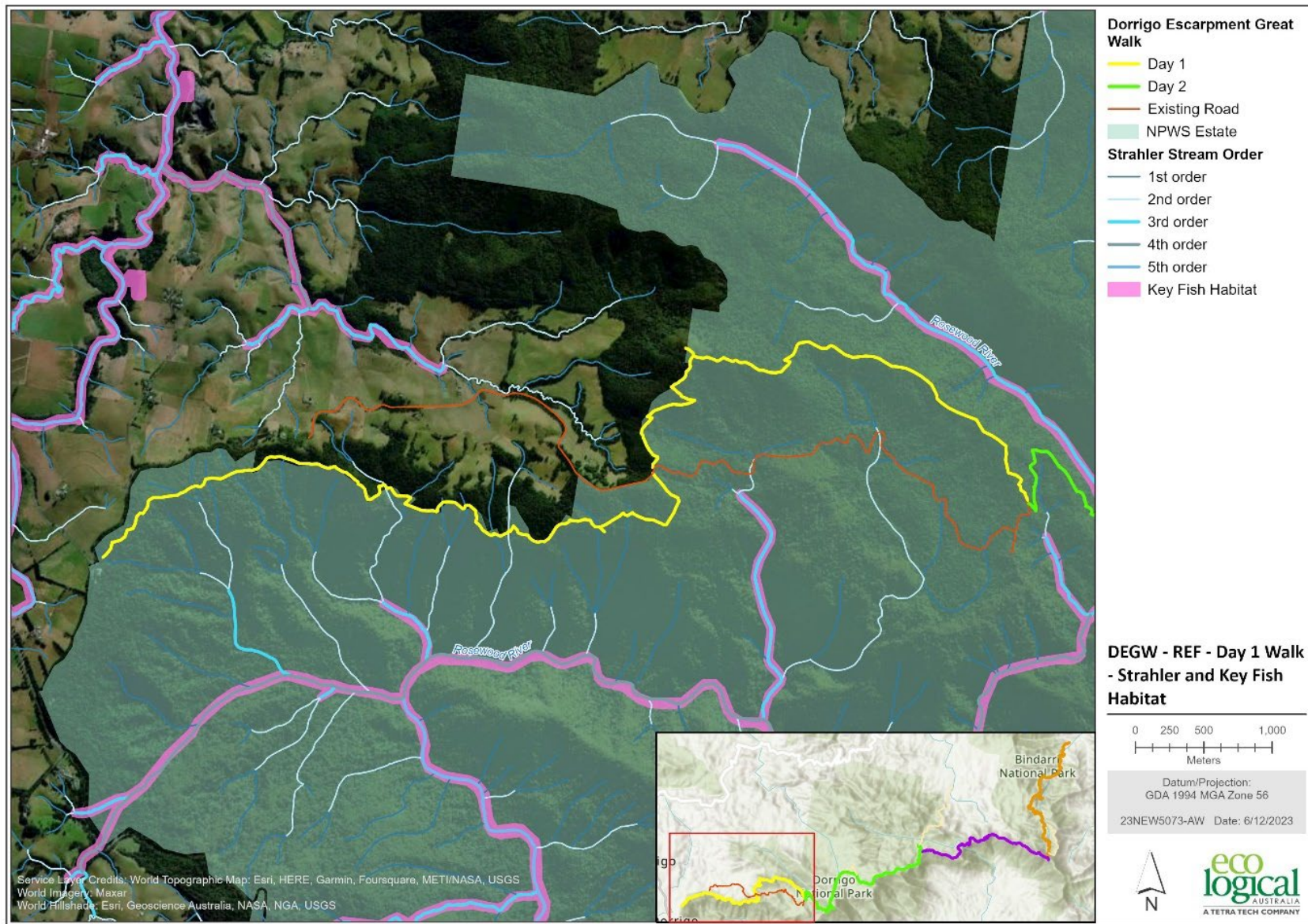


Figure 58 Strahler stream orders and key fish habitat Day 1

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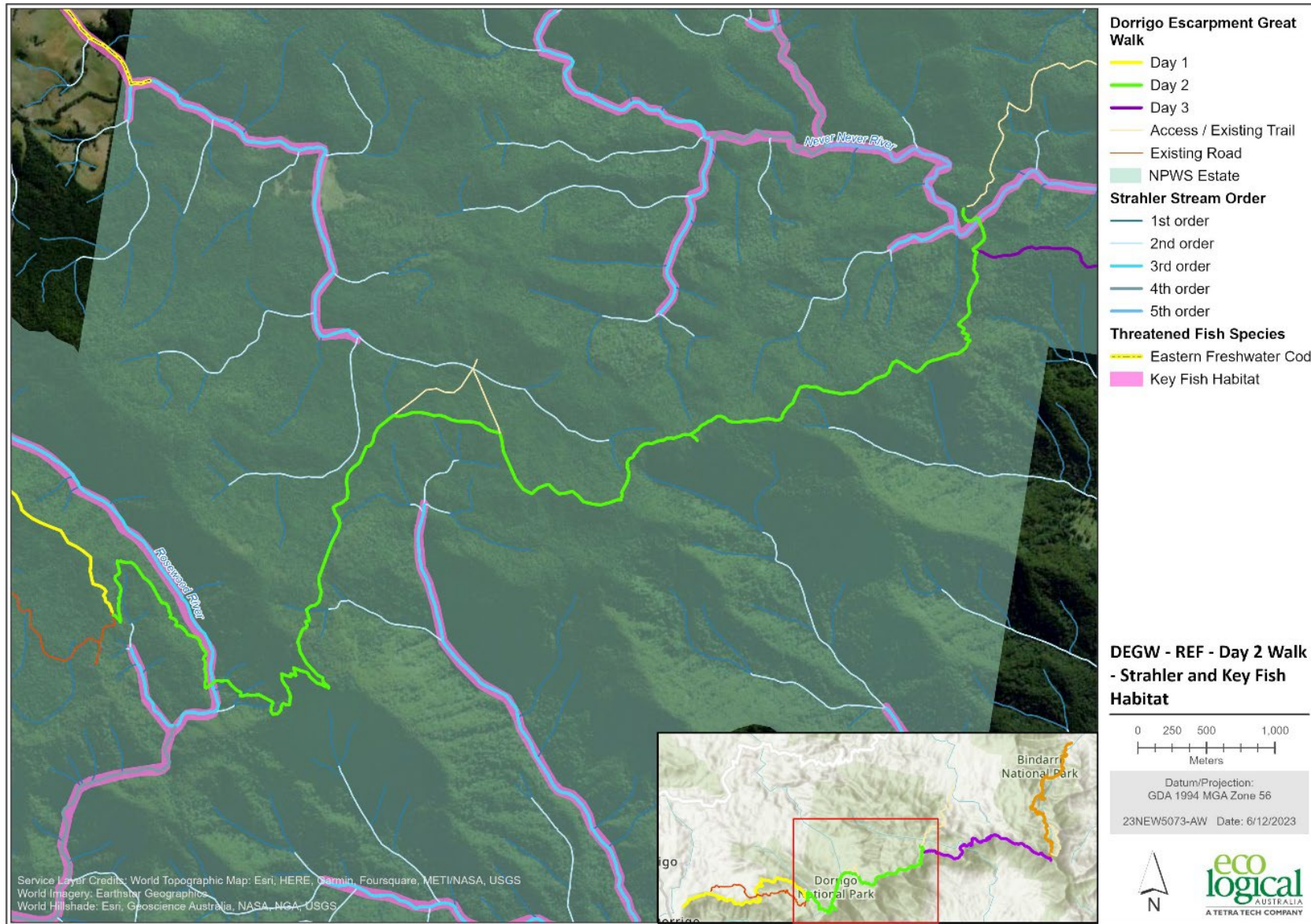


Figure 59 Strahler stream orders and key fish habitat Day 2

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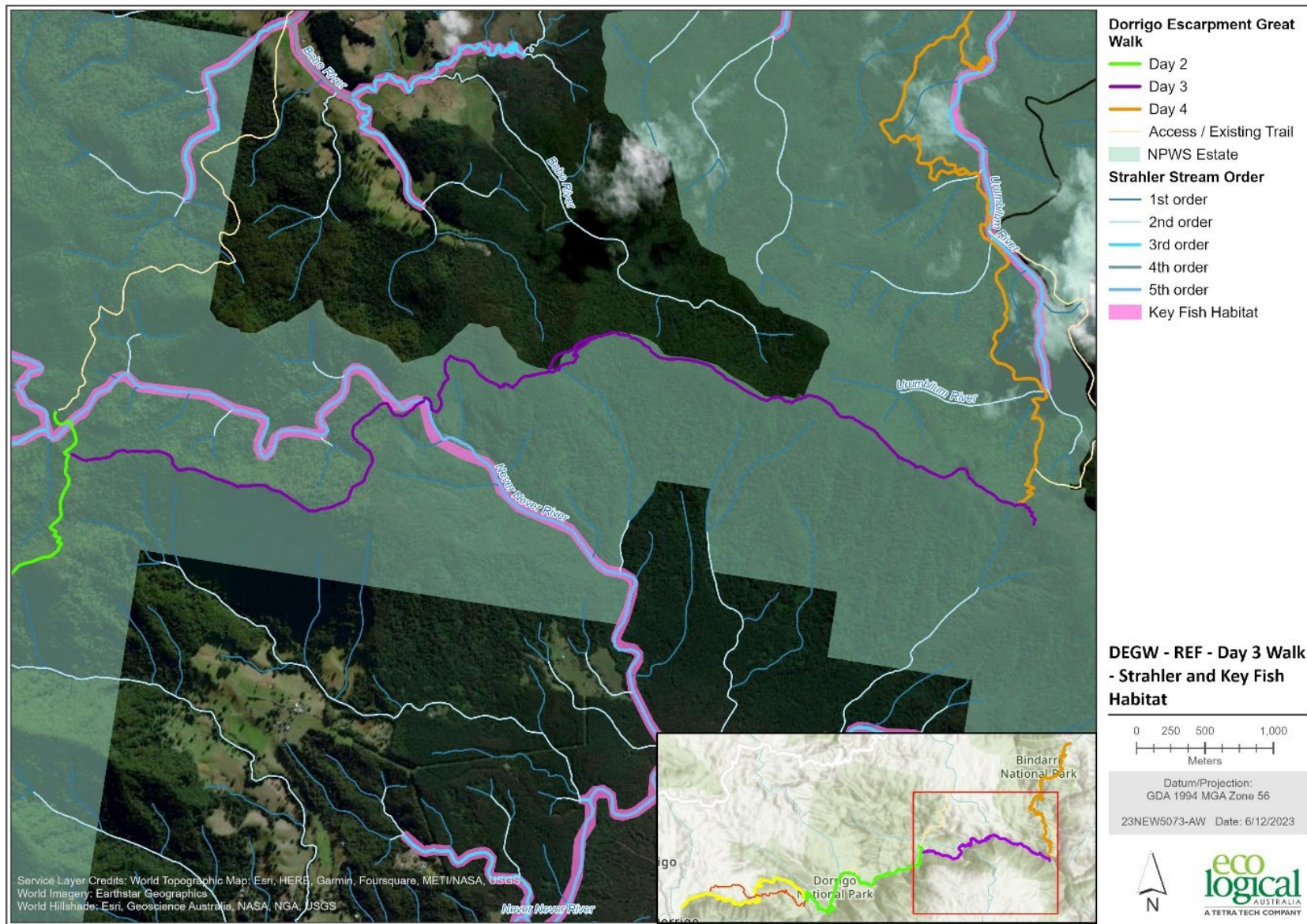


Figure 60 Strahler stream orders and key fish habitat Day 3

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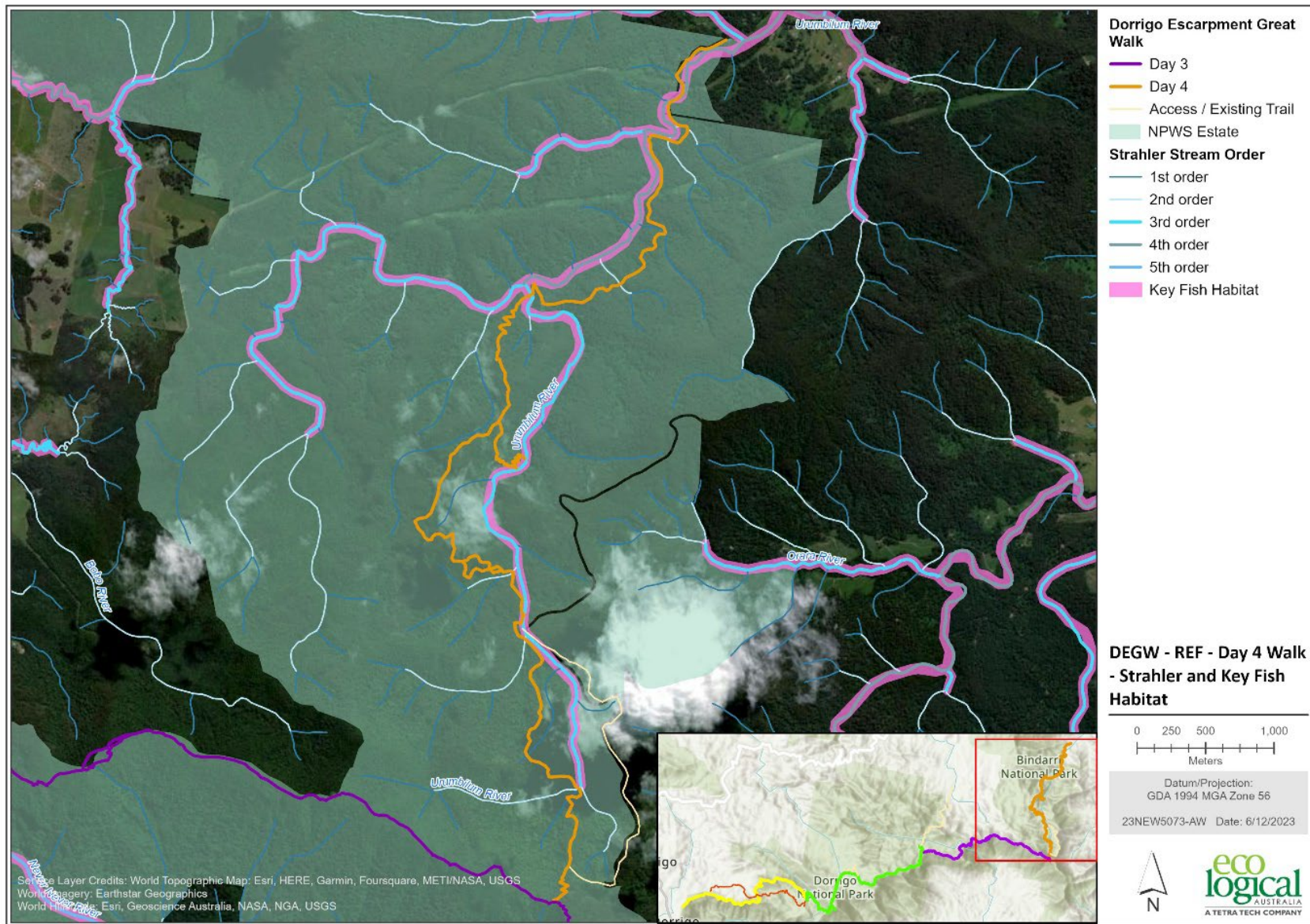


Figure 61 Strahler stream orders and key fish habitat Day 4

8.2.3 Soil types and properties (including contamination)

The proposal covers 7 soil landscapes, and 2 soils groups (refer Figure 62 to Figure 66). The soils can be deep (greater than 150 cm), well-drained minimal krasnozems (Gn3.71), that become shallow significantly on steeper slopes. Limitations include strongly to very strongly acidic soils with low available subsoil water capacity and low subsoil fertility. The steeper slopes are susceptible to high water erosion hazard and can create mass movement hazard (localised). The majority of the study area has rock outcropping and the nature of the rocky outcropping and combination of steep slopes and erosion means there is rock fall hazard (localised). The nature of the landscape has formed shallow and discontinuous soils.

The archaeological potential for these soils is low due to the high acidity, steep nature of the landscape and high erosion hazard. According to NSW Government records, the national park is largely composed of brown podzolic, with areas of krasnozems (refer Figure 62).

In accordance with clause 7.1 of the Bellingen LEP, the study area is not mapped as having acid sulfate soils and is mapped as having negligible or no probability of occurrence.

The proposed works have an extremely low likelihood of encountering contamination.

A key focus of the track design is erosion minimisation and mitigation. The track has been designed to follow the natural contours of the landscape, where possible with the aim of keeping the grade to less than 8 degrees where possible, to minimise erosion and reduce drainage line crossings. The track is designed to enable water to drain from the track surfaces, minimising the potential for erosion.

Moist sections of track are more susceptible to enhanced erosion and rutting, with moist areas likely to encourage walkers to leave the track creating track braiding and potentially impacting the environment. Erosion mitigation measures are included and focus on wet areas and soils with high turbidity.

Steep sections of track are susceptible to erosion and track designs are to incorporate track hardening measures and use of the existing slope to use natural drainage systems.

These sections will be monitored and maintained to ensure the effectiveness of erosion mitigation measures.

Dorrigo Escarpment Great Walk: Review of environmental factors



Figure 62 Great soil groups

Dorrigo Escarpment Great Walk: Review of environmental factors

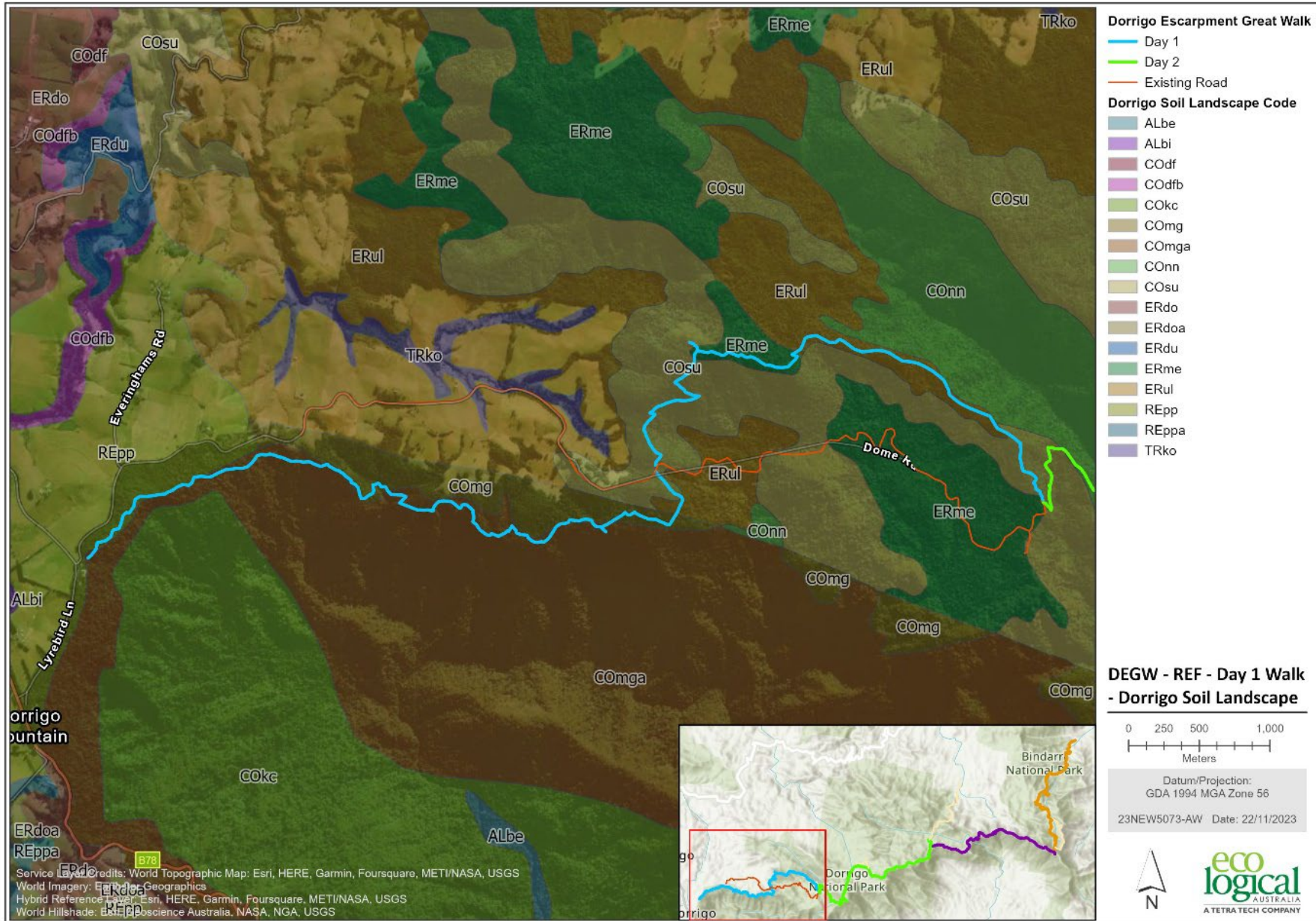


Figure 63 Soil landscape Day 1

Dorrigo Escarpment Great Walk: Review of environmental factors

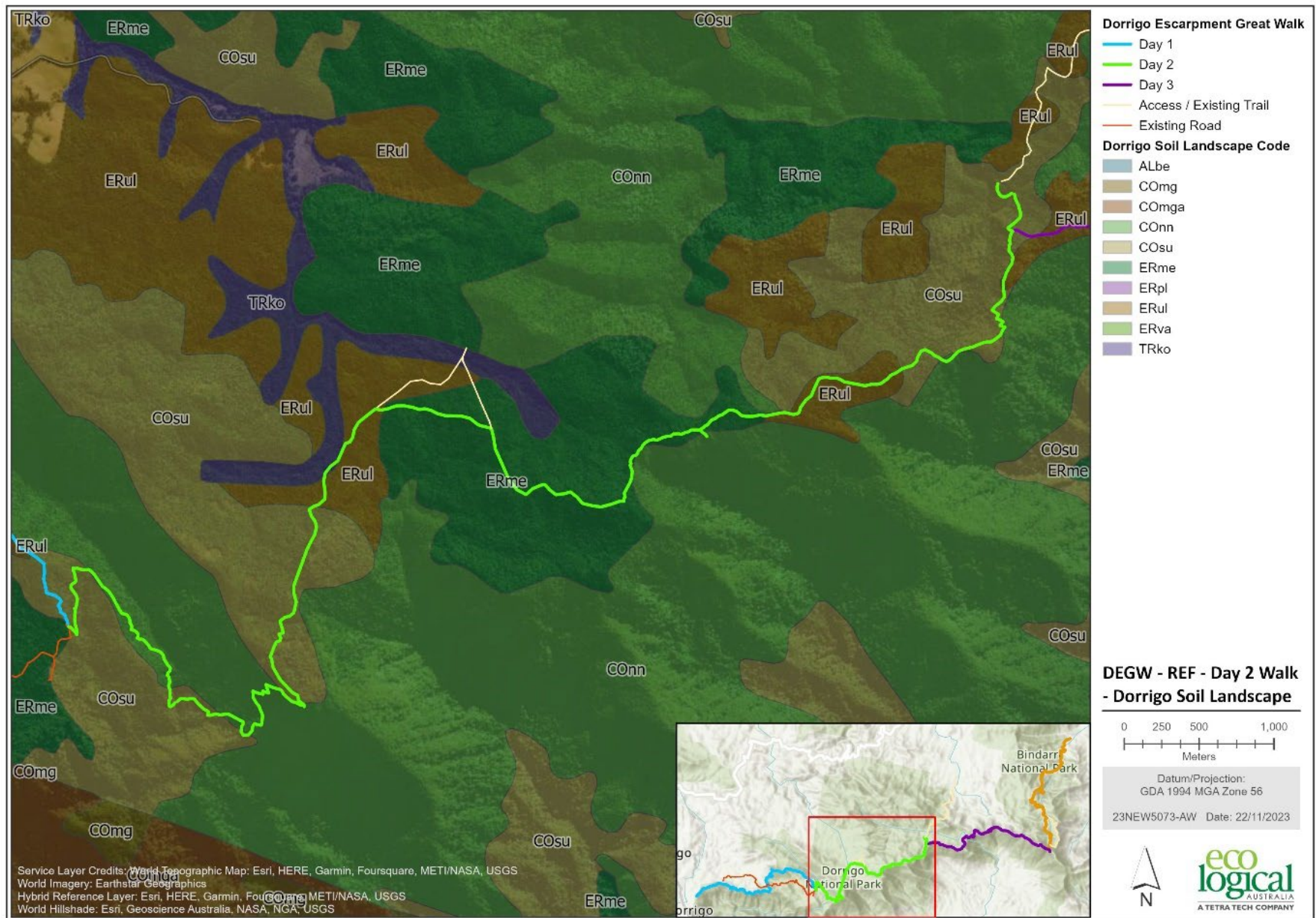


Figure 64 Soil landscape Day 2

Dorrigo Escarpment Great Walk: Review of environmental factors

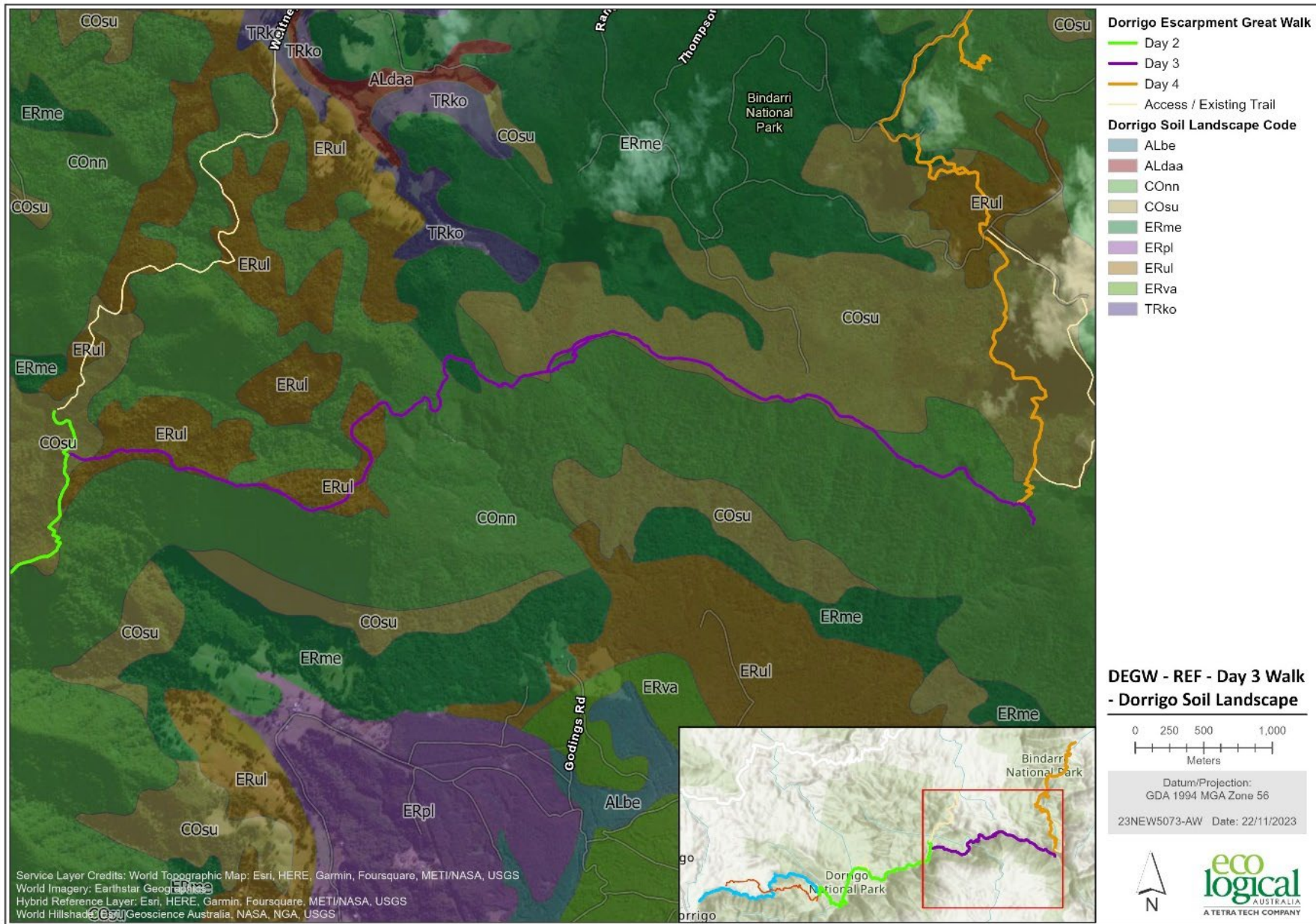


Figure 65 Soil landscape Day 3

Dorrigo Escarpment Great Walk: Review of environmental factors

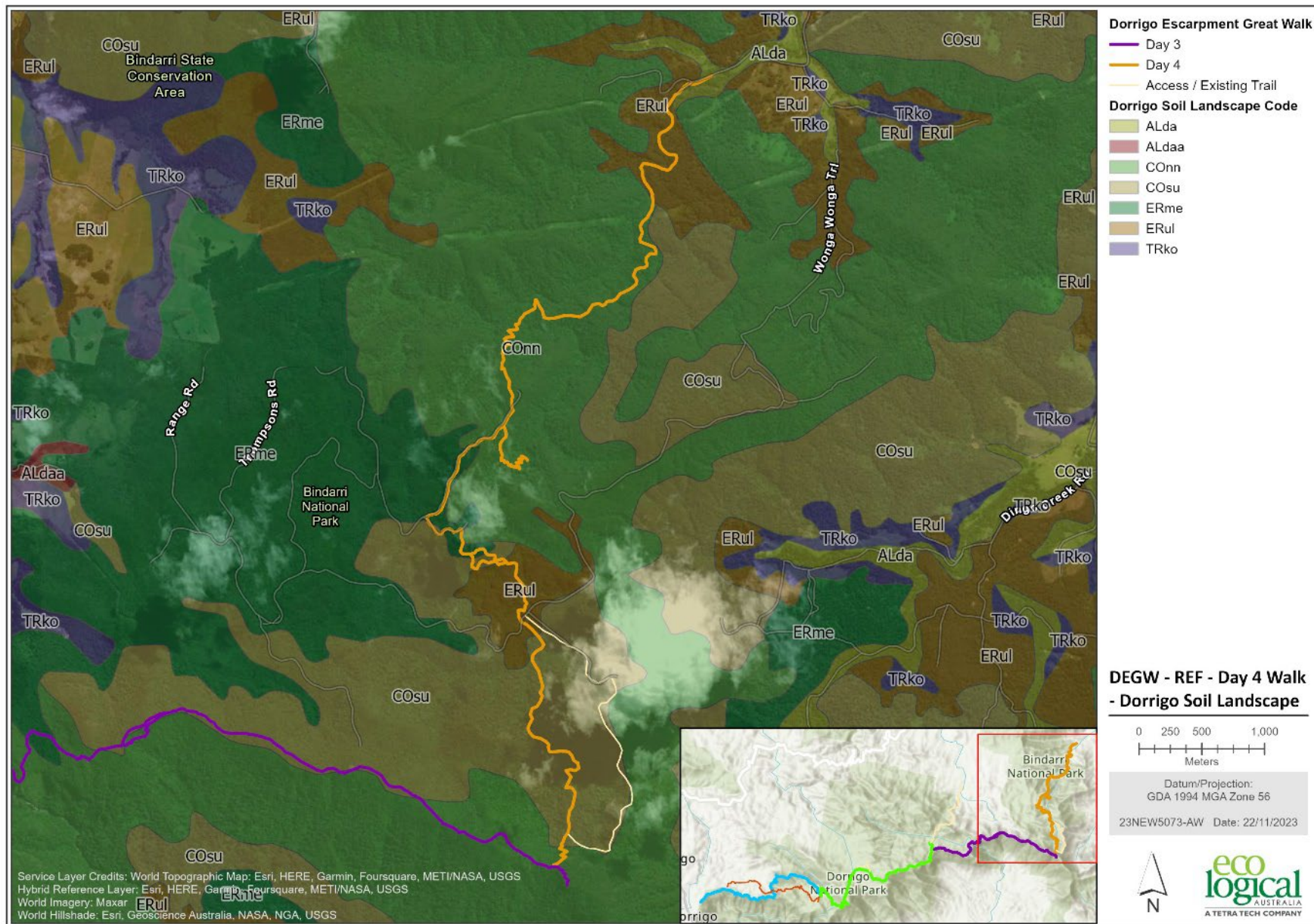


Figure 66 Soil landscape Day 4

8.2.4 Coasts and estuaries

The site is not located within any coastal risk areas or near a coastal wetland or environment under the Resilience and Hazards SEPP.

8.2.5 Areas of outstanding biodiversity value or critical habitat

Areas of outstanding biodiversity value and critical habitat are declared under both the Biodiversity Conservation Act and Environment Protection and Biodiversity Conservation Act. No critical habitat or areas of outstanding biodiversity value are relevant to the proposal area and would not be affected by the project.

8.3 Biodiversity

The proposal was assessed under s 7.3 of the Biodiversity Conservation Act which requires proponents of activities subject to Part 5 of the Environmental Planning and Assessment Act to determine whether they will have a significant impact on threatened species, populations or ecological communities, and if entry into the Biodiversity Offset Scheme is required. Impacts on native vegetation, threatened species, populations and communities listed under the Biodiversity Conservation Act, in addition to relevant matters of national environmental significance (MNES) listed under the Commonwealth Environment Protection and Biodiversity Conservation Act were assessed. Refer to the environmental assessment report (ELA 2024a, supporting document A) and MNES assessment report (ELA 2024b, supporting document B).

Generally, the study area is characterised by high floristic diversity with numerous wet vegetation types. Warm temperate and subtropical rainforest communities and tall wet sclerophyll forest communities dominate the study area with some patches containing elements of old-growth forest. Less prevalent vegetation types include small pockets of cool temperate rainforest and northern montane heath. The vegetation of the study area represents Gondwanan refugia, that is, 'areas in which a large number of primitive and ancient species occur' (NPWS 1998).

The study area is characterised by large tracts of contiguous intact native forests derived from a variety of vegetation communities. These areas are surrounded by rich agricultural lands which were historically cleared in the early 20th century for logging and agricultural practices. Dorrigo NP protects the entire upper catchment of the Rosewood and Never Never rivers and Wild Cattle Creek and is the scenic backdrop for the headwaters of the Bellingen Valley. Bindarri NP provides a link between the Dorrigo Plateau and Mid North Coast hinterland and coastal valley floors. The park protects the headwaters of the Orara and Urumbilum rivers and provides an important scenic backdrop of the Coffs Harbour coast and Bellingen Valley.

Both parks provide excellent connectivity throughout the landscape and act as movement corridors for a diverse range of mobile native fauna and allow for genetic dispersal for a high diversity of native plants.

There are cleared areas on the edge of Dorrigo Plateau on the western boundary of the study area and in the lower Rosewood Valley. These areas once supported rainforest. An important management program is to continue the restoration of these areas back to rainforest. Some of the sclerophyll forest areas, particularly areas that were part of public state forests, have been affected by logging and clearing in the 1950s (NPWS 1998) where obvious signs of thinning, remnant stumps and young regrowth were observed. A number of previously cleared areas on the edges of both parks have been regenerated and are in the process of establishing back to native forest.

8.3.1 Literature review and database search

A review of readily available databases pertaining to the ecology and environmental features of the entire study area and surrounding area, and existing vegetation mapping was conducted to identify records of threatened species, populations and communities and their potential habitat.

Databases and vegetation mapping that were reviewed (see 'More information' section for links to these databases) included:

- previous vegetation mapping under the *State Vegetation Type Map* (accessed March 2023)
- *BioNet* (Atlas of NSW Wildlife; accessed March 2023) database search for threatened species, populations and ecological communities listed under the Biodiversity Conservation Act within the study area and a 5 km buffer area
- *Protected Matters Search Tool* within a 5 km² radius for threatened and migratory species, populations and ecological communities listed under the Environment Protection and Biodiversity Conservation Act
- relevant planning instruments, documentation and information relating to biodiversity values and threatened habitat
- DPI Fisheries *Spatial Data Portal* for threatened fish species and key fish habitat
- aerial photography (Google Street View and Google Earth) of the study area and surrounds were used to investigate the extent of vegetation cover and landscape features
- relevant geographic information system (GIS) datasets (including soil, geology) via *eSpade*.

Species from both BioNet and Protected Matters Search Tool searches were combined to produce a list of threatened species, populations and communities that may occur within the study area. The likelihood of each threatened species, population and community occurring in the study area was then determined based on location of database records, the likely presence or absence of suitable habitat in the study area, and knowledge of the species' ecology. This information informed the subsequent field assessments.

8.3.2 Field survey

The field survey was conducted by Eco Logical Australia ecologists and NPWS staff over 17 days on several occasions to cover the entirety of the study area. Field surveys included:

- validation of existing vegetation mapping, determining type, condition and extent of plant community types (PCTs) and other vegetation types through the collection of field data at 'rapid data points'
- threatened flora survey for potential or likely threatened flora species similar to the parallel field traverse method described in *Surveying threatened plants and their habitats* (DPIE 2020b)
- fauna habitat assessment including the identification and use assessment of habitat features which included foraging resources, hollow-bearing trees, dens/burrows, nests, hollow logs and large woody debris, leaf litter, flaking bark, sphagnum moss, foraging habitat, rocky habitat and aquatic habitat
- opportunistic fauna sightings.

All field data was collected using mobile devices loaded with ESRI Collector for ArcGIS software. Information recorded at rapid data points included: the dominant canopy, midstorey and groundcover species, structural cover condition, vegetation structure, potential PCT, priority or environmental weed species and cover, threatened species and

count, soil texture, fire history, vegetation condition, landform element and pattern, notes, photo number, surveyor, and date recorded. Rapid data points are less comprehensive than floristic plots, however, they allow for rapid identification of PCTs which could then be extrapolated through aerial photographic interpretation. Subsequent vegetation mapping was undertaken using an on-screen digitising approach in ArcPro. Spatial data and rapid data points were loaded into ArcPro and used to guide identification/delineation of the location and extent of vegetation types.

Opportunistic sightings of fauna were recorded on a smart phone. Assessment of the presence of threatened fauna species was determined through a habitat assessment. Where a habitat feature was identified, it was way-pointed with ArcGIS software and details of the habitat feature noted down, including type, signs of use and size.

8.3.3 Vegetation validation

The study area covers approximately 16.86 ha, including a 9.61 ha impact footprint (refer Table 12), and is located on land that predominantly contains remnant vegetation with small portions of existing infrastructure and agricultural land. Field validation undertaken by Eco Logical Australia (2023 to 2024) confirmed the presence of 20 PCTs within the study area (Table 14). Areas containing existing infrastructure, cleared vegetation, exotic pasture and water were also mapped. A well-defined map series of the PCTs recorded across the study area is presented in the ecological assessment report (ELA 2024a, supporting document A).

Detailed vegetation descriptions of PCTs are provided in the ecological assessment report which is a compilation of field survey data collected by staff and information from the *Vegetation Information System*.

Table 14 Plant community types identified within the DEGW

Plant community type	Proposal area (ha)
3019 - Northern Hinterland Baloghia-Booyong Subtropical Rainforest	0.27
3021 - Northern Lowland Subtropical Rainforest	0.03
3031 - Northern Escarpment Coachwood-Beech Rainforest	0.98
3032 - Northern Escarpment Sassafras-Booyong-Corkwood Rainforest	0.29
3033 - Northern Escarpment Sassafras-Prickly Ash Rainforest	0.30
3161 - Mid North Hinterland Wet Forest	0.013
3162 - Mid North Lowland Flooded Gum-Palm Wet Forest	0.05
3165 - Northern Brush Box Subtropical Wet Forest	0.18
3167 - Northern Hinterland Blackbutt-Forest Oak Wet Forest	0.24
3172 - Northern Ranges Brush Box-Flooded Gum Wet Forest	0.23
3174 - Northern Turpentine-Brush Box Wet Forest	0.29
3202 - Mid North Escarpment Ranges Blackbutt Forest	0.78
3203 - Northern Escarpment New England Blackbutt Wet Forest	0.06
3205 - Northern Escarpment New England Blackbutt-Tallowwood Wet Forest	0.03
3206 - Northern Escarpment Corkwood-Brush Box Wet Forest	1.50
3208 - Northern Escarpment Rocky Blackbutt Scrub Woodland	0.03
3248 - Northern Blackbutt-Turpentine Shrub Forest	0.16

Plant community type	Proposal area (ha)
3829 - Eastern New England Rocky Tea-tree Scrub	0.07
4107 - Mid North Escarpment Coachwood Warm Temperate Rainforest	3.61
4107 - Mid North Escarpment Coachwood Warm Temperate Rainforest (Blackbutt emergent)	0.22
Total native plant community types:	9.34
Cleared	0.04
Exotic pasture	0.15
Water	0.05
Total impact area:	9.61

8.3.4 Comprehensive hollow-bearing tree survey

A comprehensive hollow-bearing tree survey was undertaken within the study area. The aim of the survey was to identify all habitat trees within the footprint, due to their importance to diversity and habitat of threatened fauna species.

A total of 114 hollow-bearing trees were identified within the study area. Of these, 10 are likely to be impacted by the development. Table 15 details the number of hollow-bearing trees to be removed (impacted) or retained (not impacted) and their hollow size class. Tree locations are identified on mapping in the ecological assessment report (ELA 2024a, supporting document A).

Table 15 Hollow-bearing trees identified within the study area

Hollow size class	Count
Impacted	
Greater than 300 mm	1
100 to 200 mm	5
50 to 100 mm	2
Stag	2
Subtotal	10
Not impacted	
Less than 50 mm	1
Greater than 300 mm	46
100 to 200 mm	13
200 to 300 mm	23
50 to 100 mm	7
Old-growth (likely hollows)	9
Potential hollow-bearing tree	4
Stag	1
Subtotal	104
Total	114

8.3.5 Watercourses (aquatic habitat)

The walking track crosses 21 first order, 8 second order, 3 third order, one-fourth order, and one-fifth order waterways, as classified by the Strahler stream order system. There are 9 other unmapped waterways that will need to be crossed. Hydrology will be largely unaffected by this development as there will be no significant change in catchment runoff, however, there is marginal potential to increase silt in the waterways during periods of rain.

Most waterways within the study area are typical of the area and are largely ephemeral. The waterways were either not classified as key fish habitat (DPI 2013) and/or based on observations were likely to align to Class 4 (that is, unlikely key fish habitat).

Wild Cattle Creek, Never Never River, Urumbilum River and Rosewood River are recognised as key fish habitat (DPI 2013). Within the study area, these waterways are considered Class 1 watercourses and have well-defined banks, permanent water and pools, and contain freshwater aquatic vegetation, and microhabitats such as rocks, snags and gravel.

No threatened species listed under the Fisheries Management Act are considered likely to occur within any of the aquatic habitat identified. Aquatic habitat assessments were completed at waterway crossings to confirm potential habitat for threatened aquatic species. No threatened aquatic habitat was identified and as such no targeted surveys were required.

Waterway crossings will be designed to have minimal impact on water quality and aquatic ecology, with high-level suspended swing bridges over larger rivers and natural stepping stones where needed at other crossings.

8.3.6 Flora

A total of 247 flora species were identified during the field survey undertaken in 2023 to 2024 (ELA 2024a, supporting document A). Of these, 235 were native and 12 were exotic species.

Seven threatened flora species were identified within the study area during field surveys. Table 16 provides a summary of the number of individuals to be impacted and the area of retained habitat in the study area for threatened flora species. Mitigation measures have also been proposed in Section 9 to minimise impacts.

Table 16 Threatened flora species impact summary

Common name	Scientific name	BC Act	EPBC Act	Retained in study area (m ²)	Impacted (count)
Narrow-leaf finger fern	<i>Grammitis stenophylla</i>	E	Not listed	96	0
Slender marsdenia	<i>Marsdenia longiloba</i>	E	V	20	4
Rusty plum	<i>Niemeyera whitei</i>	V	Not listed	264	40
Milky silkpod	<i>Parsonsia dorrigoensis</i>	V	E	40	4
Scrub turpentine	<i>Rhodamnia rubescens</i>	CE	CE	16	2
Ravine orchid	<i>Sarcochilus fitzgeraldii</i>	V	V	290	44
Cryptic forest twiner	<i>Tylophora woollsii</i>	E	E	5	1

Notes: BC Act = Biodiversity Conservation Act; EPBC Act = Environmental Protection and Biodiversity Conservation Act (Cth); CE = critically endangered; E = endangered; V = vulnerable.

8.3.7 Fauna

The likelihood of occurrence assessments identified that 5 fauna species are known and 43 have potential to inhabit native vegetation that will be directly impacted. Likelihood assessments are contained in the ecological assessment report (ELA 2024a, supporting document A).

To determine the specific impacts on each threatened fauna species, data from the vegetation and habitat assessment conducted for this environmental assessment, along with various resources such as the *BioNet Threatened Biodiversity Profiles*, survey guidelines, determinations and conservation advice were compiled. This information was used to establish suitable habitats similar to species polygons utilised by the NSW *Biodiversity assessment method* (DPIE 2020c) and analysed in ArcGIS. This is summarised in Table 17.

Table 17 Threatened fauna species impact summary

Common name	scientific name	BC Act	EPBC Act	Resources	Habitat	Overall impacts (ha)
Insects						
Pink underwing moth	<i>Phyllodes imperialis</i> southern subspecies	E	E	BioNet Threatened Biodiversity Profiles (TB profiles), vegetation mapping (ELA 2024a), topographic data, field observations	Subtropical rainforest (less than 600 m asl)	0.04
Amphibians						
Pouched frog	<i>Assa darlingtoni</i>	V		NSW survey guide for threatened frogs (DPIE 2020d), topographic data, vegetation mapping (ELA 2024a)	Rainforest and wet sclerophyll forest (greater than 100 m asl)	3.79
Green-thighed frog	<i>Litoria brevipalmata</i>	V		NSW survey guide for threatened frogs (DPIE 2020d), NSW hydrography dataset, vegetation mapping (ELA 2024a), field observations	Rainforest, wet sclerophyll forest and heathlands within 100 m buffer of streams	4.22
Glandular frog	<i>Litoria subglandulosa</i>	V		NSW survey guide for threatened frogs (DPIE 2020d), topographic data, vegetation mapping (ELA 2024a), field observations	Rainforest, wet sclerophyll forest and heathlands (greater than 500 m asl)	1.61
Stuttering frog	<i>Mixophyes balbus</i>	E	V	NSW survey guide for threatened frogs (DPIE 2020d), hydrography dataset, vegetation mapping (ELA 2024a), field observations	Rainforest and wet sclerophyll forest within 500 m buffer of streams	9.27
Giant barred frog	<i>Mixophyes iteratus</i>	E	E	NSW survey guide for threatened frogs (DPIE 2020d), NSW hydrography dataset, vegetation mapping (ELA 2024a), field observations	Rainforest, wet sclerophyll forest and heathlands within 50 m buffer of streams	1.20
Sphagnum frog	<i>Philoria sphagnicolus</i>	V	V	NSW survey guide for threatened frogs (DPIE 2020d), topographic data, vegetation mapping (ELA 2024a)	Rainforest and wet sclerophyll forest (greater than 250 m asl)	3.24

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Common name	scientific name	BC Act	EPBC Act	Resources	Habitat	Overall impacts (ha)
Reptiles						
Stephens' banded snake	<i>Hoplocephalus stephensii</i>	V		TB profiles, vegetation mapping (ELA 2024a)	Rainforest and wet sclerophyll forest; hollows	9.27 and 8 suitable hollows
Rainforest cool-skink	<i>Harrisoniascincus zia</i>		V	Vegetation mapping (ELA 2024a), conservation advice (Cth DCCEEW 2023), topographic data	Rainforest (greater than 500 m asl)	5.34
Non-migratory birds						
Rufous Scrub-bird	<i>Atrichornis rufescens</i>	V	E	Vegetation mapping (ELA 2024a), topographic data, conservation advice (DAWE (2014)	Rainforest and wet sclerophyll forest greater than 600m asl)	6.97
Glossy black-cockatoo	<i>Calyptorhynchus lathami</i>	V	V	TB profiles, vegetation mapping (ELA 2024a), field observations	Wet sclerophyll forest, Hollows (greater than 15 cm diameter)	3.56 and 6 suitable hollows
Little lorikeet	<i>Glossopsitta pusilla</i>	V		TB profiles, vegetation mapping (ELA 2024a), field observations	Wet sclerophyll forest, hollows	3.56 and 8 suitable hollows
White-bellied sea-eagle	<i>Haliaeetus leucogaster</i>	V		TB profiles, vegetation mapping (ELA 2024a)	Wet sclerophyll forest	3.56
Little eagle	<i>Hieraaetus morphnoides</i>	V		TB profiles, vegetation mapping (ELA 2024a)	Wet sclerophyll forest	3.56
White-throated Needletail	<i>Hirundapus caudacutus</i>	V	V, M	Draft referral guideline (DoE 2015a)	Species is almost exclusively aerial	0
Powerful owl	<i>Ninox strenua</i>	V		TB profiles, vegetation mapping (ELA 2024a), field observations	Rainforest and wet sclerophyll forest, Hollows (greater than 20 cm diameter)	9.27 and one suitable hollow
Olive whistler	<i>Pachycephala olivacea</i>	V		TB profiles, vegetation mapping (ELA 2024a)	Rainforest and wet sclerophyll forest	9.27

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Common name	scientific name	BC Act	EPBC Act	Resources	Habitat	Overall impacts (ha)
Scarlet robin	<i>Petroica boodang</i>	V		TB profiles, vegetation mapping (ELA 2024a)	Rainforest and wet sclerophyll forest	9.27
Flame robin	<i>Petroica phoenicea</i>	V		TB profiles, vegetation mapping (ELA 2024a)	Rainforest and wet sclerophyll forest	9.27
Wompoo fruit-dove	<i>Ptilinopus magnificus</i>	V		TB profiles, vegetation mapping (ELA 2024a)	Rainforest and wet sclerophyll forest	9.27
Rose-crowned fruit-dove	<i>Ptilinopus regina</i>	V		TB profiles, vegetation mapping (ELA 2024a)	Rainforest and wet sclerophyll forest	9.27
Superb fruit-dove	<i>Ptilinopus superbus</i>	V		TB profiles, vegetation mapping (ELA 2024a)	Rainforest and wet sclerophyll forest	9.27
Black-breasted Button-quail	<i>Turnix melanogaster</i>	CE	V	TB profiles, vegetation mapping (ELA 2024a)	Rainforest and wet sclerophyll forest	9.27
Masked owl	<i>Tyto novaehollandiae</i>	V		TB profiles, vegetation mapping (ELA 2024a), field observations	Rainforest and wet sclerophyll forest, hollows (greater than 20 cm diameter)	9.27 and one suitable hollow
Sooty owl	<i>Tyto tenebricosa</i>	V		TB profiles, vegetation mapping (ELA 2024a), field observations	Rainforest and wet sclerophyll forest, hollows (greater than 20 cm diameter)	9.27 and one suitable hollow
Migratory birds						
Oriental cuckoo	<i>Cuculus optatus</i>		M	TB profiles, vegetation mapping (ELA 2024a)	Rainforest and wet sclerophyll forest	9.27
Black-faced monarch	<i>Monarcha melanopsis</i>		M	TB profiles, vegetation mapping (ELA 2024a)	Rainforest	5.71
Satin flycatcher	<i>Myiagra cyanoleuca</i>		M	Draft referral guideline (DoE 2015a), vegetation mapping (ELA 2024a)	Wet sclerophyll forest	3.56

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Common name	scientific name	BC Act	EPBC Act	Resources	Habitat	Overall impacts (ha)
Rufous fantail	<i>Rhipidura rufifrons</i>		M	Draft referral guideline (DoE 2015a), vegetation mapping (ELA 2024a)	Rainforest and wet sclerophyll forest	9.27
Spectacled monarch	<i>Symposiachrus trivirgatus</i>		M	Draft referral guideline (DoE 2015a), vegetation mapping (ELA 2024a)	Rainforest and wet sclerophyll forest	9.27
Microbats						
Large-eared pied bat, large pied bat	<i>Chalinolobus dwyeri</i>	V	E	TB profiles, vegetation mapping (ELA 2024a)	Rainforest, wet sclerophyll forest and heathlands	9.34
Eastern false pipistrelle	<i>Falsistrellus tasmaniensis</i>	V		TB profiles, vegetation mapping (ELA 2024a), field observations	Rainforest, wet sclerophyll forest and hollows	9.27 and 10 suitable hollows
Little bentwing-bat	<i>Miniopterus australis</i>	V		TB profiles, vegetation mapping (ELA 2024a)	Rainforest, wet sclerophyll forest and heathlands	9.34 ha
Large bent-winged Bat	<i>Miniopterus orianae oceanensis</i>	V		TB profiles, vegetation mapping (ELA 2024a)	Rainforest, wet sclerophyll forest and heathlands	9.34
Eastern long-eared Bat	<i>Nyctophilus bifax</i>	V		TB profiles, vegetation mapping (ELA 2024a), field observations	Rainforest, wet sclerophyll forest and hollows	9.27 and 10 suitable hollows
Golden-tipped bat	<i>Phoniscus papuensis</i>	V		TB profiles, vegetation mapping (ELA 2024a), field observations	Rainforest, wet sclerophyll forest, hollows and remnant nests	9.27 and 10 suitable hollows
Yellow-bellied sheath-tail-bat	<i>Saccolaimus flaviventris</i>	V		TB profiles, vegetation mapping (ELA 2024a), field observations	Rainforest, wet sclerophyll forest, heathlands and hollows	9.34 and 10 suitable hollows
Greater broad-nosed bat	<i>Scoteanax rueppellii</i>	V		TB profiles, vegetation mapping (ELA 2024a), field observations	Rainforest, wet sclerophyll forest (less than 500 m asl) and hollows	0.80 and 10 suitable hollows

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Common name	scientific name	BC Act	EPBC Act	Resources	Habitat	Overall impacts (ha)
Non-flying mammals						
Eastern pygmy-possum	<i>Cercartetus nanus</i>	V		TB profiles, vegetation mapping (ELA 2024a), field observations	Rainforest, wet sclerophyll forest and heathlands, hollows	9.34 and 8 suitable hollows
Spotted-tailed quoll	<i>Dasyurus maculatus</i>	V	E	TB profiles, vegetation mapping (ELA 2024a), field observations	Rainforest, wet sclerophyll forest and heathlands, hollows	9.34 and 8 suitable hollows
Parma wallaby	<i>Notamacropus parma</i>	V	V	TB profiles, vegetation mapping (ELA 2024a)	Rainforest and wet sclerophyll forest	9.27
Southern greater glider	<i>Petauroides volans</i>	E	E	TB profiles, vegetation mapping (ELA 2024a), field observations	Wet sclerophyll forest and hollows	3.56 and 8 suitable hollows
Yellow-bellied glider	<i>Petaurus australis</i>	V		TB profiles, vegetation mapping (ELA 2024a), field observations	Wet sclerophyll forest and hollows	3.56 and 8 suitable hollows
Brush-tailed phascogale	<i>Phascogale tapoatafa</i>	V		TB profiles, vegetation mapping (ELA 2024a), field observations	Rainforest, wet sclerophyll forest and heathlands, hollows	9.34 and 8 suitable hollows
Koala	<i>Phascolarctos cinereus</i>	E	E	TB profiles, vegetation mapping (ELA 2024a)	Wet sclerophyll forest	3.56
Long-nosed potoroo	<i>Potorous tridactylus</i>	V	V	TB profiles, vegetation mapping (ELA 2024a)	Wet sclerophyll forest and rainforest	9.27
Grey-headed flying-fox	<i>Pteropus poliocephalus</i>	V	V	TB profiles, vegetation mapping (ELA 2024a)	Rainforest, wet sclerophyll forest and heathlands	9.27
Red-legged pademelon	<i>Thylogale stigmatica</i>	V		TB profiles, vegetation mapping (ELA 2024a)	Wet sclerophyll forest and rainforest	9.27

Notes: BC Act = Biodiversity Conservation Act; EPBC Act = Environmental Protection and Biodiversity Conservation Act (Cth); CE = critically endangered; E = endangered; V = vulnerable; M = migratory.

8.3.8 Groundwater-dependent ecosystems

The entire area has been mapped as potentially having groundwater-dependent ecosystems within the study area, with the locality having high groundwater-dependent ecosystems potential. Considering this, riparian vegetation along these waterways is considered to have high potential.

No groundwater aquifer or cave systems were identified within the study area. The proposal is unlikely to have an impact on aquifers or recharge systems.

8.3.9 Threatened ecological communities and species

Under the Biodiversity Conservation Act, 48 listed threatened communities, flora and fauna species were considered to have a moderate to high likelihood of occurrence based on the habitat available within the study area, including one threatened ecological community, 7 threatened flora species and 40 threatened fauna species. Threatened communities, flora and fauna species with a likelihood of occurrence are listed below and those recorded within the study area are shown in the ecological assessment report (ELA 2024a, supporting document A).

Endangered communities

- Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions

Threatened flora

- narrow-leaf finger fern (*Grammitis stenophylla*)
- ravine orchid (*Sarcochilus fitzgeraldii*)
- rusty plum, plum boxwood (*Niemeyera whitei*)
- scrub turpentine (*Rhodamnia rubescens*)

Threatened vine species

- cryptic forest twiner (*Tylophora woollsii*)
- slender marsdenia (*Marsdenia longiloba*)
- milky silkpod (*Parsonsia dorrigoensis*)

Threatened fauna

Insects

- southern subspecies pink underwing moth (*Phyllodes imperialis*)

Amphibians

- pouched frog (*Assa darlingtonia*)
- sphagnum frog (*Philoria sphagnicolus*)
- green-thighed frog (*Litoria brevipalmata*)

Stream-dependent amphibians

- glandular frog (*Litoria subglandulosa*)
- stuttering frog (*Mixophyes balbus*)

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- giant barred frog (*Mixophyes iteratus*)

Reptiles

- Stephens' banded snake (*Hoplocephalus stephensii*)

Aves

- white-throated needletail (*Hirundapus caudacutus*)

Ground and low nesting birds

- rufous scrub-bird (*Atrichornis rufescens*)
- black-breasted button-quail (*Turnix melanogaster*)
- olive whistler (*Pachycephala olivacea*)
- scarlet robin (*Petroica boodang*)
- flame robin (*Petroica phoenicea*)

Raptors and tree nesting birds

- white-bellied sea-eagle (*Haliaeetus leucogaster*)
- little eagle (*Hieraaetus morphnoides*)

Fruit-doves

- wompoo fruit-dove (*Ptilinopus magnificus*)
- rose-crowned fruit-dove (*Ptilinopus regina*)
- superb fruit-dove (*Ptilinopus superbus*)

Hollow-dependent birds

- little lorikeet (*Glossopsitta pusilla*)
- masked owl (*Tyto novaehollandiae*)
- sooty owl (*Tyto tenebricosa*)
- powerful owl (*Ninox strenua*)
- glossy black-cockatoo (*Calyptorhynchus lathamii*)

Microbats

- eastern false pipistrelle (*Falsistrellus tasmaniensis*)
- eastern long-eared bat (*Nyctophilus bifax*)
- little bentwing-bat (*Miniopterus australis*)
- large bent-winged bat (*Miniopterus orianae oceanensis*)
- yellow-bellied sheath-tail-bat (*Saccolaimus flaviventris*)
- greater broad-nosed bat (*Scoteanax rueppellii*)

Fruit-bats

- grey-headed flying-fox (*Pteropus poliocephalus*)

Hollow-dependent mammals

- spotted-tailed quoll (*Dasyurus maculatus*)
- eastern pygmy-possum (*Cercartetus nanus*)
- yellow-bellied glider (*Petaurus australis*)

- southern greater glider (*Petauroides volans*)
- brush-tailed phascogale (*Phascogale tapoatafa*)

Large mammals

- koala (*Phascolarctos cinereus*)
- parma wallaby (*Notamacropus parma*)
- long-nosed potoroo (*Potorous tridactylus*)
- red-legged pademelon (*Thylogale stigmatica*)

8.3.10 Priority weeds

The Biosecurity Act and regulations provide specific legal requirements for state-level priority weeds (Table 18). All plants listed under the Act are regulated with a general biosecurity duty to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable.

Specific legal requirements apply to state-determined priorities under the North Coast regional strategic weed management plan. This plan is currently being updated, however, the obligations under the 2024 to 2027 plan have been included here (North Coast LLS 2022). The plan provides species-specific management objectives and obligations under each management category. Weeds listed as ‘other weeds of regional concern’ under the plan warrant resources for local control or management programs and are a priority to keep out of the region. Inclusion in this list may assist local control authorities and/or land managers to prioritise action in certain circumstances where it can be demonstrated the weed poses a threat to the environment, human health, agriculture and the like.

A total of 12 exotic weed species were recorded within the study area, including 2 Weeds of National Significance (WoNS): lantana (*Lantana camara*) and fireweed (*Senecio madagascariensis*). Three other species, large-leaved privet (*Ligustrum lucidum*), camphor laurel (*Cinnamomum camphora*) and small-leaved privet (*Ligustrum sinense*), are identified as additional species of concern and are listed for asset protection. The weeds present in the study area and associated information are provided in Table 18.

Table 18 Priority weeds and other weeds of concern identified during field survey

Common name	Scientific name	WoNS	Priority weed obligations
Whisky grass	<i>Andropogon virginicus</i>	No	Nil
Sweet vernal grass	<i>Anthoxanthum odoratum</i>	No	Nil
Kikuyu grass	<i>Cenchrus clandestinus</i>	No	Nil
Camphor laurel	<i>Cinnamomum camphora</i>	No	Nil – listed for asset protection
Lantana	<i>Lantana camara</i>	Yes	Mandatory measure prohibits sale within or import into NSW Listed for asset protection
Large-leaved privet	<i>Ligustrum lucidum</i>	No	Nil – listed for asset protection
Small-leaved privet	<i>Ligustrum sinense</i>	No	Nil – listed for asset protection
Velvet milkweed	<i>Marsdenia velutina</i>	No	Nil
Lamb’s tongues	<i>Plantago lanceolata</i>	No	Nil

Common name	Scientific name	WoNS	Priority weed obligations
Fireweed	<i>Senecio madagascariensis</i>	Yes	Mandatory measure prohibits sale within or import into NSW Listed for asset protection
Wild tobacco bush	<i>Solanum mauritianum</i>	No	Nil
Black-berry nightshade	<i>Solanum nigrum</i>	No	Nil

The spread of weed species could occur during construction as an indirect impact of the proposal. Impacts would be greatest during vegetation clearing, and the most likely causes of weed dispersal and importation would be associated with earthworks, movement of soil, and attachment of seed (and other propagules) to vehicles and machinery.

Managing the spread of weed species is particularly important in areas immediately adjacent to the construction footprint. Although the parks are exposed to weed incursion through edge effects, the results of the field investigations identified that weed species did not occur generally within more natural areas of the rainforest.

8.3.11 Introduction and spread of pathogens

The construction and operation of the proposal may result in the introduction and distribution of pathogens, such as viruses and fungi. Pathogens detrimental to biodiversity within the study area include chytridiomycosis, or chytrid fungus, caused by *Batrachochytrium dendrobatidis* for amphibians, *Phytophthora cinnamomic* for causing dieback in plants, and disease-causing rusts (basidiomycete fungi of the order Pucciniales) which affect plants in the family Myrtaceae through myrtle rust. There is evidence that both chytrid fungus and myrtle rust exist in the locality. *Phytophthora* has also been recorded in visitor precincts and at several locations where dieback has occurred in both Dorrigo and Bindarri NPs.

The proposal involves the construction of walking tracks and upgrades to vehicle trails, which are listed as 'high risk' activities for the spread and introduction of pathogens through transport on vehicles, tools and footwear, and through the disturbance of soils. Additionally, increased pedestrian presence will occur during the operation of the DEGW. Given these factors, management for pathogens and invasive weeds will be considered carefully through strict hygiene protocols and ongoing monitoring during the construction and operation of the proposal.

Management of these pathogens is to be included in an overall hygiene management plan within the construction environmental management plan and operational management plan, including strategies for phytophthora, chytrid, myrtle rust and invasive weed management. Management actions should include but not limited to:

1. Hygiene management plan
 - a. hygiene protocols (detailed hygiene protocols are listed in Section 9)
 - b. mapping the presence and absence of the pathogens and weeds into GIS layers
 - c. monitoring of infected areas to determine the impacts of the disturbances on plant, fungal and animal species, populations and assemblages
 - d. continued sampling and monitoring of the occurrence and spread of the pathogen, including land adjacent to the proposal within the NPWS estate.
2. Monitoring or testing of flora for susceptibility to phytophthora and myrtle rust, and amphibians for chytrid.

Detailed management actions will be provided in the hygiene management plan within the construction environmental management plan and operational management plan and Section 9.

8.3.12 Vegetation trampling and littering from human activity

Increased human activity is required for the construction of the proposal and is expected during the proposal operation. Indirect impacts associated with increased human activity include trampling of vegetation and littering. These impacts have the potential to degrade the local vegetation. Several mitigation measures have been recommended in Section 9 to reduce risks associated with increased human activity.

Noise associated with an increase in human activity is likely to impact local resident fauna, particularly during breeding seasons, from construction of the proposal. Fauna may be deterred from the study area during these times. It is expected that impacts associated with noise will peak during construction and diminish during operation to an extent considered unlikely to significantly affect fauna. During construction, mitigation measures are provided in Section 9 to identify and avoid noise impacts on any identified breeding sites.

8.3.13 Potential impacts

Construction

Removal of native vegetation

It is estimated that up to a maximum of 9.61 hectares of native vegetation may require removal. Vegetation requiring removal provides suitable habitat and habitat features for a range of threatened fauna species listed under the Biodiversity Conservation Act and/or Environment Protection and Biodiversity Conservation Act. As such, direct impacts to habitat for threatened fauna species would occur during construction. The direct impacts of the proposal on threatened fauna habitat have been estimated based on a worst-case scenario, that is, removal of all vegetation within the construction footprint. However, the actual construction impact will be much less than this worst case.

The proposal has potential to have minor impacts to Type 1 (highly sensitive) and Type 3 (minimally sensitive) key fish habitat. Impacts on Never Never River, Urumbilum River and Rosewood River would include construction of bridges over the waterways. Specific impacts which may arise from the construction of the bridges could include:

- direct impacts on substrate and groundcover vegetation which may induce sedimentation, erosion and edge effects
- long-term shading of the waterway.

Invasion and spread of weeds and pests

The spread of weed and pest species could occur during construction as an indirect impact of the proposal. Impacts would be greatest during vegetation clearing with the most likely causes of weed dispersal and importation being associated with earthworks, movement of soil, and attachment of seed (and other propagules) to vehicles and machinery.

Invasion and spread of pathogens and disease

The following pathogens are considered to have potential to affect biodiversity within the construction footprint:

- amphibian chytrid fungus (caused by *Batrachochytrium dendrobatidis*)
- exotic rust fungi (Pucciniales, for example myrtle rust fungus caused by *Uredo rangelii*)
- phytophthora root rot fungus (caused by *Phytophthora cinnamomi*).

The construction and operation of the proposal may increase the risk of disturbing and spreading these pathogens. With the implementation of appropriate mitigation measures, the risk of these pathogens would be low.

Changes to hydrology

The study area's natural soil infiltration features and properties have been used as philosophy to minimise impacts associated with hydrology, however, the proposal would result in further alteration to hydrology due to an increase in surface runoff.

Groundwater-dependent ecosystems

The proposal has potential to directly and indirectly interfere with groundwater flows associated with the groundwater-dependent ecosystems identified within the study area. These impacts would be largely associated with construction activities within proximity to rivers, creeks and their tributaries. The proposal is unlikely to impact changes to hydrology and sedimentation.

Noise, light and vibration

There is potential for impacts to fauna from noise and vibration during construction, however, with the majority of construction being undertaken by hand, and the short-term nature of the works, the magnitude of this impact would be low. Specific mitigation measures are deemed necessary to identify breeding sites and avoid these areas until breeding is complete.

Injury and mortality

Injury and mortality of fauna could occur during construction activities when:

- vegetation and habitat are being cleared
- machinery and plant are moved to, from and onto site.

Operation

The proposal would not fragment habitat and not result in an increase in isolation of habitats by increasing physical distance between habitats. As such, the proposal is unlikely to have an impact on nomadic or migratory species. The proposal would not prevent fauna movement between habitats and no impassable barriers would be constructed.

The predicted level of impact is not likely to prevent breeding and dispersal of plant pollinators or the dispersal of plant propagules, that is, seed or other vegetative reproductive material, between habitats.

Edge effects on adjacent native vegetation and habitat

The proposal would likely introduce some new potential edge effect areas by incrementally increasing edge areas. However, given the narrow linear nature of the DEG, this increase is likely to be of low magnitude.

Noise, light and vibration

Even though noise and vibration levels would increase during operation of the proposal, biodiversity are unlikely to be significantly affected given the intermittent nature of impacts (mainly human movement).

Use of lighting in the evening/night associated with the operational phase (camps) of the proposal may result in impacts on nocturnal fauna. The magnitude of this impact would be low and mitigation measures are not deemed necessary, however, lighting will be low voltage and limited to internal only areas in the camp meal preparation huts. Additionally, there are species which forage on insects attracted to lights, thereby lighting as part of the proposal may benefit some species.

Injury and mortality

Injury and mortality of fauna could occur when the walk is operational. As there is no definitive data on current rates of kill or fauna population densities in the study area, the consequences of loss on local populations of fauna are relatively unknown, however, significant impacts are considered unlikely.

Conclusion on significance of impacts

The proposal is not likely to significantly impact threatened species or ecological communities or their habitats, within the meaning of the Biodiversity Conservation Act or Fisheries Management Act and therefore neither a species impact statement nor a biodiversity development assessment report is required. The proposal is not likely to significantly impact threatened species, ecological communities or migratory species, within the meaning of the Environment Protection and Biodiversity Conservation Act.

8.3.14 Recommendations

To minimise the potential impacts from the DEGW and improve environmental outcomes, several recommendations to mitigate potential impacts have been recommended.

Residual impacts included both 'direct' and 'indirect' impacts which have been assessed in the ecological assessment report (ELA 2024a, supporting document A). Measures provided in Section 9 to mitigate potential impacts related to sediment and erosion control, hollow-bearing trees, pathogen and invasive weeds, and construction must be implemented otherwise additional assessment may be required. Importantly, it is imperative that strict hygiene protocols are implemented prior to and during construction, and during operation to prevent the spread of known pathogens occurring within the locality by humans and vehicles including phytophthora, chytrid fungus, myrtle rust and invasive weeds.

Given the design of the DEGW and the mitigation proposed, the potential adverse cumulative impacts of the proposal are expected to be negligible. The proposal is not likely to:

- significantly impact threatened species or ecological communities or their habitats, within the meaning of the Biodiversity Conservation Act or Fisheries Management Act
- significantly impact threatened species, ecological communities or migratory species, within the meaning of the Environment Protection and Biodiversity Conservation Act, therefore, no biodiversity offsets are required for threatened biota listed under the Act.

8.4 Aboriginal cultural heritage

An Aboriginal cultural heritage assessment (ACHA) was prepared by Eco Logical Australia (ELA 2024c, supporting document C) to assess potential impacts to Aboriginal cultural heritage as a result of the proposal. The ACHA report has not been published due to cultural sensitivities. Any requests to view the ACHA report will need to be reviewed by the participating registered Aboriginal parties.

8.4.1 Methodology

The proposal is subject to an investigation specific to the current study area, including field survey. Searches of the Aboriginal Heritage Information System (AHIMS) database were carried out to identify any registered Aboriginal archaeological sites (Aboriginal objects, as defined under the National Parks and Wildlife Act) and declared Aboriginal places (as defined under the Act) located in the study area. None were identified.

An Aboriginal archaeological field survey was then carried out with representatives from local Aboriginal land councils (LALCs) and organisations, to search and to determine whether any previously unrecorded sites were located in the study area. The results of the survey informed the initial design development and environmental assessment.

8.4.2 Aboriginal consultation

NPWS carried out preliminary consultation with the LALCs and local Gumbaynggirr representatives as part of the early investigations for the DEGW. The formal ACHA process commenced on the 5 October 2023. Consultation was undertaken in line with the *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW 2010a).

Stage 1 – Notification of project proposal and registration of interest

Aboriginal people and organisations who may hold cultural knowledge relevant to determining the significance of Aboriginal objects or places were invited to register for the proposal. A total 16 Aboriginal parties registered and were directly involved with the project assessment.

Stages 2 and 3 – Presentation of information about the proposal, and gathering information about cultural significance

Following the registration of Aboriginal parties, Eco Logical Australia presented the project information, proposed ACHA methodology and archaeological survey methodology to the registered Aboriginal parties for review. A workshop was organised prior to undertaking the archaeological surveys to present the project information to the registered groups and to provide an opportunity for the groups to comment on the ACHA assessment methodology.

A range of Aboriginal organisations participated in the surveys of the route with Aboriginal sites officers, contributing over 300 survey hours over 6 months of surveys.

Stage 4 – Review of draft cultural heritage assessment report

Following the completion of the archaeological surveys, the draft ACHA was provided to the Aboriginal groups for review. NPWS organised an on-Country meeting with the Aboriginal groups to provide a summary of the ACHA process and the results of the surveys. The meeting was designed to facilitate access for the Gumbaynggirr cultural knowledge holders who were not able to participate in the fieldwork and to provide an opportunity to comment on the ACHA results and to contribute to the proposed mitigation measures.

8.4.3 Archaeological context

Regionally, archaeological studies suggest that site distribution is characterised by proximity to permanent water sources and along the prominent ridge lines that lead from the coastline up into the hinterland. Archaeological evidence in the vicinity of third order creek lines and above may comprise larger artefact scatters with evidence of repeat occupation. Additionally, elevated areas adjacent to creek lines and spurs or crests can be archaeologically sensitive landforms. Ridge lines and crests are likely to contain modified trees, low-density artefact scatters (due to the transient nature of the landform) and ceremonial sites.

The most common site types regionally are open artefact sites followed by Aboriginal Ceremony and Dreaming sites and modified trees. One AHIMS site has been registered within the footprint of the proposed DEGW study area along with potential of another site (scar tree). Both sites are avoided by the proposed DEGW.

Archaeological implications for the study area based on previously recorded sites, archaeological investigations in the region, predictive models, and the site's environmental characteristics are as follows:

- open sites containing artefacts are by far the most recorded in the surrounding area, located primarily on terraces adjacent to perennial streams
- larger artefact sites are predicted to occur in less disturbed areas with proximity to water sources third order and above; low-density sites are expected along lower order streams or along saddles or flat locations
- Aboriginal Ceremony and Dreaming sites or songlines may be present between the sites as the proposed walk cuts between 2 registered sites.

8.4.4 Survey results

Several significant Aboriginal cultural sites were identified. In keeping with the main aims of NPWS, to protect and conserve Aboriginal cultural values within Dorrigo NP and Bindarri NP, there have been modifications to the proposed walk route to avoid cultural sites. 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 the AHIMS database.

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.

Dorrigo Escarpment Great Walk: Review of environmental factors

- 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 landholders, 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.

8.4.5 Summary of cultural heritage values

Cultural and social

The Dorrigo escarpment and rainforest is the meeting point between the inland groups and the coastal groups. As well as this, it was a meeting place between other language groups. It was a formidable barrier with specific pathways to traverse the steep and dangerous country. The ridge lines and spurs have been used today to create tracks up from the Bellinger Valley and it is likely these are original Aboriginal travelling routes.

Scientific

Potential culturally modified trees and Aboriginal artefacts were identified during the very early stages of investigations by NPWS. The track route has been altered to avoid impacts or harm to these potentially highly scientific and culturally valuable sites.

Archaeological surveys elsewhere in the northern forests of New South Wales have demonstrated that the material record of Aboriginal use of the rainforest is elusive, sometimes cryptic. The record is easily disturbed and often has been destroyed by recent or past use of the land.

No Aboriginal objects or places with potential archaeological value were identified during the archaeological surveys. It has been assessed that the DEGW has low potential for archaeological deposits due to the geology and soils present.

If Aboriginal objects are identified within the DEGW in areas that have experienced low disturbance they would have high scientific value and would be rare, have research potential and educational value for the Aboriginal community.

Aesthetic

Remnant old-growth forests are of high aesthetic value as they represent the Aboriginal landscape before contact. The large trees create an open forest that is easily navigable and likely provided shelter from the elements.

The high points and proposed lookout locations provide a scenic view across the Bellinger Valley and have been highlighted by the Aboriginal community as locations that would have afforded a vantage point of activities within their territories.

8.4.6 Potential impacts

The construction of DEGW will not significantly impact on the cultural, social, historic, aesthetic values of the Dorrigo NP and Bindarri NP.

Aboriginal objects or areas of archaeological potential have not been identified within the study area. There are no current known impacts to the scientific values. There is the potential for Aboriginal objects to be harmed by the construction of the DEGW, however, the main aim of NPWS and the DEGW is to avoid harm to Aboriginal objects or places of cultural significance. The potential harm anticipated would be to artefact scatters and isolated finds. If these site types are encountered during construction activities and the built features cannot be moved, the type of harm will be 'movement' out of the impact areas following appropriate recording of the site.

8.4.7 Recommendations

Communication

Ongoing consultation with registered Aboriginal stakeholders will take place throughout the life of the project. Wherever possible, it is recommended NPWS engage with Aboriginal contractors during construction. In the event of an unexpected find being identified during works, Aboriginal groups must be consulted. Wherever movement of Aboriginal objects is implemented, Aboriginal groups must be provided the opportunity to be involved in the movement of Aboriginal objects.

Cultural heritage inductions

Construction and operation teams, including subcontractors, machine operators and earth moving contractors should undergo site inductions concerning Aboriginal cultural heritage issues, prior to working on the site. This induction should inform workers and contractors of:

- potential Aboriginal objects that could be identified during the construction phase
- the need to avoid sensitive areas identified during the archaeological and NPWS surveys
- the legislative protection for all Aboriginal objects under s 90 of the National Parks and Wildlife Act
- implementation of specific protocols that have been put in place.

Aboriginal unanticipated finds protocol

An Aboriginal object is anything which is the result of past Aboriginal activity. This includes stone (artefacts, rock engravings etc.), plant (culturally modified trees) and animal, such as bone (if showing signs of modification, that is, smoothing, use).

Cultural heritage significance is assessed by the Aboriginal community and is typically based on traditional and contemporary lore, spiritual values and oral history, and may also consider scientific and educational value. The protocol to be followed if previously unrecorded or unanticipated Aboriginal object(s) are encountered is provided in the ACHA report (ELA 2024c).

Discovery of human remains

If suspected human skeletal remains are uncovered at any time throughout undertaking the proposed works, procedures outlined in requirement 25 of the *Code of practice for archaeological investigation of Aboriginal objects in NSW* (DECCW 2010b) would be

followed. In all cases, the special importance of Aboriginal ancestral remains must be acknowledged and respected and the wishes of the Aboriginal community must be respected when making decisions regarding ancestral remains. To avoid doubt, the precautionary principle must be applied to all physical remains suspected to be Aboriginal ancestral remains. If any human remains are disturbed in, on or under the land, protocols are provided in the ACHA report (ELA 2024c).

Aboriginal community roles and involvement

Ongoing consultation with registered Aboriginal stakeholders will take place throughout the life of the project, to implement a care and control agreement of retrieved artefacts and in the event of any unexpected Aboriginal objects being identified during works.

Ongoing opportunities

Through the construction and subsequent operational phases of the walk, Aboriginal participation and opportunities will be actively encouraged and pursued in various aspects of the walk construction and operation, from interpretation and guiding to ongoing park management roles.

Track Ranger Program

The DEGW proposes the use of a Track Ranger Program whereby a ranger or guide walks the track regularly conducting maintenance, providing interpretation and emergency response, law enforcement and general public interface. The track ranger approach provides the eyes, ears and a public contact which helps address risks, maintenance of facilities and provides a source of knowledge and interpretation that will enhance the visitor experience.

The track ranger could be a permanent role for a member of the Aboriginal community or a contract seasonal role or a combination, and could expand and contract according to visitor numbers. Further work is required on the financial sustainability which will determine the level of servicing which will be influenced by the daily capacity and forecast occupancy. Camp host volunteer options for the camps could also be considered during busy holiday periods.

Mitigation measures

All Aboriginal objects, known or unknown and regardless of significance, in situ or subjected to disturbance, are protected under the National Parks and Wildlife Act. There are circumstances where, despite conducting surface or subsurface heritage assessments prior to commencement of the works, unexpected Aboriginal objects which may be of cultural or scientific significance are encountered.

An 'unexpected find' is any unanticipated discovery of an actual or potential Aboriginal object or site for which NPWS does not have an approval to disturb or does not have a safeguard in place to manage the disturbance. Unexpected finds include Aboriginal objects (sites) and Aboriginal ancestral skeletal remains. Detailed procedures are provided in the ACHA.

Wherever artefacts have been identified within the study area, the Aboriginal community should be provided the opportunity to collect and relocate the artefacts prior to any new works occurring. The collection of artefacts should be undertaken in line with the methodology in the ACHA report (ELA 2024c). Other mitigation measures are outlined in Section 9.

8.5 Non-Aboriginal heritage

8.5.1 Methodology

The non-Aboriginal heritage assessment was undertaken in accordance with the documents *Assessing heritage significance* (DPE 2023a) and *Guidelines for preparing a statement of heritage impact* (DPE 2023b). It included both desktop research and archaeological field survey.

8.5.2 Desktop research

Heritage database searches were conducted in 2023 and 2024 to identify heritage items located within or in proximity to the study area. The following registers were reviewed during the search:

- World Heritage List
- National Heritage List
- Commonwealth Heritage List
- NSW State Heritage Register
- NSW section 170 Heritage and Conservation Registers (s 170 registers)
- NPWS Historic Heritage Information System (HHIMS) register
- Bellingen LEP 2010.

In addition to the heritage register searches, the desktop assessment also included background research into the historical development of the study area using historical plans, aerials, photographs, newspapers and other primary and secondary historical sources, as relevant. This research was used to determine the historical context of the construction footprint and identify any potential for additional heritage items to be present within or adjacent to the construction footprint.

8.5.3 Field survey

A field survey of the study area was undertaken over 10 days during July 2023, October 2023 and February 2024 by Eco Logical Australia. The survey was conducted on foot, walking across all accessible sections of the DEGW.

Data was recorded using a handheld GPS unit. All known historic sites and items observed during the survey were recorded and photographed.

Review of potential impacts to items of heritage significance

Results from the desktop research and field survey components of the assessment were utilised to identify the heritage items within the vicinity of the study area and identify the heritage significance of each item. Following this, the assessment determined whether the proposed works would result in direct or indirect impacts to the identified significance of non-Aboriginal heritage.

Part of the study area is within Dorrigo NP which is of World Heritage significance and is located within the curtilage of the New England Group of the 'Gondwana Rainforests of Australia' heritage item listed on the State Heritage Register (SHR #1002), National Heritage List (NHL #105704) and World Heritage List (WHL #368). The significant values of the Gondwana Rainforests of Australia comprise evolutionary history, ongoing geological and biological processes, exceptional biological diversity and habitat for many threatened species of plants and animals.

Dorrigo Escarpment Great Walk: Review of environmental factors

Parts of the study area, primarily located in Bindarri NP, are located within the 'High Conservation Value Old Growth Forest' heritage listed item listed on the State Heritage Register (#1487). Part of the study area is within the 'Escape Road' archaeological site listed on the Bellingen LEP (Item #A50). Heritage listings are identified in Figures 67, 68 and 69.

A statement of heritage impact was prepared (ELA 2024d, supporting document D).

Review of environmental factors: Dorrigo Escarpment Great Walk

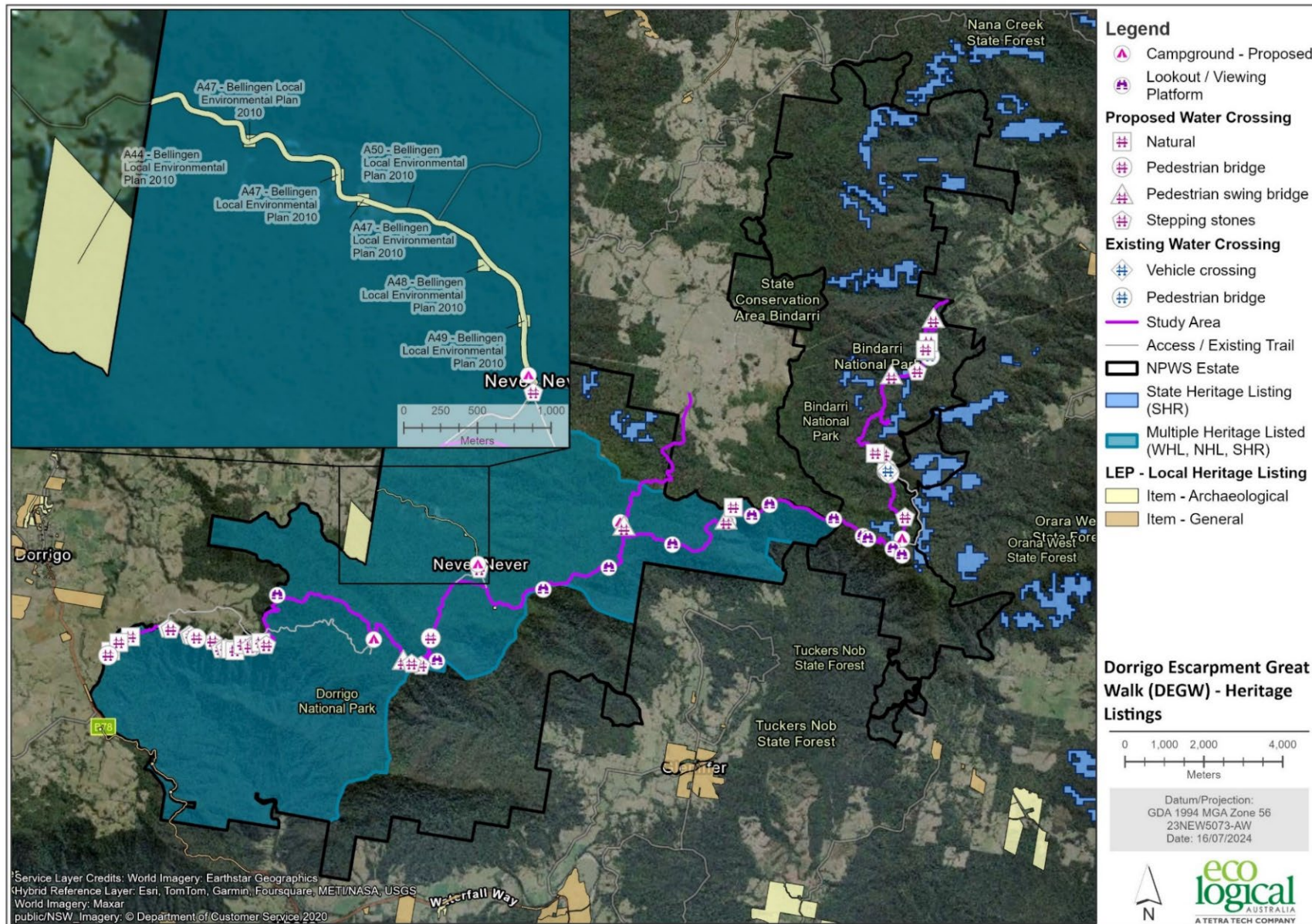


Figure 67 Dorrigo NP heritage listed sites in relation to the study area

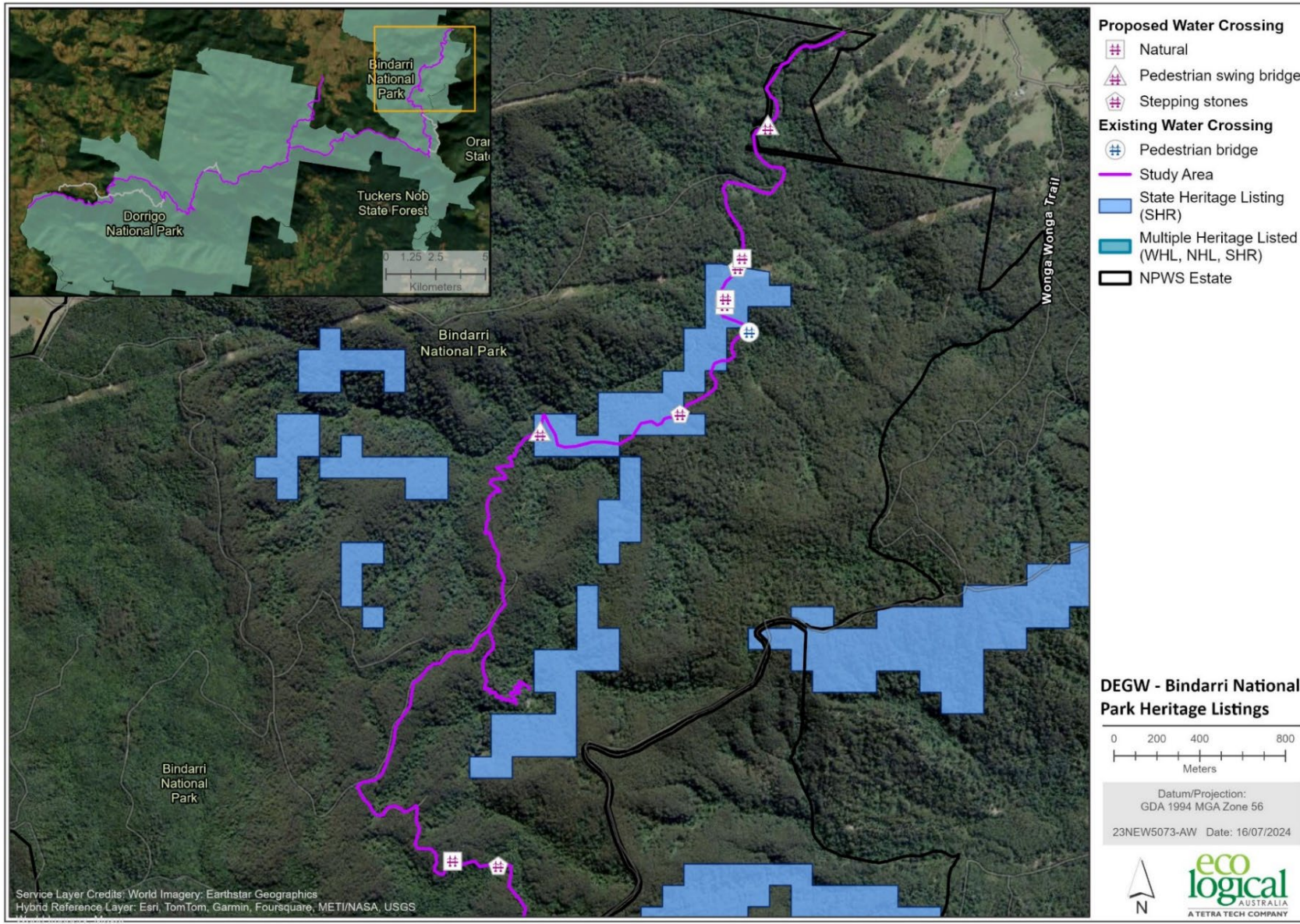


Figure 68 Bindarra NP heritage listings in relation to the study area

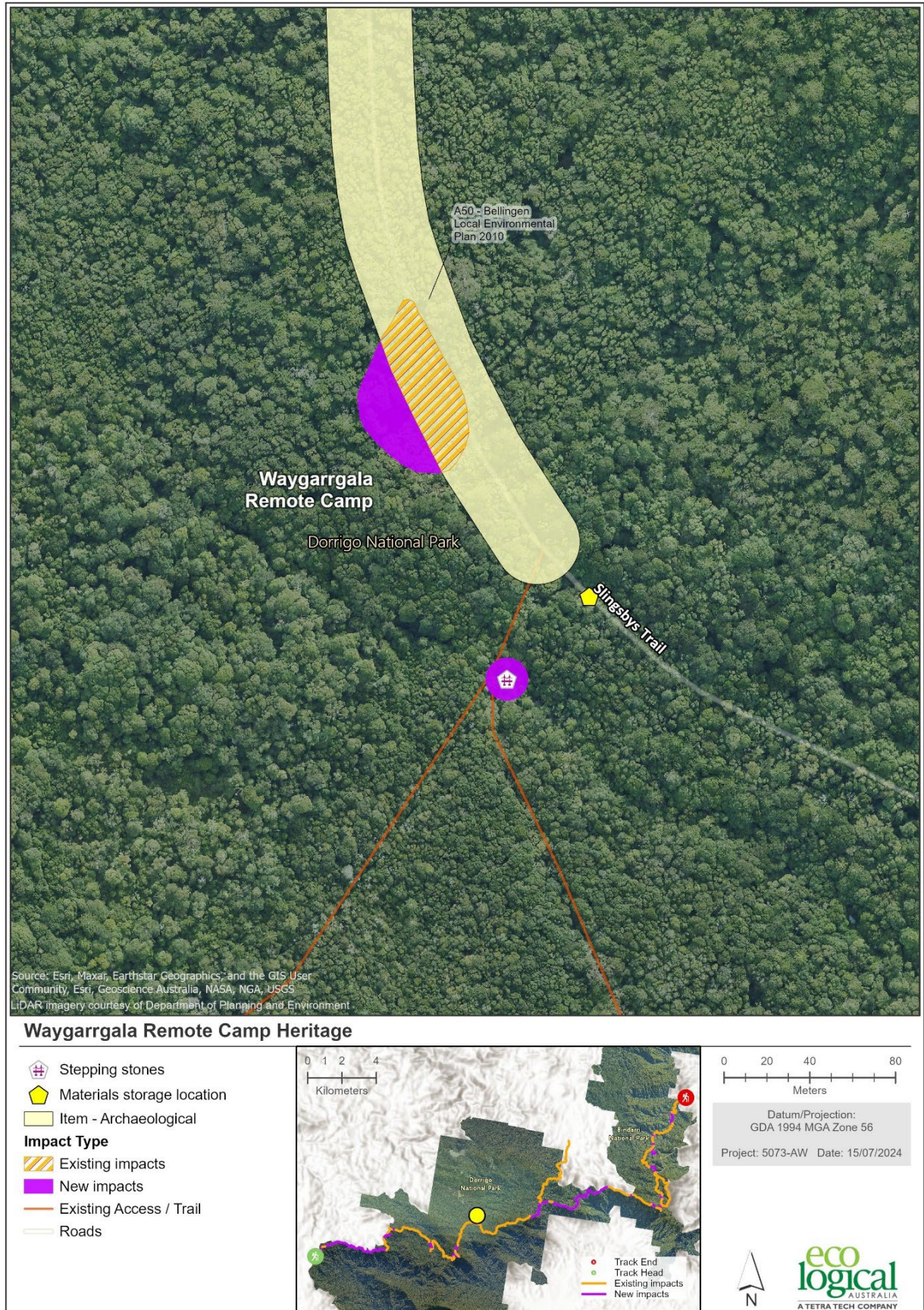


Figure 69 Waygarrgala Remote Camp and location of 'Escape Road' archaeological site (Item A50 Bellingen LEP)

8.5.4 Assessment of significance

Both the Gondwana Rainforests of Australia and High Conservation Value Old Growth Forest listings focus primarily on the importance of the ecological values of the respective heritage items. As such the impact of the proposal on the heritage value of the items can be considered jointly. The impact of the proposal on the biodiversity of the place is considered elsewhere (ELA 2024a, supporting document A).

Matters for consideration

Before making decisions to change a heritage item it is important to fully consider all its parts. This leads to decisions that will retain heritage values in the future. Each of the following aspects have been considered in relation to *Assessing heritage significance* (DPE 2023a) and following the approach in *Guidelines for preparing a statement of heritage impact* (DPE 2023b).

Fabric and spatial arrangement

The proposed new sections of the route are designed to be sympathetic to the setting. The DEGW will use natural materials, including local and imported stone, timber and other sustainable materials to blend into the natural environment. Significant tree and vegetation removal is not proposed. Where vegetation clearance is required, the recommendations outlined in the ecological assessment report would be endorsed (ELA 2024a). The design and construction will cope with the extreme weather conditions of the region, including heavy rainfall events. The final alignment will be selected to minimise the impact on localised vegetation. The proposed track itself will predominately follow the natural topography and will include minor impacts, and will not include formal sealed paths, significant excavations or change in geological features of the area.

Setting, views and vistas

The new sections of the proposed route will be essentially imperceptible from any vantage point. It will create or re-establish 14 viewpoints that will enhance the views across both national parks, enhancing appreciation and enjoyment of aspects that the heritage item is significant for. The proposed track and camps would not dominate the heritage item or its setting. Where possible they will be constructed over areas that have previously been cleared by logging activities or otherwise disturbed, and designs of the huts and track will be low-key, use sustainable materials and blend in with the environment. Given the size of the listed heritage areas, the proposed new tent platforms and huts will be essentially imperceptible.

Landscape

As far as possible existing tracks and previously disturbed areas will be utilised in the construction of the DEGW. Built infrastructure will be designed in a way that is light on footprint impact, with camp buildings, tent sites and walkways on raised piles or platforms. Viewing platforms will use of natural materials such as timber and existing stone shelves along the track to minimise impacts to the heritage item and its setting. Further, due to the density of the rainforest, the proposed DEGW will be invisible from all major viewpoints above the canopy, and would be considered localised below the canopy, shielded by vegetation. It will provide better access to the heritage item and enhance enjoyability and knowledge of the natural environment, which is a key facet of its significance.

Use

The purpose of the DEWG is to provide a hiking experience that allows a greater number of people to connect to, spend time in and explore the Dorrigo and Bindarri NPs and thus appreciate its World Heritage natural and cultural significance. Daily walker and visitor numbers will be capped to minimise impacts.

Demolition

There may be minimal localised impacts to some vegetation in areas where absolutely no alternative is possible. To avoid this, all larger construction such as camps is taking place in previously disturbed areas or areas of regrowth. Further, detailed ecological assessment has been undertaken to minimise impacts to flora. No tall tree of high aesthetic value will be impacted, no threatened species will be impacted. Some benching will occur in locations, however, this will be undertaken using locally sourced materials to minimise impact.

Curtilage

The curtilage of both heritage items is expansive to best preserve the ecological environments they seek to protect. No change to heritage curtilage would be required as the proposed works can exist within a listed item.

Moveable heritage

There will be no impacts to moveable heritage. No movable heritage is present in the study area.

Aboriginal cultural heritage

The study area is important for the potential evidence of Aboriginal past land use. This is discussed in detail in the ACHA (ELA 2024c, supporting document C).

Historical archaeology

No evidence of previous occupation has occurred in the study area. The new sections of track have been surveyed on foot and no potential areas of archaeology were observed within the study area as the study area is undeveloped national park. The part of the study area within the LEP listed archaeological site 'Escape Road' is highly unlikely to contain an historical archaeological resource that meets the threshold for local significance. Protocols for unexpected finds can be found in the statement of heritage impact (ELA 2024d, supporting document D).

Natural heritage

A key design principle is to finalise the track alignment on the ground to ensure minimal impact and maximise 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. Where possible the development will be constructed over areas that have previously been cleared by logging activities or otherwise disturbed, and designs of the huts and track will be low-key, use sustainable materials and blend in with the environment. This approach will avoid high value native vegetation and habitats, and minimise the extent of disturbance.

Conservation areas

There are no relevant LEP listed heritage conservation areas in the vicinity of the study area.

Cumulative impacts

Cumulative impact assessment considers the accumulated changes caused by multiple projects within a defined place or site type. It acknowledges that no project exists in isolation and that impacts which may appear minor in the local scale, can be much more significant when viewed in collaboration with others. There are currently multiple projects occurring across both Dorrigo and Bindarri NPs. These projects all have the general aim to enhance the preservation, appreciation and enjoyment of the natural environment through upgrades and improvements to existing visitor infrastructure. Each of these projects is small in scale and is restricted to a localised impact in the immediate vicinity of their surrounds. Projects underway or planned for the parks in addition to the activities described in this REF include:

- Slingsbys Trail bridge replacements including the ongoing management of Killungoondie Plains
- the related DARC project that is focused on the redevelopment of the Dorrigo Rainforest Centre and associated Skywalk
- The Glade development project that is related to the DARC and focuses on the use of The Glade as a temporary visitor hub with permanent improvements
- Wonga Walk upgrades which have been ongoing for the last 3 years and continuing – the latest phase completed includes track widening of a section from Crystal Shower Falls to the Satinbird stroll
- Dome Road bridges upgrade project which has upgraded 4 timber culvert-style bridges on Dome Road – the new construction was built over the previous timber bridges so that they remain preserved in situ.

More broadly it's acknowledged that ongoing works are taking place across the Gondwana Rainforests of Australia World Heritage property including maintenance and upgrades to existing infrastructure such as roads, fire trails, bridges, lookouts, walking tracks and existing visitor facilities.

There are 2 recently constructed multi-day walking tracks in the Gondwana Rainforest estate, the Gidjoom Gulganyi track in the Tweed–Byron area of New South Wales and the Scenic Rim walk in south-east Queensland.

Although this proposal spans over 44.1 km, it has a very small overall footprint of only 9.61 ha (a study area of 16 ha). This represents less than 0.07% of the Gondwana Rainforests within Dorrigo NP.

8.5.5 Potential impacts

The proposed works would result in a negligible direct (physical) and indirect (visual) impact to the heritage values of Gondwana Rainforests of Australia or High Conservation Value Old Growth Forest areas due to their expansive size and low impact methodology. There would likewise be a negligible direct or indirect impact to the heritage value of Escape Road as there is unlikely to be a historical archaeological resource within the section of the study area in the item's curtilage and any subsurface impact is restricted to areas outside of the LEP listing. No further built heritage or historical archaeological items have been identified within the study area in either national park.

The works have the potential to impact unrecorded heritage values, however, several mitigation measures have been recommended in Section 9 to reduce risks associated with the activity.

8.5.6 Recommendations

The study area partially falls within the curtilage of the Gondwana Rainforests of Australia (WHL #368, NHL #105704, SHR #01002) and Escape Road (LEP #A50) in Dorrigo NP, and small areas area in the curtilage of High Conservation Value Old Growth Forest (SHR #01487) within Bindarri NP. The outstanding universal values of the Gondwana Rainforests of Australia comprise evolutionary history, ongoing geological and biological processes, exceptional biological diversity and habitat for many threatened species of plants and animals. Aside from these areas there are no further heritage-listed items within 100 m of the study area.

The proposal is deemed acceptable from a heritage perspective as the proposal complies with the relevant legislation, management aims and/or policies and will not have a negative impact on the heritage significance of the heritage item as it:

- enhances the understanding and appreciation of Gondwana Rainforests of Australia (WHL #368, NHL #105704, SHR #01002) and High Conservation Value Old Growth Forest (SHR#01487) by facilitating greater visitor numbers
- enables controls to be placed on visitor numbers ensuring that the heritage values are not impacted by visitors
- continues a use in keeping with the original intention of the existing tracks and the continued ecological preservation intended by their dedication as national parks
- complies with the relevant conservation policies identified in the management plan for both national parks and the Gondwana Rainforests strategic overview for management (DEH 2000).

The following advice and best practice shall be included into all aspects of the DEGWS.

All works should be undertaken in accordance with the recommendations set out within the statement of heritage impact (ELA 2024d, supporting document D) and all other supporting documents. In all instances, works must be undertaken in accordance with the provisions contained within the Australia ICOMOS *Burra charter* particularly the provision of 'as much as necessary, as little as possible'. This includes ensuring no new signage or fencing is affixed to trees.

Minor design changes that have no appreciable impact on the overall layout, size and design of the project do not require any further assessment. Should detailed design change occur, including substantial alterations to the project footprint, size and shape, then the statement of heritage impact should be updated to assess these proposed changes. A precautionary approach should be taken.

The Gondwana Rainforests of Australia heritage item is largely listed for its significant ecological value. All efforts should be made to impact the rainforest as little as possible, while the recommendations outlined within the specialist ecology report should be endorsed. Dorrigo NP maintains various opportunities for heritage interpretation. High Conservation Value Old Growth Forest is important for its potential to demonstrate Aboriginal history and contribute to understanding and aesthetic appreciation of rare eucalypt forest. It is recommended that a heritage interpretation plan for the park be prepared.

Unexpected finds protocols for Aboriginal and historical archaeology should be followed at all times during works. Refer to Section 9, the ACHA report (ELA 2024c, supporting document C) and the statement of heritage impact (ELA 2024d, supporting document D).

8.6 Social values

8.6.1 Scenic and visually significant areas

The DEGW scenic quality is considered outstanding, with multiple accessible lookout locations along the escarpment. The parks are popular with tourists who visit to admire the natural beauty, ancient rainforest and interesting geological formations. The parks contain predominately closed forested areas progressing to creeks, waterfalls and cliff faces, offering a vast range of aesthetically appealing scenic landscapes. There is a significant range of native Australian flora and fauna within this study area landscape. Once completed, the DEGW will provide one of few opportunities in New South Wales for extended walking within the Gondwana Rainforests.

The DEGW also has views to Bellingen and Dorrigo townships, traverses down slopes and has views towards the Coffs Harbour hinterland. The altitude within the study area ranges from about 150 m near Bindarray picnic area to 990 m at Dome Mountain. The area encompasses a diversity of rough terrain and significant landscape features including mountains, steep escarpments, rivers, creeks, gorges and waterfalls. Important landform features from west to east of the study area include Dome Mountain, Rosewood River, Dibbs Head, Wild Cattle Creek, Never Never River, Gleniffer Falls, Mt Wondurrigah, Triple Peak, Tuckers Knob, Urumbilum River gorge and Urumbilum Falls.

8.6.2 Education and scientific values

Interpretive and educational initiatives are vital for safeguarding natural and cultural features and are important duties of the NPWS. Dorrigo NP and Bindarri NP showcase diverse rainforest types, characteristic of Australia's eastern coast. The DEGW will provide a unique opportunity for the promotion, understanding and appreciation of the area and more access for education and scientific purposes.

The wide range of natural and cultural attributes, and close proximity to educational institutions, offer unique opportunities for education and research. Research into the park's natural and cultural features has provided a wealth of scientific and other information but large gaps in knowledge remain. A better understanding of Aboriginal use and heritage values, biodiversity, landforms, historical land use, natural hazards and human impacts would improve conservation and sustainable use of the parks.

The DEGW will serve as a key regional location for access to the Gondwana Rainforests of Australia World Heritage property by providing accessibility to visitors, education, training, and research opportunities and capacity for onsite hiker accommodation. There is potential for significant improvements in education opportunities through the provision of a multi-day walk and the ability to learn and connect with the cultural heritage of the Traditional Custodians, the Gumbaynggirr People. It also provides opportunities for Gumbaynggirr People to reconnect with Country in meaningful ways.

The DEGW will increase the opportunities for education and connection with the prehistoric flora and fauna of the Gondwana World Heritage rainforests that played a role in shaping earth's existence.

8.6.3 Recreation values

The area is a major attraction for outdoor enthusiasts and provides significant opportunities for a range of recreational activities. There are currently 3 main bushwalking track systems within Dorrigo NP: the Wonga Walk (near the rainforest centre and The Glade picnic area); the Rosewood Creek and Blackbutt tracks at Baliiga picnic area; and the Slingsbys Trail and Syndicate Ridge track in the central section of the park.

Each area offers distinct opportunities to explore the parks. Satinbird stroll and Walk with the birds on the Wonga walk prioritise interpretation and cater to less-experienced or mobility-impaired walkers. Around the Baliiga picnic area, walks are of moderate length with grade 3 standard. The Slingsbys Trail and Syndicate Ridge track offers self-reliant grade 4 day and overnight walking routes through the Killungoondie Plains, Wild Cattle Creek areas and into the Bellinger Valley. Bindarri NP offers multiple day use areas, short walks to waterfalls and a 4WD touring route.

8.6.4 Interests of external stakeholders

External stakeholders have a strong interest in the DEGW as demonstrated in Section 4.2 of this REF. The views and issues from a broad section of the community are considered in the design and assessment of the DEGW. The views of local and regional stakeholder groups and organisations who provided input and advice to NPWS based on social, cultural, economic and environmental values have been included in the design location and assessments of the DEGW.

Members of the public have been engaged through the adoption of the plan of management (NPWS 2024a), the public exhibition of the draft master plan, briefings and through regular project updates.

The proposed DEGW is considered to improve the quality of the parks' visitor experience by providing a new multi-day walking opportunity and enhanced day walks and access.

8.7 Matters of national environmental significance

The Environment Protection and Biodiversity Conservation Act identifies 7 matters of national environmental significance. These include World Heritage properties, National Heritage places, Ramsar wetlands of international significance, nationally listed threatened species and ecological communities, listed migratory species, Commonwealth marine areas and nuclear actions. A search of the Act's databases for items of national environmental significance was conducted to identify significant features within a 10 km radius of the study area. An assessment based on information gathered from data searches and field investigations in conjunction with the ecological assessment report (ELA 2024a, supporting document A) was completed.

8.7.1 World heritage properties

The study area is partially within Dorrigo NP 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, supporting document D) and an Aboriginal cultural heritage assessment report (ELA 2024c, supporting document C) have been prepared to assess the heritage impacts and provide recommendations.

The statement of heritage impact has found that the proposal will have a negligible impact on the heritage values ascribed to the study area as per its World Heritage listing.

8.7.2 National heritage places

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

The statement of heritage impact has found that the proposal will have a negligible impact on the heritage values ascribed to the study area as per its National Heritage listing.

8.7.3 Wetlands of international importance (Ramsar wetlands)

The study area is not in a Ramsar listed wetland.

8.7.4 The Great Barrier Reef Marine Park

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

8.7.5 Commonwealth marine area

The study area is not within a Commonwealth marine area and is not proposed to impact any such area.

8.7.6 Threatened ecological communities

One threatened ecological community – Lowland Rainforest of Subtropical Australia – listed as critically endangered under the Environment Protection and Biodiversity Conservation Act was recorded within the study area. This community has the potential to be impacted by the proposed works and has been assessed in accordance with the Act's *Significant impact guidelines* (CoA 2013).

Patches of the community within the study area are maintained in a high condition and in the broader sense maintain an integral occurrence of an otherwise heavily disturbed community across its range. However, the limited proposed removal and modification to a portion of the threatened community in the study area is not considered likely to adversely affect its habitat to the extent that a patch would be significantly impacted.

8.7.7 Listed threatened and migratory species

The Environment Protection and Biodiversity Conservation Act *Protected Matters Search Tool* combined with a likelihood of occurrence analysis returned a list of 25 threatened species and communities, including one threatened ecological community, 11 vulnerable species, 8 endangered species, one critically endangered species, and 5 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 Act's *Significant impact guidelines* (CoA 2013). Identified species and communities are listed below.

Threatened communities

- Lowland Rainforest of Subtropical Australia

Vulnerable species

- slender marsdenia (*Marsdenia longiloba*)
- ravine orchid (*Sarcochilus fitzgeraldii*)
- stuttering frog (*Mixophyes balbus*)
- sphagnum frog (*Phyllorhina sphagnicolus*)
- glossy black-cockatoo (*Calyptorhynchus lathami*)
- white-throated needletail (*Hirundapus caudacutus*)
- black-breasted button-quail (*Turnix melanogaster*)
- parma wallaby (*Notamacropus parma*)

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- long-nosed potoroo (*Potorous tridactylus*)
- grey-headed flying-fox (*Pteropus poliocephalus*)
- rainforest cool-skink (*Harrisioniascincus zia*)

Endangered species

- 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

- scrub turpentine (*Rhodamnia rubescens*)

Migratory species

- oriental cuckoo (*Cuculus optatus*)
- black-faced monarch (*Monarcha melanopsis*)
- satin flycatcher (*Myiagra cyanoleuca*)
- rufous fantail (*Rhipidura rufifrons*)
- spectacled monarch (*Symposiachrus trivirgatus*)

Summary

A matters of national environmental significance report for the DEGWS contains all assessments of significance for these species (ELA 2024b, supporting document B). The assessment concluded that no significant impact is likely to result from the proposal.

9. Impact assessment

The tables in this section of the REF detail: what the activity is likely to impact or effect; the level of impact (either negligible, low, medium, high adverse or positive); the reasons for the impact; and the safeguards or mitigation measures to be put in place to ameliorate those impacts.

A construction environmental management plan (CEMP) will be prepared prior to any construction works to communicate measures to be adopted to minimise impacts on the environment because of the construction works.

An operational management plan will be developed to specify the protection and mitigation measures to be adopted during walk operation to minimise potential visitor use impacts. Key measures include hiker education, hygiene protocols, physical controls and occasional full or partial track closures during extreme weather conditions.

The following tables are provided:

- Table 19 Physical and chemical impacts
- Table 20 Biodiversity impacts
- Table 21 Cultural impacts
- Table 22 Natural resource impacts
- Table 23 Aboriginal cultural heritage impacts
- Table 24 Other cultural heritage impacts
- Table 25 Impacts on matters of national environmental significance
- Table 26 Cumulative impacts.

9.1 Physical and chemical impacts during all stages of the activity

Table 19 Physical and chemical impacts

Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
1. impact on soil quality or land stability?	Yes	Medium	<p>Excavation and vegetation removal during the construction phase would cause soil disturbance and expose soils to erosive forces. Impacts to soil quality and land stability would be medium to short term. Management would focus on measures that address the erodibility of the soils, slopes and sensitivity of the potential receiving environments.</p> <p>Potential contamination as a result of fuel spills or concrete that will be mixed and used onsite during construction could occur, however, impacts are considered low with the implementation of appropriate mitigation measures and the minimal amount of work required.</p> <p>Compaction of soils from the transport and storage of equipment and materials would be minor as storage would occur in disturbed areas and, where possible, materials would be delivered to site by helicopter.</p> <p>Soil protection measures are also directly relevant to protection of vegetation and flora and fauna habitat, and additional measures have been included to address this risk.</p> <p>During walk operation, soil protection measures will be required in heavily trafficked areas within camps.</p>	<ul style="list-style-type: none"> • A construction environmental management plan (CEMP) will be prepared prior to any construction works to address measures to be adopted to minimise impacts on the environment because of the construction works, including erosion and sedimentation. • Schedule the work outside of predicted heavy rain periods. • Stop work during and after heavy rainfall to reduce risk of mobilising sediment. • Clearly delineate work areas from all other areas which will be declared 'no go' areas. • Clearing and ground disturbance within the 3 camps must be restricted to the minimum necessary to carry out the work. • Communicate no go areas and other sensitive features to personnel during site inductions. • Protect all stockpiles of materials from scour and erosion. • Camp buildings must use steel screw or rod-based pier footings to reduce the need to excavate sites as well as reducing the amount of concrete. • An erosion sediment control plan, or a soil and water management plan, will be prepared before construction works commence and in accordance with <i>Managing urban stormwater: Soils and</i>

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Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
				<p><i>construction – volume 1</i> (Landcom 2004). The plan is to be a component of the CEMP.</p> <ul style="list-style-type: none"> • All sediment and erosion control devices shall be maintained in a satisfactory working order throughout the contract. All devices shall be inspected after each storm or structural damage or clogging by silt and other debris and promptly repaired or replaced if damaged. • Vehicle use and material laydown will be restricted to existing or proposed disturbed areas. • All construction vehicles shall enter and exit the site via the designated construction entry/exit. • Ensure only the minimum required vegetation is removed, maintaining the groundcover vegetation, where possible, in all areas of work. • Stabilisation of disturbed areas shall commence as soon possible after the areas have been disturbed. Biodegradable matting and native seeding will be used to re-establish groundcover where necessary. • Leave erosion and sediment controls in place until after the works completed and until disturbed areas are stabilised. • Install hardened walkways in heavily used areas within camps to reduce erosion and sediment runoff during operation of the walk.
<p>2. affect a waterbody, watercourse, wetland or natural drainage system – either physically or chemically (e.g. due to runoff or pollution)?</p>	<p>Yes</p>	<p>Low</p>	<p>The proposed track is designed to follow the landscape contours. Waterway crossings have been chosen to avoid key areas, with only 3 higher order crossings proposed. All other drainage line crossings are ephemeral watercourses, requiring either stepping stone culverts or raised track crossings. These types of crossings would involve</p>	<ul style="list-style-type: none"> • Implement sediment and silt control measures (mainly silt fencing/trapping and clean water diversions) prior to commencement of works according to: <ul style="list-style-type: none"> ○ Erosion, and sediment control on unsealed tracks (OEH year)

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Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
			<p>minimal physical alteration of the waterways and are not likely to alter flow characteristics.</p> <p>Potential contamination risks from hydrocarbons and other products entering waterways during construction exist. This impact potential is low with the appropriate mitigation measures.</p> <p>Ground disturbance would occur as a result of proposed works. This would result in increased potential for erosion and sediment-laden runoff if not managed properly.</p> <p>No threatened aquatic species, populations or communities were observed in the study area. However, a number of species are known to likely occur. Also, no threatened fish or aquatic flora listed under the Fisheries Management Act or Environment Protection and Biodiversity Conservation Act are likely to occur near the works, therefore, the works are not expected to directly impact threatened fish or their habitats.</p> <p>Works would temporarily obstruct fish passage during construction when a silt curtain is suspended parallel to the bank excavation. This impact will be minimal and temporary and unlikely chance of trapping fish. Fish passage adjacent to the construction areas will be restored post construction.</p> <p>Potential for increased turbidity during works due to an increase in loose soil and altered stream hydrology. However, the short-term nature of the proposed works will mean minimal impacts which can be managed.</p> <p>Culvert works adjacent to drainage lines will have potential to increase silt and sedimentation, however, mitigation such as barrier fencing, coir</p>	<ul style="list-style-type: none"> ○ <i>Managing urban stormwater: soils and construction - volume 1</i>, 4th edition (the 'Blue book'; Landcom (2004)) ○ <i>Managing urban stormwater, soils and construction, volume 2A Installation of services</i> (DECC 2008). ● Store all chemicals in appropriate bunding/storage systems or offsite. ● Ensure appropriate spill kits, shovels and buckets are carried with the equipment, and if small spill occurs quickly shovel the contaminated dirt into the bucket and dispose of appropriately. ● No concrete washout to occur onsite. All concrete mixing to occur in bunded areas and at least 10 m from waterways. ● Refuelling to occur in a bunded area offsite, at least 40 m from waterways. Heavy plant equipment will be refuelled offsite as it is anticipated that less than one tank of fuel will be required by all heavy plant on any given day. ● Temporary watercourse crossings will be designed to minimise impacts on hydrology, aquatic habitat and fauna by: <ul style="list-style-type: none"> ○ maintaining low-flow conditions ○ being designed with consideration of the potential for flooding during construction ○ being removed and the area rehabilitated following completion of construction ○ construction of crossings taking into consideration the requirements of the Fisheries Management Act and policy and guidelines for fish habitat conservation and management (DPI 2013).

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Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
			<p>logs and other sedimentation controls will appropriately mitigate impacts.</p> <p>During operation, there are potential impacts on waterways due to human use of the watercourses and surrounds including swimming and toileting, and the use of sunscreen and insect repellent.</p>	<ul style="list-style-type: none"> • Regular monitoring of sediment controls as well as inspections after heavy rainfall and follow-up work to repair/install erosion and sedimentation controls. • Weather forecasts will be checked daily to ensure that work is not carried out immediately before or during high rainfall. Where possible works that require soil disturbance on steep slopes or near waterways are to be scheduled during the drier seasons and periods. • Stabilisation of disturbed areas shall commence as soon as possible after the areas have been disturbed. Native vegetation removed during construction can be spread to 'brush mat' disturbed areas to promote native flora regeneration and stabilise soils. • Temporary in-water measures such as rock and silt curtains will be used where required to minimise impacts on water quality, ensuring measures are in place to limit the risk of turbid water escaping into the aquatic environment and will be closely monitored during works. • Where stockpiling is required, stockpiling will only take place in approved locations outside of flood-prone lands. No laydown or stockpiling in previously undisturbed areas or within 40 m of a waterway. • Any material removed from the waterway that is to be temporarily deposited or stockpiled on land is to be located well away from the waterway and to be contained by appropriate sediment control devices. • Construction materials will be placed away from the high-water level.

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Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
				<ul style="list-style-type: none"> • DPI Fisheries (1800 043 536) and the Environment Protection Authority (131 555) are to be notified immediately if any fish kills occur in the vicinity of the works. In such cases, all works other than emergency response procedures are to cease until the issue is rectified and approval is given by DPI Fisheries and/or the Environment Protection Authority for the works to proceed. • Waterway crossings should be designed and constructed in accordance with the national guidelines <i>Why do fish need to cross the road? Fish passage requirements for waterway crossings</i> (Fairfull and Witheridge 2003). This document can be obtained from NSW DPI offices or from the website at www.dpi.nsw.gov.au. Please note that any existing piped culverts should be replaced with box culverts in line with these guidelines. • Inspections of the site works adjacent to waterways must occur following rain events to determine suitability for construction works. • During operation of the walk the following measures will be implemented: <ul style="list-style-type: none"> ○ Pre-walk information and briefings for hikers on how to minimise impacts including protocols for toileting and swimming. ○ Plans to provide a shower at Camp 2 to provide alternative to bathing in the river. ○ Hardened walkways in heavily used areas within camps to reduce erosion and sediment runoff.
3. change flood or tidal regimes, or be affected by flooding?	Yes	Negligible	The track has been designed to minimise drainage line crossings where possible. Given the river and creek environments, these areas will be subject to	<ul style="list-style-type: none"> • All crossing structures will be designed with peak flows in mind. Other measures as per Table 9.1, point 2.

Review of environmental factors: Dorrigo Escarpment Great Walk

Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
			<p>periodic flooding. Where required, drainage crossings have been designed to minimise impacts and to have negligible change to flooding regimes.</p> <p>Overall, the DEGWS will have negligible impact to flood and/or tidal regimes as a result of the proposal.</p>	
<p>4. affect or be affected by coastal processes and coastal hazards, including those under climate change projections (e.g. sea level rise)?</p>	No	Na	<p>Proposal will have no impact on coastal processes, including those under climate change and sea level rise projections.</p>	N/A
<p>5. involve the use, storage or transport of hazardous substances, or use or generate chemicals which may build up residues in the environment?</p>	Yes	Negligible	<p>The proposed DEGWS would not involve the transport of hazardous substances or the use of chemicals that may build up residues in the environment, including waterways, and potentially harm fauna.</p> <p>The hazardous substances and chemicals to be used in the construction and maintenance of the track include fuels and oils for machinery use.</p> <p>The proposal would have a negligible impact through the generation and transportation of hazardous substances.</p>	<ul style="list-style-type: none"> • For any excess spoil material classified as contaminated, disposal of this material will be at an appropriately licensed landfill in accordance with the <i>Waste classification guidelines</i> (NSW EPA 2014). • Store all chemicals (such as fuel and oil) in appropriate bunding/storage systems. • Ensure appropriate spill kits are carried with the equipment. • If contaminated areas are encountered during construction, appropriate control measures will be implemented to manage the immediate risks of contamination. All other works that may impact on the contaminated area will cease until the nature and extent of the contamination has been confirmed and any necessary site-specific controls or further actions identified in consultation with council and/or EPA.

Review of environmental factors: Dorrigo Escarpment Great Walk

Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
6. involve the generation or disposal of gaseous, liquid or solid wastes or emissions?	Yes	Negligible	<p>During the construction phase, there is expected to be waste generated, but it will be minimal. Potential impacts from waste generation include:</p> <ul style="list-style-type: none"> • reduced aesthetics within and surrounding the area • minor spills from hazardous fuel and chemical use • pollution of the environment from other general wastes. <p>Minor emissions are anticipated due to the use of construction machinery and vehicles, however, will result in negligible and short-term impacts.</p> <p>Removal and appropriate disposal of general waste generated by the contractors during the proposed works is the responsibility of the contractors unless advised differently by NPWS.</p> <p>The accommodation huts will be designed with minimal services and utilising sustainable principles. Visitors will generate various liquid and solid wastes at each camp.</p>	<ul style="list-style-type: none"> • Resource management options for the project must be considered against a hierarchy of the following order embodied in the <i>Waste Avoidance and Resource Recovery Act 2001</i>. <ul style="list-style-type: none"> ○ avoid unnecessary resource consumption ○ recover resources (including reuse, reprocessing, recycling and energy recovery) ○ dispose (as a last resort). • All wastes must be classified in accordance with the <i>Waste classification guidelines</i> (NSW EPA 2014) prior to disposal and be transported to a licensed waste disposal facility. <p>During construction of the walk the following measures will be implemented:</p> <ul style="list-style-type: none"> • All waste must be removed from each site on completion of the works. • Portable toilet facilities must be provided at all work sites and if track construction contractors stay onsite overnight. • An adequate number of bins must be placed at the site for workers and all litter will be placed in these bins. Worker's food waste is to be removed from site daily to avoid attraction of animals to bins. Work areas of the project site would be kept clean and free of litter, including cigarette butts, at all times. • Plant and equipment must be regularly inspected to ascertain that fitted emission controls are operating efficiently. • Plant and equipment must be maintained in accordance with manufacturer's specifications to ensure that it is in a proper and efficient condition.

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Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
				<ul style="list-style-type: none"> • Machinery will not be left running while not in use. • Minimise use of machinery for required activity only. <p>During operation of the walk the following measures will be implemented:</p> <ul style="list-style-type: none"> • Solid waste generation by visitors would be minimised through education messaging. • Toilet waste would be contained and composted and transferred off-park. Other liquid waste would be treated onsite. • Renewable power will be provided for lighting of the communal shelter and for charging points. No mains power would be provided.
7. involve the emission of dust, odours, noise, vibration or radiation?	Yes	Negligible	<p>The proposal would require the movement of machinery, excavations and increased traffic during the construction period.</p> <p>Dust and other airborne fine particles may result from the track construction works. However, given the relatively small construction footprint, dispersed over a large area, it is likely that dust generation would be negligible.</p> <p>Helicopter activity during the construction phase would involve the generation of noise. However, helicopter operations would be spread out over the entire duration of the construction schedule to deliver materials progressively as required. This would be temporary for the duration of the works. The works would cause short-term noise, pollution and visual impacts.</p>	<ul style="list-style-type: none"> • Ensure machinery used is well maintained and in good working order. • Dust suppression techniques to be implemented if required. • Track construction methodology to be largely by hand and small excavator. • Helicopter delivery of material would be scheduled over the entire course of the construction schedule to limit periods of intense helicopter activity. • Helicopter delivery locations shall be inspected by an ecologist to ensure helicopter movement do not coincide with threatened species breeding times prior to work scheduling. • All activities will be undertaken in accordance with the <i>Interim construction noise guideline</i> (DECC 2009) and the <i>Draft construction noise guideline</i> (NSW EPA 2020).

9.2 Biodiversity impacts during all stages of the activity

Table 20 Biodiversity impacts

Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
1. affect any declared area of outstanding biodiversity value or critical habitat or environmental asset of intergenerational significance?	No	N/A	The DEGW does not impact any declared area of outstanding biodiversity value (under the Biodiversity Conservation Act) or critical habitat (under the Fisheries Management Act).	N/A
2. result in the clearing or modification of vegetation, including ecological communities and plant community types of conservation significance?	Yes	Medium	<p>A maximum of 9.61 ha of native vegetation would be cleared to establish the new track, including features, camps, viewing platforms, bridges and signs and interpretive elements.</p> <p>The linear nature of the DEGW and the 12 m wide study area allows for further micro-siting to mitigate impacts and limit the extent of vegetation removal, habitat trees or other valuable habitat features. A pre-clearing process will be utilised to ensure the greatest distance between the track and tree is implemented.</p> <p>There will be no proposed clearing of any canopy trees throughout the entire walk area, allowing for many of the direct impacts such as loss of shade and shelter or breeding opportunities to be avoided. Camp sites may require some canopy trees to be removed.</p> <p>Impacts to TECs will occur with the removal of small areas of Lowland Rainforest scattered across the DEGW, with the following totals:</p> <ul style="list-style-type: none"> State (Biodiversity Conservation Act): Lowland Rainforest in NSW North Coast – 0.46 ha 	<ul style="list-style-type: none"> A biodiversity management plan will be created and include: <ul style="list-style-type: none"> pre-clearing protocol (including avoidance and micro-siting requirements around habitat features) exclusion zones or other means to clearly demarcate proposal boundaries and protect the adjacent vegetation from clearing or vehicle traffic clearing of native vegetation and removal of bush rock (including staged removal of habitat features) unexpected threatened species finds weed and pathogen management pest management actions and procedures best practice removal, reuse and disposal of vegetation develop pre- and post-construction monitoring program which implements monitoring and control measures necessary to manage threatened native species, and locally rare species

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Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
			<p>impacted, PCTs 3021, 3032 and 4107 (<600 m ASL)</p> <ul style="list-style-type: none"> Commonwealth (Environmental Protection and Biodiversity Conservation Act): Lowland Rainforest of Subtropical Australia – 0.04 ha impacted, PCTs 3021 and 4107 (<300 m ASL). <p>A test of significance (BC Act) and an assessment of significance (EPBC Act) for the Lowland Rainforest threatened ecological community were conducted and are presented in supporting documents A and B. The assessments conclude that the proposal is unlikely to have significant impacts.</p>	<ul style="list-style-type: none"> clearing protocols that identify vegetation to be retained, prevent inadvertent damage and reduce soil disturbance all groundwork associated with construction and operation of the walk construction protocols for handheld tools such as chainsaws and brush cutters associated with clearing activities protocols for trees adjacent but outside of the construction footprint, which require an adequate tree protection zone for the duration of works – details for calculating zones are provided within <i>Australian Standard 4970-2009 – Protection of trees on development sites</i> all trees to be protected in accordance with <i>Australian Standard 4970-2009 – Protection of trees on development sites</i> undertake site induction and toolbox talks for ecologically sensitive areas. If unexpected fauna (e.g. nesting birds) is discovered and have the potential to be impacted, works are to stop immediately, and the project manager notified. To reduce impacts on any local fauna species (including threatened species), before felling, all trees are to be checked to confirm they are not hollow-bearing trees (HBT). If hollows are identified, then felling must be supervised by an ecologist or experienced fauna spotter/catcher. Any occupied nests located or any fauna which are inadvertently injured should be reported to WIRES or a similar organisation and relocated

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Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
				<p>from the works area by a suitably qualified fauna handler.</p> <ul style="list-style-type: none"> • Machinery coming from outside the works area should be thoroughly washed down prior to entering the site to reduce the risk of introducing weed species and pathogens. • Priority weed species should be targeted in accordance with the NSW DPI WeedWise recommended control measures. • Any revegetation of disturbed areas should utilise a seed mix consisting of local provenance species that are typical of native vegetation in the landscape, where possible.
<p>3. endanger, displace or disturb terrestrial or aquatic fauna, including fauna of conservation significance, or create a barrier to their movement?</p>	<p>Yes</p>	<p>Low</p>	<p>The proposed works cover several creeks and tributaries that have been identified as having scenic values but have not been declared as such. Direct impacts for the majority of fauna species will be through minor removal of potential foraging habitat on the edges of the fire trails. Important habitat features for the lifecycle of many of the threatened species considered (rocky outcrops, cave habitats, suitable waterbodies) are not proposed to be directly impacted by the works.</p> <p>The relatively small area of habitat, the presence of no HBTs along the track, and the need to remove fewer than 10 HBTs within the camps will minimise impacts.</p> <p>Some sections of track cross creek lines modelled as key fish habitat. Where crossing works are proposed, such as the introduction of new bridges, the hydrology and water flows will not be altered to impact on aquatic habitat or water flow.</p> <p>The proposal was sent to DPI Fisheries, a division of NSW Department of Primary Industries. This</p>	<ul style="list-style-type: none"> • Pre-clearing site surveys are to be undertaken to ensure the demarcation of the walk, camps, waterway crossings and viewing areas (clearing limits) have been correctly identified. These surveys will ensure that there are no direct impacts to HBTs (except in camps) and/or threatened species. • Site personnel and operators are to be briefed before works begins, regarding the identification and unexpected finds procedure. • At locations containing leaf litter, excavation is to push leaf litter outside the construction area to allow any frogs and other fauna present to self-relocate. • Environmental safeguards (silt curtains, booms etc.) are to be used during the works to ensure that there is no escape of turbid plumes into the adjacent aquatic environment. • If fauna (aquatic or terrestrial) is encountered, all fauna handling or relocation would be done by suitably qualified person.

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Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
			<p>notification was in accordance with s 199(1)(a) of the <i>Fisheries Management Act 1994</i> concerning the proposed dredging and reclamation activities associated with the mapped waterways.</p> <p>The single vehicle bridge is an existing timber bridge and was inspected for microbats such as <i>Myotis macropus</i> (southern myotis), which regularly utilise bridges as roosting sites.</p> <p>The southern myotis is listed as vulnerable under the <i>Biodiversity Conservation Act 2016</i>. Southern myotis or other similar species were not observed roosting under the bridge.</p> <p>The precautionary principle deals with reconciling scientific uncertainty about environmental impacts, however, in this instance no uncertainty is considered to exist and no threat of serious or irreversible environmental damage is likely to occur.</p>	<ul style="list-style-type: none"> • If active nests of threatened bird species are encountered during pre-construction surveys, the site should be identified, works should not be conducted within 200 m of the tree during the optimum breeding season for the species identified. • If an active threatened species nest is detected, works within 200 m of the nest tree should only be undertaken outside the breeding season of the species to avoid impacting the lifecycle of species involved. • Clear management measures must be set in place for the continuing maintenance to avoid and minimise impacts on breeding habitat of hollow-dependent species. • As part of continuing maintenance, clear management measures will be set in place to avoid and minimise impacts on breeding habitat and foraging habitat for threatened species. • Information on the threatened species known within the locality must be included in the induction process for applicable personnel.
4. result in the removal of protected flora or plants or fungi of conservation significance?	Yes	Low	<p>Vegetation at, and in the vicinity of, the DEGW and facilities contains protected flora of conservation significance.</p> <p>The threatened species assessments concluded that impacts can be avoided, and if mitigation measures are implemented the activity is unlikely to have a significant impact.</p>	Refer Table 9.2 points 2 and 3.
5. contribute to a key threatening process to biodiversity or ecological integrity?	Yes	Low	The following key threatening processes currently listed on the schedules of the Biodiversity Conservation Act are associated with the proposal:	<ul style="list-style-type: none"> • Information on threatened species within the locality identified during targeted surveys will be included in the induction process for relevant personnel.

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Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
			<ul style="list-style-type: none"> • Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands • Clearing of native vegetation • Infection of frogs by amphibian chytrid causing the disease chytridiomycosis • Infection of native plants by <i>Phytophthora cinnamomic</i> • Introduction and establishment of Exotic Rust Fungi of the order Pucciniales pathogenic on plants of the family Myrtaceae • Invasion and establishment of exotic vines and scramblers • Invasion of native plant communities by exotic perennial grasses • Invasion, establishment and spread of lantana • Loss of hollow-bearing trees • Removal of dead wood and dead trees • Unplanned inappropriate fire regimes • Invasion of the yellow crazy ant 	<ul style="list-style-type: none"> • Pre-clearance surveys and micro-siting for threatened flora species listed under the Biodiversity Conservation and/or Environment Protection and Biodiversity Conservation Act will be undertaken, each threatened flora species will be tagged with visible flagging tape to prevent damage during construction and avoid removal where practicably possible. • An unexpected, threatened flora or fauna procedure will be developed and if species are discovered, works will stop immediately, and the environment manager notified. An ecologist will then be engaged to determine management actions to avoid or mitigate any potential impact. • All construction materials and plant/equipment must be certified to come from areas free of any known pests such as yellow crazy ants. • Hygiene inspection checklist as identified in supplementary assessment (ELA 2024a) must be included in the CEMP and used during the entire construction of the DEGW.
6. introduce weeds, pathogens, pest animals or genetically modified organisms into an area?	Yes	Medium	<p>The construction and operation of the proposal may result in the introduction and distribution of pathogens, such as viruses and fungus. Pathogens detrimental to biodiversity within the study area include chytrid fungus for amphibians, phytophthora causing dieback in plants, and disease-causing rusts (basidiomycete fungi of the order Pucciniales) which affect Myrtaceae plant species through myrtle rust. There is evidence that both chytrid fungus and myrtle rust exist in the locality. <i>Phytophthora</i> has also been recorded in visitor precincts in the past.</p>	<p>A weed and pathogen management procedure would be developed for the proposal. This would include:</p> <ul style="list-style-type: none"> • management protocol for declared priority weeds under the <i>Biosecurity Act 2015</i> during and after construction • weed hygiene protocol in relation to plant, machinery and fill • any occurrences of pathogens such as myrtle rust, chytrid fungus and phytophthora would be monitored, treated and reported

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Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
			<p>The proposed activity may facilitate the spread of phytophthora through the landscape on equipment, machinery or boots. Ultimately the responsibility lies with the land managers, stakeholders, contractors and visitors to the area, however, example measures for managing phytophthora are recommended in Daniel et al. (2013).</p>	<ul style="list-style-type: none"> • avoid all use of foreign soil matter for landscaping/mulching • install disinfecting facilities – wash-down bays, footbaths and/or scrubbing stations at primary entrance/exit points for both vehicles/machinery and foot traffic • in priority locations, install signage (e.g. ‘Stay on marked tracks’) to reduce off-track disturbance and elevate or divert walking tracks to minimise contact with soil, particularly in locations near waterways and drainage lines • incorporate hygiene protocols into pre-walk information and briefings to maximise hiker compliance. • the procedure will be incorporated into the biodiversity management plan. <p>Phytophthora, chytrid fungus, myrtle rust and invasive weed control measures must be undertaken from the commencement of the project to minimise the risk of spread and to the site. The following guidelines should be followed.</p> <p>Phytophthora</p> <ul style="list-style-type: none"> • The following guidelines should be followed in relation to phytophthora (or any updated versions): <ul style="list-style-type: none"> ○ Hygiene guidelines (DPIE 2020a) ○ Botanic Gardens of Sydney biosecurity webpage ○ management of phytophthora cinnamomi for biodiversity conservation in Australia (Cth DCCEEW 2006) ○ <i>Management strategies for Phytophthora in the Gondwana Rainforests of Australia</i>

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Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
				<p><i>World Heritage Area</i> (Daniel et al. 2013). Faculty of Agriculture and Environment, The University of Sydney</p> <ul style="list-style-type: none"> ○ Managing phytophthora dieback in bushland: a guide for landholders and community conservation groups Dieback Working Group 2008). ● All pathogens can be spread by dispersal of reproductive material on wind, animals, waterways and people (via contaminated clothing, hats, footwear, tools, equipment, machinery and vehicles) (DoE 2015b). ● The following protocols apply to personnel, clothing, footwear, tools and equipment (refer hygiene protocols, DPIE 2020a): <ul style="list-style-type: none"> ○ Check – check personnel, clothing, footwear, backpacks and equipment for soil, plant material and other debris. ○ Clean <ul style="list-style-type: none"> i. remove all soil, plant material and other debris using a hard brush and (if required) clean water ii. wash dirty hands with soap and water iii. remove seeds from clothing, footwear, tools and equipment by hand. Where possible, have a co-worker check you have removed all seeds. ○ Dry – where practical, ensure hands, clothing, footwear and equipment are dry before proceeding. ● The following additional procedures are to be included within the weed and pathogen management procedure:

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Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
				<ul style="list-style-type: none"> ○ assume the activity to be carried out has the potential to introduce phytophthora ○ clean footwear, equipment, machinery and tools before entering an area ○ spray soles of shoes, and soak tools with one of the following disinfectants before entering and when leaving a site: methylated spirits (70% v/v) or quaternary ammonium disinfectant ○ ensure that any adhering soil and plant material is removed ○ repeat this when moving from potentially infested areas to non-infested areas. ● Always work in areas free of phytophthora before working in infested areas. ● Minimise soil disturbance. ● Restrict activities to dry periods where possible. Avoid or minimise activities during wet periods because soil is more likely to adhere to shoes, tools and equipment and the pathogen is also more active under these conditions. ● Use only construction material (gravel, sand, etc.) and plants that have come from accredited suppliers, or that has been tested for phytophthora. ● Ensure staff, stakeholders and contractors are aware of phytophthora and its impacts and are suitably trained in the hygiene measures available. ● Install footwear washing/scrubbing stations for hikers at track heads and camps to limit spread, where phytophthora is present or at high risk of being introduced.

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Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
				<p>Myrtle rust</p> <ul style="list-style-type: none"> • Myrtle rust spores can quickly spread via people on contaminated clothing, footwear, tools, vehicles and machinery, as well as on animals (DPIE 2020a). • Hygiene protocol for personnel, clothing, footwear, tools and equipment: <ul style="list-style-type: none"> ○ Disinfect – spray down equipment and clothing with disinfectant. ○ Clean: <ul style="list-style-type: none"> i. wash all personnel clothing including hats using detergent and warm water or hot machine wash ii. shower thoroughly to remove residual spores from skin and hair (DPIE 2020a). • Hygiene protocol for vehicles and heavy machinery: <ul style="list-style-type: none"> ○ Check exterior and interior of vehicles and machinery for soil, plant material and other debris ○ Clean: <ul style="list-style-type: none"> i. remove large clods of soil ii. remove all soil, plant material and other debris from the interior using vacuum or dustpan and brush iii. dispose of debris in a bag and put in commercial waste bin iv. if returning from a potentially contaminated area, wash vehicle and/or machinery ASAP (e.g. at commercial carwash) before heading back to base. Spray tyres with a disinfectant if no carwash is available (refer DPIE 2020a).

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Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
				<ul style="list-style-type: none"> ○ Disinfect: <ul style="list-style-type: none"> i. use 70% alcohol wipes or spray bottle to apply disinfectant to vehicle/machinery interior focusing on seats, steering wheel, gear stick, pedals and floor ii. spray exterior with disinfectant or hand pressure sprayer. Leave disinfectant on surface for 30 seconds before rinsing with clean water (DPIE 202a0). <p>Chytrid fungus</p> <ul style="list-style-type: none"> • Humans can spread the disease by contaminated footwear and equipment and by (illegally) moving frogs from one area to another (DPIE 2020a). • Where practical, select clothing, footwear, tools and equipment that are easy to clean (e.g. non-absorbent). • Where practical, pack separate sets of equipment (including shoes) for each site (DPIE 2020a). • Before arriving and leaving site: <ul style="list-style-type: none"> ○ Check – thoroughly check all personnel, clothing, footwear and equipment for soil, water, organic material or other debris. Where possible, have a co-worker double-check for you. ○ Clean – remove all soil, water, organic material or other debris using a hard brush and clean water. ○ Disinfect – spray or soak potentially contaminated materials with disinfectant. Leave for 30 seconds before proceeding. Where practical, rinse with clean water.

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Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
				<ul style="list-style-type: none"> ○ Dry – where practical, ensure all clothing, footwear, tools and equipment are dry before proceeding (DPIE 2020a).

9.3 Community impacts during all stages of the activity

Table 21 Cultural impacts

Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
1. affect community services or infrastructure?	Yes	Low	<p>During construction, there would be an increase in construction-associated traffic on both the public and national park roads for the movement of construction staff, material deliveries, etc.</p> <p>The use of compound sites to store equipment and materials, and helicopters, will reduce the number of deliveries required to the parks.</p> <p>Any disruptions as a result of construction would be short term and work will be arranged during non-peak times.</p> <p>Short-term park road closures may be required during the construction period.</p> <p>No broader community services or infrastructure would be affected.</p> <p>The proposed works would improve accessibility and safety, resulting in a positive outcome for community and visitors to the DEGW.</p> <p>The DEGW would provide a higher level of service and would provide improved access for park users.</p> <p>In the long term, DEGW users would benefit from new facilities and improvements at existing day use areas including the use of accommodation areas.</p>	<ul style="list-style-type: none"> • The construction environmental management plan (CEMP) will include traffic controls, and signage and speed limits will be implemented for works undertaken on public access tracks. • Prepare an operational management plan to formalise hut accommodation and camping area booking system. A review to be undertaken every 6 months. • Notice of planned work schedules, including impacts to parking areas and road closures, must be advertised to the public in advance of work commencing.
2. affect sites important to the local or broader community for their recreational or other values or access to these sites?	Yes	Low	<p>Public access to the tracks and day use areas would be limited during construction period. Minor disruption to visitors, and walkers, to be anticipated. Dust and noise will be present although will be temporary.</p>	<ul style="list-style-type: none"> • The CEMP to include signage and visitor controls and include use of 'Works' warning signs on tracks. • Signage will be displayed notifying public of works and where/if tracks area closed, that is, signage and pedestrian controls for users of the area.

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Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
			<p>Provision of new hut accommodation would provide for a broader range of visitors, particularly those who are unable to currently camp.</p>	<ul style="list-style-type: none"> • Signage to be installed on existing track approaches notifying users of track under construction. • Closures will be advertised on the NPWS website. • If visitors or vehicles approach machinery, works are to stop momentarily until it is deemed safe. Visitors or vehicles are to be approached and directed safely away from the works area. • All neighbours are to be notified of works at least 7 days prior to works commencing. Ongoing consultation required if project timing changes. • The design and style of accommodation and facilities will be in keeping with the surrounding landscape. • The design and scale of accommodation and facilities will be in accordance with NPWS design guidelines.
<p>3. affect economic factors, including employment, industry and property value?</p>	<p>Yes</p>	<p>Low and also positive long-term</p>	<p>There will be short-term and longer-term local employment of contractors and hire of local plant and equipment during construction of the DEG. The proposal would create a new experience and will create opportunities for ongoing local jobs in recreation and science providing an overall regional economic benefit.</p> <p>The value of any land outside the national park is not expected to be affected by this proposal.</p>	<ul style="list-style-type: none"> • Where possible, suitable local contractors will be employed for certain aspects of construction such as earthworks and vegetation management.
<p>4. have an impact on the safety of the community?</p>	<p>Yes</p>	<p>Negligible</p>	<p>During construction, there would be an increase in construction-associated traffic on the public road network for movement of construction staff, materials and deliveries.</p> <p>The use of a helicopter to transport certain construction materials to remote areas of the</p>	<p>Refer Table 9.3 point 2.</p> <p>Also:</p> <ul style="list-style-type: none"> • Vehicles speed limits imposed up to 20 km/h when within vicinity of the public and adjoining property.

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Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
			<p>proposal site will result in fewer disruptions to park users.</p> <p>All work would be constructed to meet relevant Australian Standards, building codes and bushfire regulations, with independent certification granted where required.</p> <p>All work areas will be fenced off from park users.</p>	<ul style="list-style-type: none"> • Construction sites must be managed to prevent public access during and outside work times. • Proposed works must be certified to comply with the <i>Building code of Australia</i> or relevant Australian Standards as per the <i>NPWS Construction assessment procedures</i> (OEH 2011b).
5. cause a bushfire risk?	Yes	Low	<p>Heat from vehicles and machinery may increase the risk of starting a fire as could any hot works associated with the bridge construction.</p> <p>Once in operation, hikers may inadvertently cause ignitions.</p>	<ul style="list-style-type: none"> • Pre-fabrication of structural components will reduce on-site ignition risks from construction. • The CEMP must identify construction works that represent an ignition risk and include mitigation measures to reduce the risk. • Contractors and staff to report any fires immediately to NPWS project manager. • Contractors are to have fire extinguishers and a small tanker on site capable of dousing a small fire during Catastrophic fire danger days. • Pre-walk briefings and education about fire risks. • A bushfire-specific evacuation plan and emergency management procedures will be developed which adheres to the park's fire management plan and put in place to evacuate staff and contractors in the event of wildfire. • Proactive park fire bans and partial track closures based on fire risk modelling when the fire danger risk forecasts and fuel conditions meet set triggers. Focus will be on track sections with fire-prone vegetation and fuels. • Fuel-stove only areas and fires in approved fireplaces only.

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Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
6. affect the visual or scenic landscape?	Yes	Low	<p>The DEGW has been designed using the natural topography to reduce impacts on the scenic experience. Safety aspects will remain important ensuring the track is clearly identified and safe for users.</p> <p>Vegetation clearing, soil disturbance and machinery may impact on the visual landscape, however, as this would be restricted to the immediate track width this impact is considered minor.</p> <p>The upgrade and use of track signage is expected to have some scenic visual impacts to the area. In addition, removal of trees will create change to the natural landscape.</p> <p>The construction of hut accommodation infrastructure and camping areas within the camps would have a permanent impact on visual and scenic landscape, as these areas currently have no infrastructure. The proposed accommodation would enable a wider range of visitors to enjoy the natural and cultural values of the park.</p>	<ul style="list-style-type: none"> Where these structures are required, as much as possible, they must utilise natural materials that blend into the environment.

9.4 Natural resource impacts during all stages of the activity

Table 22 Natural resource impacts

Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
1. result in the degradation of the park or any other area reserved for conservation purposes?	Yes	Medium	<p>Parts of Dorrigo NP and Bindarri NP will undergo a transformation due to construction of the DEGW and the camps. The design has been iterative and has avoided sensitive areas that may be prone to degradation where possible.</p> <p>Class 4 multi-day recreational walkers generally align with NPWS values, in particular, an interest in and concern/respect for the natural and cultural heritage that national parks protect. These visitors are looking for opportunities to spend time in nature, are interested in places that provide stories and are looking for a deeper connection with nature and culture.</p> <p>The DEGW proposal alignment looks to follow areas previously modified. The overall outcome will be beneficial. Sediment and erosion controls will be implemented to manage impacts associated with soil erosion and sedimentation into nearby watercourses.</p> <p>The DEGW will meet the relevant Australian Standard and NPWS <i>Park facilities manual</i> with minimal grade changes, track infrastructure and signage. Imported material will be minimised with a natural surface preferred.</p> <p>The proposal seeks to improve track quality and drainage features for long-term improvement Dorigo NP and Bindarri NP.</p>	<ul style="list-style-type: none"> Mitigation measures addressing natural resources have been provided in Section 9.2.

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Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
			The new camps (hut accommodation and camping areas) will offer an improved experience to park users closely aligned with NPWS values. Some loss of natural space will occur within the locality of the precincts.	
2. affect the use of, or the community's ability to use, natural resources?	Yes	Low	The proposal would not affect the community's ability to use natural resources. The DEGWS will enable a wider range of visitors to enjoy the natural surroundings while minimising impacts on the natural and cultural values of the national park.	<ul style="list-style-type: none"> • Mitigation measures addressing natural resources have been provided in Section 9.2.
3. involve the use, wastage, destruction or depletion of natural resources including water, fuels, timber or extractive materials?	Yes	Negligible	<p>The proposal will involve the use of natural resources including rock, gravel and timber; however, these resources would not be used to a level that would lead to destruction or depletion. Reuse of onsite natural resources would be undertaken.</p> <p>Buildings will be designed to standard dimensions to reduce wastage. Sustainable and recycled materials have been specified that are long-lasting and simple to maintain in a remote setting. With the implementation of appropriate construction measures the project would not impact water quality and no water within the park is used as a water supply or forms a water supply catchment.</p>	<ul style="list-style-type: none"> • Plant and equipment must be regularly inspected and maintained to manufacturer's standards to ensure that fitted emission controls are operating efficiently. • Do not have machinery running while not in use. • Minimise use of machinery for required activity only. • Should any unexpected historical archaeology be uncovered during installation of the compound, the following procedure must be adhered to: <ul style="list-style-type: none"> ○ Stop all work in the immediate area of the item and notify the project manager. ○ Establish a 'no go zone' around the item. Use high visibility fencing, where practical. Inform all site personnel about the no go zone. ○ No work is to be undertaken within this zone until further investigations are completed. ○ Engage a suitably qualified and experienced archaeologist to assess the finds. ○ The Heritage Council must be notified if the finds are of local or state significance.

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Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
				<p>Additional approvals will be required before works can recommence on site.</p> <ul style="list-style-type: none"> ○ If the item is assessed as not a 'relic', a 'heritage item' or an 'Aboriginal object' by the archaeologist, work can proceed with advice provided in writing.
4. provide for the sustainable and efficient use of water and energy?	Yes	Negligible	<p>The buildings within the camps will be designed as remote hiking huts and limited solar power and lighting will be provided in the communal hut. Harvest rainwater tanks would be installed and will provide water for drinking and cooking. Highly efficient pellet heaters will be used in the communal hut.</p>	<ul style="list-style-type: none"> ● Mitigation measures addressing natural resources have been provided in Section 9.2.

9.5 Aboriginal cultural heritage impacts during all stages of the activity

Table 23 Aboriginal cultural heritage impacts

Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
1. disturb the ground surface or any vegetation likely to contain culturally modified trees?	Yes	Low	<p>All activities would result in ground disturbance and vegetation removal. No large growth trees would be impacted by the proposal nor were any artefacts or cultural sites identified within the study area.</p> <p>Trees containing hollows are regrowth trees from previously disturbed logging impact areas.</p> <p>Ground disturbance will be minimised by using the natural surface and using existing tracks where appropriate.</p>	<ul style="list-style-type: none"> • Management and mitigation measures outlined in the Aboriginal cultural heritage assessment (ACHA) report (ELA 2024c, supporting document C) must be implemented over the life of the project. <ul style="list-style-type: none"> ○ The ACHA report has not been published due to cultural sensitivities. • A copy of the final ACHA report must be forwarded to all registered Aboriginal parties for their review and comment. • If suspected Aboriginal objects, such as stone artefacts are located during future works, works must cease in the affected area and an archaeologist called in to assess the finds. • In the extremely unlikely event that human remains are found, works should immediately cease, and the NSW Police should be contacted. If the remains are suspected to be Aboriginal, Heritage NSW may also be contacted at this time to assist in determining appropriate management. • Prior to working in the study area, all contractors associated with the project are to receive cultural heritage inductions delivered by either NPWS staff trained in Aboriginal cultural heritage site identification or a member of LALC.
2. affect or occur near known Aboriginal objects, Aboriginal	Yes	Low	No AHIMS sites were identified along any of the DEGW.	<ul style="list-style-type: none"> • Mitigation measures addressing natural resources have been provided in Section 9.2.

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Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
<p>places or an Aboriginal cultural asset of intergenerational significance? If so, can impacts be avoided? How?</p>			<p>The study area contains several large overhangs and ledges, waterway crossings and ridgelines. No cultural markings or grinding grooves were observed on any of the exposures in the areas immediately adjacent to any of the track due to the dense vegetation and leaf litter.</p> <p>Any old-growth trees (girth larger than 2 m) should be avoided.</p>	
<p>3. affect areas: - within 200 m of waters - within a sand dune system - on a ridge top, ridge line or headland - within 200 m below or above a cliff face - in or within 20 m of a cave, rock shelter or a cave mouth? If so, can impacts be avoided? How?</p>	Yes	Low	<p>Most of the DEGW proposal is within landscape features including waterways and on ridge tops/ridge lines.</p> <p>Field surveys have revealed significant cultural sites outside of the study area and these will not be impacted.</p>	<ul style="list-style-type: none"> Mitigation measures addressing natural resources have been provided in Section 9.2.
<p>4. affect wild resources which are used or valued by the Aboriginal community or affect access to these resources?</p>	Yes	Negligible	<p>The proposed activity is not expected to affect wild resources used or valued by the local Aboriginal community.</p> <p>The proposed activity may have an impact on access to resources by the local Aboriginal community in the short term, however, positive long-term impacts for community access are proposed.</p> <p>The DEGW will provide opportunities for connections for local Aboriginal community to the natural resources and cultural values of the park.</p>	<ul style="list-style-type: none"> Mitigation measures addressing natural resources have been provided in Section 9.2.

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Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
5. affect access to culturally important locations?	Yes	Low	<p>An ACHA was prepared by ELA (2024c) to assess potential impacts to Aboriginal cultural heritage as a result of the proposal.</p> <p>The proposal is subject to an investigation specific to the current study area, including field survey. Searches of the AHIMS database were carried out to identify any registered Aboriginal archaeological sites (Aboriginal objects, as defined under the National Parks and Wildlife Act) and declared Aboriginal places (as defined under the Act) located in the study area. None were identified.</p> <p>An Aboriginal archaeological field survey was then carried out in with representatives from LALC, to search and to determine whether any previously unrecorded sites were located in the study area. The results of the survey informed the initial design development and environmental assessment.</p> <p>The construction of DEGW will not impact on the cultural, social, historic, aesthetic values of the Dorrigo NP and Bindarri NP.</p> <p>Aboriginal objects or areas of archaeological potential have not been identified within the study area. There are no current known impacts to the scientific values or culturally important locations.</p>	<ul style="list-style-type: none"> Mitigation measures addressing natural resources have been provided in Section 9.2.

9.6 Other cultural heritage impacts during all stages of the activity

Table 24 Other cultural heritage impacts

Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
1. affect or occur near places, buildings or landscapes of heritage significance?	Yes	Low	<p>A statement of heritage impact has been completed for the DEGW (ELA 2024d, supporting document D). Overall, heritage impacts to the cultural landscape will be minimal.</p> <p>The proposed works would result in a negligible direct (physical) and indirect (visual) impact to the heritage values of Gondwana Rainforests of Australia or High Conservation Value Old Growth Forest areas due to their expansive size and low impact methodology.</p> <p>There would likewise be a negligible direct or indirect impact to the heritage value of Escape Road as there is unlikely to be a historical archaeological resource within the section of the study area in the item's curtilage and any subsurface impact is restricted to areas outside of the LEP listing.</p> <p>No further built heritage or historical archaeological items have been identified within the study area in either national park.</p>	<ul style="list-style-type: none"> • Should any unexpected historical archaeology be uncovered during works, the following procedure must be adhered to: <ul style="list-style-type: none"> ○ Stop all work in the immediate area of the item and notify the project manager. ○ Establish a 'no go zone' around the item. Use high visibility fencing, where practical. Inform all site personnel about the no go zone. ○ No work is to be undertaken within this zone until further investigations are completed. ○ Engage a suitably qualified and experienced archaeologist to assess the finds. ○ The Heritage Council must be notified if the finds are of local or state significance. Additional approvals will be required before works can recommence onsite. ○ If the item is assessed as not a 'relic', a 'heritage item' or an 'Aboriginal object' by the archaeologist, work can proceed with advice provided in writing.
2. impact on relics or moveable heritage items, or an area with a high likelihood of containing relics?	Yes	Low	No relics or potential relics were identified with the study area.	Refer to Table 9.6 point 1.
3. impact on vegetation of cultural landscape value?	Yes	Low	No vegetation of cultural landscape value will be affected by the proposal (e.g. gardens and settings, introduced exotic species, or evidence of broader remnant land uses).	Refer to Table 9.6 point 1.

9.7 Impacts on matters of national environmental significance under the Environment Protection and Biodiversity Conservation Act during all stages of the activity

Table 25 Impacts on matters of national environmental significance

Is the proposal likely to affect MNES, including:	Applies?	Likely impact	Reasons	Safeguards/mitigation measures
1. listed threatened species or ecological communities?	Yes	Negligible	No species or threatened ecological communities listed under the Environment Protection and Biodiversity Conservation Act would be significantly impacted as a result of the activities that form this proposal. Refer to ELA (2024a, b, supporting documents A and B).	Refer Section 9.2.
2. listed migratory species?	Yes	Negligible	No migratory species would be significantly impacted as a result of the activities that form this proposal. Refer to supporting documents A and B.	Refer Section 9.2.
3. the ecology of Ramsar wetlands?	No	N/A	No Ramsar wetlands would be impacted as a result of the activities that form this proposal.	N/A
4. world heritage values of World Heritage properties?	Yes	Negligible	No World Heritage items, places or properties would be significantly impacted as a result of the activities that form this proposal.	Refer sections 9.1 to 9.6.
5. the national heritage values of national heritage places?	Yes	Negligible	No National Heritage items, places or properties would be significantly impacted as a result of the activities that form this proposal.	Refer sections 9.1 to 9.6.

9.8 Cumulative impacts during all stages of the activity

Table 26 Cumulative impacts

When considered with other projects, is the proposed activity likely to affect...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
1. natural landscape or biodiversity values through cumulative impacts?	Yes	Negligible	<p>Several activities have been proposed by NPWS within Dorrigo NP. These include:</p> <ul style="list-style-type: none"> the Dorrigo Arc Rainforest Centre The Glade precinct upgrades. <p>A number of other activities not associated with the DEGW project continue as part of ongoing visitor management and infrastructure renewal programs. These include:</p> <ul style="list-style-type: none"> upgrades to the existing 7 km Wonga walk circuit. ongoing cyclic replacement of timber bridges with concrete bridges on existing roads and management trails road and trail maintenance and improvements. <p>These activities are located within existing precincts, disturbed areas and road formations and would be consistent with existing uses at these locations.</p>	<ul style="list-style-type: none"> All proposals must be coordinated so they do not occur all at the same time to minimise impacts to biodiversity values; or parts of the proposals are to be undertaken at well separated areas of the parks to allow construction areas to settle.
2. cultural (Aboriginal, shared and historic heritage) values through cumulative impacts?	Yes	Negligible	As above	<ul style="list-style-type: none"> All proposals must be coordinated as per above.
3. social (amenity, recreation, education) values through cumulative impacts?	Yes	Negligible	As above	<ul style="list-style-type: none"> All proposals must be coordinated as per above.

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When considered with other projects, is the proposed activity likely to affect...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
4. the community through cumulative impacts on any other part of environment (e.g. due to traffic, waste generation or perceived over-development?)	Yes	Negligible	As above	<ul style="list-style-type: none"> All proposals must be coordinated as per above.

10. Proposals requiring additional information

10.1 Lease or licence proposals under s 151 National Parks and Wildlife Act

Not applicable; no leases or licences proposed as part of the project.

10.2 Telecommunications facilities

The DEGW project has no telecommunications facility component so assessment under s 153D of the National Parks and Wildlife Act is not required.

10.3 Activities within the Sydney Drinking Water Catchment

The DEGW project does not fall within the Sydney Drinking Water Catchment so further assessment is not required.

10.4 Activities in River Murray riverine land

The DEGW project is not located within lands defined as Murray riverine land so further assessment is not required.

11. Summary of impacts and conclusions

Table 27 provides a summary of considerations of significance of impacts for each environmental factor.

Table 27 Consideration of significance of impacts for each environmental factor

Environmental factor	Consideration	Significance of impact
(a) the environmental impact on the community	Social, economic and cultural impacts as described in Sections 9.3, 9.5 and 9.6	Not significant
(b) the transformation of the locality	Human and non-human environment as described in Sections 9.1, 9.2 and 9.4	Not significant
(c) the environmental impact on the ecosystems of the locality	Amount of clearing, loss of ecological integrity, habitat connectivity/fragmentation and changes to hydrology (both surface and groundwater) as described in Sections 9.1, 9.2 and 9.4 and, for nationally listed threatened ecological communities, in Section 9.7.	Not significant
(d) reduction of the aesthetic, recreational, scientific or other environmental quality or value of the locality	Visual, recreational, scientific and other impacts as described in Section 9.3.	Not significant
(e) the effects on any locality, place or building that has— (i) aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance, or (ii) other special value for present or future generations	Impacts to Aboriginal and historic heritage associated with a locality (including intangible cultural significance), architectural heritage, social/community values and identity, scenic values and others, as described in Sections 9.3, 9.5 and 9.6 and (for MNES heritage places) Section 9.7.	Not significant
(f) the impact on the habitat of protected animals, within the meaning of the Biodiversity Conservation Act	Impacts to all native terrestrial species, including but not limited to threatened species, and their habitat requirements, as described in Section 9.2.	Not significant
(g) the endangering of a species of animal, plant or other form of life, whether living on land, in water or in the air	Impacts to all listed terrestrial and aquatic species, and whether the proposal increases the impact of key threatening processes, as described in Section 9.2	Not significant
(h) long-term effects on the environment	Long-term residual impacts to ecological, social and economic values as described in all parts of Section 9.	Not significant
(i) degradation of the quality of the environment	Ongoing residual impacts to ecological, social and economic as described in Section 9.4.	Not significant
(j) risk to the safety of the environment	Impacts to public and work health and safety, from contamination, bushfires, sea level rise, flood, storm surge, wind speeds, extreme heat, rockfall and landslip, and other risks	Not significant

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Environmental factor	Consideration	Significance of impact
	likely to increase due to climate change as described in Sections 9.1, 9.3 and 9.4.	
(k) reduction in the range of beneficial uses of the environment	Impacts to natural resources, community resources and existing uses as described in Sections 9.3 and 9.4.	Not significant
(l) pollution of the environment	Impacts due to air pollution (including odours and greenhouse gases); water pollution (water quality health); soil contamination; noise and vibration (including consideration of sensitive receptors); or light pollution, as described in Sections 9.1 and 9.3.	Not significant
(m) environmental problems associated with the disposal of waste	Transportation, disposal and contamination impacts as described in Section 9.3.	Not significant
(n) increased demands on natural or other resources that are, or are likely to become, in short supply	Impacts to land, soil, water, gravel, minerals and energy supply as described in Section 9.4.	Not significant
(o) the cumulative environmental effect with other existing or likely future activities	The negative synergisms with existing development or future activities as considered in Section 9.8.	Not significant
(p) the impact on coastal processes and coastal hazards, including those under projected climate change conditions	Impacts arising from the proposed activity on coastal processes and impacts on the proposed activity from those coastal processes and hazards, both current and future, as considered in Section 9.1.	Not significant
(q) applicable local strategic planning statements, regional strategic plans or district strategic plans made under the Act, Division 3.1	Inconsistency with the objectives, policies and actions identified in local, district and regional plans, as considered in Section 3.2.2.	Not significant
(r) other relevant environmental factors.	Any other factors relevant in assessing impacts on the environment to the fullest extent, such as native title.	Not significant

In conclusion:

- There **is not** likely to be a significant effect on the environment and an environmental impact statement **is not** required.
- There **is not** likely to be a significant effect on threatened species, populations, ecological communities or their habitats and a species impact statement **is not** required.
- The activity **is not** likely to have a significant impact on matters of national environmental significance listed under the Cth Environment Protection and Biodiversity Conservation Act and so **will not** require referral to the Australian Government.
- The activity **will not** require certification to the *Building Code of Australia, Disability (Access to Premises – Buildings) Standards 2010* or Australian Standards in accordance with the NPWS *Construction assessment procedures*.

Reason(s): Overall, there would be minor negative impacts to the local environment and some parts of the community during construction in the vicinity of the DEGW alignment.

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During operation, there would be negligible environmental and community impacts. Impacts nonetheless have been avoided and/or minimised wherever possible through design and site-specific and project-specific safeguards. The study area has been subject to detailed environmental investigation and this REF outlines the maximum area or subject site within which the proposed DEGW and its associated construction works will be located. This provides as much clarity and certainty as possible during the DEGW's early design, but retains flexibility during construction to avoid, minimise and manage any potential environmental impacts and indirect impacts. The findings of the REF include:

- The proposed DEGW is not likely to have a significant impact on the environment and therefore the necessity for an environmental impact statement to be prepared and approval to be sought from the Minister for Planning under Division 5.2 of the Environmental Planning and Assessment Act is not required.
- The proposal is not likely to significantly impact threatened species or ecological communities or their habitats, within the meaning of the Biodiversity Conservation Act or Fisheries Management Act, and therefore neither a species impact statement nor a biodiversity development assessment report is required.
- The significance of any impact on native vegetation and species is negligible, and no offsets are required.
- The proposed DEGW works will have negligible impact on nationally listed biodiversity matters, other MNES or Commonwealth land and the need to make a referral under the Environment Protection and Biodiversity Conservation Act is not considered to be required.

The REF has examined and taken into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the proposed DEGW. This has included consideration of plans of management under the National Parks and Wildlife Act, the Biodiversity Conservation Act, wilderness areas, areas of outstanding value, impacts on threatened species, ecological communities and their habitats as well as other protected fauna and native plants. It has also considered potential impacts to matters of national environmental significance listed under the Environment Protection and Biodiversity Conservation Act.

The potential environmental impacts identified from the proposal have been avoided or reduced during the concept design development and options assessment. The proposal as described in the REF best meets the project objectives but would still result in some minor impacts on biodiversity, hydrology and create temporary noise, odour and dust impacts during construction. Safeguards and management measures as detailed in this REF will ameliorate or minimise these expected impacts. On balance the proposed DEGW is considered justified.

12. Supporting documentation

Table 28 provides details of documentation that support this application. The Aboriginal cultural heritage assessment report has not been published due to cultural sensitivities. A summary is provided in Section 8.4. Any requests to view the ACHA report will need to be reviewed by the participating registered Aboriginal parties.

Table 28 Supporting documents that accompany the review of environmental factors

Document	Document title	Author	Date
A	Ecological assessment	Eco Logical Australia	2024a
B	Matters of national environmental significance report	Eco Logical Australia	2024b
C	Aboriginal cultural heritage assessment	Eco Logical Australia	2024c
D	Statement of heritage impact	Eco Logical Australia	2024d
E	Project mapping	Eco Logical Australia	2024e

13. Fees for external proponents

N/A – Proponent is not external to NPWS.

14. Declarations

As the person responsible for the preparation of the REF, I certify that, to the best of my knowledge, this REF is in accordance with the Environmental Planning and Assessment Act, the Environmental Planning and Assessment Regulation and the guidelines approved under section 170 of the Environmental Planning and Assessment Regulation and the information it contains is neither false nor misleading.

Signature	
Name (printed)	
Position	
Date	

By endorsing the REF, the proponent confirms that the information in the REF is accurate and adequate to ensure that all potential impacts of the activity can be identified.

Signature	
Name (printed)	
Position	NPWS Park Operations Area Manager
Date	

Seal (if signing under seal):

15. References

Bellingen Shire Council (2020) [Bellingen Shire local strategic planning statement 2020–2040 \[PDF 24.9 MB\]](#), BSC, Bellingen.

Cth DCCEEW (Commonwealth Department of Climate Change, Energy, the Environment and Water) (2006) [Management of phytophthora cinnamomi for biodiversity conservation in Australia](#), Commonwealth of Australia, Canberra, ACT.

Cth DCCEEW (2023) [Conservation advice for Harrisoniascincus zia \(rainforest cool-skink\) \[PDF 942KB\]](#), Commonwealth of Australia, Canberra, ACT.

Cth DCCEEW (2024) [Species Profile and Threats Database Turnix melanogaster — Black-breasted Button-quail](#), Commonwealth of Australia, Canberra, ACT.

CoA (Commonwealth of Australia) (2013) [Matters of National Environmental Significance Significant impact guidelines 1.1 Environment Protection and Biodiversity Conservation Act 1999 \[PDF 1.8MB\]](#), CoA, Canberra.

Daniel R, Guest D and Bishop T (2013) [Management strategies for Phytophthora in the Gondwana Rainforests of Australia World Heritage Area](#), Faculty of Agriculture and Environment, The University of Sydney.

DAWE (Commonwealth Department of Agriculture, Water and the Environment) (2014) [Conservation advice Atrichornis rufescens rufous scrub-bird \[PDF 151KB\]](#), DAWE Canberra.

DECC (Department of Environment and Climate Change NSW) (2008) [Managing urban stormwater: soils and construction - volume 2A](#), DECC, Sydney South.

DECC (2009) [Interim construction noise guideline \[PDF 1.2MB\]](#), DECC, Sydney South.

DECCW (Department of Climate Change, Energy, the Environment and Water NSW) (2010a) [Aboriginal cultural heritage consultation requirements for proponents 2010](#), DECCW, Sydney South.

DECCW (2010b) [Code of practice for archaeological investigation of Aboriginal objects in New South Wales](#), DECCW, Sydney South.

DEH (Commonwealth Department of the Environment and Heritage) (2000) [World Heritage Central Eastern Rainforest Reserves of Australia strategic overview for management \[PDF 1MB\]](#), Commonwealth of Australia, Canberra.

Dieback Working Group (2008) [Managing phytophthora dieback in bushland: a guide for landholders and community conservation groups](#).

DoE (Cth Department of Environment) (2015) [Draft referral guideline for 14 birds listed as migratory species under the EPBC Act](#), Cth DCCEEW webpage.

DoE (Commonwealth Department of the Environment) (2015) [Arrive clean, leave clean: guidelines to help prevent the spread of invasive plant diseases and weeds threatening our native plants, animals and ecosystems \[PDF 6.9MB\]](#), Commonwealth of Australia, Canberra, ACT.

Department of Planning and Environment (DPE) (2022) [North Coast regional plan 2041](#), DPE, Parramatta.

DPE (2023a) [Assessing heritage significance](#), DPE Parramatta.

DPE (2023b) [Guidelines for preparing a statement of heritage impact](#), DPE, Parramatta.

DPI (Department of Primary Industries NSW) (2013) [Policy and guidelines for fish habitat conservation and management \[PDF 2.4MB\]](#), Department of Trade and Investment, Regional Infrastructure and Services, Wollongbar.

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- DPIE (Department of Planning, Industry and Environment NSW) (2020a), 'Hygiene guidelines: protocols to protect priority biodiversity areas in NSW from *Phytophthora cinnamomi*, myrtle rust, amphibian chytrid fungus and invasive plants', DPIE, Parramatta.
- DPIE (Department of Planning, Industry and Environment NSW) (2020b) 'Surveying threatened plants and their habitats: NSW survey guide for the Biodiversity Assessment Method', DPIE, Parramatta.
- DPIE (2020c) 'Biodiversity assessment method', DPIE, Parramatta.
- DPIE (2020d) 'NSW survey guide for threatened frogs a guide for the survey of threatened frogs and their habitats for the Biodiversity Assessment Method', DPIE, Parramatta.
- Eco Logical Australia (ELA) (2024a) 'Dorrigo Escarpment Great Walk: ecological assessment [PDF 110MB], ELA, Sydney.
- ELA (2024b) 'Dorrigo Escarpment Great Walk: matters of national environmental significance [PDF 2.3MB], ELA, Sydney.
- ELA (2024c) Dorrigo Escarpment Great Walk: Aboriginal cultural heritage assessment [unpublished report], ELA, Sydney.
- ELA (2024d) 'Dorrigo Escarpment Great Walk: statement of heritage impact [PDF 9.1MB], ELA, Sydney.
- ELA (2024e) 'Dorrigo Escarpment Great Walk: project mapping [PDF 4.6MB], ELA, Sydney.
- Fairfull S (2013) *Fisheries NSW policy and guidelines for fish habitat conservation and management*, NSW Department of Primary Industries, Cronulla.
- Fairfull S and Witheridge G (2003) *Why do fish need to cross the road? fish passage requirements for waterway crossings*, NSW Department of Primary Industries, Cronulla.
- IECAA (International Erosion Control Association Australia) (2008) 'Best practice erosion and sediment control - Volumes 1 to 3', IECA Australasia.
- Landcom (2004) 'Managing urban stormwater: soils and construction - volume 1', NSW Government.
- NPWS (NSW National Parks and Wildlife Service) (1998) *Dorrigo National Park plan of management*, NPWS, Hurstville.
- NPWS (2016a) *Parks facilities manual* [unpublished report], NPWS, Sydney.
- NPWS (2016b) *Parks signage manual* [unpublished report], NPWS, Sydney.
- NPWS (2024a) 'Dorrigo National Park, Bindarri National Park and Bindarri State Conservation Area plan of management', Department of Climate Change, Energy, the Environment and Water, Parramatta.
- NPWS (2024b) 'Landslides and rockfalls procedures', Department of Climate Change, Energy, the Environment and Water, Parramatta.
- NPWS (2024c) 'Fire management manual', Department of Climate Change, Energy, the Environment and Water, Parramatta.
- North Coast LLS (Local Land Services) (2022) 'North Coast regional strategic weed management plan 2023–2027 [PDF 2.9MB], North Coast LLS.
- NSW EPA (NSW Environment Protection Authority) (2020) 'Draft construction noise guideline [PDF 646KB], EPA, Parramatta.
- NSW EPA (2014) 'Waste classification guidelines', EPA, Sydney.
- OEH (2011a) 'Sustainability assessment criteria for visitor use and tourism in NSW national parks [PDF 299KB], OEH, Sydney South.

Office of Environment and Heritage (OEH) (2011b) *Construction assessment procedures: certification for new building and infrastructure works within lands reserve or acquired under the National Parks and Wildlife Act 1974* [PDF 246KB], OEH, Sydney South.

More information

- [BioNet Vegetation Information System](#)
- [Botanic Gardens of Sydney biosecurity webpage](#)
- [DPI Fisheries Spatial Data Portal](#)
- [eSpade](#)
- [State Vegetation Type Map](#) – SEED data portal
- [National Construction Code](#)
- [NSW BioNet](#)
- [NSW WeedWise](#)
- NPWS park policies:
 - [Landslides and rockfalls](#)
 - [Visitor accommodation](#)
 - [Visitor safety](#)
 - [Walking tracks](#)
- [Protected Matters Search Tool](#)
- [Species Profile and Threats Database](#)