APPENDIX 1

Community and Stakeholder Engagement Strategy

Community and Stakeholder Engagement Strategy – Scenic Rim Trail

Background

Vision for the Scenic Rim Trail

The Scenic Rim Trail (SRT) revisits Arthur Groom's visionary concept for the Scenic Rim. The basic aspects of access, infrastructure and style of camping are still as relevant today as they were 73 years ago – including the notion of developed lodges at key access points interspersed with campsites. By the 75th anniversary of his vision first being expressed, work could be completed on a 50 km walking trail and associated Ecocamp accommodation commencing from Thornton the northern section of the Scenic Rim and continuing south to Spicers Canopy Ecocamp. This project provides the northern equivalent of the southern Scenic Rim Trail from O'Reilly's to Springbrook. The Trail would be developed to Class 5 Australian Standards and would be open to the public and guests of the 'Scenic Rim Trail'. A more detailed overview of the Scenic Rim Trail is presented in Appendix A.

The SRT is an important component of the Gainsdale Pty Ltd range of conservation projects that seeks to contribute to the conservation and buffer protection of the universally important Gondwana World Heritage Area. It forms part of a comprehensive program of activities that will provide a Queensland with a major conservation legacy.

The Experience

The Scenic Rim Trail offers 5 days of walking in the spectacular Main Range, part of the Gondwana World Heritage Area. The proposed trail would operate in a southerly direction from Thornton, following the escarpment through to the Spicers Nature Refuge adjoining the Cunningham Highway. The majority of the walk is within National Park, and walkers will experience majestic sub-tropical rainforests, tall eucalypt forests, mountain heathlands, waterfalls and unsurpassable views. The high altitude of the Scenic Rim provides for mild walking conditions for most of the year. At points along the Trail outstanding views to the east open up from the edge of the escarpment.

Walkers with the 'Scenic Rim Trail' will be accompanied by two interpretive ecoguides, and walk on average 5-6 hrs/day (8-12km). Each evening guests will be at a different location and the style of accommodation will vary from remote wilderness Ecocamps to a rural Ecocamps. Where possible private lands are used for the Ecocamp accommodation. Two Ecocamps are proposed within National Parks to achieve viable overnight stops. The public would use the bushcamping sites established within the World Heritage Area by the Queensland Parks and Wildlife Service.

The Opportunity

The Scenic Rim Trail will provide a re-invigoration for bushwalking and bushcamping. It promises to provide a world-class long range walking trail that rivals the other great walks of Australia and New Zealand. The Scenic Rim Trail will act as a catalyst for ecotourism in the region and will create tourism and sustainability related employment opportunities in the region. In particular Gainsdale Pty Ltd is committed to employing indigenous Australians with a connection to these lands to undertake maintenance, monitoring and interpretative activities along the Scenic Rim Trail.

Scope of this document

This plan covers the community and stakeholder Engagement across three stages:

- Pre-construction;
- Construction; and
- Operations.

The document by necessity is dynamic as it will operate in a dynamic environment. As a result the plan will updated periodically to maintain its relevance and contemporary value.

The purpose of this plan is to inform parties that have a legislative responsibility or role in relation to the project and those who have, or may have an interest in the project by virtue of their geographical location; interest in the protection of the environment; interest in the sustainable use of the environment; or other indirect interests in the region or project.

Goal

To facilitate meaningful engagement between Gainsdale Pty Ltd and the Scenic Rim community, including local government, community groups, traditional owners, neighbours and other stakeholder groups throughout the life of the project and to ensure relationships are based on mutual trust and respect.

To apply a value set based on the protection and presentation of the universal values of the Gondwana World Heritage Area.

Objectives

- Activities meet or exceed relevant planning approval conditions related to stakeholder and community consultation
- Ensure systems and processes are in place to record and respond to community concerns, queries and complaints with the aim of working collaboratively to resolve all complaints
- Ensure Gainsdale Pty Ltd meets all commitments made to the community throughout each phase of the project
- Ensure the positive reputation and credibility of Gainsdale Pty Ltd is enhanced through the conduct of this project
- Initiatives undertaken within this plan contribute to the ongoing success and viability of the Scenic Rim Trail
- Ensure the community has up to date and accessible information throughout the life of the project.

Key Stakeholder and Community Engagement

Gainsdale Pty Ltd set out its approach to community and stakeholder engagement in the first two phases of the Queensland Government expression of interest process.

This approach is further outlined below.

Engagement Parameters

Geographic:
Geographically the SRT traverses from the lowlands near Thornton to the escarpment associated with the Main Range. The communities of Lockyer Valley and Southern Downs neighbour the SRT.

World Heritage Community
The Gondwana World Heritage Area is part of an elite group of properties that have been recognised by the World Heritage Committee of UNESCO for their universally important values and hence there is a global community of interest in relation to activities that occur on the World Heritage Area.

Legislative
The SRT must comply with:
- Local Government planning and building requirements
- Environmental legislation at a Commonwealth and State level
- Native title and heritage legislation as it applies to the project

Interest and User Groups
The Scenic Rim is valued by a wide range of groups for its place in nature conservation, heritage protection, nature study and recreation.

Key stakeholder interaction

QPWS is the principal stakeholder and there are a range of key interactions with QPWS through the planning and approval stages and for the life of the program. Gainsdale Pty Ltd will involve QPWS staff closely in the trail alignment and Wilderness Ecocamp and Ecocamp site selections to minimise impacts yet provide for a world class long range walking trail (Ecocamps and Wilderness Ecocamps will be located to ensure that they do not impinge on traditional bush camping locations). Similarly it will involve QPWS in the development of a range of specific Scenic Rim Trail management plans that will relate to maintenance, fire, feral animals, weeds, emergency evacuation, impact monitoring and biodiversity.

Regional and Central Office QPWS involvement

Gainsdale Pty Ltd would continue to engage with the regional and central office staff of QPWS to:

- ensure the best trail alignment is achieved (while protecting heritage values) and that appealing Ecocamp and wilderness Ecocamp sites are selected, and do not impinge on traditional bushcamping locations;
- develop monitoring and wildlife research programs that contribute to wildlife conservation in the region;
- implement the Queensland Ecotourism Plan;
- co-operate in the implementation of the Main Range National Park Management Statement; and
- co-operative marketing initiatives with QPWS.

Regional Office of QPWS

The involvement of local QPWS staff is important across all elements of the project:

- selection of the final trail alignment;
- selection of Wilderness Ecocamp and Ecocamp sites;
- construction phase oversight (including construction protocols in relation to environmental protection, cultural heritage protection, OWH&S)
- operational phase oversight (including maintenance program, weed management fire management, monitoring and research);
- emergency evacuation or search and rescue operations.

Traditional owners

There are a number of Traditional Owner groups that associate with the broader area, including the Githabul people, whose lands extend into New South Wales; the Western Wakka Wakka to the west; and the Jagera People to the east of the escarpment.

It has been reported that about 200 Githabul people live in the Queensland towns such as Warwick, Killarney and Rathdowney.

The forests, streams and landforms of Main Range National Park are of intrinsic value to the local Aboriginal people as part of the cultural landscape of their country. Aboriginal place names are known for some of the prominent landforms in the area. Jirramun – Wilsons Peak; Barguggan - Spicers Peak; Cooyinnirra - Mount Mitchell Niamboyoo - Mount Cordeaux; and Mount Roberts (Bunkoo) (Steele,1984).

Gainsdale Pty Ltd has contacted Traditional Owners that may have an interest in the Project area and will continue to consult with Traditional Owners with the aim of presenting the project in a way that respects the Indigenous heritage values and provides a valuable interpretive experience.

Gainsdale Pty Ltd's strategy is to communicate with Traditional Owners as part of the planning process with a view to proactively:

- informing them of the Scenic Rim Trail proposal;
- discussing the management of Indigenous cultural heritage;
- meeting with the appropriate people to discuss the project and to see how they would like to become involved in the assessment of cultural values;
- sharing Gainsdale Pty Ltd's aspirations in relation to involving Aboriginal people with land management, lodge management and guest services; and
- establishing some agreed lines of communication and information sharing.

For its part, Gainsdale Pty Ltd hopes that Traditional Owners will wish to be involved with:

- cultural assessment of trail alignments;
- interpretive content development (spiritual significance, bushfoods and medicine, Aboriginal trails, hunting, festivals, shelters etc.);
- employment opportunities; and
- contracted services. Given the large land holdings of Gainsdale Pty Ltd, employment opportunities extend beyond tourism into agriculture and protected area management, providing a diversity of opportunity.

Indigenous cultural interpretation will be a highly desirable part of the interpretive theming.

Gainsdale Pty Ltd specialists will follow guidelines set out by the Australian Heritage Commission Ask First publication and the Queensland Department of Aboriginal and Torres Strait Island and Multicultural Affairs Protocols for consultation and negotiation with Aboriginal People.

Adjoining neighbours

Gainsdale Pty Ltd has seven years' experience in running three and four day walks in the region and 16 years experience operating ecotourism and small luxury lodges in the area. Consequently they have extensive relationships with neighbours, an understanding of the operating conditions and good local knowledge of the landscapes. The SRT can be accessed from the north from Thornton through Gainsdale Pty Ltd lands. It can also be accessed from the south through Gainsdale Pty Ltd's Spicers Peak Nature Refuge. Neighbours will be contacted directly in relation to the SRT.

Approach

Gainsdale Pty Ltd is very conscious that the success of the project lies in its ability to develop and present a highly credible ecotourism product. It is also conscious that, as a flagship project under the Government's polices, key stakeholder groups will pay significant attention to the project standards and performance.

Key themes of engagement

The facilities would be built to Advanced Eco-certification standards and be in alignment with the Queensland Government's Best Practice Ecotourism Development Guidelines. The Scenic Rim design team is highly experienced in the development and use of these standards and guidelines and will ensure that they are achieved or exceeded.

Expert guides will deliver interpretation on the trail. The guides will be highly trained. At times the trail will be led by renowned experts from a broad cross section of disciplines to provide guests with a rich understanding of region's values. These experts will also be used to train the 'Scenic Rim Trail' guides on the diversity of heritage values on site. Experts will be drawn from local and national universities, research organisations and community groups. Specialist walks that focus on nature photography, birdwatching , indigenous foods, and many other natural and cultural history themes will be offered. Seasonal programs shall be developed reflect the changes in the natural setting. This approach will also assist in the viability of the operation in the summer months when the focus will shift away from the long range walks. Indigenous guides would be sought to provide both the standard guiding and interpretive services and specialised indigenous cultural walks and activities.

It is planned to involve guests in conservation related programs, working in association with groups like Conservation Volunteers Australia.

Other Government and Industry Stakeholders

Upon finalisation of the Scenic Rim environmental assessment an information briefing will be offered at Spicers Canopy to provide a range of stakeholders with the details of the Scenic Rim Trail vision. Invitees would include:

Local Government

- Southern Downs, Lockyer and Scenic Rim local authorities;
- Southern Queensland Country Regional Tourism Organisation.

State Government

- Qld Dept. of Aboriginal and Torres Strait Islander Partnerships
- Qld Dept of Environment and Heritage Protection
- Qld Dept of Infrastructure, Local Government and Planning
- Qld Dept of Local Government and Planning
- Qld Dept of National Parks, Sports and Racing
- Qld Dept of Natural Resources and Mines
- Qld Police, Fire and Emergency Services
- Qld Dept of State Development
- Qld Dept of Transport and Main Roads
- Qld Dept of Touirsm, Major Events, Small Business and the Commonwealth Games.

Commonwealth Government

Department of Environment

The briefing would outline the vision, design, heritage assessment, construction management, expected use levels and marketing considerations of the Scenic Rim Trail.

Interest Group Stakeholders

Interest Group Stakeholder briefings would be offered on a one-on one basis at the offices of the organisation (or at their regular membership meeting), the Gainsdale Pty Ltd office or on site – as preferred by the Stakeholder. These briefings will be structured to provide attendees with the context of the existing Gainsdale Pty Ltd operations and an overview of the Scenic Rim Trails vision and planning. These stakeholders include:

Conservation

- Conservation groups (National Parks Association; WWF, Wilderness Society, QCC, Wildlife Queensland)
- Ecotourism Australia
- Condamine Headwaters Landcare
- Condamine Alliance.

Bushwalking

- Brisbane Bushwalkers Club
- Brisbane Catholic Bushwalkers Club

- Bushwalkers of Southern Queensland
- Family Bushwalkers Inc.
- Ipswich Buswalkers
- Logan and Beaudesert Bushwalkers
- Queensland Bushwalkers Club
- Redland Bushwalkers
- YHA Bushwalkers Queensland Inc.

Outdoor Recreation

- Queensland Outdoor Recreation Federation

Throughout the project, Stakeholder updates would be offered periodically as major milestones are achieved. Updates would be provided to stakeholders on a regular basis via an electronic project newsletter and through a social media program.

Community Awareness

Community awareness will be achieved through multiple channels:

- release of regular media releases into the local community newspapers as key milestones are achieved or points of interest are discovered (eg historic survey markers, boat anchor in the middle of the rainforest;
- publish an e-newsletter to a database of local organisations and individuals;
- create a dedicated website for the project to post updates, photos, request community comment and to promote complementary community projects;
- create a facebook, twitter and Instagram site.
- Seek feature articles in metropolitan dailies based on:
  - new trends in ecotourism
  - private conservation and philanthropy
  - wildlife programs.

Professional Awareness and Engagement

Building awareness of the Gainsdale Pty Ltd ecotourism activities within the ecotourism profession (tourism agencies, protected area agencies, universities):

- undertake eco certification across the range of eco properties and ecotours;
- contribute to thought leadership in great walks and ecotourism through active involvement in the Global Eco Asia-Pacific Tourism Conference;
- Broaden existing partnerships with universities in relation to wildlife conservation, walking trail monitoring, campsite monitoring.

Pre-construction phase

Action	Timing	Notes
Direct notification	January/February 2017	Letter (with information sheet) and local advertising to neigbours and local community - seek written or verbal feedback – provide phone contacts.
Office based briefings – one on one	January/February 2017	Best method for single issue groups, seek feedback
Office based briefings - group	January/February 2017	Ideal for common interest groups, seek feedback. Meetings with employment services in the Warwick, Laidley area in relation to indigenous employment opportunities.
Site meetings	January/February 2017	Ideal for local regional groups to see first-hand on the ground. Traditional owners may also prefer to see progress on the ground.
Media releases	Seek to achieve media editorial placement once monthly	Local and metropolitan media – print and electronic.
SRT Website	January/February 2017	Outline of vision, concepts, gallery, best practice case studies, seek feedback
Social media	Establish social media presence and at least once weekly postings	Updates on architectural sketches, photographic pictorials. Seek feedback
Industry events	Attend and speak at Global Eco Asia-Pacific Walking Trail Masterclass – November 2016	Concepts, innovation, outline of Foundation activities
Community liaison officer	From January 2017	Allocated officer to run consultation program and respond to feedback
Comments/Feedback register	December 2016 through to approval	Response to feedback to be provided within 24 hours.

Construction phase

Action	Timing	Notes
Direct notification	8 weekly during construction	Letter with newsletter and local advertising, provide update on construction progress
Office based briefings – group	Throughout construction period	For single issue and common interest groups, invite feedback
Site meetings	January/February 2017 January/February 2018	Ideal for local regional groups to see first-hand on the ground. Traditional owners may also prefer to see progress on the ground.
Media releases	Seek to achieve media editorial placement once monthly throughout construction	Local and metropolitan media – print and electronic.
Static displays	Throughout construction	For use at tourism industry, local community and in Council library installations.
Site signage at Manna Gum Camping Area (one at each toilet facility) and Mt Castle Lookout carpark	Throughout construction	Informative sign showing the SRT route, distance, opening date, partners, experience
SRT Website	Ongoing through construction with e-newsletter updates	Outline of vision, concepts, gallery, best practice case studies, seek feedback
Social media	Establish social media presence and at least once weekly postings	Updates on building progress, photographic pictorials, release of marketing materials.
Industry events	Attend QTIC, ATE and other industry events	Concepts, innovation, pricing structure, packaging
Community liaison officer	Throughout construction phase	Allocated officer to run consultation program and respond to feedback
Comments/Feedback register	December through to approval	Response to feedback to be provided within 24 hours.
Employment services		

Operational phase

Action	Timing	Notes
Office based briefings – group		Ideal for common interest groups, seek feedback
Meetings with employment services	3 months prior to completion of construction	Meetings with employment services in the Warwick, Laidley area in relation to indigenous employment opportunities.
Site meetings	January/February 2017 January/February 2018	Ideal for local regional groups to see first-hand on the ground
Media releases	Seek to achieve media editorial placement once monthly throughout construction	Local and metropolitan media – print and electronic.
SRT Website	Ongoing through construction with e-newsletter updates	Outline of vision, concepts, gallery, best practice case studies, seek feedback
Social media	Establish social media presence and at least once weekly postings	Updates on building progress, photographic pictorials, release of marketing materials.
Industry events	Attend QTIC, ATE and other industry events	Concepts, innovation, pricing structure, packaging
Community liaison officer	Throughout construction phase	Allocated officer to run consultation program and respond to feedback
Comments/Feedback register	December 2016 through to approval	Response to feedback to be provided within 24 hours.

Key themes for stakeholder and community engagement

Theme	Community	Neighbours	Trad. owners	Govt	Conser. Interest Groups	User groups	Prof. interest Group	Guests of Scenic Rim Trail
Vision	X	X	X	X	X	X	X	X
Experience	X	X	X	X	X	X	X	X
Detailed alignment and design		X	X	X	X	X	X	X
Conservation measures and objectives	X	X	X	X	X	X	X	X
Target Market			X	X	X	X	X	
Impacts and levels of use		X	X	X	X	X	X	
Quality & standards	X	X	X	X	X	X	X	X
Employment opportunities	X	X	X	X			X	
Monitoring &research		X	X	X	X	X	X	X
Natural Heritage values	X			X	X	X		X
Cultural Heritage values	X	X	X	X	X	X		X
Interesting facts	X							X
Milestone announcements	X	X	X	X	X	X	X	X

Appendix A – An overview of the Scenic Rim Trail.

The Experience

The Scenic Rim Trail will offer 5 days of walking in the spectacular Main Range, part of the Gondwana World Heritage Area. Walkers will experience sub-tropical rainforests, tall eucalypt forests, mountain heathlands, waterfalls an unsurpassable views form the escarpment.

Walkers with the 'Scenic Rim Trail' will be accompanied by two interpretive ecoguides, and walk on average 5-6 hrs/day (8-12 km) along this reasonably non-challenging trail. The SRT uses private lands where possible for the Ecocamps. However, on the whole, only National Park lands are suitable for the wilderness Ecocamps due to high altitude of the area and location of ridgelines in National Park tenure. In Stage 1a, one wilderness ecocamp (Amphitheatre View) and one Ecocamp (Woodcutters) is required on National Park. **Ecocamps** are designed for up to 20 walkers/guests in basic but comfortable accommodation. Ecocamps will be self-sufficient in energy, water and waste management. **Wilderness Ecocamps** are located at more remote locations along the trail and accommodate 10 walkers and two guides. They will be self-sufficient for energy, water and waste. They are not available for public use. The buildings will be light frame and minimalistic with a small central communal building and individually placed camping pods placed between trees. All accommodation will be built and operated to achieve Ecotourism Australia's Advanced Eco Certification.

Supporting Park Management Priorities

The 2013 Management Statement for the Main Range National Park makes significant reference to the role of the Main Range in nature-based recreation, from remote walking and camping through to developed camping grounds and high-use, popular walks. Reference is made to the need for an ongoing remote area campsite monitoring program aimed at minimising environmental degradation.

National Parks Bushcamping Sites

Bush camping sites will continue to be provided by National Parks for remote country walkers who are travelling independently. The public would have access to the Trail – under the management regimes of QPWS.

Existing National Parks walking tracks used

Mt Mitchell Track

Mt Cordeaux walk

Mt Cordeaux to Bare Rock

Mt Castle Lookout track

The Winder Track

Old Forestry Road reopened for management vehicles and mountain bikes

The Winder Management Road from the end of the Winder Track north to Mt Mistake.

New tracks

- From Thornton Trailhead to the Mt Mistake Farmhouse using a Class 5 walking track (approximately 6.5 km) including a caged ladder system to ascend a small rock cliff section.
- From Mt Mistake south to the existing Winder Track using a mix of new Class 5 walking tracks and the old road alignment (approximately 7 km).
- A deviation from the Winder Track to link to the Amphitheatre View Wilderness Ecocamp to avoid an extra 2 km of walking and backtracking on the same track on the next day (approximately 0.2 km).
- A Class 5 trail from the Mt Castle Lookout to Sylvester's Lookout (approximately 1.5 km)
- A Class 5 trail from Sylvester's Lookout to link up to the existing Cascade Circuit (approximately 2.5 km).
- A Class 5 trail from the Banshee Fire Line to the escarpment and south to Bare Rock – a section at the western end is an old forestry road. (approximately 6 km).

Total Class 5 track to be constructed by Gainsdale Pty Ltd – approximately 29.25 km.

Ecocamps on National Park

- Amphitheatre View Wilderness Ecocamp – located along the western fireline from Mt Castle Lookout Carpark. Positioned on the southern side of the road. No large trees would be removed. Camping pods and a communal building will be placed to avoid trees. A lookout deck would be located on the northern side of the western fire management road to provide views into the Amphitheatre.
- Woodcutters Ecocamp – located in regrowth New England Blackbutt and Sydney Blue Gum open forest. No tree removal.

Sunrise lookout

A lookout deck is proposed along the edge of the escarpment adjoining the Mt Mistake Farmhouse.

Appendix B

Complaints Procedure
Prior to the commencement of construction, a community complaints process will be implemented and made available to the local community. The process will be available for pre-construction and construction period.
The complaints process will include four options for contact:

- A business hours telephone number where complaints about construction and operational activities at the site may be registered;
- A postal address to which written complaints may be sent;
- An email address to which complaints may be transmitted electronically
- Via website email link

The website, telephone number, postal address and email address will be advertised in local newspapers on at least one occasion prior to the commencement of construction, at 3-monthly intervals during construction.

The website, telephone number, the postal address and email address will be displayed on a sign near the entrance to publicly accessible construction sites, in a position that is clearly visible.

Details of all complaints received will be recorded in a Complaints Register. The Register will record:

- The name and address of the complainant (if provided);
- Date and time of the complaint;
- The means by which the complaint was made (telephone, mail or email);
- Nature of the complaint;
- Commitments made to the complainant in relation to responding to the complaint;
- The person who received and responded to the complaint;
- The person within Gainsdale Pty Ltd that the complaint was referred to (if applicable);
- Follow up contacts (if required) with the complainant and notes on the resolution or otherwise of the matter (where possible matters should be dealt with, within 48 hours).

APPENDIX 2

HIDDEN VALE UQ WILDLIFE CENTRE INFORMATION

HIDDEN VALE UQ WILDLIFE PROJECT

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Background and Vision

In 2015 The University of Queensland and the Gainsdale Group entered into a collaboration to develop a broad-scale wildlife conservation project at Spicers Hidden Vale. The overall objective of the Hidden Vale UQ wildlife project is:

"To deliver resilient ecosystems with representative, self-sustaining populations of fauna and flora endemic to the Scenic Rim" where "*Everything we do should support and be supported by applied, scientific research".* Spicers Hidden Vale and the Gainsdale Group are owned by Graham (Skroo) and Jude Turner who have said that they want:
"Hidden Vale to be our legacy…" and "… to conserve the area's significant natural and cultural resources, and provide for the controlled use of the land's natural resources for livestock production, ecotourism and adventure activities…"

Spicers Hidden Vale is a Scenic Rim property which has a long history of cattle grazing with extensive pastures but also has remnant habitat suitable for native wildlife, greatly valued by the owners and conservation bodies. The property, following control of invasive introduced plants and animals, and habitat restoration, will be ideal for establishing sustainable populations of wildlife within half an hour of the University of Queensland Gatton Campus. More than 3,000 ha has been declared as Nature Refuge, it has a wide variety of native animals and vegetation, but still requires effective pest management and the integration of conservation with the existing livestock enterprise. As such it has tremendous potential for students, researchers, external groups/ institutions (e.g. Landcare, RSPCA), and members of the public to learn about, observe and participate in conservation.

Under construction near the Spicers Hidden Vale Retreat in Grandchester, is the Hidden Vale UQ Wildlife Facility which is an integral part of this collaboration. Numerous UQ courses, from undergraduate to post-graduate, will benefit greatly from the use of this Wildlife Facility as students (during their practical sessions) and volunteers gain work experience that will be an integral part of their degrees.

The intention of the Hidden Vale UQ Wildlife Facility is to develop and research best-practice breeding techniques for threatened native species, and to subsequently research the post-release success of these animals and their progeny. Prior to release of any animals, research will be conducted into methods of restoring habitat combined with predator and pest control.

The Hidden Vale property comprises part of a corridor of cooperative properties effectively forming a 100 km^2 conservation area. In this much larger conservation area the Hidden Vale UQ Wildlife Facility will have the role of researching the breeding and release of species previously present in this landscape. A list of vertebrate species has been discussed with

the Director and Manager of the Threatened Species Unit in the DEHP and they have indicated that they will support Captive Breeding Agreements for all the species on this list. In addition to captive breeding and release, another urgent issue for research is the need to investigate the restoration of habitat for rehabilitated animals to be released onto the property. Habitat destruction through much of South East Queensland means that a large number of wild animals are rehabilitated and released each year (30,000+, with the majority coming from the RSPCA at Wacol). Suitable habitat is needed for the release of some of these animals and so restoring habitat to create 'homes' for them is a priority for animals endemic to this area.. Restoration of the Hidden Vale property will provide an excellent site on which to conduct research into the post-release success of reintroducing rehabilitated wildlife.

The current UQ Native Wildlife Teaching and Research Facility on the Gatton campus was not purpose built and is a modified poultry abattoir. As such, it is restricted in the number of species, animals, students that it can manage, and the quantity and quality of teaching and research that it can support. The new purpose designed Hidden Vale UQ Wildlife Facility can cater for an almost unrestricted diversity of species and will be capable of supporting research into the breeding (for release) of a wide range of birds, mammals, reptiles, amphibians, fish and invertebrates. Consequently students and researchers will soon have access to hands-on wildlife management (including best-practice captive husbandry, breeding and release), access to more animals and a diverse range of species. Consequently the quality and depth of learning and research will be greatly enhanced.

The Hidden Vale UQ Wildlife Facility

The Hidden Vale UQ Wildlife Facility is currently under construction, and is expected to be finished by the end of this year. It will include a classroom capable of seating 30-40 students, a postgraduate room with desks for at least eight postgraduate students, office space for staff, three research laboratories, a veterinary clinic, large feed preparation and feed storage areas including a walk-in cold room, laundry facilities, toilets, a lunch room and an interpretation room that looks into the clinic and the first aviary (Diagram 1). Along the north side of the building, where six large aviaries attach, is a ground floor corridor where each aviary has a window and doors that will be used to enter them. In addition, via an internal and an external set of stairs is a second corridor directly above the ground level corridor that looks into the top of the aviaries, each of which also has a window and access panels to allow attachment of nest boxes and research equipment.

The six aviaries being built are each 24 m long, 7 m high and 6 m wide. Three pairs of these aviaries run perpendicular to the axis of the building with 2 m wide walkways between the pairs of aviaries. At the end of these six aviaries is a 3 m wide, 3 m high enclosed laneway that connects the aviaries and walkways through gates. On the lower side of the enclosed laneway are two separate 6 m wide, 6 m long and 3 m high holding enclosures. All the aviaries, walkways, laneway and enclosures have a metre deep HDPE barrier (plastic sheeting, as used in stables) to stop animals digging into or out of the aviaries or enclosures. Extending above the ground is another metre high HDPE barrier to deter animals climbing into or out of the aviaries or enclosures. Across the top of the aviaries, walkways, laneway and enclosures is plastic coated, stainless steel 10 mm square mesh. This mesh extends from the top down the walls of the aviaries, walkways, laneway and enclosures to connect

with the top of the HDPE barriers to ensure animals inside the mesh and barriers can't escape nor can animals enter. Each aviary is divided in half by the meter deep and meter high HDPE barriers to effectively create two pens 12 m long and 6 m wide within each aviary. Each pen has its own rainwater and bore water supply, and a concrete path to place feed containers for ground-dwelling animals in the pens.

Galvanized steel posts, i.e. the aviary framework, that support the HDPE barriers and the mesh also have multiple lugs at a range of heights onto which will be attached, where appropriate, aviary 'furniture' e.g. wooden poles cut from trees on Hidden Vale, leafy and flower covered branches, ropes or nest boxes depending on the species kept in each aviary/pen. These steel posts will also have multiple cameras fixed to them to record the behaviour of animals in the pens/aviaries.

Once the steel framework is erected and the HDPE barriers are inserted into the ground any surplus building materials e.g. broken remnants of concrete, steel off-cuts will be removed so the ground level in all aviaries has the same slope i.e. draining away from the building. A 30 cm layer of soil will then be evenly distributed throughout the aviaries and enclosures, on top of which will be placed a 10 cm layer of top soil. Once this material has been placed in the aviaries and enclosures a range of local native grasses, forbs and shrubs will be planted such that each aviary (and enclosures) has the same combination of vegetation.

The architectural design of the Hidden Vale UQ Wildlife Facility takes into account orientation (winter sunlight penetrates the large aviaries as they face north) and the building is situated on the top of a ridge to take advantage of summer breezes and drainage of the aviaries. It has also been designed to be both energy and water self-sufficient. The Hidden Vale UQ Wildlife Facility has been divided into a public area (that includes an interpretation room and classroom with viewing windows), and access controlled areas that are restricted to authorised staff and students.

Access to the Hidden Vale UQ Wildlife **Facility**

There is an agreement in place that grants the University of Queensland, managed by the School of Agriculture and Food Sciences, access to the Hidden Vale UQ Wildlife Facility for three consecutive periods of 10 years, assuming both parties agree to continue. In this agreement the Hidden Vale UQ Wildlife Facility is acknowledged to be a University of Queensland teaching facility and as such access to it is controlled by UQ. As part of this agreement Spicers Retreat guests can request a guided tour of the Facility, by SAFS staff, under terms still being negotiated but likely to be for an hour once a day possibly from 2-3 pm.

There are no plans to open the Hidden Vale UQ Wildlife Facility to the general public nor are there any plans to have an entrance fee for Spicers guests i.e. the Facility is not a commercial enterprise.

Timelines

The current completion date for the Hidden Vale UQ Wildlife Facility is late November, 2016. It is likely that the building, that already has its roof completed and contains the teaching space, laboratories, clinic etc, is likely to be finished well before the completion of

the aviaries, construction of which was commenced only recently. Irrespective of the timing of their completion, plans are under way to start the fit-out of the building in December with an official opening of the whole Facility in March 2017.

Translocation of animals from the Native Wildlife Teaching and Research Facility on the Gatton campus to the Hidden Vale UQ Wildlife Facility will be dependent on the completion of the building and the aviaries, and the fit-out of furniture and equipment. It is likely that animals will not be moved from the Native Wildlife Teaching and Research Facility until late January or February 2017 subject to both University of Queensland Animal Ethics Committee and Queensland Government staff site inspection and approval. Associated with those approvals will be a number of changes to existing permits and permits to transfer animals from the existing Native Wildlife Teaching and Research Facility. Approvals and permits will be applied for once a reliable completion day is determined. A number of research projects at Hidden Vale are under development and both University of Queensland Animal Ethics Committee and Queensland Government approvals is currently being sought for animals involved in those research projects (discussed below).

Plans for the existing UQ Native Wildlife Teaching and Research Facility at Gatton and the fate of the animals that are currently housed there.

It is intended that all animals and associated equipment (e.g. feed and animal weigh scales) and resources (e.g. nest boxes) be transferred to the new Hidden Vale UQ Wildlife Facility. This is subject to the approvals and permits discussed under Timelines above. Transfer of animals is partly to ensure their continuity of care, and partly to centralise captive wildlife within the School of Agriculture into one Facility and thus also facilitate teaching and research at this one location. It is possible that species not normally found on the Scenic Rim but currently held in the Native Wildlife Teaching and Research Facility (e.g. Mahogany gliders) will eventually be relocated, with appropriate permits and approvals, to other wildlife facilities. However it is equally possible that species not normally found on the Scenic Rim may be bred at the new Hidden Vale UQ Wildlife as part of other research to release that species elsewhere in Australia, with appropriate permits and approvals.

Research

Two Research positions have already been included in the budget for the Hidden Vale UQ Wildlife Facility. The first, a Principal Ecologist, will undertake ecological projects with a focus on the restoration of the vegetation i.e. habitat on Hidden Vale for native wildlife. Research of both plant and animal pests, as well as their management and control, will be undertaken. The second a Senior Research Officer (Wildlife Conservation), will work with postgraduates and industry in the development of multidisciplinary research projects focused on maximising the success of all elements of captive wildlife breeding and release.

Wildlife trapping and a range of ecological techniques will also be taught on the property, and

the wildlife research and conservation will be integrated with Hidden Vale's cattle production (a strong feature of the property) to demonstrate the effective management of both shared land. The inclusion of agricultural land use with native conservation is practical and beneficial for teaching and research programs.

The research to be undertaken at Spicers Hidden Vale will naturally increase as the overall UQ Wildlife at Spicers Hidden Vale project progresses but at present includes the following:

1. Description and evaluation of the existing soil profiles, flora and fauna (vertebrate and invertebrate) in key locations for intensive long term studies to determine effect of climate change and changes in management (extend these studies to new sites as other studies begin e.g. comparison of fire and cattle grazing management to control fuel load on habitat and species diversity);
2. Introduced predator control – primarily cats and foxes using a range of techniques including Eradicat (learn from Western Shield) and trial once validated the Mata Hari Judas cat (once permits have been obtained). Use fencing in key sites;
3. Habitat restoration including weed poisoning and removal plus planting missing forbs, shrubs and understory plant species – primarily for ground-dwelling animals – vertebrates and invertebrates. Initially in key locations and then extend to new sites;
4. Identification of areas for fencing to control cattle grazing e.g. along riparian zones, (fragile) slopes, remnant vegetation;
5. Restoration of riparian areas to restore permanent water in key creeks, primarily for frogs and potentially platypus;
6. Identification and evaluation of thick timber regrowth areas for potential timber thinning to encourage larger trees (monitor tree hollow development), and use forestry techniques to encourage Casuarina growth for cockatoos, capture and use existing data on Glossy Black cockatoo sightings (and other information) to map key she-oaks feeding sites and apply management to encourage tree growth and dispersal;
7. Identification of large trees, their species and presence, and size of tree hollows and to identify potential sites for different sized nest boxes for a range of avian and mammal species;
8. Capture and use existing data on rainfall and creek lines on the property to understand water movement and it effect on erosion and potential (localised) flooding;
9. Capture and use existing data on grazing and fire management to understand and implement appropriate management of flammable fuel (e.g. pasture, regrowth) into the future to avoid impacting on other property changes (e.g. restoration of creek lines, restoring undergrowth in key locations).
10. Source (from other breeding facilities where available and/or from free-living populations in other locations), breed and release species missing from this landscape and undertaking research on best practice breeding management, release techniques and long term monitoring to determine survival, breeding and dispersal of released animals.
11. Rehabilitation and release of animals from different sources (e.g. wildlife from the RSPCA, carers) missing from this landscape while undertaking research on best practice release techniques and long term monitoring to determine survival and dispersal of released animals.

12. Post-release monitoring of released animals using a range of technologies (e.g. surveillance cameras to determine predator- prey relationships; use of microchip operated access to nest boxes by free-living animals);
13. Other research as determined by the project progresses.

This UQ and Gainsdale Group collaboration will also provide a close linkage with visitors at the Spicers Hidden Vale Retreat. This will allow them to understand and observe the wildlife and their breeding, rehabilitation and release, as well as attending wildlife activities and events to be held at the property. In this way, information can be spread to communities and the general public encouraging and inspiring them to become involved with and to support conservation. By encouraging guests to experience and understand natural flora and fauna, the importance of its preservation is likely to become more relevant and hence valuable to them. Research into visitor attitudes to wildlife conservation will also be undertaken.

Native species that have already been discussed with the DEHP as being of high priority for breeding and research are given in the table below:

Class	Common Name	Scientific Name
Mammal	Plains rat	*Pseudomys australis*
Mammal	Brush-tailed Rock-wallaby	*Petrogale penicillata*
Mammal	Hastings River mouse	*Pseudomys oralis*
Mammal	Large-eared pied bat	*Chalinolobus dwyeri*
Mammal	Long-nosed potoroo	*Potorous tridactylus tridactylus*
Mammal	Spotted-tailed quoll (Southern subspecies)	*Dasyurus maculatus maculatus*
Mammal	Mahogany glider	*Petaurus gracilis*
Mammal	Bridled nailtail wallaby	*Onychogalea fraenata*
Mammal	Greater bilby	*Macrotis lagotis*
Mammal	Silver-headed antechinus	*Antechinus argentus*
Mammal	Black tailed antechinus	*Antechinus arktos*
Mammal	Brush-tailed rabbit rat	*Conilurus penicillatus*
Mammal	Greater glider	*Petauroides volans*
Mammal	Kowari	*Dasyuroides byrnei*
Mammal	Northern bettong	*Bettongia tropica*
Amphibian	Fleay's barred frog	*Mixophyes fleayi*
Amphibian	Giant barred frog	*Mixophyes iteratus*
Amphibian	Cascade treefrog	*Litoria pearsoniana*
Amphibian	Tusked frog	*Adelotus brevis*
Amphibian	Wallum rocketfrog	*Litoria freycineti*
Reptile	Nangur skink	*Nangura spinosa*
Reptile	Gulbaru gecko	*Phyllurus gulbaru*
Bird	Eastern bristlebird	*Dasyornis brachypterus*
Bird	Rufous scrub-bird	*Atrichornis rufescens*
Bird	Coxen's fig-parrot	*Cyclopsitta diophthalma coxeni*
Bird	Golden-shouldered parrot	*Psephotus chrysopterygius*
Bird	Palm cockatoo	*Probosciger aterrimus*
Fish	Red-finned blue-eye	*Scaturiginichthys vermeilipinnis*
Fish	Edgbaston goby	*Chlamydogobius squamigenus*
Gastropod	Boggomoss snail	*Adclarkia dawsonensis*

Hidden Vale UQ Wildlife Facility

Opening in late 2016, this Australian wildlife conservation project is a partnership between the Turner Family's 'Gainsdale Group' and The University of Queensland (UQ).

Located at Hidden Vale and adjacent to a 3,100 hectare Nature Refuge with diverse native wildlife, the project combines learning and research with the opportunity to develop sustainable wildlife populations in a multi-use environment.

Currently under contruction, the Hidden Vale UQ Wildlife Facility will include two main facilities - a captive wildlife breeding facility, and ultimately a permanent release facility.

From 2017, UQ's Native Wildlife Teaching and Research Facility will, for the first time, be able to offer students hands-on access to learn wildlife management techniques and to study a diverse range of native and endangered animals. This presents exciting opportunities to heighten the quality and depth of research and learning into endangered and vulnerable native wildlife.

KOALA

Hidden Vale's size, the variety of native animals and vegetation, as well as the opportunity to interact with cattle and pest management activities, makes it an ideal centre for learning.

Landscape restoration work is also taking place on the property and this will be an invaluable experience for students, researchers, external groups/institutions and the community to better understand biodiversity and conservation science.

GLOSSY BLACK COCKATOO

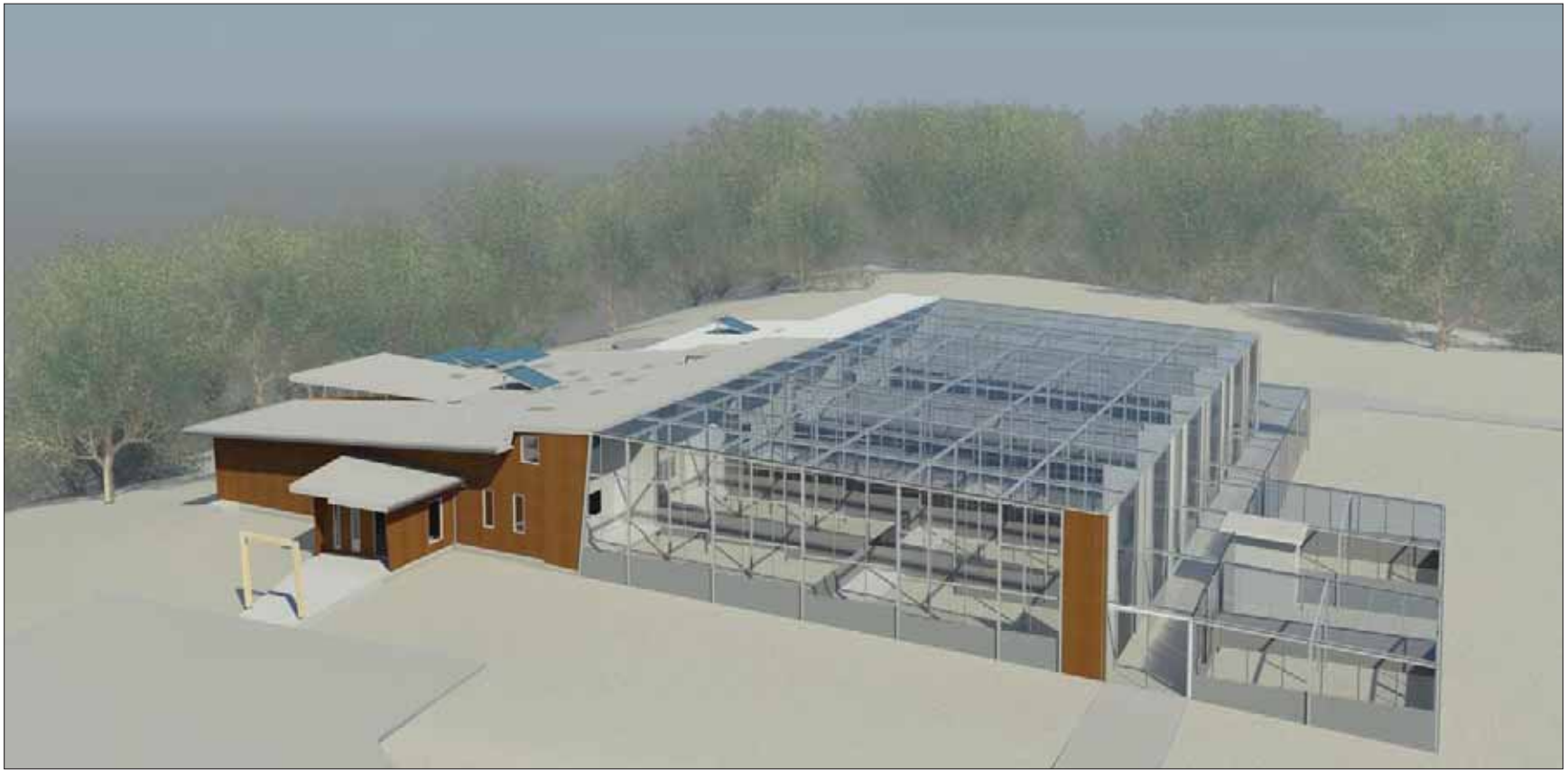
Research of both plant and animal pests, as well as management and control of non-native species, will be undertaken at Hidden Vale. The various management practices will be assessed, documented and shared with the public for adoption elsewhere.

The opportunity to integrate native and endangered species research and conservation with Hidden Vale's cattle production will provide a leading-edge demonstration of effective land co-management for successful coexistence of wildlife and livestock.

The native species potentially involved in the facilities captive breeding and release program will include .

BRUSH-TAILED PHASCOGALE

Visitors to Spicers Hidden Vale will have the opportunity to experience and observe the wildlife breeding, rehabilitation, and release programs at Hidden Vale UQ Wildlife Facility.



No.	Revision	Date
1	CONSTRUCTION ISSUE	03/05/2016

NOTE: Whilst every endeavour is made to list all revised items care should be taken to also consult all clouded areas.

SPICERS
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WILDLIFE SCIENCES FACILITY

SPICERS HIDDEN VALE

UNIVERSITY OF QUEENSLAND

AERIAL VIEW

Scale @ A1		Drawn by	CD
Checked by	CD	Project No.	15-453
Approved By		Date	29/06/2015

A903 | 1 Revision

No.	Revision	Date
1	CONSTRUCTION ISSUE	03/05/2016

NOTE: Whilst every endeavour is made to list all revised items care should be taken to also consult all clouded areas.

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wd architects

WILDLIFE SCIENCES FACILITY

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PERSPECTIVE

Scale @ A1		Drawn by	CD
Checked by CD	Project No. 15-453	Date	29/06/2015
Approved By	A904	1 Revision	

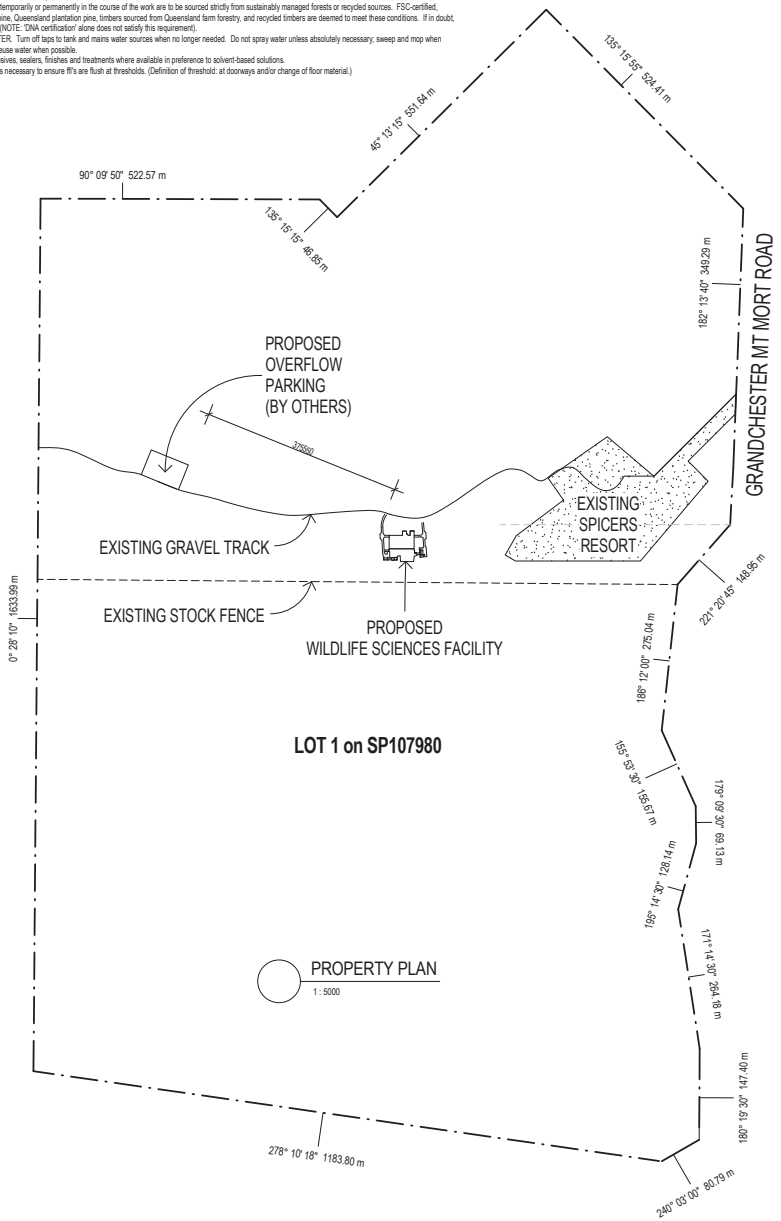
UNIVERSITY OF QUEENSLAND WILDLIFE SCIENCES FACILITY AT SPICERS HIDDEN VALE

GENERAL NOTES

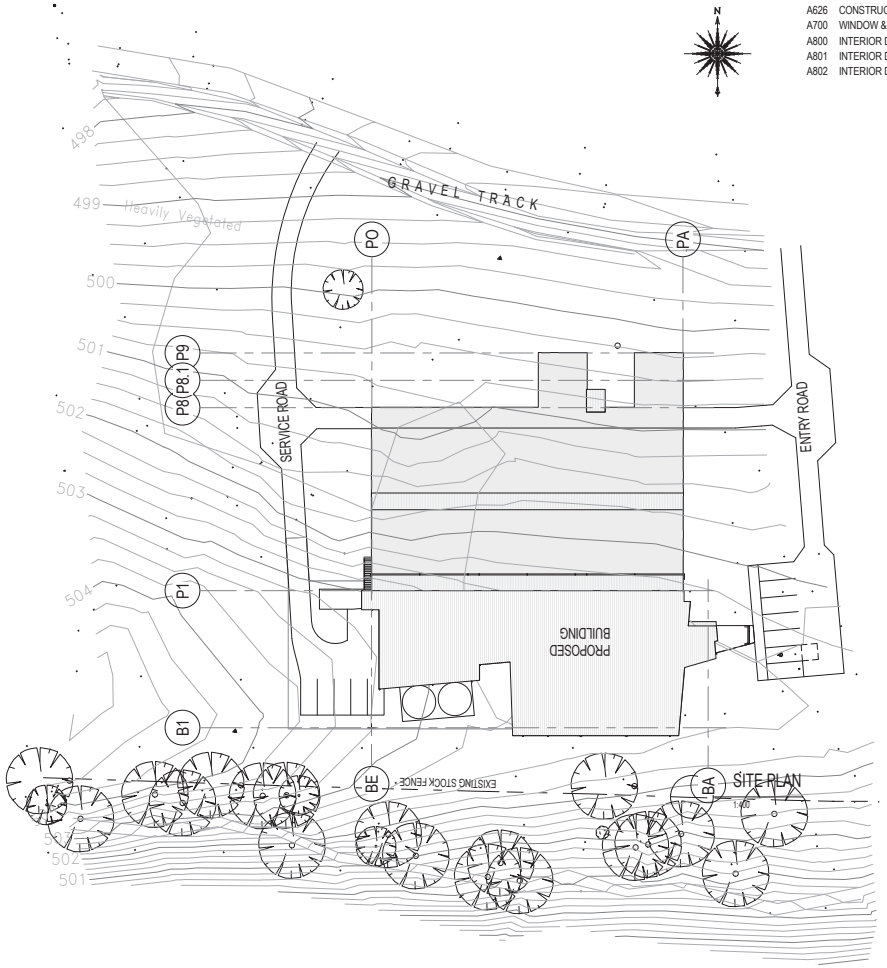
- DO NOT SCALE DRAWINGS Larger scale drawings take precedence over smaller scale drawings. Noted dimensions take precedence over scale. IF IN DOUBT, REFER TO ARCHITECT.
- These drawings are to be read in conjunction with written specifications, all relevant consultants' drawings and other written instructions issued during the course of the contract. REPORT DISCREPANCIES, errors or ambiguities found in the drawings to the Architect immediately for correction and/or direction.
- All workmanship & materials are to be in accordance with the current Building Code of Australia, relevant Australian Standards including amendments and the requirements of Council and other authorities having jurisdiction.
  Install materials, fixtures and fittings in accordance with manufacturers' specifications and recommendations and the requirements of manufacturers' warranties.
- THE BUILDER SHALL VERIFY all locations, dimensions, levels, inverts, distances and features on site prior to commencement of any work or the production of any shop drawings. Should existing conditions differ from those shown or indicated or if it appears that the contract documents do not adequately detail the work to be done, the Builder must notify the Architect prior to continuing with related work. No allowance will be made on behalf of the Builder for extra expenses resulting from the Builder's failure or neglect in determining the conditions under which the work is to be performed.
- DO NOT WELD, GRIND, TORCH or otherwise generate sparks or open flames WHEN FLAMMABLE MATERIALS ARE IN CLOSE PROXIMITY to the work area. When conducting such work, maintain fire extinguishers and/or working hoses within easy reach at all times.
- DO NOT SMOKE ON SITE
- MAINTAIN THE SITE in an ordered and clean manner. Sweep and remove rubbish as work progresses and at minimum daily intervals. Subcontractors are to remove rubbish produced by their part of the work at minimum daily intervals and when complete.
- RECYCLE waste materials which display the universal recycling symbol as well as paper, cardboard, glass bottles and other suitable materials as advised by the waste management operator. Separate recyclable items from non-recyclable items during clean-up. Maintain clearly marked bins / skips on site to facilitate this.
- NO TIMBERS FROM RAINFORESTS, OLD GROWTH FORESTS NOR OTHER SENSITIVE ECOSYSTEMS MAY ENTER THE SITE or be used to build sub-assemblies off-site. Timbers used temporarily or permanently in the course of the work are to be sourced strictly from sustainably managed forests or recycled sources. FSC-certified, Queensland Cypress pine, Queensland plantation pine, timbers sourced from Queensland farm forestry, and recycled timbers are deemed to meet these conditions. If in doubt, refer to the Architect. (NOTE: 'DNA certification' alone does not satisfy this requirement).
- DO NOT WASTE WATER. Turn off taps to tank and mains water sources when no longer needed. Do not spray water unless absolutely necessary; sweep and mop when possible. Catch and reuse water when possible.
- Use water-based adhesives, sealers, finishes and treatments where available in preference to solvent-based solutions.
- Set out floor framing as necessary to ensure ffl's are flush at thresholds. (Definition of threshold: at doorways and/or change of floor material.)

ARCHITECTURAL DRAWINGS

SHEET	NAME	REVISION	REVISION DATE
A100	TITLE PAGE, NOTES AND SITE PLANS	1	23/11/2015
A300	GROUND FLOOR PLAN (TOTAL)	1	23/11/2015
A301	GROUND FLOOR PLAN (PARTIAL)	1	23/11/2015
A302	OBSERVATION GALLERY PLAN	1	23/11/2015
A370	REFLECTED CEILING PLANS	1	23/11/2015
A380	ROOF PLAN	1	23/11/2015
A400	SECTIONS	1	23/11/2015
A401	SECTIONS	1	23/11/2015
A402	SECTIONS	1	23/11/2015
A500	ELEVATIONS	1	23/11/2015
A621	CONSTRUCTION DETAILS 1	1	23/11/2015
A622	CONSTRUCTION DETAILS 2	1	23/11/2015
A624	CONSTRUCTION DETAILS 3	1	23/11/2015
A625	CONSTRUCTION DETAILS 4	1	23/11/2015
A626	CONSTRUCTION DETAILS 5	1	23/11/2015
A700	WINDOW & DOOR SCHEDULE	1	23/11/2015
A800	INTERIOR DRAWINGS	1	23/11/2015
A801	INTERIOR DRAWINGS	1	23/11/2015
A802	INTERIOR DRAWINGS	1	23/11/2015



PROPERTY PLAN
1 : 5000



SITE PLAN
1 : 400

SITE PLAN
1 : 400

SITE INFORMATION

LOT 1 on SP107980 617 Grandchester Mount Mort Rd, Grandchester QLD 4340	
LOCALITY:	GRANDCHESTER
LOCAL GOVERNMENT:	IPSWICH RC
SITE AREA:	227.5 ha
BUILDING FOOTPRINT:	720 m2

SITE NOTES

- Set out the building so the pens face **True North**. The setout point shown is nominal and not critical assuming true north is maintained.
- Contours shown are existing and indicative only and must be confirmed by a site survey.
- Service locations shown are approximate. Refer to the relevant service authority or provider for the exact locations and specifications.
- This site plan does not guarantee the position of pegs, allotment boundaries or fences.

No.	Revision	Date
1	TENDER ISSUE	23/11/2015
F.	CLIENT MEETING	05/11/2015

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TITLE PAGE, NOTES AND SITE PLANS

Scale @ A1	As indicated	Drawn by	CD
Checked by	AW	Project No.	15-453
Date	29/06/2015		
Approved By		A100	1 Revision

Media release

Turner family sets up multi-million-dollar wildlife centre with UQ

Queensland philanthropists and tourism entrepreneurs Graham and Jude Turner have joined forces with the University of Queensland to establish a multi-million-dollar conservation project at Hidden Vale an hour west of Brisbane.

In what is thought to be the largest family donation to conservation in Queensland history, the Turners have committed over $18.5M for building costs and an ongoing support to run the facility for the purpose of breeding and rehabilitating wildlife and protecting endangered species over the next thirty years.

Opening in early 2017, the Hidden Vale UQ Wildlife Facility will comprise a captive wildlife and breeding centre and a permanent release facility.

It is surrounded by a 3,100 hectare nature refuge which is home to some of the rarest and most threatened species in Australia including the glossy black cockatoo, square tailed kite, eastern bristle bird, brush tailed rock wallaby, spotted tail quoll, Stephen's banded snake, three-toed snake-tooth skink and more.

The project is a cooperative venture between the University of Queensland and the Turner family foundation.

Graham Turner - the founder and managing director of Flight Centre Travel Group, qualified vet and passionate environmentalist - said the aim was to conserve the area's significant natural and cultural resources and values for future generations.

"The objective is to deliver resilient eco systems with representative, self-sustaining populations of fauna and flora endemic to the Scenic Rim region, supported by applied scientific research," Mr Turner said.

Situated at the Turner's luxury Spicers Hidden Vale Retreat, the facility will also provide wildlife education and significant ecotourism opportunities. It will also combine wildlife conservation with livestock management at the historic beef cattle station first settled in 1871.

Foundation spokesman, UQ Honorary Associate Professor and former senior vet at Melbourne Zoo, Andrew Tribe, said the Turner family's commitment to the project was remarkable.

"The Turners are passionate about leaving a lasting legacy, a truly protected environment dedicated to the enhancement of threatened wildlife species,'' Dr Tribe said.

"From 2017, UQ's Native Wildlife Teaching and Research Facility will, for the first time, be able to offer students hands-on access to learn wildlife management techniques and to study a diverse range of native and endangered animals.

"This presents exciting opportunities to heighten the quality and depth of research and learning into endangered and vulnerable native wildlife.

"Hidden Vale's size, the variety of native animals and vegetation, as well as the opportunity to interact with cattle and pest management activities, makes it an ideal centre for learning,'' he said.

Dr Tribe said the project fitted in with the Little Liverpool Range Initiative where likeminded property owners in the region were working together for the protection and management of native species and their habitats and to promote ecotourism opportunities.

ENDS: **Media enquiries to Dr Andrew Tribe: 0400 240 135**

APPENDIX 3

Key Examples of the World Heritage Values

Appendix 3 Key examples of CERRA's World Heritage values

Natural criteria against which CERRA was inscribed on the World Heritage List in 1994 following extension of the original area listed in 1986.	Examples of CERRA's World Heritage values for which the property was inscribed on the World Heritage List in 1994 following extension of the original area listed in 1986.
Criterion (i) outstanding examples representing the major stages of the earth's evolutionary history.	CERRA preserves outstanding examples of ecosystems and taxa from which modern biota are derived, including: • some of the oldest elements of the world's ferns from the Carboniferous period, • one of the most significant centres of survival for Araucarians, • an outstanding record of Angiosperms, • an outstanding number of the oldest lineages of the Corvida (one of the two major groups of true songbirds that evolved in the Late Cretaceous), and • outstanding examples of other relict vertebrate and invertebrate fauna from ancient lineages linked to the break-up of Gondwana. The World Heritage values include: • rainforests which are exceptionally rich in primitive and relict species, many of which are similar to fossils from Gondwana; • subtropical rainforest habitat; • warm temperate rainforest habitat; • ancient ferns and tree ferns; • conifers (e.g. hoop pine) and cycads; • primitive groups within Magnoliales and Laurales (e.g. pepper bushes, sassafras, *Trimenia*, *Wilkiea*, *Cryptocarya*, *Litsea*); • primitive groups within Rosidae and Dillenidae (e.g. coachwood, Antarctic Beech, *Eucryphia jinksii*, turnipwood, *Pittosporum*, most common in warm temperate and subtropical rainforest types); • primitive group of Corvida (such as lyrebirds, rufous scrub-bird, bowerbirds and tree-creepers); • other birds dating from Gondwana (e.g. logrunner, thornbills, scrubwrens and gerygones); • frogs in the families Myobatrahidae and Hylidae; • reptiles such as chelid turtles, leaf-tailed gecko and angle-headed dragon; • monotremes and marsupials; and • invertebrate fauna with origins in Gondwana, including fresh-water crays, land snails, velvet worms, mygalomorph spiders, flightless carabid beetles, bird-wing butterfly and glow-worms. • Ecosystems and taxa which demonstrate the origins and rise to dominance of cold-adapted/dry-adapted flora, including: - cool temperate rainforest habitat; - dry rainforest habitat; and - plant species in the families Myrtaceae, Casuarinaceae and Proteaceae.

Criterion (ii) outstanding examples representing significant ongoing geological processes, biological evolution and man's interaction with his natural environment.	The Central Eastern Rainforest Reserves provides outstanding examples of ongoing geological processes associated with Tertiary volcanic activity, and of biological evolution. The World Heritage values include: • the caldera of the Tweed Shield Volcano is considered one of the best preserved erosion caldera in the world and is notable for its size, its age (20 million years), and for the presence of a prominent central mountain mass with all three stages of the erosion of shield volcanoes (the planeze, residual and skeletal stages); • centres of endemism where ongoing evolution is taking place; • flora and fauna of low dispersal capability that occur in more than one isolated pocket of the Central Eastern Rainforest Reserves; • plant taxa that show evidence of relatively recent evolution, including: - genera in Southern Hemisphere families (e.g. Winteraceae, Monimiaceae and Lauraceae in the Magnolidae, Proteaceae, Cunoniaceae, Euphorbiaceae, Escalloniaceae, Davidsoniaceae Pittosporaceae, Myrtaceae and Sapindaceae in the Rosidae and, Elaeocarpaceae, Sterculiaceae and Ebenaceae in the Dillenidae); and - monotypic endemic families (e.g. Akaniaceae and Petermanniaceae); • animal taxa that show evidence of relatively recent evolution, including: - 3 species of frogs in the myobatrachid genus *Pseudophyrne* believed to have diverged in the Pliocene; - species of frogs in the relict genus *Philoria*/*Kyarranus* and the *Litoria pearsoniana/ phyllochroa* complex; - reptiles such as *Eulamprus* spp; and - invertebrates such as snails, earthworms, crays, velvet worms and carabid beetles, including taxa that show overlap and intergradation of different faunal elements (e.g. ants and dung beetles) and • the diversity of plant and animal species.
Criterion (iv) contain the most important and significant habitats where threatened species of plants and animals of outstanding universal value from the point of view of science and conservation still survive.	The ecosystems of the Central Eastern Rainforest Reserves contain significant and important natural habitats species of conservation significance, particularly associated with rainforest which once covered much of the continent of Australia and is now restricted to archipelagos of small areas of rainforest isolated largely by sclerophyll vegetation and cleared land. The World Heritage values include: • habitats associated with: - subtropical rainforest; - wet sclerophyll forest; - montane heathlands; - rocky outcrops; and - ecotones between rainforest and sclerophyll communities; • plant taxa of conservation significance (more than 200 plant taxa, particularly in the families Proteaceae, Myrtaceae and Euphorbiaceae and including species of *Cryptocarya*, *Tasmannia* and *Endiandra*); • species of vertebrate fauna of conservation significance (including at least 80 taxa such as Albert's lyrebird, rufous scrub-bird, marbled frogmouth, eastern bristlebird, black-breasted button quail, *Philoria/Kyarranus* spp., pouched frog, barred frogs, parma wallaby, yellow-bellied glider, Hastings River mouse, New Holland mouse, fawn-footed melomys and golden-tipped bat); and • species of invertebrate fauna of conservation significance (such as the Richmond River bird-wing butterfly and *Euastacus jagara*).

APPENDIX 4

Scenic Rim Trail Soils Review

Report

Scenic Rim Trail Soils Review

Company	Spicers Group
Site	Scenic Rim Trail
Date	December 2016
Doc No	SPICER4054-04

palaris

Report To	Paulette Jones
Project No.	SPICER4054
Doc No.	SPICER4054-04

Document History	Name	Date	Version
Author	S Macnish / A Schneider	August 2016	01
Peer Review By	T Grogan	August 2016	01
Draft Issued To	Paulette Jones	August 2016	01
Final Review By	T Grogan / A Schneider	August 2016	02
Final Issued To	Paulette Jones	August 2016	02
Final Issued To	Paulette Jones	September 2016	03
Final Issued To	Paulette Jones	December 2016	04

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- efficiency considerations
- variations in cost elements
- market conditions and global demand
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- regulatory and policy changes

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1 Introduction

Turner Family via Gainsdale Pty Ltd proposes to develop a new, approximately 52 km long, multi-day hiking trail from Thornton Trail Head to the Spicers Canopy Ecocamp in the Scenic Rim. The new trail will be located partly on private property and partly in the Main Range National Park. The proposed development is named the Scenic Rim Trail and will be called the Project in the following.

The hiking trail will utilise existing tracks and roads where possible, and an estimated 20 km of new tracks are to be constructed to complete the route. The new trails will be constructed as a Class 5 Track under the Australian Standard. These tracks are defined to likely be “very rough, very steep and unmarked”. This translates to a path with no or very limited modification of the natural environment (Dep. of Sustainability and Environment, undated).

Two new camp sites will be established in the national park for overnight accommodation.

As the Project is partly located in a national park, there is potential for impacts on Matters of National Environmental Significance (MNES) listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Therefore, the project has been referred to the Commonwealth for assessment under the EPBC Act.

1.1 Objectives

The objective of this report is to provide an initial assessment of soils and hydrological features along the proposed route, including the Project’s likely impacts in regards to soil compaction, erosion, sedimentation and interruption to natural water flows. Some suggestions are made as to possible mitigation measures that may be appropriate both for construction and operation of the proposed trail as well as for the existing trail.

2 Methods

The assessment has been undertaken as a desktop study of publically available data and a one day field study of key sections of the proposed new trail. As these sections are as yet uncleared, access is extremely limited. As the Project is located in part in the Main Range National Park, the assessment was restricted to observations of surface conditions and limited exposures of soils in gullies, streambanks, shallow excavations to <30 cm and disturbed areas associated with fallen tree root balls, animal activities, former logging tracks and eroded sites.

Due to the limited amount of time spent in the field it was not possible to survey the complete route of the proposed new walking track. Accordingly, easily accessible sections of the track, assessed at a desktop level as representative of key landscape and vegetation types, were investigated to provide an effective overview of likely features and risks in the time available.

3 Environmental Setting

This section summarises the desktop assessment and field investigation in respect to soils and surface hydrology as relevant to the establishment of the proposed trail and its long-term management issues.

3.1 Geology

The Scenic Rim is largely formed by Tertiary basalt flows with some localised trachyte and rhyolite flows and intrusions. Basalt flows reached a thickness of 15 to 25 m while trachyte layers can reach a thickness of up to 80 m. Minor areas of dolomite occur along the Main Range associated with exposures of former accumulations of carbonate-rich seepages from weathering of the basalts over a long period.

The Main Range volcano is thought to have been at its highest at Spicers Gap with a potential original basalt thickness of 1000 m approximately. Today, an estimated 900 m of exposed basalt can still be found in that area. The basalt flows are believed to originally have extended to the Kalbar-Boonah in the east and Rosewood in the north-east. However, ancient streams have since eroded large areas of the eastern extent of the basalt flow, leaving behind the steep escarpments which are prominent today (Stevens and Willmott, 1996). Evidence of these former drainages are shown in the serrated landforms along the range to the north of Cunningham's Gap where valleys of their former headwaters frame to skyline. Today, the largest exposures of the basalt province lie to the west of the Main Range, with surface drainage contributing to the Condamine River Basin, which is part of the Murray-Darling Basin.

The proposed camp sites as well as the majority of the trail (both existing and proposed) are located on Tertiary olivine basalt. A small band of trachyte has been mapped to the east of parts of the already existing track associated with Castle Mountain. A further band of trachyte associated with Mount Mitchell is located to the south of the Cunningham Highway. The southernmost extension of the proposed walking tracks intercepts this trachyte area (Figure 3.1).Jurassic sandstones, including the Walloon Coal Measures and Koukandowie Formation, form the hills and slopes while Quaternary Alluvial deposits are located in the incised valleys.

During the field investigations, isolated rhyolite rocks were found in places though no significant exposures were observed. Bedrock was only observed in creek beds and all other occurrences were as surface rock residuals or highly weathered faces in cuttings along former logging tracks. Several exposures of basaltic tuff were also observed ranging from pale grey to white and the more common red forms that have frequently been considered previously as lateritised basalt. These exposures, where subject to soil development, also form Ferrosols and Dermosols as compositionally, they are very similar to the hard rock forms.

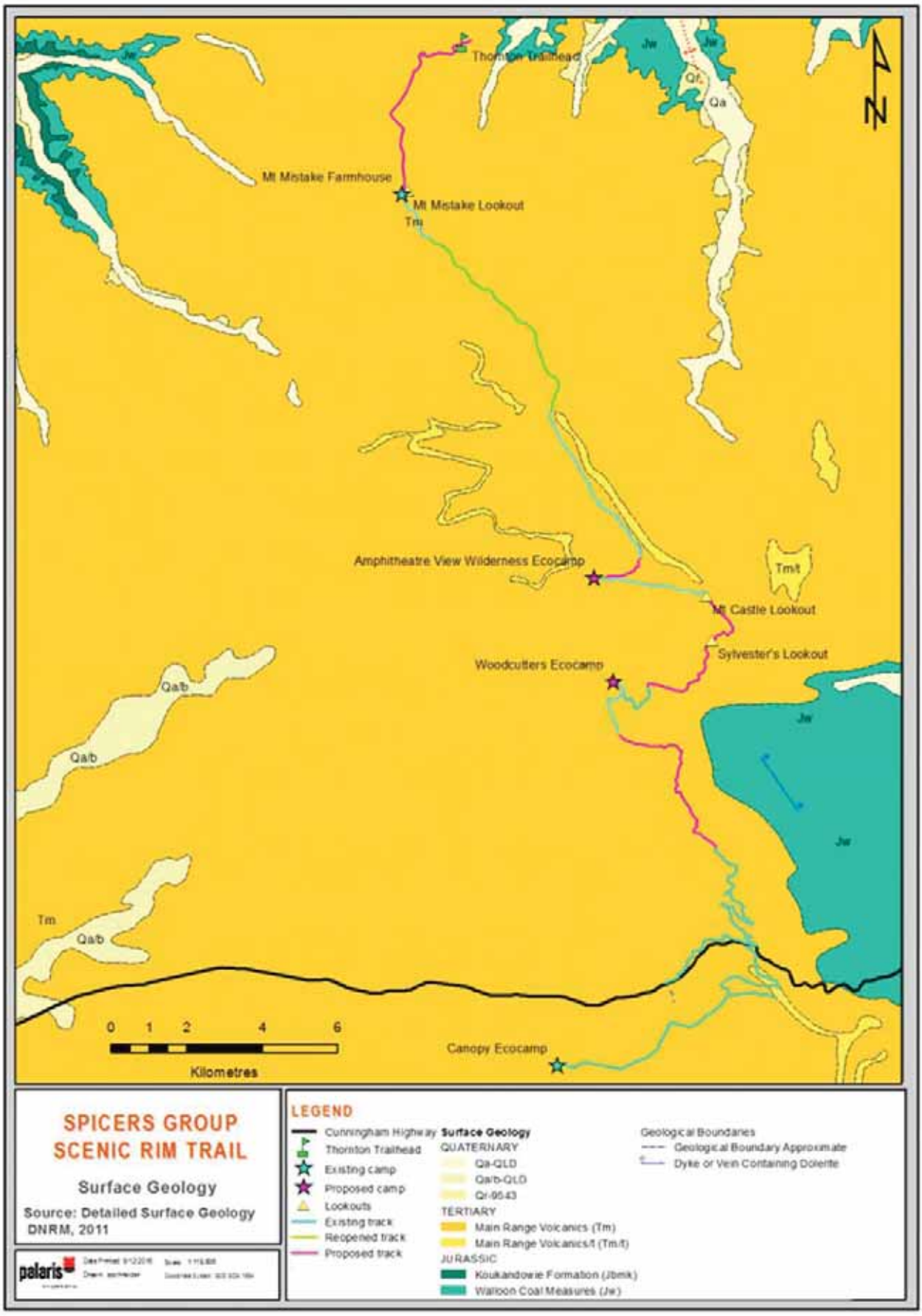

Figure 3.1 Surface geology of the Project area

3.2 Soils

Publically available soils data on the Project area are very limited. A land and agricultural suitability assessment was carried out to the east of the Project area. To the north of the Cunnigham Highway, areas to the south-east and east of the new trails from Mt Castle Lookout and Woodcutter camp, respectively were mapped as a composite of Red Dermosols and Orthic Tenosols. The track south of the highway intercepts this composite soil unit (Loi *et al*., 2005). The Australian Soil Resource Information System (ASRIS) shows (using the former Great Soil Group and Northcote soil classification systems[1]) the area as gradational soils, which are predominantly Gn4.11 Kraznozems (now called Ferrosols), Um6.21 uniform soils, which are a mixture of Prairie soils and Black Earths where on basalt (now called Dermosols) and Uc2.12, leached sands (now called Tenosol) (Figure 3.2)[2].

[1] Stace et al (1968), A Handbook of Australian Soils. CSIRO, Rellim Technical Publications
Northcote, K.H. (1965). A Factual Key for the recognition of Australian soils. CSIRO, Division of Soils, Report 2/65
[2] http://www.asris.csiro.au/

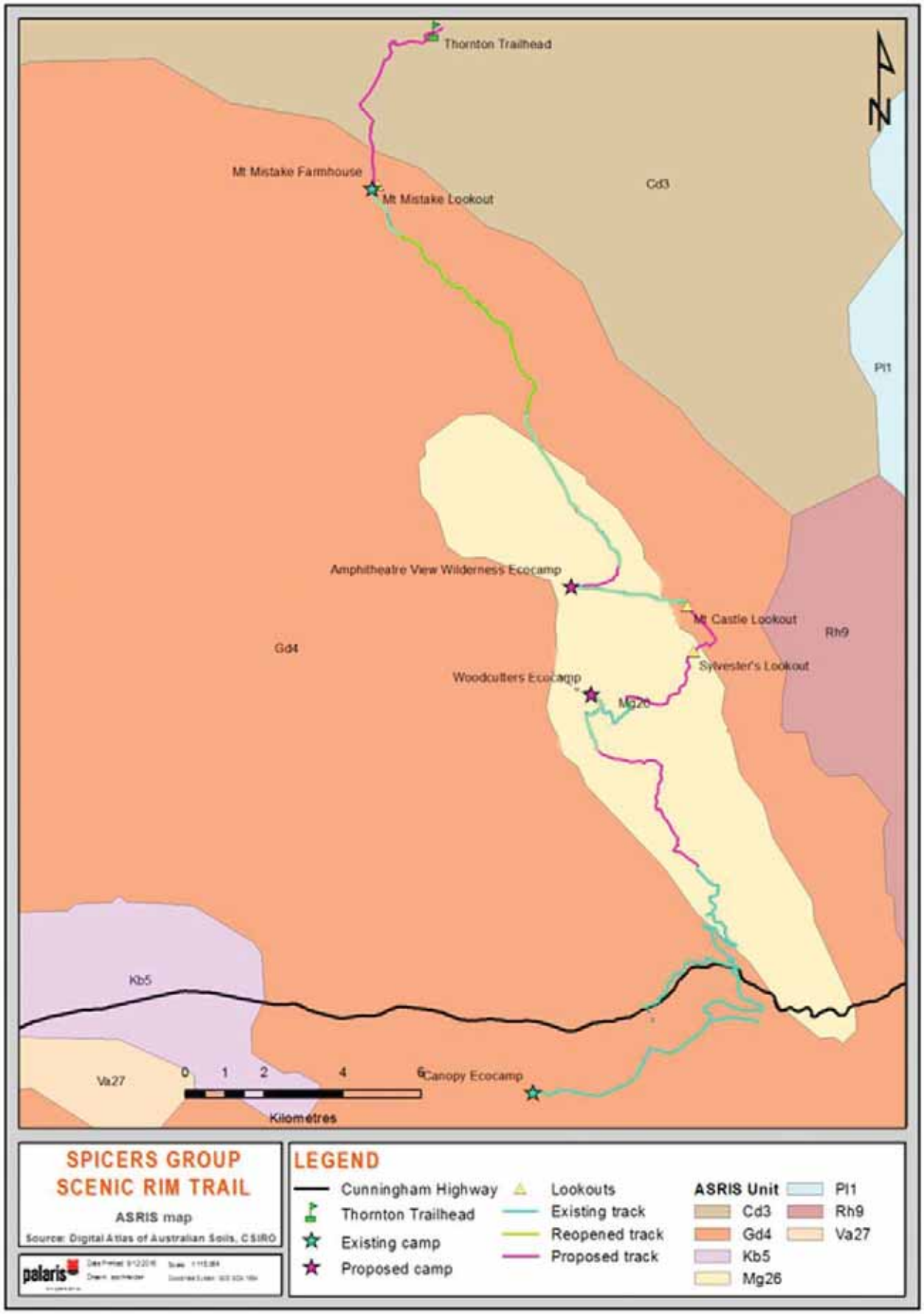

Figure 3.2 ASRIS soil map in the Project area

Field investigations showed that Dermosols (Figure 3.3) and Ferrosols are the dominant soil types within the Project area. Soil thickness varies from few centimetres on hill crests (Figure 3.4) to up to 2 m on lower slopes and valleys. Discrete surface rocks, ranging in size from cobbles to small boulders are abundant in many areas, on hill crests as well as on slopes.

Figure 3.3 Exposed profile of a Dermosol along a track cutting

Figure 3.4 Exposed roots after recent soil disturbance demonstrate thin soils on hill crest

From the limited field investigations, it appears that the Ferrosols are predominantly associated with the higher and older surfaces along the ridge crests and upper slopes where the dense closed forests occur. The Dermosols appear to be more commonly associated with the more recently (geologically speaking) exposed older basalts at lower elevation where the drier eucalypt forests

associated with an understorey of *Xanthorrhea* spp. and grasses occur. It is likely that the Ferrosols are degraded relict soils from the intense weathering of the Tertiary surface, while the Dermosols are more likely to be associated with Pleistocene and Quaternary weathering.

3.3 Soil Limitations

3.3.1 Soil Creep

Soil creep on slopes was observed in several locations within the general Project area. This creep phenomenon is generally associated with a thin veneer of soil and accumulated organic matter overlying a layer of small gravels and angular basalt rocks, which in turn overlies weathered or hard rock basalt exposures where observed on slopes and in road cuttings (Figure 3.5, Figure 3.6 and Figure 3.7).

This layer of unconsolidated soil and rock progressively moves downslope due to gravitational forces. These slopes are inherently unstable and activity will be enhanced following wildfires and clearing removing the limited surface protection and root anchoring value of the vegetation. Some more extreme exposures are associated with landslips. The risk of material movement is often enhanced through the fact that the material below the rock layer may not be a beneficial rooting medium (thin soil over bedrock, strongly weathered bedrock etc.) and also functions similar to 'ball-bearings' as there is no integration with the underlying weathered or hard rock layer. Fallen boulders were also present in the general area.

Figure 3.5 Soil creep occurring on several slopes along tracks in the general area of the Project

Figure 3.6 Close up of soil creep. A thin layer of soil and organic matter overlying a layer of rocks over thin soil over strongly weathered basalt

Figure 3.7 Rockfall in general Project area

3.3.2 Landslip

Landslips are a catastrophic form of soil erosion, however, often with significant impacts on landform and future slope stability. Landslips mostly occur on steep slopes, thus the proposed shortcut from the existing Winder track to the proposed Amphitheatre camp, the track to the south of the Cunningham Highway and other sections of the proposed trail where steep slopes need to be traversed down/up to cross the narrow valleys in the headwaters of the upland streams have a higher risk of the occurrence of a landslip compared to tracks on ridges or gentler slopes.

Landslips were also observed along existing former logging tracks where road cuttings subtend steep overlying slopes and recent rainfall had lubricated the contact zone between the overlying weathered zone and the harder underlying rock (Figure 3.7).

3.3.3 Soil Depth

Along the existing trails it is clear that soil depth is limiting and that the vegetation present is well-adapted to these conditions. This is clearly shown by the preponderance of shallow root systems that are exposed along the track and evident in the root balls of fallen trees. It is clear that the vegetation is exploiting nutrients from the deep litter layer and rainfall/cloud combing for moisture rather than seeking to send roots into the hard rock layers. Where the weathered zone is deeper associated with some of the highly vesicular basalts and tuffs that were observed, the trees do send down deeper roots and are generally of significantly larger girths and height.

3.3.4 Soil Erosion

Under the current conditions, erosion is predominantly caused by soil creep, as described above, and rockfalls along road or track cuttings. The dense vegetation has to date prevented major occurrences of rill or sheet erosion.

Ferrosols in general have good infiltration and thus a low erosion risk. However, they can be prone to erosion if left bare (i.e. excessive clearing) or are compacted. The erosion risk of the Dermosols on steep slopes with low groundcover cover can be high (Alt *et al*., 2009) though at the time groundcover following good recent rains was in good condition and no erosion was noted.

3.4 Vegetation/Soil Relationships

3.4.1 Amphitheatre Camp Site

The vegetation changed distinctively from a rainforest to a dry forest on the track from the Mt Castle Lookout to the proposed Amphitheatre campsite and track leading to the proposed Amphitheatre lookout (Figure 3.8, Figure 3.9). The soil type at the proposed Amphitheatre camp site has been identified as predominantly Dermosols with a medium to medium heavy clay subsoil. No Ferrosols were observed in association with this eucalypt forest area and it is likely that these soils are somewhat younger than the Ferrosols having only developed in more humid climates following later exposure of the basalts under the stripped Tertiary surface associated with the Ferrosols.

The heavier clay subsoil layer may preclude the viability of an absorption trench that was initially considered for effluent disposal in this area. The slope leading to the proposed Amphitheatre Lookout may be prone to soil creep where only a thin layer of soil and organic matter overlie a layer of rocks and cobbles on a steep slope. Soil depth on the slope to the valley is shallow and as infiltration into the heavy clay subsoil is likely to be restricted, there is a moderate probability that near surface lateral seepage may occur and initiate slope instability, further encouraging soil creep at this site.

Figure 3.8 Proposed Amphitheatre camp site

Figure 3.9 Vegetation leading to proposed Amphitheatre lookout

3.4.2 Woodcutters Camp Site

The camp is planned on a flat area which has been constructed on a steep hillslope. The area is associated with historical logging activities and a galvanised iron hut used by former loggers still remains. The area appears to have been affected by levelling due to these historic activities and some material has been pushed towards the Cascade Trail road (Figure 3.10). An approximately 250 m deviation from the Cascade Trail will lead to the new camp site.

Figure 3.10 Level pad for planned Woodcutters camp

As far as could be determined, the Woodcutters camp site is associated with Dermosols but Ferrosols are visible in a cutting of the established Cascades Trail approximately 100 m up the road from the proposed camp site. The road cutting on Cascade Trail shows signs of soil creep and there is evidence of a recent loss of material due to slippage (Figure 3.11).

Figure 3.11 Soil creep and possibly recent soil loss at Cascades Trail road cutting

The soil creep indicates slope instability in the direction of the Cascades Trail and it is suggested that the ecocamp should be established further away from the road towards the historic hut. The area upslope of the proposed camp area has an established New England Blackbutt forest with good herbaceous ground coverage. If not disturbed to any extent, the erosion risk from the upslope area is considered to be low.

3.5 Surface Hydrology

Apart from runoff along former logging tracks and more recent roads, streams appear to be fed from seepage until hard rock is intercepted and baseflows daylight. The drainage lines are well incised and steep-sided V-shaped valleys are common. Benches may occur along the channels in places where flows of harder consistence are exposed and channel grade decreases forming shallow pools and run and riffle sections. The heavily littered forest floor appears to be very stable where we were able to observe it and we saw no evidence of surface erosion where clearing had not occurred.

It would appear likely that a Class 5 track as proposed would not lead to any significant change in runoff conditions, thus limiting any risk of erosion occurring.

However, the same cannot be said for the steeper slope sections of the trail where it must descend to cross these drainage lines. As these slopes are often associated with soil creep, any downslope pressure from foot traffic is likely to aggravate the soil creep, particularly along cleared tracks. Some ideas are proposed later in this report as to options for hardening the trail in these higher risk areas.

4 Impact Assessment

4.1 Risk Assessment

A desktop risk assessment has been undertaken based on the limited field observations, knowledge of the surveyors of similar soils and landscapes elsewhere along the Main Range and of the soil properties of the major soils present.

The risk assessment was carried following a risk matrix adapted from an Australian New Zealand risk management standard (AS/NZS 4360:1999). Likelihood ratings are defined as shown in Table 4.1, consequences are as described in Table 4.2 and the qualitative risk analysis matrix is presented in Table 4.3.

Table 4.1 Measures of likelihood

Descriptor	Description
Almost certain	Is expected to occur in most circumstances
Likely	Will probably occur in most circumstances
Possible	Might occur at some time
Unlikely	Could occur at some time
Rare	May occur only in exceptional circumstances

Table 4.2 Measures of impact

Descriptor	Example detail description
Insignificant	No effect, low financial cost
Minor	Small physical impact, low financial cost
Moderate	Moderate impact, moderate maintenance costs
Major	Extensive physical impact, significant maintenance/repair cost
Catastrophic	Significant physical impact, major repair costs

Table 4.3 Risk analysis matrix

Likelihood	Consequences				
	Insignificant	Minor	Moderate	Major	Catastrophic
Almost certain	H	H	E	E	E
Likely	M	H	H	E	E
Possible	L	M	H	E	E
Unlikely	L	L	M	H	E
Rare	L	L	M	H	H

With:

- E: extreme risk
- H: high risk
- M: moderate risk
- L: low risk

Table 4.4 Risk assessment of soil and surface runoff characteristics based on field observations

	Unmitigated			Mitigating actions	Mitigated			
Issue/Description	**Likelihood**	**Consequence**	**Risk**		**Likelihood**	**Consequence**	**Risk**	**Comment**
Soil **Aspects**								
♦ Soil creep on slopes – risk present on all slopes observed on western side of range (comments relate only to proposed trail area as creep will naturally occur remote from the trail also)	Likely	Moderate	H	Install board walks and stairs to bridge sensitive sections of tracks Placement of basalt stone steps is not likely to be successful as they would tend to 'float' on the shallow soil and litter layer and progressively move downslope at a faster rate than the natural creep activity	Unlikely	Moderate	M	Cost may be appreciable for the Amphitheatre lookout and Woodcutters camp areas but annual maintenance costs would be lower than a rock-based step system or zigzag path.
♦ Soil depth – majority of observed soils <30 cm deep; some deeper soils exist on gentler slopes; as only minor understorey clearing is proposed some loss of nutrients and access to soil moisture along trail	Possible	Minor	M	Avoid trail disturbance around all larger species	Unlikely	Minor	L	No soil removal is proposed for trail development but depth will be affected over time by foot traffic
♦ Soil erosion – lower risk for Ferrosols as better drained and higher permeability than Dermosols	Possible	Insignificant	L	Educate hikers so they stay to the designated track. Regular track maintenance. Trail guides to observe any erosion during walks and additional track management when flagged through tour guides. Track perpendicular to slope and minimisation of sections which angle across the slope.	Unlikely	Insignificant	L	Natural condition is generally well-protected by deep organic layer of leaf litter
♦ Soil compaction – restricted to trails	Possible	Insignificant	L	Restrict number of people on the track. No machinery on Class 5 tracks	Possible	Insignificant	L	Not considered a high risk under proposed usage levels

	Unmitigated			Mitigating actions	Mitigated			
Issue/Description	**Likelihood**	**Consequence**	**Risk**		**Likelihood**	**Consequence**	**Risk**	**Comment**
Surface Hydrology								
♦ Runoff – highest on cleared and trafficked areas but very low in forest	Likely	Moderate	M	Ensure that leaf litter and groundcover remains on the soil surface wherever possible	Possible	Insignificant	L	
♦ Infiltration – high for Ferrosols and moderate for Dermosols; may affect runoff due to compaction of surface soil and reduced infiltration; particular issue where trails head directly downslope	Likely	Moderate	M	Avoid trafficking when soils are wet and puddling may occur in footsteps increasing compaction	Possible	Insignificant	L	
Trail Formation								
♦ Ridge crest sections – limited clearing proposed and track to follow ridge crest as close as possible	Unlikely	Insignificant	L	Regular track management to ensure minimal disturbance and reduce the erosion risk caused by hikers.	Rare	Insignificant	L	
♦ Downslope sections – greatest risk where soil creep present or likely to develop	Possible	Minor	M	Regular track management to ensure minimal disturbance and reduce the erosion risk caused by hikers. Install board walks and stairs to bridge sensitive section of tracks.	Unlikely	Minor	L	Board walks and above ground steps across these steeper sections will considerably reduce risk of slope mobilisation and reduce annual maintenance costs though at a higher initial installation cost for critical sites. Reduced safety risk for trips and falls
♦ Stream crossings – issues mainly associated with banks of incised streams and increases with increasing soil depth on banks	Possible	Minor	M	When establishing the track choose gentle entrance point to the creeks. Contemplate low impact bridge to cross deeply incised creeks.	Unlikely	Insignificant	L	

	Unmitigated			Mitigating actions	Mitigated			
Issue/Description	**Likelihood**	**Consequence**	**Risk**		**Likelihood**	**Consequence**	**Risk**	**Comment**
• Exposed roots on trails	Possible	Minor	M	Regular track management. Trail guides to observe any erosion during walks and additional track management when flagged through tour guides.	Possible	Insignificant	L	Aside from a trip hazard these roots may aggravate erosion in acting as a tumble pit where tracks run downslope
• Landslip	Possible	Major	E	Ongoing observation of slope condition from trail guides. Check of track and slope safety after significant rain and prior to the commencement of tourist season.	Unlikely	Moderate	M	Residual risk is predominantly for infrastructure. Risk for humans would be unlikely if slope stability is carefully monitored and tracks located away from high risk zones
• Shortcutting on bends aggravating erosion	Likely	Insignificant	M	Education of all Spicer group hikers and guides leading with example. Educational signs on locations where track routes are described. Regular track maintenance. Trail guides to observe any erosion during walks and additional track management when flagged through tour guides. Avoid use of zigzag track design to traverse steeper slopes as this design will encourage shortcutting	Possible	Insignificant	L	This risk is predominantly caused by general public using the new tracks

4.2 Summary

As shown in Table 4.4 the highest risks are posed by soil creep and landslip, though the likelihood of the latter is less. Both risks are inherent to the ecosystem and cannot be eliminated. The risk to human health can be significantly reduced by monitoring of slope stability. This can be undertaken through aerial imagery and communication with the park rangers after the wet season or severe storm and/or rainfall events. Guides should be made aware of signs of slope instability and soil creep so they can recognise early warning signs. Soil creep may pose a risk to the proposed Amphitheatre Lookout. Geotechnical investigations should establish if the lookout can be keyed into underlying hard (bed-) rock and thus reduce the risk soil creep poses to the infrastructure. The risk to tracks through soil creep would be reduced by the construction of stairs or board walks over sensitive sections.

The current ecosystem is a closed, multi-storey forest with limited plant ground cover but high amounts of leaf litter and surface rocks. The low disturbance caused by Class 5 hiking tracks reduces the risk of aggravating erosion and sedimentation, especially as no mature trees will be removed. The highest risks of erosion occur on the steep slope sections. In general, the disturbance footprint of these slopes is relatively low with approximately 0.2 ha only being affected. Track sections running parallel with the slope should be short to reduce flow path length over relatively bare ground. Exposed roots on the track may act as tumble pits and cause sedimentation and undercutting erosion. Regular track maintenance is required to reduce risk to the tracks.

Shortcutting on the slope by hikers is a factor which can increase the risk of erosion through the creating of cleared paths parallel to the slope. The hikers of the Spicer group will be with a guide at all times, therefore the risk of shortcutting from this group is low. However, the general public using the new tracks cannot be easily controlled. Information signs about the consequences of leaving the track should be placed at the carparks and/or the track entrances. Further, regular track maintenance will be required to address any potential erosion caused by hikers leaving the designated paths.

Soil compaction is not considered a difficult issue to manage and at the proposed trail usage rates should not be a significant problem. It is likely to be more severe if the trail is used when the soil surface is wet and trampling with boots causes puddling of the soil. Avoidance of usage under such conditions would reduce the risk but at no time should such conditions be taken as an opportunity to step off the marked track and broaden the width of the track area.

No sites of sedimentation were observed due to the lack of significant erosion and low human intervention in the areas observed. Heavy litter layers should be sufficient to deal with heavy rainfall events in non-track areas and the only risk would be associated with the actual trail. Regular maintenance of the trail and repairs to affected areas should be adequate.

The trail will not *per se* affect natural waterflows except for the risk of channelling downslope flows along the actual track. As the trail will predominantly follow ridge crest lines it is only the downslope sections that will be affected. The use of boardwalks for traversing steep slopes, particularly in high risk soil creep sites will not impact on surface flows or drainage lines.

5 Summary and Recommendations

From the limited field work and an understanding of the soil properties and landform constraints based on experiences with similar soils and lithologies elsewhere, the following issues are worthy of note:

i) Soil creep is likely to be a management issue for much of the trail length in those sections that traverse slopes at either an angle or directly downslope. It is not expected to be a concern where the trail is sited along ridge crests

ii) Soil compaction may be an issue if the trail is used under wet conditions and puddling occurs

iii) Landslip is not likely to be a concern if the trail is sited away from high risk areas and clearing of vegetation is minimal as required for a Class 5 track

iv) At the low levels of usage proposed and the presence of guides for escorted walks, there are no significant anticipated impacts on either soils or surface hydrology

To reduce the risk of soil creep impacts onto the Woodcutter ecocamp, it is suggested that the camp site should be established on the flat pad towards the historic hut. Clearing of the steep slope above the proposed camp should be avoided as it is currently well vegetated with good herbaceous ground coverage. A significant disturbance of the slope will increase the risk of the occurrence of significant erosion.

The use of stone steps and/or zigzag layouts to traverse steep slopes is not recommended as both designs are likely to aggravate slope instability. Rather, installation of permanent raised board walks, though at a higher initial cost, are more likely to minimise any risk to slope stability and provide better safety for walkers.

6 References

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APPENDIX 5

Flora species recorded along the Scenic Rim Trail Route

Table 5A: Species Recorded Between Mt Mistake Farmhouse and Bare Rock (National Park)

Key to Acronyms

Status

LC - least concern
V - Vulnerable
Weed - invasive non-native species

Habitat types

CSRF - Cool Subtropical Rainforest
d/CSRF - disturbed Cool Subtropical Rainforest (eg treefall gaps)
e/CSRF - edge (ecotone) of Cool Subtropical Rainforest and WSF/OF
OF - Eucalyptus Open Forest
RP - Rock Pavements (eg. Bare Rock)
T&C - 4wd tracks and clearings
WSF - Wet Sclerophyll Forest
WTRF - Warm Temperate Rainforest

Life Forms

e - epiphyte
F - fern
G - grass or grass-like plant
H - herbaceous plant
MT - medium tree
S - shrub
ST - small tree
TT - tall tree
V - vine

Abundance along route

C - common within the given habitat
MC - moderately common within the given habitat
O - occasional within the given habitat
U - uncommon/rare within the given habitat

Family	Genus	Species	Common Name	Status	Habitat	Life form	Abundance
Adoxaceae	*Sambucus*	*australasica*	Native Elderberry	LC	d/CSRF	S	O
Amarathaceae	*Deeringia*	*amaranthoides*	Shrubby Deeringia	LC	d/CSRF	H/S	O
Amarathaceae	*Phytolacca*	*octandra*	Inkweed	Weed	d/CSRF	H	O
Annonaceae	*Melodorum*	*leichhardtii*	Zigzag Vine	LC	CSRF (lower altitudes)	V	MC

APPENDIX 5: FLORA RECORDED ALONG SCENIC RIM TRAIL ROUTE

Family	Genus	Species	Common Name	Status	Habitat	Life form	Abundance
Anthericaceae	*Arthropodium*	*milleflorum*	Pale Vanilla Lily	LC	OF	H	C
Apiaceae	*Hydrocotyle*	*pedicellosa*	Pennywort	LC	T&C, dCSRF	H	C
Aphanopetalaceae	*Aphanopetalum*	*resinosum*	Gum Vine	LC	WSF	V	O
Apocynaceae	*Alyxia*	*ruscifolia*	Chain Fruit	LC	RP	S	U
Apocynaceae	*Asclepias*	*curassavica*	Redhead Cotton Bush	Weed	OF	S	O
Apocynaceae	*Gomphocarpus*	*physocarpus*	Balloon Cotton Bush	Weed	OF	S	O
Apocynaceae	*Parsonsia*	*fulva*	Furry Silkpod	LC	CSRF	V	C
Apocynaceae	*Parsonsia*	*straminea*	Monkey Rope	LC	CSRF, OF	V	U
Apocynaceae	*Parsonsia*	*ventricosa*	Acuminate Silkpod	LC	CSRF	V	U
Apocynaceae	*Marsdenia*	*rostrata*	Milk Vine	LC	e/CSRF	V	MC
Araceae	*Alocasia*	*brisbanensis*	Cujevoi	LC	d/CSRF	S	MC
Araceae	*Gymnostachys*	*anceps*	Settlers Flax	LC	OF, WSF	G	O
Araliaceae	*Cephalaralia*	*cephalobotrys*	Climbing Panax	LC	CSRF, WTRF, WSF	V	O
Araliaceae	*Polyscias*	*elegans*	Celery Wood	LC	d/CSRF, WSF, OF	ST	C
Araliaceae	*Polyscias*	*murrayi*	Pencil Cedar	LC	d/CSRF	MT	U
Araliaceae	*Polyscias*	*sambucifolius*	Elderberry Panax	LC	CSRF, WSF	S	MC
Araucariaceae	*Araucaria*	*cunninghamii*	Hoop Pine	LC	CSRF, WSF	TT	MC
Arecaceae	*Archontophoenix*	*cunninghamiana*	Piccabeen Palm	LC	CSRF, WSF	MT	C
Arecaceae	*Linospadix*	*monostachya*	Walking Stick Palm	LC	CSRF (south), WTRF	ST	C
Aspleniaceae	*Asplenium*	*australasicum*	Bird's Nest Fern	LC	CSRF, WTRF	eF	C
Aspleniaceae	*Asplenium*	*polyodon*	Mare's-tail Fern	LC	CSRF, WSF	F	O
Asteraceae	*Ageratina*	*adenophora*	Crofton Weed	Weed	T&C	H	C
Asteraceae	*Ageratum*	*houstonianum*	Billygoat Weed	Weed	T&C	H	MC
Asteraceae	*Bidens*	*pilosa*	Cobbler's Pegs	Weed	T&C	H	C
Asteraceae	*Cyanthillium*	*cinereum*	Vernonia	LC	OF	H	C
Asteraceae	*Conyza*	*sumatrensis*	a Fleabane	Weed	T&C	H	C
Asteraceae	*Ozothamnus*	*rufescens*	Brown Dogwood	LC	RP	S	O
Asteraceae	*Picris*	*angustifolia* subsp. *carolorum-henricorum*	Hawk Weed	LC	OF	H	U
Asteraceae	*Senecio*	*hispidulus*	Hill Fireweed	LC	OF	H	O
Asteraceae	*Sigesbeckia*	*orientalis*	Indian Weed	LC	T&C, OF	H	MC
Asteraceae	*Tagetes*	*minuta*	Stinking Roger	Weed	T&C	H	O
Asteraceae	*Xerochrysum*	*bracteatum*	Golden Everlasting	LC	OF	H	MC
Atherospermaceae	*Daphnandra*	*apetala*	Socket Wood	LC	CSRF, WTRF	MT	MC
Athyriaceae	*Diplazium*	*assimile*	Austral Lady Fern	LC	CSRF	F	MC
Bignoniaceae	*Pandorea*	*jasminoides*	Bower Vine	LC	e/CSRF	V	C

APPENDIX 5: FLORA RECORDED ALONG SCENIC RIM TRAIL ROUTE

Family	Genus	Species	Common Name	Status	Habitat	Life form	Abundance
Bignoniaceae	*Pandorea*	*floribunda*	Yellow-flowered Bower Vine	LC	WSF, eCSRF	V	C
Bignoniaceae	*Pandorea*	*pandorana*	Wonga Vine	LC	e/CSRF, WSF	V	C
Blechnaeae	*Blechnum*	*cartilagineum*	Gristle Fern	LC	CSRF, WTRF	F	C
Blechnaeae	*Doodia*	*aspera*	Prickly Rasp Fern	LC	CSRF, WTRF, WSF	F	C
Boraginaceae	*Austrocynoglossum*	*latifolium*	Forest Hound's Tooth	LC	T&C	F	MC
Campanulaceae	*Lobelia*	*quadrangularis*	Forest Lobelia	LC	e/CSRF, T&C	H	C
Campanulaceae	*Lobelia*	*purpurascens*	White Root	LC	OF	H	C
Campanulaceae	*Wahlenbergia*	*communis*	a Bluebell	LC	OF, T&C	H	C
Casuarinaceae	*Allocasuarina*	*torulosa*	Forest Oak	LC	OF	MT	C
Caesalpiniaceae	*Senna*			LC	OF	S	U
Celastraceae	*Celastrus*	*subspicata*	Staff Vine	LC	CSRF	V	O
Celastraceae	*Denhamia*	*celastroides*	Denhamia	LC	e/CSRF, WTRF, WSF	ST	O
Celastraceae	*Denhamia*	*silvestris*	Narrow-leaved Orangebark	LC	OF	S	O
Commelinaceae	*Aneilema*	*biflorum*	Two-flowered aneilema	LC	T&C	H	C
Commelinaceae	*Commelina*	*diffusa*	Wandering Jew	LC	OF, WSF, T&C	H	C
Commelinaceae	*Pollia*	*crispata*	Pollia	LC	d/CSRF, WTRF (wet areas)	H	C
Cornaceae	*Alangium*	*villosum* subsp. *polyosmoides*	Muskwood	LC	CSRF	ST	C
Crassulaceae	*Crassula*	*sieberiana*	Australian Crassula	LN	RP	H	U
Cucurbitaceae	*Zehneria*	*cunninghamii*	Slender Cucumber	LC	eCSRF, T&C, WSF	V	C
Cupressaceae	*Callitris*	*rhomboidea*	Port Jackson Pine	LC	RP	LT	U
Cyatheaceae	*Cyathea*	*australis*	Black Tree-fern	LC	d/CSRF	LT	C
Cyperaceae	*Carex*	*declinata*	a Sedge	LC	eCSRF, WSF	G	O
Cyperaceae	*Carex*	*brunnea*	Greater Brown Sedge	LC	CSRF	G	O
Cyperaceae	*Cyperus*	*laevis*	a Sedge	LC	OF	G	O
Cyperaceae	*Gahnia*	*aspera*	Rough Saw Sedge	LC	OF, WSF, CSRF	G	O
Cyperaceae	*Gahnia*	*melanocarpa*	Black-fruit Saw-sedge	LC	eCSRFm WSF	G	O
Cyperaceae	*Lepidosperma*	*laterale*	a Razor Sedge	LC	OF, WSF	G	U
Dennstaedtiaceae	*Pteridium*	*esculentum*	Bracken Fern	LC	OF, WSF	F	C
Dicksoniaceae	*Dicksonia*	*antarctica*	Soft Tree-fern	LC	CSRF (damp places), WTRF	LT	MC
Dilleniaceae	*Hibbertia*	*diffusa*	Wedge Guinea Flower	LC	OF	S	U
Dilleniaceae	*Hibbertia*	*scandens*	Twining Guinea Flower	LC	eCSRF	V	MC

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Family	Genus	Species	Common Name	Status	Habitat	Life form	Abundance
Doryanthaceae	*Doryanthes*	*palmeri*	Spear Lily	LC	RP	S	C
Dryopteridaeae	*Lastreopsis*	*decomposita*	Trim Shield Fern	LC	CSRF	F	C
Dryopteridaeae	*Lastreopsis*	*munita*	Glossy Shield fern	LC	CSRF, WTRF	F	C
Ebenaceae	*Diospyros*	*australis*	Black Plum	MC	CSRF, WTRF, WSF	ST	O
Ebenaceae	*Diospyros*	*pentamera*	Myrtle Ebony	LC	CSRF	TT	MC
Ehretiacea	*Ehretia*	*acuminata*	Koda	LC	e/dCSRF	MT	MC
Elaeocarpaceae	*Elaeocarpus*	*kirtonii*	Mowbullan Whitewood	LC	CSRF, WTRF	TT	C
Elaeocarpaceae	*Sloanea*	*woollsii*	Yellow Carrabeen	LC	CSRF	TT	C
Epacridaceae	*Leucopogon*	*juniperinis*	Prickly Heath	LC	RP	S	MC
Escalloniaceae	*Polyosma*	*cunninghamii*	Featherwood	LC	CSRF, WTRF	MT	C
Euphorbiaceae	*Baloghia*	*inophylla*	Scrub Bloodwood	LC	CSRF	MT	MC
Euphorbiaceae	*Claoxylon*	*australe*	Brittlewood	LC	d/CSRF	ST	O
Eupomatiaceae	*Eupomatia*	*laurina*	Bolwarra	LC	CSRF	S	MC
Fabaceae	*Derris*	*involuta*	Native Derris	LC	eCSRF, WSF	V	C
Fabaceae	*Desmodium*	*gunnii*	Slender Tick Trefoil	LC	OF, WSF	H	C
Fabaceae	*Glycine*	*clandestina*	a Native Glycine	LC	OF	H	C
Fabaceae	*Hardenbergia*	*violacea*	Native Sarsaparilla	LC	OF	V	C
Geraniceae	*Geranium*	*homeanum*	Small-flowered Geranium	LC	OF, WSF, T&C	H	C
Goodeniaceae	*Scaevola*	*albida*	Pale fan-flower	LC	OF	H	U
Halagoraceae	*Gonocarpus*	*teucrioides*	Raspwort	LC	OF	H	U
Icacinaceae	*Citronella*	*moorei*	Churn Wood	LC	CSRF	TT	C
Icacinaceae	*Pennantia*	*cunninghamii*	Brown Beech	LC	CSRF	MT	C
Lamiaceae	*Mentha*	*dimenca*	Native Mint	LC	OF	H	O
Lamiaceae	*Plectranthus*	*graveolens*	a Plectranthus	LC	OF, RP	H	MC
Lamiaceae	*Plectranthus*	*parviflorus*	a Plectranthus	LC	OF	H	MC
Lamiaceae	*Plectranthus*	*suaveolens*	a Plectranthus	LC	RP	H	O
Lamiaceae	*Prostanthera*	*ovalifolia*	Mint Bush	LC	RP	S	U
Lamiaceae	*Prunella*	*vulgaris*	Self Heal	Weed	T&C	H	U
Lauraceae	*Cinnamomum*	*virens*	Red-barked Sassafras	LC	CSRF, WTRF	MT	C
Lauraceae	*Cryptocarya*	*erythroxylon*	Pigeonberry Ash	LC	CSRF	TT	C
Lauraceae	*Cryptocarya*	*foveolata*	Mountain Walnut	LC	CSRF, WTRF	MT/TT	C
Lauraceae	*Cryptocarya*	*obovata*	Pepperberry	LC	CSRF	TT	MC
Lauraceae	*Litsea*	*reticulata*	Bolly Gum	LC	CSRF	TT	MC
Lauraceae	*Neolitsea*	*australiensis*	Grey Bolly Gum	LC	CSRF	ST	C
Lauraceae	*Neolitsea*	*dealbata*	White Bolly Gum	LC	CSRF	ST	MC
Lomandraceae	*Lomandra*	*longifolia*	Spiny-headed Matrush	LC	OF, WSF	G	C
Lomandraceae	*Lomandra*	*spicata*	Rainforest Matrush	LC	CSRF, WTRF	G	C

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Family	Genus	Species	Common Name	Status	Habitat	Life form	Abundance
Luzuriagaceae	*Eustrephus*	*latifolius*	Wombat Berry	LC	all habitats	V	C
Meliaceae	*Dysoxylum*	*fraserianum*	Rosewood	LC	CSRF	TT	C
Meliaceae	*Toona*	*ciliata*	Red Cedar	LC	CSRF	TT	C
Menispermaceae	*Carronia*	*multisepala*	Carronia	LC	CSRF	V	U
Menispermaceae	*Stephania*	*japonica* var. *discolor*	Snake Vine	LC	CSRF	V	U
Mimosaceae	*Acacia*	*irrorata*	Green Wattle	LC	OF	S, ST	C
Mimosaceae	*Acacia*	*maidenii*	Maiden's Wattle	LC	OF	ST	MC
Mimosaceae	*Acacia*	*melanoxylon*	Blackwood	LC	eCSRF, WS,OF	ST	C
Monimiaceae	*Hedycarya*	*angustifolia*	Native Mulberry	LC	eCSRF	S, ST	MC
Moraceae	*Ficus*	*watkinsiana*	Strangler Fig	LC	CSRF	TT	O
Moraceae	*Maclura*	*cochinchinesis*	Cockspur Thorn	LC	CSRF	V	O
Moraceae	*Streblus*	*brunonianus*	Whalebone Tree	LC	CSRF	MT	O
Myrsinaceae	*Myrsine*	*variabilis*	Muttonwood	LC	OF, WSF	ST	O
Myrtaceae	*Acmena*	*ingens*	Red Apple	LC	CSRF	MT	O
Myrtaceae	*Acmena*	*smithii*	Lilly Pilly	LC	WTRF	MT	C
Myrtaceae	*Angophora*	*floribunda*	Rough-barked Apple	LC	OF	MT	O
Myrtaceae	*Eucalyptus*	*biturbinata*	a Grey Gum	LC	OF, WSF	TT	C
Myrtaceae	*Eucalyptus*	*campanulata*	New England Blackbutt	LC	OF	TT	U
Myrtaceae	*Eucalyptus*	*eugenioides*	Thin-leaved Stringybark	LC	OF	TT	C
Myrtaceae	*Eucalyptus*	*laevopinea*	Silvertop Stringybark	LC	OF, WSF	TT	C
Myrtaceae	*Eucalyptus*	*melliodora*	Yellow Box	LC	OF	TT	C
Myrtaceae	*Eucalyptus*	*quadrangulata*	Black Box	LC	OF, WSF	TT	C
Myrtaceae	*Eucalyptus*	*saligna*	Sydney Blue Gum	LC	WSF	TT	C
Myrtaceae	*Eucalyptus*	*tereticornis*	Forest Red Gum	LC	OF	TT	C
Myrtaceae	*Kunzea*	*ericoides*	Burgan	LC	RP	S, ST	U
Myrtaceae	*Leptospermum*	*polygalifolium*	Wild May	LC	RP	S	U
Myrtaceae	*Lophostemon*	*confertus*	Brush Box	LC	WSF, OF	MT, TT	C
Myrtaceae	*Rhodamnia*	*rubescens*	Scrub Turpentine	LC	WSF	ST	MC
Myrtaceae	*Rhodamnia*	*whiteana*	White Malletwood	LC	CSRF	MT	MC
Myrtaceae	*Rhodomyrtus*	*psidioides*	Native Guava	LC	WTRF	MT	U
Myrtaceae	*Syzygium*	*crebrinerve*	Purple Cherry	LC	CSRF	TT	MC
Oleaceae	*Notelaea*	*venosa*	Veined Mock Olive	LC	RP	S	U
Oleaceae	*Olea*	*paniculata*	Native Olive	LC	CSRF, WSF	MT	U
Orchidaeae	*Calanthe*	*triplicata*	Christmas Orchid	LC	CSRF, WSF	H	MC
Orchidaeae	*Dendrobium*	*gracilicaule*	Tiger Orchid	LC	CSRF, WSF	e	MC
Orchidaeae	*Dendrobium*	*kingianum*	Pink Rock Orchid	LC	RP	e	MC
Orchidaeae	*Dendrobium*	*pugioniforme*	Dagger Orchid	LC	CSRF	e	C
Orchidaeae	*Dendrobium*	*speciosum*	King Orchid	LC	CSRF	e	C
Orchidaeae	*Plectorrhiza*	*tridentata*	Tangle Orchid	LC	CSRF	e	O

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Family	Genus	Species	Common Name	Status	Habitat	Life form	Abundance
Orchidaeae	*Sarcochilus*	*falcatus*	Orange-blossom Orchid	LC	WTRF	e	U
Passifloraceae	*Passiflora*	*edulis*	Passionfruit	Weed	d/eCSRF	V	U
Passifloraceae	*Passiflora*	*herbertiana*	Native Passionfruit	LC	eCSRF	V	O
Passifloraceae	*Passiflora*	*subpeltata*	White Passion Flower	Weed	CSRF	V	U
Phormiaceae	*Dianella*	*caerulea* var. *assera*	Blue Flax Lily	LC	OF	G	O
Phyllanthaceae	*Actephila*	*lindleyi*	Actephila	LC	CSRF	S	MC
Phyllanthaceae	*Breynia*	*oblongifolia*	Breynia	LC	eCSRF, OF, WSF	S	C
Piperaceae	*Peperomia*	*tetraphylla*	Small-leaved Peperomia	LC	CSRF, WTRF	E	C
Pittosporaceae	*Auranticarpa*	*rhombifolium*	Diamond-leaved holly	LC	CSRF	MT	U
Pittosporaceae	*Hymenosporum*	*flavum*	Native Frangipani	LC	e/dCSRF	MT	U
Pittosporaceae	*Pittosporum*	*multiflorum*	Orange Thorn	LC	CSRF	S	C
Pittosporaceae	*Pittosporum*	*undulatum*	Sweet Pittosporum	LC	d/eCSRF, WTRF, WSF, RP	ST	O
Plantaginaceae	*Veronica*	*plebeia*	Trailing Speedwell	LC	OF	H	O
Poaceae	*Anthosachne*	*scabra*	Wheatgrass	LC	OF/T&C	G	MC
Poaceae	*Austrostipa*	*ramosissima*	Stout Bamboo Grass	LC	CSRF	G	O
Poaceae	*Avena*	*sp.*	Wild Oats	Weed	T&C	G	C
Poaceae	*Bothriochloa*	*bunyensis*	Bunya Mts Bluegrass	V	OF	G	O
Poaceae	*Bothriochloa*	*decipiens*	Pitted Bluegrass	LC	OF	G	MC
Poaceae	*Echinopogon*	*ovatus*	Forest Hedgehog Grass	LC	OF	G	U
Poaceae	*Echinopogon*	*nutans*	Nodding Hedgehog Grass	LC	OF	G	U
Poaceae	*Imperata*	*cylindrica*	Blady Grass	LC	OF	G	C
Poaceae	*Oplismenus*	*aemulus*	Wavy Beardgrass	LC	OF, WSF, eCSRF	G	C
Poaceae	*Oplismenus*	*imbecillis*	Creeping Beardgrass	LC	T&C, WSF, eCSRF	G	C
Poaceae	*Paspalum*	*dilatatum*	Paspalum	Weed	T&C	G	C
Poaceae	*Pennisetum*	*clandestina*	Kikuya	Weed	T&C	G	C
Poaceae	*Poa*	*annua*	Winter Grass	Weed	T&C	G	O
Poaceae	*Poa*	*labillardieri*	Tussock Grass	LC	OF	G	C
Poaceae	*Poa*	*sp.*	Tussock Grass	LC	RP	G	C
Poaceae	*Rytidosperma*	*indutum*	a Wallaby Grass	LC	OF	G	O
Poaceae	*Rytidosperma*	*longifolium*	Long-leaved Wallaby Grass	LC	OF	G	O
Poaceae	*Rytidosperma*	*racemosum*	a Wallaby Grass	LC	T&C, OF	G	MC
Poaceae	*Sporobolus*	*fertilus*	Giant Parramatta Grass	Weed	T&C	G	MC

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Family	Genus	Species	Common Name	Status	Habitat	Life form	Abundance
Poaceae	*Sylvipoa*	*queenslandica*	Queensland Grass	LC	T&C	G	MC
Poaceae	*Themeda*	*triandra*	Kangaroo Grass	LC	OF	G	C
Poaceae	*Tripogon*	*loliiformis*	Five Minute Grass	LC	RB	G	U
Polygalaceae	*Polygala*	*virgata*	Broom Milkwort	Weed	eCSRF	S	U
Polygonaceae	*Persicaria*	*decipiens*	Slender Knotweed	LC	T&C	H	C
Polypodiaceae	*Dictymia*	*brownii*	Strap Fern	LC	CSRF, WTRF, RP	eF	C
Polypodiaceae	*Microsorum*	*scandens*	Fragrant Fern	LC	CSRF, WTRF	eF	C
Polypodiaceae	*Platycerium*	*bifurcatum*	Elkhorn Fern	LC	WSF	eF	O
Polypodiaceae	*Pyrrosia*	*confluens*	Robber Fern	LC	CSRF	eF	C
Polypodiaceae	*Pyrrosia*	*rupestris*	Rock Felt Fern	LC	CSRF,RP	eF	C
Proteaceae	*Lomatia*	*arborescens*	Smooth Lomatia	LC	WTRF	ST	MC
Proteaceae	*Orites*	*excelsa*	Prickly Ash	LC	CSRF	MT	C
Proteaceae	*Stenocarpus*	*salignus*	Scrub Beefwood	LC	CSRF	ST	U
Pteridaceae	*Adiantum*	*aethiopicum*	Maidenhair Fern	LC	CSRF, WSF	F	MC
Pteridaceae	*Adiantum*	*formosum*	Giant Maidenhair	LC	CSRF	F	O
Pteridaceae	*Adiantum*	*hispidulum*	Rough Maidenhair Fern	LC	CSRF, WSF, OF	F	MC
Pteridaceae	*Cheilanthes*	*sieberi*	Mulga Fern	LC	RP	F	RP
Pteridaceae	*Pellaea*	*nana*	Sickle Fern	LC	CSRF	F	U
Pteridaceae	*Pteris*	*umbrosa*	Jungle Brake	LC	CSRF	F	C
Quintiniaceae	*Quintinia*	*sieberi*	Rough Possumwood	LC	CSRF, WTRF	MT	U
Ranunculaceae	*Clematis*	*glycinoides*	Headache Vine	LC	e/CSRF, OF	V	C
Rhamnaceae	*Emmenosperma*	*alphitonioides*	Bonewood	LC	CSRF	MT	U
Rosaceae	*Acaena*	*novae-zelandiae*	Bidgee Widgee	LC	T&C, dCSRF	H	MC
Rosaceae	*Rubus*	*moluccanus*	Molucca Raspberry	LC	e/d/CSRF	V	C
Rosaceae	*Rubus*	*parvifolius*	Native Raspberry	LC	OF	V	MC
Rosaceae	*Rubus*	*rosifolius*	Rose-leaved Raspberrry	LC	e/d/CSRF	V	C
Rousseaceae	*Abrophyllum*	*ornans*	Native Hydrangea	LC	WSF	ST	MC
Rubiaceae	*Asperula*	*conferta*	Common Woodruff	LC	OF, WSF	H	C
Rubiaceae	*Galium*	*leptogonium*	a Bedstraw	LC	OF, WSF	H	C
Rubiaceae	*Morinda*	*jasminoides*	Morinda	LC	CSRF, WSF	V	C
Rubiaceae	*Psychotria*	*loniceroides*	Hairy Psychotria	LC	CSRF, WSF	S	U
Rutaceae	*Acronychia*	*oblongifolia*	White Aspen	LC	WTRF, WSF	S	U
Rutaceae	*Melicope*	*micrococca*	White Euodia	LC	d/CSRF	ST	O
Rutaceae	*Sarcomelicope*	*simplicifolia*	Yellow Aspen	LC	CSRF	ST	U
Rutaceae	*Zanthoxylum*	*brachyacanthum*	Thorny Yellowwood	LC	CSRF	ST	C
Rutaceae	*Zieria*	*smithii*	Sandfly Bush	LC	WSF	S	U
Santalaceae	*Exocarpos*	*cupressiformis*	Native Cherry	LC	OF	ST	O

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Family	Genus	Species	Common Name	Status	Habitat	Life form	Abundance
Santalaceae	*Santalum*	*obtusifolium*	Blunt Sandalwood	LC	OF	S	U
Sapindaceae	*Alectryon*	*subcinereus*	Native Quince	LC	CSRF, WTRF	MT	MC
Sapindaceae	*Arytera*	*divaricata*	Coogera	LC	CSRF	ST	U
Sapindaceae	*Cupaniopsis*	*baileyana*	Narrow-leaved Tuckeroo	LC	WTRF	ST	MC
Sapindaceae	*Diploglottis*	*australis*	Native Tamarind	LC	dCSRF	MT	MC
Sapindaceae	*Elattostachys*	*xylocarpa*	White Tamarind	LC	CSRF	ST	U
Sapindaceae	*Guioa*	*semiglauca*	Wild Quince	LC	d/CSRF, WTRF	ST	O
Scrophulariaceae	*Myoporum*	*acuminatum*	Boobialla	LC	OF	S	O
Scrophulariaceae	*Myoporum*	*betcheanum*	Mountain Boobialla	LC	eCSRF	S	O
Smilacaceae	*Smilax*	*australis*	Barbed-wire Vine	LC	CSRF, WTRF, OF, WSF	V	O
Solanaceae	*Solanum*	*aviculare*	Kangaroo Apple	LC	d/CSRF	S	MC
Solanaceae	*Solanum*	*nigrum*	Blackberry Nightshade	Weed	d/CSRF, WSF, T&C	H	O
Solanaceae	*Solanum*	*stelligerum*	Devil's Needles	LC	OF, WSF	S	O
Sterculiaceae	*Argyrodendron*	*actinophyllum*	Black Booyong	LC	CSRF	TT	C
Sterculiaceae	*Brachychiton*	*acerifolius*	Flame Tree	LC	CSRF	MT	O
Sterculiaceae	*Brachychiton*	*discolor*	Scrub Bottle Tree	LC	CSRF	MT/TT	U
Sterculiaceae	*Brachychiton*	*populneus*	Kurrajong	LC	OF	ST	O
Surianaceae	*Guilfoylia*	*monostylis*	Guilfoylia	LC	CSRF	MT	MC
Symplocaceae	*Symplocos*	*thwaitesii*	Buff Hazelwood	LC	CSRF	MT	U
Tectariaceae	*Arthropteris*	*beckleri*	Small Climbing Fishbone Fern	LC	CSRF	eF	C
Tectariaceae	*Arthropteris*	*tenella*	Climbing Fishbone Fern	LC	CSRF	eF	C
Thymelaeaceae	*Pimelea*	*curviflora*	Tough-barked Riceflower	LC	OF	S	U
Thymelaeaceae	*Pimelea*	*umbratica*	Rainforest Riceflower	LC	e/CSRF	S	U
Thymelaeaceae	*Wikstroemia*	*indica*	Tiebush	LC	e/CSRF, WSF	S	O
Urticaceae	*Dendrocnide*	*excelsa*	Giant Stinging Tree	LC	dCSRF	TT	C
Urticaceae	*Elatostema*	*reticulatum*	Rainforest Spinach	LC	CSRF (wet areas)	H	MC
Urticaceae	*Urtica*	*incisa*	Stinging Nettle	LC	d/CSRF, T&C	H	C
Verbenaceae	*Verbena*	*litoralis*	a Purpletop	Weed	T&C	H	C
Violaceae	*Hybanthus*	*stellaroides*	Orange Spade Flower	LC	OF	H	O
Violaceae	*Viola*	*hederacea*	Native Violet	LC	eCSRF, WSF	H	MC
Violaceae	*Viola*	*betonicifolia*	Native Violet	LC	eCSRF, WSF	H	MC
Vitaceae	*Cayratia*	*clematidea*	Slender Grape	LC	OF, WSF, eCSRF	V	MC
Vitaceae	*Cayratia*	*eurynema*	Soft Water Vine	LC	CSRF	V	U

Family	Genus	Species	Common Name	Status	Habitat	Life form	Abundance
Vitaceae	*Cissus*	*antarctica*	Water Vine	LC	CSRF, WSF	V	C
Vitaceae	*Cissus*	*hypoglauca*	Five-leaved Water Vine	LC	CSRF, WSF	V	C
Vitaceae	*Cissus*	*sterculiifolia*	Long-leaved Water Vine	LC	CSRF	V	O
Vitaceae	*Tetrastigma*	*nitens*	Native Grape	LC	CSRF, WSF, OF	V	O
Winteraceae	*Tasmannia*	*insipida*	Scrub or Brush Pepperbush	LC	CSRF, WTRF, WSF	S	C
Xanthorrhoeaceae	*Xanthorrhoea*	*glauca*	Grass Tree	LC	OF	S	C
Zingiberaceae	*Alpinia*	*caerulea*	Native Ginger	LC	eCSRF, WSF	G	C

Table 5B: Species Recorded Between Thornton Trailhead and Mt Mistake Farmhouse (Freehold tenure)

Family	*Genus*	*Species*	Common Name	Status	Habitat	Life form	Abundance
Acanthaceae	*Rostellularia*	*adscendens*		LC	W	H	R
Apiaceae	*Hydrocotyle*	*laxiflora*	Stinking Pennywort	LC	OF	H	O
Apocynaceae	*Asclepias*	*curassavica*	Redhead Cotton Bush	Weed	OF, W	S	O
Apocynaceae	*Gomphocarpus*	*physocarpus*	Balloon Cotton Bush	Weed	OF	S	U
Apocynaceae	*Parsonsia*	*straminea*	Monkey Rope	LC	W	V	O
Apocynaceae	*Sarcostemma*	*viminale* subsp. *brunonianum*	Caustic Vine	LC	RP	V	U
Araceae	*Gymnostachys*	*anceps*	Settlers Flax	LC	OF	G	O
Asteraceae	*Ageratina*	*adenophora*	Crofton Weed	Weed	W, OF	H	O
Asteraceae	*Ageratum*	*houstonianum*	Billygoat Weed	Weed	OF	H	O
Asteraceae	*Bidens*	*pilosa*	Cobbler's Pegs	Weed	W	H	C
Asteraceae	*Brachyscome*	sp.		LC	RP	H	U
Asteraceae	*Cassinia*	*quinquefaria*		LC	RP	S	U
Asteraceae	*Chrysocephalum*	*apiculatum*	Yellow Buttons	LC	W	H	O
Asteraceae	*Cyanthillium*	*cinereum*	Vernonia	LC	OF, W	H	C
Asteraceae	*Conyza*	sp.	a Fleabane	Weed	W	H	C
Asteraceae	*Senecio*	*madagascariensis*	Fire Weed	Weed	all habitats	H	C
Asteraceae	*Sigesbeckia*	*orientalis*	Indian Weed	LC	W	H	U
Asteraceae	*Tagetes*	*minuta*	Stinking Roger	Weed	W	H	U
Asteraceae	*Vittadinia*	*hispidula* var. *setosa*		LC	RP, OF	H	MC
Asteraceae	*Xerochrysum*	*bracteatum*	Golden Everlasting	LC	RP	H	U
Blechnaeae	*Doodia*	*aspera*	Prickly Rasp Fern	LC	OF	F	MC
Cactaceae	*Opuntia*	sp.	a Prickly Pear	Weed	W, RP	S	O
Campanulaceae	*Isotoma*	*axillaris*	Australian Harebell	LC	RP	H	U

APPENDIX 5: FLORA RECORDED ALONG SCENIC RIM TRAIL ROUTE

Family	*Genus*	*Species*	Common Name	Status	Habitat	Life form	Abundance
Campanulaceae	*Lobelia*	*purpurascens*	White Root	LC	OF	H	C
Campanulaceae	*Wahlenbergia*	*graniticola*	a Bluebell	LC	RP	H	MC
Caryophyllaceae	*Stellaria*	*media*	Chickweed	Weed	OF	H	U
Casuarinaceae	*Allocasuarina*	*torulosa*	Forest Oak	LC	OF	MT	C
Chenopodiaceae	*Einadia*	*hastata*	Berry Saltbush	LC	OF	H	O
Commelinaceae	*Commelina*	*diffusa*	Wandering Jew	LC	OF	H	O
Convolvulaceae	*Dichondra*	*repens*	Kidney Weed	LC	OF, RP	H	MC
Crassulaceae	*Crassula*	*sieberiana*	Australian Crassula	LN	RP	H	U
Cyperaceae	*Cyperus*	*gracilis*	a Sedge	LC	W	G	O
Cyperaceae	*Gahnia*	*aspera*	Rough Saw Sedge	LC	W	G	O
Cyperaceae	*Lepidosperma*	*laterale*	a Razor Sedge	LC	RP	G	U
Cyperaceae	*Scleria*	*mackaviensis*		LC	W	G	O
Dennstaedtiaceae	*Pteridium*	*esculentum*	Bracken Fern	LC	OF, RP	F	MC
Dilleniaceae	*Hibbertia*	*scandens*	Twining Guinea Flower	LC	OF, RP	S/V	MC
Doryanthaceae	*Doryanthes*	*palmeri*	Spear Lily	LC	RP	S	C
Fabaceae	*Crotalaria*	*lanceolata*		Weed	W	H	O
Fabaceae	*Crotalaria*	*montana*		LC	W	H	U
Fabaceae	*Daviesia*	*ulicifolia*	Native Gorse	LC	SOF	S	U
Fabaceae	*Desmodium*	*brachypodum*	Large Tick Trefoil	LC	W	H	C
Fabaceae	*Desmodium*	*gunnii*	Slender Tick Trefoil	LC	OF, W	H	MC
Fabaceae	*Glycine*	*clandestina*		LC	OF	H	C
Fabaceae	*Glycine*	*tabacina*		LC	W	H	MC
Fabaceae	*Glycine*	*tomentella*	Woolly Glycine	LC	W	H	MC
Fabaceae	*Hardenbergia*	*violacea*	Native Sarsaparilla	LC	OF, W	V	C
Fabaceae	*Jacksonia*	*scoparia*	Dogwood	LC	W, RP	S	MC
Fabaceae	*Lespedeza*	*juncea*	Lespedeza	LC	W	H	MC
Fabaceae	*Swainsona*	*galegifolia*	Darling Pea	LC	RP	S	U
Fabaceae	*Trifolium*	*repens*	White Clover	Weed	OF	H	C
Geraniceae	*Geranium*	*homeanum*	Small-flowered Geranium	LC	OF, W	H	C
Goodeniaceae	*Scaevola*	*albida*	Pale fan-flower	LC	RP	H	U
Lamiaceae	*Ajuga*	*australis*	Australian Bugle	LC	W	H	O
Lamiaceae	*Mentha*	*dimenca*	Native Mint	LC	OF, W	H	MC
Lamiaceae	*Plectranthus*	*graveolens*	a Plectranthus	LC	OF, RP	H	MC
Lamiaceae	*Plectranthus*	*parviflorus*	a Plectranthus	LC	OF	H	MC
Lomandraceae	*Lomandra*	*longifolia*	Spiny-headed Matrush	LC	OF, WSF	G	O
Lomandraceae	*Lomandra*	*multiflora*	Many-flowered Matrush	LC	OF	G	O
Luzuriagaceae	*Eustrephus*	*latifolius*	Wombat Berry	LC	OF, W	V	C
Malvaceae	*Melhania*	*oblongifolia*		LC	W	S	O

APPENDIX 5: FLORA RECORDED ALONG SCENIC RIM TRAIL ROUTE

Family	*Genus*	*Species*	Common Name	Status	Habitat	Life form	Abundance
Malvaceae	*Sida*	*rhombifolia*	Paddy's Lucerne	Weed	OF, W	S	O
Mimosaceae	*Acacia*	*falcata*	Sickle-leaved Wattle	LC	RP	S	U
Mimosaceae	*Acacia*	*irrorata*	Green Wattle	LC	OF	S, ST	C
Mimosaceae	*Acacia*	*implexa*	Lightwood	LC	RP, W	S, ST	C
Mimosaceae	*Acacia*	*maidenii*	Maiden's Wattle	LC	OF	ST	MC
Mimosaceae	*Acacia*	*melanoxylon*	Blackwood	LC	OF	ST	U
Myoporaceae	*Eremophila*	*debilis*	Winter Apple	LC	W	H	O
Myrtaceae	*Angophora*	*floribunda*	Rough-barked Apple	LC	W, OF	MT	O
Myrtaceae	*Angophora*	*leiocarpa*	Rusty Gum	LC	SOF	TT	U
Myrtaceae	*Corymbia*	*intermedia*	Pink Bloodwood	LC	W	TT	MC
Myrtaceae	*Corymbia*	*tessellaris*	Moreton Bay Ash	LC	W	TT	MC
Myrtaceae	*Eucalyptus*	*biturbinata*	a Grey Gum	LC	OF, WSF	TT	C
Myrtaceae	*Eucalyptus*	*crebra*	Narrow-leaved Ironbark	LC	W	TT	C
Myrtaceae	*Eucalyptus*	*eugenioides*	Thin-leaved Stringybark	LC	OF	TT	C
Myrtaceae	*Eucalyptus*	*melanophloia*	Silverleaved ironbark	LC	W	TT	MC
Myrtaceae	*Eucalyptus*	*melliodora*	Yellow Box	LC	OF	TT	MC
Myrtaceae	*Eucalyptus*	*moluccana*	Gum-topped Box	LC	SOF	TT	U
Myrtaceae	*Eucalyptus*	*tereticornis*	Forest Red Gum	LC	OF	TT	C
Myrtaceae	*Lophostemon*	*confertus*	Brush Box	LC	OF, RP	S, MT	O
Oxalidaceae	*Oxalis*	*chnoodes*		LC	OF	H	O
Phormiaceae	*Dianella*	*caerulea* var. *assera*	Blue Flax Lily	LC	OF	G	O
Phyllanthaceae	*Breynia*	*oblongifolia*	Breynia	LC	OF	S	O
Plantaginaceae	*Plantago*	*debilis*		LC	OF	H	O
Poaceae	*Anthosachne (Elymus)*	*scaber*	Common Wheat Grass	LC	OF	G	O
Poaceae	*Aristida*	*ramosa*	Purple Wiregrass	LC	W	G	O
Poaceae	*Aristida*	sp.	a Wiregrass	LC	RP	G	U
Poaceae	*Avena*	sp.	Wild Oats	Weed	OF	G	C
Poaceae	*Bothriochloa*	*bunyensis*	Bunya Mts Bluegrass	V	RP	G	U
Poaceae	*Bothriochloa*	*decipiens*	Pitted Bluegrass	LC	W, RP	G	MC
Poaceae	*Cymbopogon*	*refractus*	Barbed-wire Grass	LC	W, OF, RP	G	C
Poaceae	*Dichanthium*	*sericeum*	Queensland Bluegrass	LC	W, RP	G	O
Poaceae	*Digitaria*	*parvifolia*	Small-flowered Finger Grass	LC	W, OF	G	O
Poaceae	*Echinopogon*	*ovatus*	Forest Hedgehog Grass	LC	OF	G	U
Poaceae	*Echinopogon*	*nutans*	Nodding Hedgehog Grass	LC	OF	G	U
Poaceae	*Entolasia*	*stricta*	Wire Grass	LC	RP	G	O
Poaceae	*Eremochloa*	*bimaculata*	Poverty Grass	LC	RP	G	U

APPENDIX 5: FLORA RECORDED ALONG SCENIC RIM TRAIL ROUTE

Family	*Genus*	*Species*	Common Name	Status	Habitat	Life form	Abundance
Poaceae	*Heteropogon*	*contortus*	Spear Grass	LC	W	G	C
Poaceae	*Imperata*	*cylindrica*	Blady Grass	LC	W, OF	G	C
Poaceae	*Melinus*	*repens*	Red Natal Grass	Weed	W, RP	G	O
Poaceae	*Oplismenus*	*aemulus*	Wavy Beardgrass	LC	OF, WSF, eCSRF	G	C
Poaceae	*Oplismenus*	*imbecillis*	Creeping Beardgrass	LC	T&C, WSF, eCSRF	G	C
Poaceae	*Paspalum*	*dilatatum*	Paspalum	Weed	T&C	G	C
Poaceae	*Pennisetum*	*clandestina*	Kikuya	Weed	RP, grazed OF	G	C
Poaceae	*Poa*	*annua*	Winter Grass	Weed	T&C	G	O
Poaceae	*Poa*	*labillardieri*	Tussock Grass	LC	OF, RP	G	C
Poaceae	*Rytidosperma*	*indutum*	a Wallaby Grass	LC	RP, OF	G	O
Poaceae	*Rytidosperma*	*longifolium*	Long-leaved Wallaby Grass	LC	OF	G	O
Poaceae	*Rytidosperma*	*racemosum*	a Wallaby Grass	LC	OF	G	O
Poaceaea	*Sarga (Sorghum)*	*leiocladum*	Wild Sorghum	LC	W	G	C
Poaceae	*Sporobolus*	*fertilus*	Giant Parramatta Grass	Weed	near roads along RP	G	O
Poaceae	*Themeda*	*triandra*	Kangaroo Grass	LC	OF, W, RP	G	C
Poaceae	*Tripogon*	*loliiformis*	Five Minute Grass	LC	RP	G	U
Polypodiaceae	*Platycerium*	*bifurcatum*	Elkhorn Fern	LC	OF	eF	U
Proteaceae	*Banksia*	*integrifolia* subsp. *integrifolia*	Coast banksia	LC	RP	S, ST	U
Pteridaceae	*Adiantum*	*aethiopicum*	Maidenhair Fern	LC	OF, RP	F	O
Pteridaceae	*Adiantum*	*hispidulum*	Rough Maidenhair Fern	LC	OF	F	O
Pteridaceae	*Cheilanthes*	*distans*	Bristly Cloak Fern	LC	W	F	U
Pteridaceae	*Cheilanthes*	*sieberi*	Mulga Fern	LC	W, RP	F	O
Ranunculaceae	*Clematis*	*glycinoides*	Headache Vine	LC	OF	V	U
Ranunculaceae	*Ranunculus*	*lappaceus*	Buttercup	LC	OF, RP	H	O
Rhamnaceae	*Alphitonia*	*excelsa*	Red Ash	LC	W	S	U
Rosaceae	*Rubus*	*rosifolius*	Rose-leaved Raspberrry	LC	W, RP	V	MC
Rubiaceae	*Asperula*	*conferta*	Common Woodruff	LC	OF	H	C
Santalaceae	*Exocarpos*	*cupressiformis*	Native Cherry	LC	W, OF	ST	O
Sapindaceae	*Dodonaea*	*viscosa* subsp. *burmanniana*	a Hopbush	LC	W	S	U
Smilacaceae	*Smilax*	*australis*	Barbed-wire Vine	LC	W, OF	V	O
Solanaceae	*Physalis*	*minima*	Gooseberry	Weed	W	H	O
Solanaceae	*Solanum*	*nigrum*	Blackberry Nightshade	Weed	OF	H	U
Solanaceae	*Solanum*	*limitare*		LC	OF	S	U
Solanaceae	*Solanum*	*stelligerum*	Devil's Needles	LC	OF	S	U
Sparrmanniaceae	*Grewia*	*latifolia*	Dysentery Plant	LC	W	S	O

Family	*Genus*	*Species*	Common Name	Status	Habitat	Life form	Abundance
Sterculiaceae	*Brachychiton*	*populneus*	Kurrajong	LC	OF, W	MT	O
Thymelaeaceae	*Pimelea*	*neo-anglica*	Poison Pimelea	LC	RP	S	O
Thymelaeaceae	*Pimelea*	*umbratica?*	Rainforest Riceflower	LC	OF	S	U
Thymelaeaceae	*Wikstroemia*	*indica*	Tiebush	LC	OF	S	R
Verbenaceae	*Verbena*	*bonariensis*	a Purpletop	Weed	W	H	C
Violaceae	*Hybanthus*	*stellarioides*	Orange Spade Flower	LC	OF	H	O
Violaceae	*Viola*	*betonicifolia*	Native Violet	LC	OF, RP	H	MC
Vitaceae	*Cayratia*	*clematidea*	Slender Grape	LC	OF	V	U
Xanthorrhoeaceae	*Xanthorrhoea*	*glauca*	Grass Tree	LC	OF	S	C

Table 5C: Additional species noted along or near trail from West Peak of Mt Mitchell to Canopy Ecocamp

Family	*Genus*	*Species*	Common Name	Status	Habitat	Life form	Abundance
Rosaceae	*Acaena*	*ovina*	Sheep's Burr	LC	T&C, dW/OF	H	O
Dilleniaceae	*Hibbertia*	*acicularis*	a Guinea Flower	LC	OF (rocky slope near creek)	S	U
Fabaceae	*Hovea*	*planifolia*	a Hovea	LC	OF (rocky slope near creek)	S	U
Fabaceae	*Indigofera*	*baileyi*	Bailey's Indigo	LC	OF	S	U
Fabaceae	*Tephrosia*	*bidwillii*	Hillside Tephrosia	LC	OF	S	U
Myrtaceae	*Angophora*	*subvelutina*	Broad-leaved Apple	LC	OF	T	C
Myrtaceae	*Eucalyptus*	*conica*	Fuzzy Box	LC	dOF (near creek)	T	U
Myrtaceae	*Eucalyptus*	*nobilis*	Ribbon Gum	LC	OF (creek flat)	T	C
Pittosporaceae	*Bursaria*	*spinosa*	Black Thorn	LC	OF (rocky slope near creek)	S	C
Poaceae	*Bothriochloa*	*bladhii*	Forest Bluegrass	LC	dOF	G	C
Sapindaceae	*Dodonaea*	*stenophylla*	a Hopbush	LC	OF (rocky slope near creek)	S	U

APPENDIX 6

Fauna Survey Results

1.0 FIELD SURVEY APPROACH

A targeted terrestrial vertebrate fauna field survey program was undertaken over a 5-day period 7-11 November 2016 by Dr Penn Lloyd (Principal Ecologist) and Adrian Caneris (Principal Wildlife Expert). The survey was preceded by a site visit by Dr Penn Lloyd on 27 October, during which proposed Ecocamp locations and trails in the central portion of the project area around Goomburra were visited, which assisted with survey planning. The survey program was split into three stages, two days and two nights in the northern portion of the project area between the Thornton Trailhead and Mt Mistake (7-9 November) two days and two nights in the central section of the project area around Goomburra (9-11 November) and two days and one night in the Mt Mitchell portion (December 5-6). Methodology and activities are outlined below.

The survey program in the Mt Mistake portion included:

- trapping for small mammals (targeting Hastings River Mouse and New Holland Mouse) over two consecutive nights using Elliott A traps (baited with a standard mix of rolled oats, peanut butter, vegetable oil and vanilla essence), 20 traps at each of five sites (total of 200 trap nights) within Main Range National Park along the proposed walking trail;
- deployment of three remote cameras over two consecutive nights, specifically targeting Brush-tailed Rock-wallaby and Long-nosed Potoroo; the same bait used for the trapping survey was sprinkled in front of the cameras as an attractant to mammals;
- active searching for reptiles, including turning surface rocks in eucalypt forest targeting Collared Delma and raking through leaf litter and rotting tree trunks in rainforest targeting Three-toed Snake-tooth Skink;
- active searching for signs of Koala (tree-trunk scratches and scats at the bases of preferred food tree species) in eucalypt forest during the day;
- spotlighting in eucalypt forest at night, specifically targeting Greater Glider, Koala and Brush-tailed Rock-wallaby;
- visiting small farm dams, the only available moist frog habitats at dusk to survey for calling frogs;
- observational and aural surveys for birds during the day and night throughout the survey.

The survey program at Goomburra included:

- trapping for small mammals (targeting Hastings River Mouse and New Holland Mouse) over two consecutive nights using baited Elliott A traps, 50 traps at each of two sites (total of 200 trap nights), one site focussed on the proposed Amphitheatre Ecocamp location and the other focussed on the proposed Woodcutters Ecocamp location, both within Main Range National Park;
- deployment of three remote cameras over two consecutive nights, specifically targeting wet sclerophyll habitats for Long-nosed Potoroo; the same bait used for the trapping survey was sprinkled in front of the cameras as an attractant to mammals;
- active searching for reptiles, including raking through leaf litter and rotting tree trunks in rainforest targeting Three-toed Snake-tooth Skink;
- active searching for signs of Koala (tree-trunk scratches and scats at the bases of preferred food tree species) in eucalypt forest during the day;
- spotlighting in eucalypt forest at night, specifically targeting Greater Glider, Koala and Brush-tailed Rock-wallaby;
- visiting the proposed trail crossing point of a perennial creek at dusk, specifically targeting Fleay's Barred Frog;

- observational and aural surveys for birds during the day and night throughout the survey.

The survey program in the Mt Mitchell portion included:

- Targeted aural census for Eastern Bristlebird in all potential habitats in proximity to the prosed trails (no call-playback was used);
- active searching for reptiles, including raking through leaf litter and rotting tree trunks in rainforest targeting Three-toed Snake-tooth Skink;
- active searching for signs of Koala (tree-trunk scratches and scats at the bases of preferred food tree species) in eucalypt forest during the day.

The field team camped two nights on the edge of the escarpment near the Mt Mistake Ecocamp on freehold Lot 144/CC761 and two nights at the site of the proposed Amphitheatre Ecocamp. This facilitated spotlighting in eucalypt forest near these two locations and aural surveys for nocturnal birds and animals through the night. One night was spent at the Canopy Ecocamp for the Mt Mitchell trail assessment. The locations of survey sites and conservation significant species records were recorded using a hand-held GPS.

2.0 FIELD SURVEY CONDITIONS

For the Mt Mistake and Goomburra assessment the field survey was undertaken during partly cloudy, warm and dry weather conditions. The only rainfall during the survey occurred as late evening showers of approximately 10 mm overnight on 9 November.

The Mt Mitchell survey was undertaken during relatively extreme hot weather on the first day with temperatures reaching 38^{O} Celsius with thunderstorms and rainfall on the 2^{nd} morning followed by overcast conditions until midday.

3.0 FIELD SURVEY RESULTS AND DISCUSSION

A total of 16 mammal species, 82 bird species, eight reptile species and nine amphibian (frog) species were detected during the field survey (see **Table A6.1** for the full species list). These included four species listed as threatened species and two species listed as migratory species under the EPBC Act, and seven species listed as threatened or near threatened under the NC Act. The trapping survey results are summarised in **Table A6.2** and details of the trap site locations are provided in **Table A6.3**. The Elliott traps captured five small mammal species and one reptile species, the remote cameras photographed four mammal species and two bird species, and nocturnal spotlighting detected four mammal species and two nocturnal bird species.

Conservation significant species and threatening processes detected during the field survey are discussed individually in more detail in the sections that follow.

Hastings River Mouse *Pseudomys oralis* (EPBC Act: endangered; NC Act: vulnerable)

A single Hastings River Mouse (**Photo 1**) was trapped and released on the steep hillside approximately 30 m above the proposed Woodcutters Ecocamp site. The identity of the animal has been confirmed by Dr Ian Gynther (Senior Conservation Officer and mammal expert at EHP's Threatened Species Unit) from photographs taken of the head, tail and feet of the individual before release. This is a significant record since it is the most northerly site that the species has been detected at to date. Previously is has been known to occur only as far north as Cunningham's Gap and North Branch Creek (Ian Gynther, personal communication). The habitat that the individual was trapped in is *Eucalyptus campanulata* (New England Blackbutt) tall open forest that lacked a shrub layer and had a relatively dense groundcover dominated by *Lomandra*

longifolia (Spiny-headed Mat-rush) (**Photo 2**). This habitat is consistent with the known association of the species with upland open eucalypt forests with a dense understorey of grasses, sedges or mat-rushes (NSW DECC 2005, Pyke and Reid 2002, Law *et al*. 2016). Suitable habitat for Hastings River Mouse in the local area comprises the eucalypt forest both upslope and downslope to the west and north of the proposed Woodcutters Ecocamp site, in areas where the groundcover is dense and is dominated by the mat-rush *Lomandra longifolia* and/or the grass *Themeda triandra*. Historical logging at the capture location is likely to have enhanced current habitat values for Hastings River Mouse, since the species' occupancy rates are known to be higher after moderate-intensity logging disturbance and to decline if habitat disturbance (e.g. from moderate-intensity logging or occasional, patchy fire) is excluded for more than 30 years (Law *et al*. 2016). This relationship appears to be mediated to some extent by competition with rats (*Rattus* and *Melomys* species), including Bush Rat, since a strong negative relationship between Hastings River Mouse occupancy and rat abundance has been demonstrated (Law *et al*. 2016). The relatively high abundance of rats at the location where Hastings River Mouse was captured (9 rat captures to 1 Hastings River Mouse capture) suggests that Hastings River Mouse occupancy at the site may be dynamic over time and dependent on periodic habitat disturbance.

Photo 1. Hastings River Mouse captured upslope of the proposed Woodcutters Ecocamp location, showing the 'Roman nose', black eye-ring and white hairy feet characteristic of the species.

Photo 2. *Eucalyptus campanulata* tall open forest with a dense groundcover dominated by *Lomandra longifolia* at the capture location of Hastings River Mouse.

Photo 3. Potentially suitable habitat for Hastings River Mouse in eucalypt open forest with a dense grass and mat-rush groundcover at the edge of rainforest in the Mount Mistake portion of the project area.

Photo 4. Typical open eucalypt parkland with very short, grassy groundcover on the Thornton to Mount Mistake section of the proposed hiking trail through a freehold livestock grazing property.

The proposed pad area for the Ecocamp itself is not suitable habitat for the species, since the groundcover is more open and dominated by bracken and raspberry shrubs. The rainforest ecotone habitat to the east and north of the Ecocamp is similarly not suitable habitat for the species due to the absence of mat-rush or grassy groundcover and the dominance of Lantana, bracken, raspberry or a variety of rainforest shrubs. Therefore the Ecocamp location is at the edge of Hastings River Mouse habitat in the local area and will not fragment the species' habitat. Potential impacts of the project on Hastings River Mouse are therefore limited to potential impacts of noise and lighting disturbance at night, potential introduction or spread of weeds and potential introduction of food sources for Brown Rat, Black Rat or House Mouse that may compete with the species. The sensitivity of Hastings River Mouse to noise and light disturbance remains unknown. Design of the Ecocamp in this location would need to shield the habitat from noise and light impacts as far as possible.

Potentially suitable habitat for Hastings River Mouse also occurs in eucalypt forest near the rainforest edge in the Mt Mistake portion of Main Range National Park (**Photo 3**), but not on the freehold properties to the north-west (Lots 144/CC761, 209/CC761 and 180/CC1945) where a history of livestock grazing means that there is insufficient ground cover for the species (**Photo 4**). While no individual was trapped during the survey in the Mount Mistake area, the potential occurrence of the species in this area cannot be excluded since the trapping survey effort (40 trap nights at each of five sites) was less than the recommended survey effort of 400 trap nights per site (NSW DECC 2005). However, the habitat area is already accessible via an existing fire-trail and habitat values for Hastings River Mouse in this area are being degraded by a relatively high density of feral pigs currently active in this area. The proposed hiking trail would therefore have a negligible impact on the species should it occur in this northern section of the project area and would potentially have a beneficial effect through increased feral animal management.

There is potential habitat for Hastings River Mouse within the higher eucalypt forests within the National Park on the Mt Mitchell trial. As the SRT would be confined to the existing trail in this habitat, there are no impacts from the project predicted for the species.

Eastern Bristlebird *Dasyornis brachypterus* (EPBC Act: endangered, NC Act: endangered)

Habitats in the project area north of Cunningham's Gap are generally unsuitable for Eastern Bristlebird. In particular, the grassy ground layer in the eucalypt forests in the Mt Mistake portion of Main Range National Park (see **Photo 6**) and on the freehold lots 144/CC761, 209/CC761 and 180/CC1945 (see **Photo 4**) is insufficiently tall and dense to provide suitable habitat for Eastern Bristlebird.

There is habitat for the species on the southern slopes of Mt Mitchell (**Photos 8 and 9**). There are historical records in this location (**Figure 1**), although there have been no records of the species here for over 20 years following a fire event (Gregory, 2007). While the habitat may now be suitable for the species, it is not known if it will or can recolonise.

The SRT trail in this location is confined to existing tracks and trails that are currently in use by walkers, therefore no Eastern Bristlebird habitat would be directly impacted by the project. Habitat condition monitoring and long-term monitoring of the trail using song meters is recommended. Should the species be detected, operational and management planning will need to be undertaken in consultation with QPWS as the species is sensitive to disturbance during the breeding season.

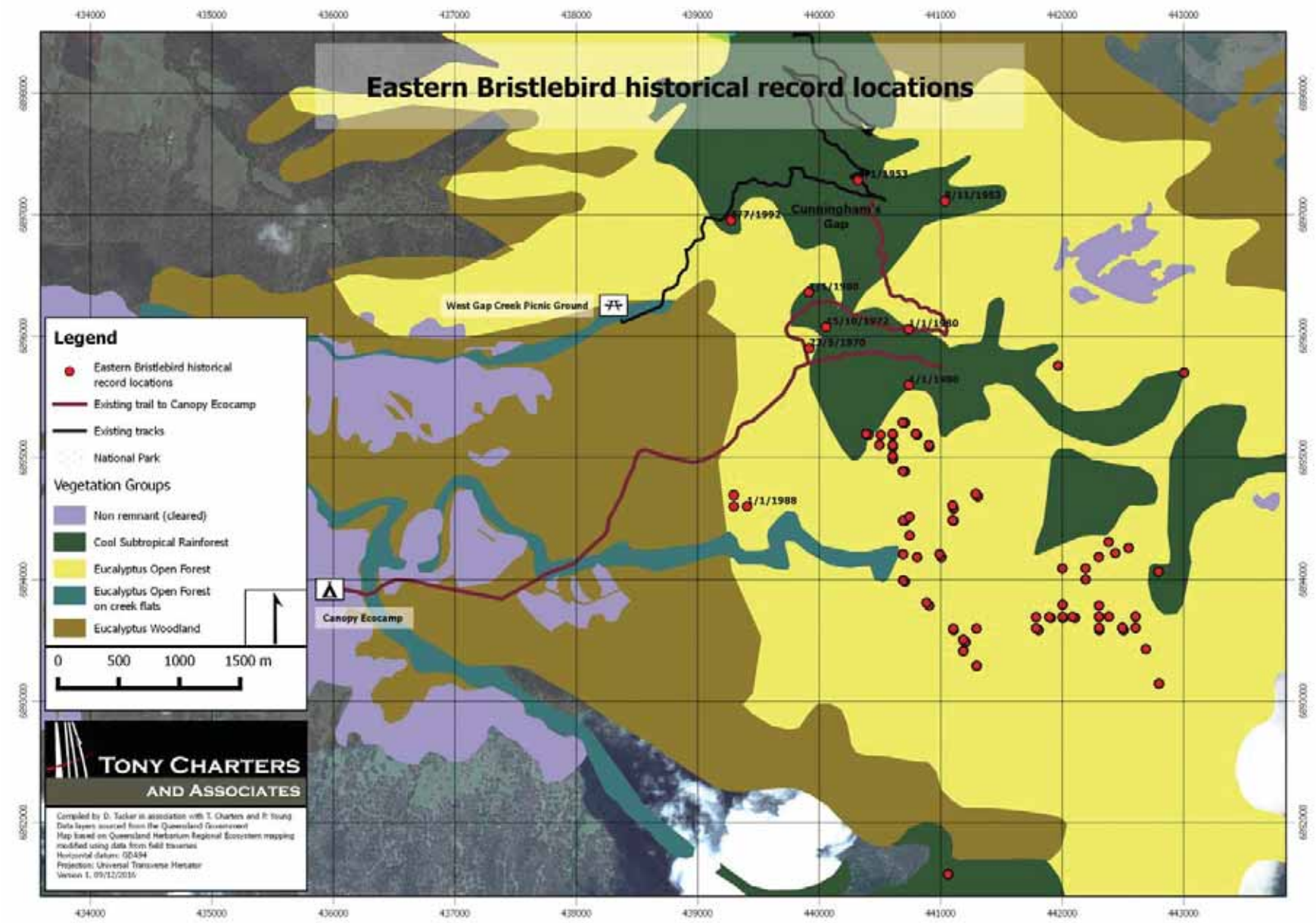

Figure 1 Eastern Bristlebird historical record locations

Fleay's Barred Frog *Mixophyes fleayi* (EPBC Act: endangered; NC Act: endangered)

Fleay's Barred Frog was detected during a dusk survey of a small, perennial stream located in the upper valley between the Winder track and the Amphitheatre track, at the proposed crossing point of the stream by a proposed new section of walking trail. Male frogs, spaced 10-30 m apart down the stream, were actively calling at dusk. Fleay's Barred Frog lays its eggs in the shallow riffle zones of small streams, either into a rounded nest depression in the substrate, or occasionally directly onto bedrock (Knowles *et al.* 2014). Potential impacts to the species at this location include trampling of stream riffle zones, stream banks and vegetation, and soil disturbance causing increased erosion and sedimentation. Therefore, to mitigate potential negative impacts on the species, any proposed approach to the walking trail crossing of the creek, through the use of sensitive placement of stepping stones or a walkway raised above the highest possible flood water mark should ensure the following requirements are met:

- there is no disturbance to shallow stream riffle habitats that the species lays its eggs in or the adjoining stream banks;
- there is no release of sediment into the stream during any walkway construction works or erosion from the trail; and
- there are no nearby pools on the creek that would entice people using the trail to leave the trail to take a dip in the pool, thereby causing trampling of the stream riffle zones, banks and vegetation.

These requirements may mean that the proposed crossing point be revised in consultation with QPWS to ensure minimal potential for impacts to conservation significant frogs inhabiting the stream environment.

Mountain Frog *Philoria kundagungan* (NC Act: Vulnerable)

Mountain Frog, which has a very restricted distribution and inhabits the boggy headwaters of streams and soaks in rainforest (Hero *et al.* 2006), was detected calling during the day at two locations during the field survey: in a moist, rocky rainforest gully well below the proposed trail at Mt Mistake; and in a rocky soak at the top of a moist gully on the escarpment edge approximately 20 m below the existing unofficial walking track between Sylvester's lookout and Mount Castle lookout, just north of Sylvester's lookout. The identity of this species was confirmed by Dr Harry Hines (Senior Conservation Officer and frog expert at QPWS's Ecological Assessment Unit) from recordings of the call. Main Range National Park is a stronghold for Mountain Frog, which has been found at many locations in boggy stream headwaters and soaks. It may therefore also occur in the vicinity of the proposed stream crossing discussed under Fleay's Barred Frog, where it could inhabit moist habitats fringing the stream. Therefore, the proposed trail approach to any crossing of a stream, boggy ground or moist, rocky soak would require sensitive management to avoid negative impacts on conservation significant frog species.

Long-nosed Potoroo *Potorous tridactylus tridactylus* (EPBC Act: vulnerable; NC Act: vulnerable)

Long-nosed was not recorded during targeted camera trapping. Suitable habitat for the species comprises wet sclerophyll forest with dense groundcover, particularly along ecotones with rainforest. The results of a risk assessment for this species (Table 4.5 of the DPEMP) indicates that potential impacts of the project on this species are likely to be low.

Brush-tailed Rock-wallaby (EPBC Act: vulnerable; NC Act: vulnerable)

A single Brush-tailed Rock-wallaby was observed at night on the edge of the escarpment approximately 400 m north of the homestead on the freehold property (Lot 144/CC761), but just within Main Range National Park, in the northern section of the project area. The livestock dams on this grazing property that are located within a few hundred metres of the escarpment edge provide water sources for this species, which is likely to occur at many points along the proposed trail in the vicinity of steep, rocky escarpment slopes and cliffs (**Photo 5**). The results of a risk assessment for this species (Table 4.5 of the DPEMP) indicates that potential impacts of the project on this species are likely to be low.

Photo 5. Steep, rocky slopes along the escarpment edge that provide suitable habitat for Brush-tailed Rock-wallaby.

Glossy Black-Cockatoo *Calyptorhynchus lathami* (NC Act: vulnerable)

Recent evidence of feeding activity by Glossy Black-Cockatoos (distinctive cone chewings known as 'orts') were found under *Allocasuarina torulosa* feed trees at multiple locations in eucalypt forest with an abundance of this feed tree species between the Thornton trailhead and the Mount Mistake homestead, and on the hillsides surrounding the Goomburra campgrounds, including between the Manna Gum campground and the proposed Woodcutters Ecocamp site. Feeding evidence was also recorded on the southern slopes of Mt Mitchell. Potential nesting hollows are relatively common in old-growth eucalypt forest throughout the project area. The results of a risk assessment for this species (Table 4.5 of the DPEMP) indicates that potential impacts of the project on this species are likely to be low.

Albert's Lyrebird *Menura alberti* (NC Act: near threatened)

Albert's Lyrebird was heard calling in rainforest habitats at many locations in both the Mount Mistake and Goomburra portions of the project area, and was photographed by remote camera at the proposed Woodcutters Ecocamp site. Suitable habitat for this species includes wet sclerophyll and rainforest habitats throughout the project area, and the species is likely to be a relatively common resident in these habitats. Threats to the species include predation on eggs by feral pigs when nests are constructed on or close to the ground. The results of a risk assessment for this species (Table 4.5 of the DPEMP) indicates that potential impacts of the project on this species are likely to be low.

Habitat assessment for other threatened species

No evidence of recent Koala presence (i.e. scats or tree-trunk scratches consistent with Koala, or grunting of males at night) was detected in eucalypt forests, and neither Koalas nor Greater Gliders were observed during spotlighting surveys that focussed on these two species in eucalypt forests. Nevertheless, potentially suitable habitat for these two species includes all eucalypt forests in the project area. Similarly, Collared Delma was not detected during targeted searching via lifting surface rocks in rocky eucalypt forest habitats, and Three-toed Snake-tooth Skink was not detected during targeted raking of rainforest leaf litter and loose, rotting log material. Nevertheless, Three-toed Snake-tooth Skink is known to occur in rainforest habitat in Main Range National Park, and rainforest throughout the project area provides suitable habitat for Three-toed Snake-tooth Skink. Threats to the two reptile species include predation by feral pigs, which were found to be common in the northern portion of the project area (see further below).

While the project area provides suitable habitat for Red Goshawk, the species was not detected during extensive surveys in 2013/14 focussed on the vicinity of historical breeding records of the species, including Main Range National Park, and there have been no recent records of the species in the region (Seaton 2014). Consequently, the southerly range of Red Goshawk appears to have undergone a significant retraction over the past several decades and the species may no longer be breeding in the South-East Queensland region (Seaton 2014).

Photo 6. Typical grassy eucalypt open forest in the Mt Mistake portion of Main Range National Park; the *Themeda triandra* grass layer is insufficiently tall or dense to provide habitat for Eastern Bristlebird.

Photo 7. Feral pigs were common in the Mt Mistake portion of the project area and are an important threatening process to the ecological values of Main Range National Park.

Photos 8 &9 The wetter denser grassy eucalypt open forest in the higher portions of the eucalypt forests within the Mt Mitchell portion of Main Range National Park; where the mix of ground layer vegetation is sufficiently tall and dense to provide habitat for Eastern Bristlebird.

4.0 THREATENING PROCESSES

The most important threatening process to the ecological values of the project area that were detected during the field survey are: feral pigs (in Main Range National Park and on freehold properties); livestock grazing (on freehold grazing properties); and abundant Bell Miners. Feral pigs appeared to be abundant in the Mount Mistake area (**Photo 7**), both in the national park and on the adjoining freehold properties where livestock dams provide water sources for feral pigs. During the field survey, feral pigs were observed during the day and at night, two of the remote cameras photographed feral pigs, and feral pig diggings were prolific in the area. Evidence of less prolific feral pig diggings was found throughout the project area, including on the escarpment between Cascades and Bald Rock. The proposed contributions of the operators of the Scenic Rim hiking trail to feral pig monitoring and control, particularly in the Mount Mistake area that is more problematic for QPWS to manage feral pigs in, would make an important positive impact on the longer term management of the ecological values of Main Range National Park. Livestock grazing on freehold grazing properties has substantially reduced the height and density of the grassy ground layer in eucalypt forests on freehold grazing properties (see **Photo 4**), which has impacted negatively on habitat values for species that are dependent on a dense, grassy groundcover, including Hastings River Mouse, New Holland Mouse and Eastern Bristlebird.

The abundance of Bell Miners at several locations has resulted in extensive canopy tree dieback in the vicinity of Manna Gum campground and at Cunningham's Gap in Main Range National Park. Bell Miners were also present on freehold properties in the Mt Mistake and Mt Mitchell section of the project area, but there was little evidence of canopy tree dieback on these properties.

The potential impact of fire on habitat for significant species is demonstrated in the Mt Mitchell area where a fire was considered to be responsible for the loss of a well-known and important Eastern Bristlebird population. Measures to prevent accidental fire from SRT activities are included in management planning, and Gainsdale Pty Ltd will work with QPWS and neighbours for fire management.

5.0 OTHER NOTABLE FEATURES

A large, senescent hollow-bearing tree located 95 m east of the proposed Amphitheatre Ecocamp site is being used as a roost site by Masked Owl; a bird was heard calling at dusk and dawn (presumably when leaving and returning to the roost), and prey remains were found within the hollow base of the tree. While Masked Owl is not a listed threatened species, this is a locally significant feature for this generally rare species. Potential noise disturbance to the roost site during the construction and operation of the proposed Amphitheatre Ecocamp is likely to be limited though due to the distance of the tree from the camp site and the good number of intervening screening trees.

Photo 10. Large, senescent eucalypt tree with large hollows being used as a roost site by Masked Owl near the proposed Amphitheatre Ecocamp site.

6.0 REFERENCES

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Table A6.1. Fauna species detected during the field survey.

Species	Common name	NCA*	EPBC*	Mt Mistake	G'burra	Mt Mitchell
Mixophyes fasciolatus	Great Barred Frog	LC		X		
Mixophyes fleayi	Fleay's Barred Frog	E	E		X	
Philoria kundagungan	Mountain Frog	V		X	X	
Pseudophryne raveni	Copper-backed Broodfrog	LC		X		
Litoria caerulea	Green tree Frog	LC				X
Litoria dentata	Bleating Tree Frog	LC		X		X
Litoria fallax	Eastern Dwarf Tree Frog	LC		X		X
Litoria latopalmata	Broad-palmed Frog	LC		X		
Litoria peronii	Peron's Tree Frog	LC		X		
Anomalopus verreauxii	Three-clawed Worm-skink	LC		X		
Calyptotis scutirostrum	Scute-snouted Calyptotis	LC		X		X
Egernia cunninghami	Cunningham's Skink	LC		X		
Hemidactylus frenatus	Asian House Gecko	I				X
Lampropholis delicata	Dark-flecked Garden Sunskink	LC		X	X	X
Ophioscincus truncatus	Short-limbed Snake-skink	LC		X		
Varanus varius	Lace Monitor	LC			X	
Morelia spilota	Carpet Python	LC			X	X
Alectura lathami	Australian Brush-turkey	LC			X	X
Falco berigora	Brown Falcon	LC		X		
Aquila audax	Wedge-tailed Eagle	LC		X		
Vanellus miles	Masked Lapwing	LC		X		X
Columba leucomela	White-headed Pigeon	LC			X	
Macropygia amboinensis	Brown Cuckoo-Dove	LC		X	X	X
Leucosarcia picata	Wonga Pigeon	LC		X	X	X
Ptilinopus magnificus	Wompoo Fruit-Dove	LC		X	X	
Ptilinopus regina	Rose-crowned Fruit-Dove	LC			X	
Lopholaimus antarcticus	Topknot Pigeon	LC		X	X	
Calyptorhynchus lathami	Glossy Black-Cockatoo	V		X	X	X
Cacatua galerita	Sulphur-crested Cockatoo	LC			X	X
Trichoglossus haematodus	Rainbow Lorikeet	LC			X	X
Glossopsitta pusilla	Little Lorikeet	LC		X		
Platycercus elegans	Crimson Rosella	LC		X	X	X
Platycercus eximius	Eastern Rosella	LC			X	
Platycercus adscitus	Pale-headed Rosella	LC		X		X
Alisterus scapularis	Australian King Parrot	LC		X	X	X
Cacomantis variolosus	Brush Cuckoo	LC		X	X	
Cacomantis flabelliformis	Fan-tailed Cuckoo	LC		X	X	X
Chalcites lucidus	Shining Bronze-Cuckoo	LC			X	
Eudynamys orientalis	Pacific Koel	LC		X		X
Scythrops novaehollandiae	Channel-billed Cuckoo	LC			X	
Centropus phasianinus	Pheasant Coucal	LC		X		X
Tyto novaehollandiae	Masked Owl	LC			X	X

Species	Common name	NCA*	EPBC*	Mt Mistake	G'burra	Mt Mitchell
novaehollandiae	(Southern subsp)					
Ninox novaeseelandiae	Southern Boobook	LC		X	X	
Podargus strigoides	Tawny Frogmouth	LC		X		
Aegotheles cristatus	Australian Owlet-nightjar	LC		X	X	X
Dacelo novaeguineae	Laughing Kookaburra	LC		X		X
Todiramphus sanctus	Sacred Kingfisher	LC		X	X	X
Ceyx azurea	Azure Kingfisher	LC			X	
Pitta versicolor	Noisy Pitta	LC		X	X	
Menura alberti	Albert's Lyrebird	NT			X	
Cormobates leucophaea	White-throated Treecreeper	LC		X	X	X
Malurus lamberti	Variegated Fairy-wren	LC		X	X	
Malurus cyaneus	Superb Fairy-wren	LC			X	X
Malurus melanocephalus	Red-backed Fairy-wren	LC		X	X	X
Pardalotus punctatus	Spotted Pardalote	LC		X	X	X
Sericornis citreogularis	Yellow-throated Scrubwren	LC		X	X	
Sericornis frontalis	White-browed Scrubwren	LC		X	X	X
Sericornis magnirostra	Large-billed Scrubwren	LC		X	X	
Gerygone mouki	Brown Gerygone	LC		X	X	X
Acanthiza pusilla	Brown Thornbill	LC		X	X	
Lichenostomus chrysops	Yellow-faced Honeyeater	LC		X	X	X
Meliphaga lewinii	Lewin's Honeyeater	LC		X	X	X
Manorina melanophrys	Bell Miner	LC		X	X	X
Manorina melanocephala	Noisy Miner	LC		X		X
Melithreputs lunatus	White-naped Honeyeater	LC		X	X	X
Philemon corniculatus	Noisy Friarbird	LC		X		X
Anthochaera carunculata	Red Wattlebird	LC		X		
Acanthorhynchus tenuirostris	Eastern Spinebill	LC		X	X	
Myzomela sanguinolenta	Scarlet Honeyeater	LC		X		X
Tregellasia capito	Pale-yellow Robin	LC		X		
Eopsaltria australis	Eastern Yellow Robin	LC		X	X	X
Petroica rosea	Rose Robin	LC		X	X	
Orthonyx temminckii	Australian Logrunner	LC			X	
Psophodes olivaceus	Eastern Whipbird	LC		X	X	X
Daphoenositta chrysoptera	Varied Sittella	LC		X		
Pachycephala pectoralis	Golden Whistler	LC		X	X	X
Pachycephala rufiventris	Rufous Whistler	LC			X	X
Colluricincla harmonica	Grey Shrike-thrush	LC		X	X	
Rhipidura rufifrons	Rufous Fantail	S	M	X	X	X
Rhipidura albiscapa	Grey Fantail	LC		X	X	X
Dicrurus bracteatus	Spangled Drongo	LC		X	X	
Monarcha melanopsis	Black-faced Monarch	S	M	X	X	X
Myiagra rubecula	Leaden Flycatcher	LC		X		X
Ptiloris paradiseus	Paradise Riflebird	LC		X	X	
Cracticus torquatus	Grey Butcherbird	LC		X		X
Gymnorhina tibicen	Australian Magpie	LC		X	X	X

Species	Common name	NCA*	EPBC*	Mt Mistake	G'burra	Mt Mitchell
Strepera graculina	Pied Currawong	LC		X	X	X
Coracina tenuirostris tenuirostris	Cicadabird	LC		X	X	X
Coracina novaehollandiae	Black-faced Cuckoo-shrike	LC		X		X
Oriolus sagittatus	Olive-backed Oriole	LC		X		X
Corvus orru	Torresian Crow	LC		X	X	X
Ailuroedus crassirostris	Green Catbird	LC		X	X	X
Ptilonorhynchus violaceus	Satin Bowerbird	LC		X	X	
Zoothera lunulata	Bassian Thrush	LC			X	
Zoothera heinei	Russet-tailed Thrush	LC			X	
Hirundo neoxena	Welcome Swallow	LC		X		X
Zosterops lateralis	Silvereye	LC		X	X	X
Dicaeum hirundinaceum	Mistletoebird	LC		X	X	X
Neochmia temporalis	Red-browed Finch	LC		X	X	X
Antechinus stuartii	Brown Antechinus	LC		X	X	
Isoodon macrourus	Northern Brown Bandicoot	LC			X	X
Petaurus breviceps	Sugar Glider	LC		X		
Trichosurus caninus	Mountain Brushtail Possum	LC		X	X	
Potorous tridactylus tridactylus	Long-nosed Potoroo (SE Mainland)	V	V			
Macropus rufogriseus	Red-necked Wallaby	LC			X	
Petrogale penicillata	Brush-tailed Rock-wallaby	V	V	X		
Thylogale sp.	Unidentified pademelon	LC			X	
Wallabia bicolor	Swamp Wallaby	LC			X	
Aepyprymnus rufescens	Rufous Bettong	LC			X	
Pseudomys gracilicaudatus	Eastern Chestnut Mouse	LC		X		
Pseudomys oralis	Hastings River Mouse	V	E		X	
Melomys cervinipes	Fawn-footed Melomys	LC			X	
Rattus fuscipes	Bush Rat	LC		X	X	
Rattus lutreolus	Swamp Rat	LC		X		
Canis lupus dingo	Dingo	LC				X
Sus scrofa	Pig	I		X	X	X

Table A6.2. Trapping survey results and locations of conservation significant species.

Species	Common name	EPBC	NCA	Number	Latitude	Longitude	Precision (m)	Date	Type
Pseudomys oralis	Hastings River Mouse	E	V	1	-27.98723	152.360748	10	11/11/2016	Trapped
Petrogale penicillata	Brush-tailed Rock-wallaby	V	V	1	-27.86665	152.311282	10	8/11/2016	Seen
Mixophyes fleayi	Fleay's Barred Frog	E	E	3	-27.95901	152.366407	10	10/11/2016	Heard
Philoria kundagungan	Mountain Frog		V	Several	-27.9763	152.385744	10	11/11/2016	Heard
Philoria kundagungan	Mountain Frog		V	Several	-27.88328	152.319756	10	8/11/2016	Heard
Calyptorhynchus lathami	Glossy Black-Cockatoo		V	Feeding sign	-27.86685	152.308905	10	8/11/2016	Seen
Calyptorhynchus lathami	Glossy Black-Cockatoo		V	Feeding sign	-27.86609	152.308548	10	8/11/2016	Seen
Calyptorhynchus lathami	Glossy Black-Cockatoo		V	Feeding sign	-27.84012	152.313598	10	9/11/2016	Seen
Calyptorhynchus lathami	Glossy Black-Cockatoo		V	Feeding sign	-27.83985	152.313523	10	9/11/2016	Seen
Calyptorhynchus lathami	Glossy Black-Cockatoo		V	Feeding sign	-27.97856	152.354578	10	10/11/2016	Seen
Calyptorhynchus lathami	Glossy Black-Cockatoo		V	Feeding sign	-28.073265	152.370339	10	5/12/2016	Seen
Calyptorhynchus lathami	Glossy Black-Cockatoo		V	Feeding sign	-28.064398	152.386376	10	5/12/2016	Seen
Tyto novaehollandiae novaehollandiae	Masked Owl		LC	1	-28.079286	152.361533	150	05/10/2016	Heard
Tyto novaehollandiae novaehollandiae	Masked Owl		LC	1	-27.96326	152.354493	10	10/11/2016	Heard
Antechinus stuartii	Brown Antechinus		LC	1	-27.88113	152.318727	100	8/11/2016	Trapped
Aepyprymnus rufescens	Rufous Bettong		LC	1	-27.98703	152.361087	10	10/11/2016	Camera
Aepyprymnus rufescens	Rufous Bettong		LC	1	-27.9624	152.357539	10	11/11/2016	Camera
Egernia cunninghami	Cunningham's Skink		LC	1	-27.88168	152.318377	100	9/11/2016	Trapped
Egernia cunninghami	Cunningham's Skink		LC	1	-27.88046	152.31491	100	9/11/2016	Trapped
Pseudomys gracilicaudatus	Eastern Chestnut Mouse		LC	1	-27.8781	152.314536	100	8/11/2016	Trapped
Pseudomys gracilicaudatus	Eastern Chestnut Mouse		LC	1	-27.8781	152.314536	100	9/11/2016	Trapped
Rattus lutreolus	Swamp Rat		LC	2	-27.8781	152.314536	100	9/11/2016	Trapped
Rattus fuscipes	Bush Rat		LC	1	-27.86622	152.311252	100	8/11/2016	Trapped
Rattus fuscipes	Bush Rat		LC	1	-27.86622	152.311252	100	9/11/2016	Trapped
Egernia cunninghami	Cunningham's Skink		LC	1	-27.86622	152.311252	100	9/11/2016	Trapped
Rattus fuscipes	Bush Rat		LC	5	-27.96327	152.35353	100	10/11/2016	Trapped
Melomys cervinipes	Fawn-footed Melomys		LC	1	-27.96327	152.35353	100	10/11/2016	Trapped
Melomys cervinipes	Fawn-footed Melomys		LC	2	-27.96327	152.35353	100	11/11/2016	Trapped

Species	Common name	EPBC	NCA	Number	Latitude	Longitude	Precision (m)	Date	Type
Rattus fuscipes	Bush Rat		LC	5	-27.96327	152.35353	100	11/11/2016	Trapped
Antechinus stuartii	Brown Antechinus		LC	1	-27.98753	152.360697	100	10/11/2016	Trapped
Rattus fuscipes	Bush Rat		LC	4	-27.98753	152.360697	100	10/11/2016	Trapped
Rattus fuscipes	Bush Rat		LC	4	-27.98753	152.360697	100	11/11/2016	Trapped
Melomys cervinipes	Fawn-footed Melomys		LC	1	-27.98753	152.360697	100	11/11/2016	Trapped
Menura alberti	Albert's Lyrebird		NT	1	-27.98703	152.361087	10	10/11/2016	Camera
Sus scrofa	Feral Pig		I	1	-27.86348	152.310196	10	8/11/2016	Camera
Sus scrofa	Feral Pig		I	3	-27.88171	152.318989	10	8/11/2016	Camera
Isoodon macrourus	Northern Brown Bandicoot		LC	1	-27.88117	152.319258	10	7/11/2016	Camera
Trichosurus caninus	Mountain Brushtail Possum		LC	1	-27.98703	152.361087	10	10/11/2016	Camera
Gymnorhina tibicen	Australian Magpie		LC	1	-27.86348	152.310196	10	7/11/2016	Camera

Table A6.3. Trapping survey locations and survey effort.

Latitude	Longitude	Elevation (m)	Survey method	Trap nights
-27.98703	152.361087	914	Camera	2
-27.98703	152.361087	914	Camera	2
-27.863479	152.310196	849	Camera	2
-27.881707	152.318989	934	Camera	2
-27.881174	152.319258	945	Camera	2
-27.962398	152.357539	989	Camera	2
-27.962398	152.357539	989	Camera	2
-27.962446	152.358374	982	Camera	2
-27.962446	152.358374	982	Camera	2
-27.88113	152.318727	938	Elliott A trap line	40
-27.881682	152.318377	946	Elliott A trap line	40
-27.880458	152.31491	961	Elliott A trap line	40
-27.878102	152.314536	947	Elliott A trap line	40
-27.866218	152.311252	866	Elliott A trap line	40
-27.98753	152.360697	941	Elliott A trap line	100
-27.963269	152.35353	973	Elliott A trap line	100

APPENDIX 7

National Native Title Tribunal Search Results

National Native Title Tribunal

Search Results

Prepared for Tony Charters and Associates

Geospatial Job: ***2013/1817***

Your Reference: ***Spicers Scenic Rim***

Search Area: ***As per Clients Graphic***

Requested by: ***Tony Charters***

Date: ***17/09/2013***

DISCLAIMER
This information product has been created to assist in understanding the spatial characteristics and relationships with native title matters and is intended as a guide only. Spatial data used has been sourced from the relevant custodians in each jurisdiction. The Registrar, the National Native Title Tribunal and its staff and officers and the Commonwealth, accept no liability and or give no undertakings, guarantees or warranties concerning the accuracy, completeness or fitness for purpose of the information.

NOTES FOR INTERPRETING THE RESULTS
The search is based on the external boundary of the application or agreement. To determine whether any search area is subject to claim, determination or agreement, you need to refer to the accompanying extracts and associated documents. An "*explanation of terms*" follows the search results.

Results of spatial analysis as at ***17 September 2013***

National Native Title Register
There is NO overlap with any determination of native title as per the National Native Title Register.

Register of Native Title Claims
There is NO overlap with any registered application as per the Register of Native Title Claims.

Schedule of Applications - Federal Court
There is NO overlap with any scheduled application as filed with the Federal Court.

Indigenous Land Use Agreements
There is NO overlap with any registered indigenous land use agreements as per the Register of ILUAs.

There is NO overlap with any indigenous land use agreements notified (but not registered) by the Tribunal.

Representative Aboriginal and Torres Strait Islander Body Area

Search Area	Area (sq km)	% of Area within RATSIB Area	Name
Spicers Scenic Rim	431.226	100.00	Queensland South Native Title Services Ltd

Local Government Authority

Search Area	Area (sq km)	% of Area within LGA	Name
Spicers Scenic Rim	431.226	40.44	Lockyer Valley Regional Council
Spicers Scenic Rim	431.226	25.52	Scenic Rim Regional Council
Spicers Scenic Rim	431.226	34.04	Southern Downs Regional Council

DATA STATEMENT

Prepared by Geospatial Services, National Native Title Tribunal.

Queensland
Application boundary data compiled by National Native Title Tribunal or sourced from the Department of Natural Resources and Mines, Qld.
Local Government Authorities data sourced from Department of Natural Resources and Mines, Qld (21 August 2013).

RATSIB data compiled by NNTT based on reference material sourced from FaHCSIA.

EXPLANATION OF TERMS

National Native Title Register (NNTR)	Contains determinations of native title where native title does and does not exist in a particular area of land or waters.
Register of Native Title Claims (RNTC)	Contains claimant applications which have passed the Registration Test and those applications filed before 30/09/1998 that are still undergoing the Registration Test.
Schedule of applications – Federal Court	Contains active applications before the Federal Court.
Register of ILUAs	Contains indigenous land use agreements (ILUAs) that have been accepted for registration
Notified applications for indigenous land use agreements	Contains applications for ILUAs which have been notified but not yet registered
Area (sq km)	Total area of the Search Area (in sq km)
Tribunal Number	National Native Title Tribunal reference number (including identifier to record part applications)
Fed Court Number	Federal Court reference number
Name	Application or agreement name
Determination Date	Date on which the determination was made
Registration Date	Date on which the application was first placed on the Register of Native Title Claims with regard to its current 'registered' status or date on which an ILUA was registered
Reg Test Status	Registration test status (e.g. Accepted for registration, Currently identified for Reg. Test, Not currently identified for Reg. Test)
Application Type	Claimant, non-claimant or compensation
ILUA Status	In notification, notified, Registered

APPENDIX 8

Construction Management Plan

TONY CHARTERS AND ASSOCIATES

Scenic Rim Trail

Construction Management Plan

Thornton Trail Head

Mt Mistake Ecocamp

Amphitheatre View Wilderness Ecocamp

Woodcutters Ecocamp

Mt Mistake to Mt Mitchell Trail

20 November 2016

TONY CHARTERS AND ASSOCIATES

Construction Timetable

Mt Mistake to Bare Rock – Scenic Rim Trail	Commence (week no.)	Complete (week no.)	Notes
Thornton Trailhead (private land)	Week1	Week 4	Assumes same building contractor as for Ecocamps
Sunrise Deck	Week 1	Week 3	Assumes same building contractor as for Ecocamps
Management Track I and Walking Trail Deviations- Mt Mistake Property to the Mt Castle Lookout Road	Week 1	Week 17	Assumes 2 management track-building teams of 4 with 2x1m wide mini-excavators. Two teams working simultaneously. Assume average 75m/day for each team for the northern 8km. Crews work nine days on, 5 days off. (80 days in total assumes average rain days). Class 5 deviation trail sections and 1.2km new trail to link to Western management road. Overnight Mt Mistake Farmhouse accommodation for Team A and Goomburra Valley for Team B.
Re-construct short access track from Manna Gum to Cascades Trail	Week 1	Week 5	Lay clean-sourced gravel to short section of walk to be constructed form Manna Gum gate to Cascades Trail. Walking trail team to do short walking track section. This is to remove shared road with SRT maintenance vehicles.
Complete laying gravel on the Thornton to Mt Mistake road (private land)	Week 1	Week 5	Lay clean-sourced gravel to the steep ascent/descent areas of the existing road – approx. 2km
Amphitheatre View Wilderness Ecocamp Construction and lookout deck	Week 1	Week 12	Assumes contracted builder, engineering and architectural services, 7 individual sleeping cabins, central common room and services building, landscaping.
Walking Trail – Woodcutters Ecocamp to Bare Rock	Week 2	Week 9	Working concurrently with team undertaking Mt Castle Lookout to Woodcutters Ecocamp trail. Approx 5km of class 5 trail. One team of 6 based at Goomburra farm base camp Average150m/day. Some sections easy building conditions (e.g. old snig tracks). Crews work nine days on, 5 days off.
Mt Mitchell Track to Canopy Ecocamp	Week 6	Week 8	Upgrade a short section (450m) of existing track that links the QPWS Mt Mitchell Track with the Spicers Nature Refuge. Upgrade of the existing track through Spicers Peak Nature Refuge to Canopy Ecocamp. track Assumes track-building team of two, overnight farm camp accommodation at Spicers Peak Nature Refuge.
Woodcutters Ecocamp	Week 6	Week 18	Assumes same contracted builder as Amphitheatre View site, 7 individual sleeping cabins, central common room and restored woodcutters hut, landscaping, on-roof solar. Building team camp at Goomburra.
Walking Trail– Mt Castle Lookout to Woodcutters Ecocamp	Week 14	Week 26	Approx 4.5km of class 5 trail. One team of 4 based at Goomburra base camp Average100m/day. Crews work nine days on, 5 days off. Some sections easy building conditions. Some sections involve use of Banshee Fire Trail, the Ridge Track and Cascades Trail. Steep sections will require contouring, raised steps and local rock work.
Completion of Project		**Week 26**	

Location of Storage Sheds and Office

Thornton Trailhead (private land)

The existing farm sheds, car park and secure storage areas will be used during the construction of the Trailhead infrastructure.

Mt Mistake Ecocamp (private land)

The existing farm has extensive secure sheds, car park areas and all essential services already in place. During construction the farm will be used as a site office for the northern end of the SRT.

Amphitheatre View Wilderness Ecocamp

A storage container will located at the road edge adjoining the construction site at a point that minimises disturbance to vegetation. A temporary yard will be installed using 1.8m site fencing panels with a locked gate. The yard will have secure joints and hinges. The yard will be limited to the width of the existing clearing. The existing management track will remain open to management vehicles.

Woodcutters Ecocamp

A storage container will be located on the track intersecting the Cascades Trail, to the east of the Ecocamp site. A temporary yard will be installed using 1.8m site fencing panels with a locked gate. The yard will have secure joints and hinges. The yard will be limited to the width of the existing clearing. The existing management track will remain open to management vehicles. An accessible driveway will be maintained for use by QPWS and SRT vehicles in the event of the need to re-supply slip on fire units with water from the Ecocamps stored supply.

Walking trail Thornton Trailhead to Canopy Ecocamp

Thornton Trailhead to Mt Mistake Farmhouse

Within the sections that are accessible by 4WD or ATV, a trailer with equipment will be positioned along the track, and will be moved to the location of current works. Bulk building supplies such as gravel will be stored at the Thornton or Mt Mistake farm on private land. Tools and equipment will be locked within the trailer when work ceases each day. Plant shall be locked at the end of each day. A temporary storage yard (within the confines of the management track alignment), when required, will be constructed with portable site boundary panels to a height of 1.8 m.

Walking trail and Management Road - Mt Mistake to Amphitheatre View Wilderness Ecocamp

Given the access to the Winder Road and the Western Fire Line, a trailer with equipment will be positioned along the track, moved to the location of current works. Bulk building supplies such as gravel will be stored at the Mt Mistake farm on private land. Tools and equipment

will be locked within the trailer when work ceases each day. Plant shall be locked at the end of each day. A temporary storage yard (within the confines of the management track alignment), when required, will be constructed with portable site boundary panels to a height of 1.8m.

Mt Castle Lookout to Bare Rock

Access to this area is very limited and will be undertaken without vehicular access. There will be no site office or storage sheds associated with this work. An open area on the Banshee Fire Line could be utilised for equipment storage, within a temporary storage yard (within the confines of the management track alignment). When required, the enclosure will be constructed with portable site boundary panels to a height of 1.8m.

Bare Rock to Mt Mitchell

Most of this section uses existing National Park tracks (Bare Rock to Mt Mitchell). A short section of Class 5 track (some 450 m) is required to link from the Mt Mitchell track to the Spicer's Peak Nature refuge. Access to this area is very limited and will be undertaken without vehicular access. There will be no site office or storage sheds associated with this work.

Location of Toilets

Thornton Trailhead

Existing toilet and shower facilities in place at farmhouse.

Mt Mistake Ecocamp

Existing toilet and showering facilities in place at farm house.

Amphitheatre View Wilderness Ecocamp

A portaloo will be located at the site at the road edge.

Woodcutters Ecocamp

A portaloo will be located at a site at the road edge.

Walking Trail Mt Mistake to Mt Mitchell

Except when the work crew is close to the sites above, workers will need to undertake bush toileting in line with QPWS guidelines i.e. 100m away from watercourses and the walking trail, shallow burial.

Walking Trail from Mt Mitchell track to Canopy Ecocamp

Except when the work crew is close to the Canopy Ecocamp, workers will need to undertake bush toileting in line with QPWS guidelines i.e. 100m away from watercourses and the walking trail, shallow burial.

Location of Rubbish Receptacles

Thornton Trailhead

Skips to be hired for construction rubbish. Domestic rubbish system is already in place. Recyclable metal and timber products will be separated for recycling.

Mt Mistake Farmhouse

Skips to be hired for construction rubbish. Domestic rubbish system is already in place. Recyclable metal and timber products will be separated for recycling.

Amphitheatre View Wilderness Ecocamp

A lidded skip will be located on the road edge for all building waste. Recyclable metal and timber products will be separated for recycling.

A separate, secure, lidded organic waste receptacle will be provided and removed daily to eliminate wildlife foraging.

Woodcutters Ecocamp

A lidded skip will be located on the road edge for all building waste. Recyclable metal and timber products will be separated for recycling.

A separate, secure, lidded organic waste receptacle will be provided and removed daily to eliminate wildlife foraging.

Walking trail Mt Mistake to Bare Rock

All green construction spoil (eg trimmed scrubs and vines) will be disposed of at the site but out of sight and in a dispersed way. All building waste (eg concrete mix bags) will be removed as it is created. All domestic rubbish shall be stored in a sealed receptacle and removed each time that the camp is vacated.

Location of Building Materials

Thornton Trailhead

Storage of building materials will be within a fenced area of the existing farm yards.

Mt Mistake Farmhouse

Building materials will be stockpiled at the property in existing storage areas. Material will be delivered by 4WD trucks in all cases. Given the large cleared areas involved at this site, vegetation protection is not relevant.

Amphitheatre View Wilderness Ecocamp

Building materials will be stockpiled at a nearby Gainsdale Pty Ltd property and will be transported by ATV's, and small trucks (up to 4-6 tonne). Building materials will be

transported to site immediately pre-installation. As much as possible wall, floor and roofing panels will be pre-fabricated off-site to minimise on-site fabrication and disturbance.

Woodcutters Ecocamp

Building materials will be stockpiled at a nearby privately-owned site and will be transported by ATV's and small (up to 4-6 tonne) 4WD trucks in all cases. Building materials will be transported to site immediately pre-installation. As much as possible wall, floor and roofing panels will be pre-fabricated off-site to minimise on-site fabrication and disturbance.

Walking trail Mt Mistake to Bare Rock

Limited building materials required. Where accessible to management tracks materials will brought to the site by ATV for use directly at the site. Materials such as bagged concrete will be stockpiled at the base at Mt Mistake Farm or at the Goomburra Valley.

Traffic management

Thornton Trailhead

The existing farm carpark can adequately handle construction related vehicles.

Mt Mistake Ecocamp

The existing farm carpark can adequately handle construction related vehicles

Amphitheatre View Wilderness Ecocamp

Project workers not requiring on-board tools and equipment will park at the Mt Castle Lookout carpark and turn around point. This is a large area. Limited worker vehicles are involved (maximum 6 vehicles). Tradesmen requiring access to their vehicle will have access to the management road adjoining the construction site, maintaining clear access for any management vehicles that may need to traverse the road. Under wet conditions access will be restricted to 4WD vehicles. Some sections of the western management track have hollows and moderately steep short sections. These sections will be repaired and gravelled to provide all weather access.

Woodcutters Ecocamp

Project workers not requiring on-board tools and equipment will park at the Manna Gum Camping area, in a contained location. This is a very large site. Limited worker vehicles are involved (maximum 6 vehicles). Tradesmen requiring access to their vehicle will have access to the management road to the plantation, but only 4WD vehicle will be permitted to use the road. Trades vehicles will park adjoining the construction site, maintaining clear access for any management vehicles that may need to traverse the road. Gravel and drainage repair will be undertaken prior to construction commencing, providing all weather access.

Walking trail Mt Mistake to Bare Rock

Projects workers will park at the Spicers Thornton Farm and be transferred by ATV to the Mt Mistake farm for work on the northern end of the SRT.

Project workers will park at the Goomburra Valley, Manna Gum Camping Ground for work on the walking trail in the Sylvester Lookout/Cascades/Bare Rock area. They will be transferred to the nearest location to the work site on existing management roads by ATV.

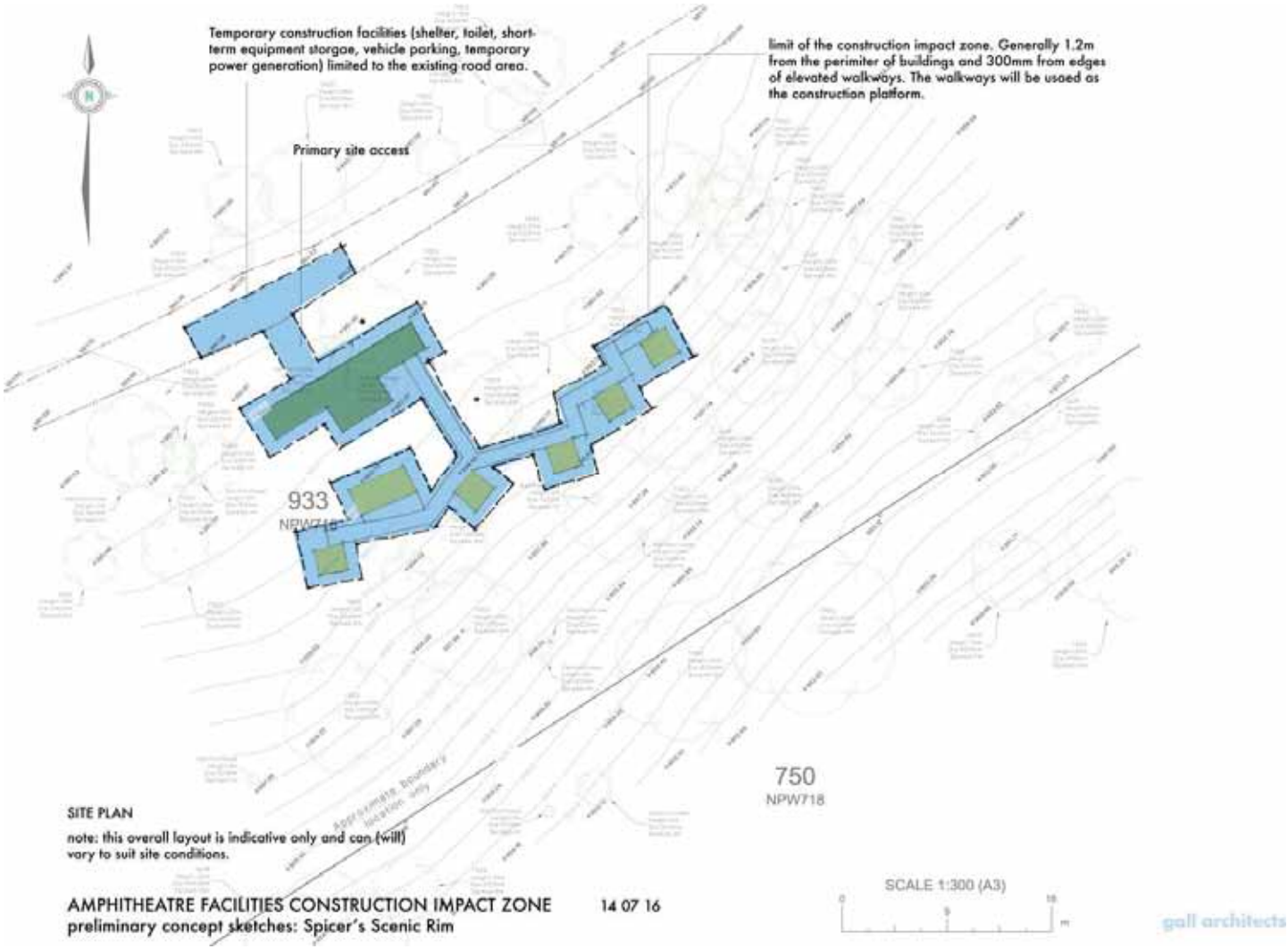
Walking Trail from Mt Mitchell to Canopy Ecocamp

Project workers will park at the Canopy Ecocamp for work on the walking trail in the area. They will be transferred to the nearest location to the work site on existing management roads by ATV.

TONY CHARTERS AND ASSOCIATES

Site Plans (note site plans are only provided for the two National Park located ecocamps)

Amphitheatre View Wilderness Ecocamp



TONY CHARTERS AND ASSOCIATES

Woodcutters Ecocamp

Approach to sub-contracting

Gainsdale Pty Ltd will engage building contractors based on their:

- experience in the area of operation (eg track building, construction, road building)
- capacity to deal with multiple projects concurrently
- experience in working in sensitive environments
- quality systems in place
- location, with a preference given to using local sub-contractors where available

The design team

Gainsdale Pty Ltd will seek to minimise the number of contractors involved and will look to the following key contractors:

- Construction of buildings and lookout decks
- Construction of walking trails
- Construction of management roads
- Suspension bridge construction
- Overall construction project management (independent of the above contractors)

The key contractors will be responsible for bringing on any necessary sub-contractors, working to the standards and conditions required under this Plan and any conditions applied by approving authorities.

Overseeing the project shall be a SRT Project Team consisting of the management of Gainsdale Pty Ltd; the existing team of specialists engaged in:

- Master planning
- Plant ecology
- Fauna
- Fire management
- Architecture
- Project Management
- Town Planning
- Native Title
- Legal
- Waste and water engineering
- Civil engineering
- Solar energy, electrical engineering
- Cultural heritage
- Ecotourism
- Heritage interpretation

Information and documentation management

All information and documentation related to the masterplanning, design, environmental assessment and approval shall be retained by Gainsdale Pty Ltd and managed by the existing contractor co-ordinating this work.

All construction related information and documentation shall be managed by an appointed project manager with extensive experience in this field, including building in sensitive areas in remote locations.

Management of information and documents will be undertaken to standards that ensure that key personnel and agencies are informed of key decision points, are copied into required information in a timely way.

Procedures will control:

- document creation and format
- document review
- modification and updates
- document/policy deletions
- document release approval processes
- identification of documents
- available at points of use
- ensuring currency of document version
- document approval prior to issue
- distribution of approved new or modified documents
- Ensuring documents for local use are current and can be accessed
- Ensuring records that are generated are managed so that they properly and adequately record business activities and the work functions for the SRT project.
- Complying with procedures related to approvals and legislative requirement seg WH&S.

As Built Plans

As built plans will be prepared upon completion of the construction process. Plans will include:
- architectural and landscape drawings;
- civil and structural drawings;
- mechanical and electrical drawings;
- plumbing drawings;
- a GPS recorded alignment of the tracks and trails.

Plans will be made available to QPWS in electronic format.

Progress Review and Reporting Protocol

The SRT project is to be constructed over a period of 26 weeks and will require efficient construction, project management and review systems. The trail and track construction and ecocamp construction will require reviews and reports – although the nature of the track

reviews will quite different to the ecocamp construction due to the linear form of the Trail and the interplay of many disciplines. The construction of the Ecocamps and lookout decks will require a more traditional approach, being within confined locations that have already undergone significant fine level survey

It will be important for QPWS to outline its preferred review system and reporting protocols in developing the final approach.

In relation to the trail and track alignments the existing specialist team will maintain their role to liaise and report to QPWS through the Sustainability and Ecotourism Advisor, Scenic Rim Trail.

Issues requiring review will include:

- final trail selection – fine-tuning trail alignment on the ground based on the flagged and GPS recorded route developed by Gainsdale Pty Ltd.
- responding to any unusual finds related to natural and cultural heritage development of baseline reports, plans and monitoring programs such as weed management, aquatic fauna surveys etc

The SRT construction project manager, through the General Manager Scenic Rim Trail will be the primary contact point in relation to the infrastructure components of the SRT. Gainsdale Pty Ltd Sustainability and Ecotourism Advisor will be the primary contact for Environmental, Heritage and Interpretive related components of the SRT.

With concurrent construction teams working across the trail and track and the ecocamps there will be a requirement to maintain virtually day-to-day contact with QPWS personnel.

It is proposed that a high level Project Steering Group is retained involving senior officers of QPWS from Central Office and the Region. This group should meet at regular intervals and on demand for key decisions that may be required.

At a local level it is proposed that meetings with the project manager are held at least weekly. Additional, inspections will be required in addition to that as set out above.

Risk Assessment

Table 1. Risk assessment of potential impacts of construction of Amphitheatre View Wilderness and Woodcutters Ecocamps

Risk rating: **Extreme** **High** **Moderate** **Low**

Activity	Potential impact	Potential consequences	Comments	Likelihood of the impact occurring	Expected severity of the impact
Removal of ground and shrub/low tree layer vegetation from 0.05 ha at both sites	Loss of individuals of plant species listed under Queensland and Commonwealth legislation	No loss	No conservation significant species recorded from 0.1 ha plots enveloping Amphitheatre View and Woodcutters sites (see CEMP Appendix C).	Unlikely	Insignificant
	Localised loss of *Eucalyptus* Open forest understorey diversity within 0.1 ha	Localised decline in least concern species' populations	The ground stratum and shrub/low tree layers will be removed within an area of 0.05 ha at both sites. The *Eucalyptus* Open Forests (RE 12.8.1, 12.8.14) have Least Concern VMA and Biodiversity status and are relatively widespread within Main Range NP. The understorey would recover upon withdrawal of the facilities especially if soil compaction was reversed.	Likely	Insignificant
		Very small, localised decline in fauna habitat availability	This habitat type is relatively widespread within the Main Range NP. The understorey would recover upon withdrawal of the facilities.	Likely	Insignificant
	Mechanical damage to individual overstorey trees (e.g. removal of bark, root disturbance)	Decline or death of individual trees due to attack from pathogens	There will be limited ground disturbance at sites. Impacts to trunks close to work areas could be avoided by applying a temporary "stocking" to base of stems.	Possible	Minor
	Soil erosion, siltation.	Transport of soil downslope and potential localised siltation of stream headwaters	Low risk due to flattish ground and heavy vegetation cover.	Possible	Minor
			Sediment traps to be employed where there is risk of soilwash at both sites.	Possible	Minor

Activity	Potential impact	Potential consequences	Comments	Likelihood of the impact occurring	Expected severity of the impact
	Cohort of short-lived weeds likely to respond to creation of bare ground	Short-term decline in vegetation condition around Amphitheatre View facility.	Short-lived (ruderal) weeds for example Cobbler's Pegs, Indian Weed, Billygoat Weed are present in open sunny places near the sites (e.g. roadsides). . The ruderal weeds die out through time and are replaced by native ground layer species unless there is a cycle of repeated disturbance. Mulching bare ground will greatly reduce likelihood of occurrence.	Almost certain	Minor
	Introduction of weeds, pests, pathogens new to area	Potential for the introduction of a range of organisms some of which would have serious impacts.	Risks during construction to be minimised by prior wash down/cleaning of vehicles, equipment and footwear.	Possible	Moderate
Change in fire management regime locally due to presence of Ecocamps	Alteration in the *Eucalyptus* Open Forest understorey due to withdrawal of periodic planned use of fire	The understorey has a presence of rainforest species and their abundance and density is expected to increase through time in the absence of fire.	This ecological process occurs widely in moist *Eucalyptus* Open Forests in southern Queensland when periodic fire is withdrawn from the landscape due to changes in land use/land management. Lantana *Lantana camara* which is present at the sites may increase in abundance. It could be readily controlled.	Almost certain	Minor

Table 2. Risk assessment of potential impacts of Class 5 trail route and localised track construction

Risk rating: **Extreme** **High** **Moderate** **Low**

Activity	Potential impact	Potential consequences	Comments	Likelihood of the impact occurring	Expected severity of the impact
Track construction (may include steps) on short sections of very steep slope	Localised loss of Rainforest, Wet Sclerophyll Forest and Open Forest ground layer diversity.	Localised decline in least concern species' populations, largely ferns and vines.	The ground stratum will be removed for localised track construction. Larger woody growth forms (large shrubs, saplings) will be avoided. Confined to sections of the route from Cascades creek system to scarp and 1-2 creek banks.	Likely	Minor
	Soil erosion, siltation.	Transport of soil downslope and potential localised siltation of nearby stream headwaters.	Sediment traps to be employed where there is a risk of rainwash and overland flow.	Possible	Minor
Stabilisation of route on sections of steep rocky slopes with loose rock (mostly in mossy high latitude Warm Temperate Rainforest) (may include steps)	Inadvertent destruction of individuals of a listed lithophytic orchid, a species with a small likelihood of being present.	Small reduction in local population(s).	The listed species Cliff Orchid *Sarcochilus weinthalii* potentially occurs along the route. It has not been recorded from the area and was not observed during reconnaissance of the proposed trail. The risk will be reduced by avoiding rocks where any type of orchid is present.	Possible	Minor
	Localised loss of specialised components of biodiversity especially mosses and lichens and lithophytic ferns.	Localised decline in abundance of mosses and lichens, ferns.	Ferns, mosses and lichens growing on rocks used for the trail route will be damaged or killed through use. However, confining foot traffic to a single stabilised route will prevent impacts being spread over a larger area. A reference area for the localised nature of impacts is provided by the rough track on a very steep bouldery slope in mossy Warm Temperate Rainforest between Sylvester's Look-out and the exit point for Hole in the Wall.	Likely	Minor

Activity	Potential impact	Potential consequences	Comments	Likelihood of the impact occurring	Expected severity of the impact
Cutting/brushing a swathe in sections of route where there is dense low viney vegetation or dense ground layer of fern	Potential for localised loss of Rainforest and Wet Sclerophyll Forest ground layer, shrub and vine diversity	Localised decline through time in least concern species' populations	A narrow swathe (maximum 60 cm width) will be cut through dense ground stratum or viney shrub-layer growth to reduce impacts of pulling (vines) and trampling (ferns) over a broader area. Many of the brushed plants will re-shoot.	Likely	Minor
		Very small, localised decline in fauna habitat availability	This habitat types is widespread within the Main Range NP. The understorey would recover upon cessation of use.	Likely	Insignificant
Establishing the new trail network – all sections.	Introduction of new weeds, pests, pathogens; potential spread of existing pathogens.	Potential for the introduction of a range of organisms some of which would have serious impacts.	The entire route is essentially weed-free at present, apart from a very low incidence in logged areas. The dense shade and cool conditions would inhibit the establishment of many rainforest weeds occurring in southern Queensland. However, temperate adapted species are present along the more open conditions of internal roads in the national park which indicate that there is a potential for introductions of weed species adapted to the cooler climate. The pathogen Myrtle rust has not been observed. However, patches of dead trees were observed in inaccessible parts of the route (e.g. Hoop Pine *Araucaria cunninghamii*) which may indicate attack by fungal pathogens. Localised patches of dead trees present along the route will be avoided/detoured as a precautionary measure. Risks of accidental introduction along the trail as it is developed are to be minimised by prior wash down/ cleaning of hand-held equipment, footwear etc.	Possible	Moderate

Activity	Potential impact	Potential consequences	Comments	Likelihood of the impact occurring	Expected severity of the impact
	Gradual compaction of a narrow pad through repeated use	Localised decline in least concern species' populations largely ferns	Narrow footpads used by hikers are evident along parts of the route especially north of Bare Rock. Similar compaction which will occur through time along the remainder of the route will gradually exclude ground layer plants in a narrow corridor (<60 cm). The krasnozem soils would be expected to recover over a period of time if the trail ceased to be used.	Likely	Moderate

Table 3. Risk assessment of potential impacts of re-construction of the Winder Management Road

Risk rating: **Extreme** **High** **Moderate** **Low**

Activity	Potential impact	Potential consequences	Comments	Likelihood of the impact occurring	Expected severity of the impact
Removal of ground and shrub/low tree layer vegetation from approx. 0.05 ha of *Eucalyptus* Open Forest	Inadvertent destruction of a small number of individuals of the listed plant species Bunya Mountains Bluegrass confirmed as growing along 200 m section of route.	Small reduction in local population.	Bunya Mountains Bluegrass *Bothriochloa bunyensis* was recorded from a 0.1 ha plot adjacent to former road. Any Bunya Mountains Bluegrass plants located within the proposed 2.5m road corridor will be identified and removed prior to construction and used to re-vegetate verges of re-built road.	Possible	Minor
	Localised loss of *Eucalyptus* Open Forest understorey biodiversity.	Localised decline in least concern species' populations	The ground stratum and shrub/low tree layers will be removed within a corridor 200m long x 2.5m wide. The *Eucalyptus* Open Forest (RE 12.8.14) has a Least Concern VMA and Biodiversity status and is relatively widespread within northern Main Range NP.	Almost certain	Minor
	Loss of habitat for terrestrial fauna	Very small, localised decline in fauna habitat availability	This habitat types is relatively widespread within the northern Main Range NP. The understorey would recover upon withdrawal of the facility.	Likely	Insignificant
	Spread of weeds that are present in vicinity.	Localised habitat degradation	The most serious weed locally is Crofton Weed which was noted as favouring the moist sunny conditions in an Open Forest – Rainforest ecotone. Broom Milkwort *Polygala virgata*, a possible recent arrival, was also noted along with ruderal (short-lived colonisers of bare ground) species which come and go with disturbance. A program for removal (hand pulling) of the Broom Milkwort is recommended. Bare earth along the 2.5 m corridor can be	Possible	Minor

Activity	Potential impact	Potential consequences	Comments	Likelihood of the impact occurring	Expected severity of the impact
			mulched with woody material removed for construction to minimise regeneration of ruderal species such as Billygoat Weed *Ageratum houstonianum* and Fleabane *Conyza canadensis*.		
	Introduction of weeds, pests, pathogens new to area	Potential for the introduction of a range of organisms some of which could have serious impacts to ecosystem health.	Risks during construction to be minimised by prior wash down/cleaning of vehicles, equipment, footwear etc.	Possible	Moderate
Removal of colonising ground layer plants (largely ferns), shrubs, vines, palms and small trees from former road surface from approx. 1.50 ha of rainforest	Inadvertent destruction of individuals of listed plant species of conservation significance with some likelihood of being present within the former road corridor.	Small reduction in local population(s).	No listed species were recorded during reconnaissance of the entire proposed route. The likelihood of occurrence is assessed as low based upon the known rainforest flora of the Mistake Range which was found to be comprehensive.	Possible	Minor
	Localised loss of rainforest diversity especially coloniser type species	Localised decline in Least Concern species' populations	All coloniser species will be removed from within the 6km long x 2.5m wide road corridor through rainforest. The rainforest, predominantly a Cool Subtropical type (best fit is RE 12.8.5) has a Least Concern VMA and Biodiversity status and is widespread within northern Main Range NP. The rainforest along much of the route has been heavily logged and there is extensive regrowth away from the road alignment.	Almost certain	Minor
	Loss of habitat for terrestrial fauna	Very small, localised decline in fauna habitat availability	This habitat types is widespread within the Main Range NP. The understorey would recover upon cessation of use.	Likely	Insignificant
	Mechanical damage to individual tree trunks and buttressed roots and risk of harmful fungi	Decline or death of plants especially older trees	Removed material to be mulched and spread thinly on ground surface away from tree trunks.	Possible	Moderate

Activity	Potential impact	Potential consequences	Comments	Likelihood of the impact occurring	Expected severity of the impact
	benefiting from decomposing plant waste				
	Introduction of new weeds, pests, pathogens new to area	Potential for the introduction of a range of organisms some of which would have serious impacts.	The route is essentially weed-free at present, and Myrtle rust has not been not been observed. The dense shade and cool elevated environment appear to inhibit the establishment of characteristic southern Queensland rainforest weeds including Lantana. Risks during construction to be minimised by prior wash down/cleaning of vehicles, equipment, footwear etc.	Possible	Moderate
Disturbance of soil on sloping ground to repair washed out sections of road surface and mitigate drainage, and potential use of imported gravel	Soil erosion, siltation,	Transport of soil downslope and potential localised siltation of nearby stream headwaters.	Sediment traps to be employed where there is a risk of rainwash and overland flow.	Possible	Minor
	Introduction of weeds, pathogens in road base material	Potential for the introduction of a range of organisms some of which would have serious impacts.	Gravel used to be certified as low risk.	Possible	Moderate

APPENDIX 9

Draft Workplace Health and Safety Plan

Scenic Rim Trail

Work Health and Safety (WHS) Management Plan

28 November 2016

Contents

1 Project information

1.1 Management and review

This WHS Management Plan has been developed to outline our approach to managing work health and safety (WHS) on the Scenic Rim Trail in south-east Queensland.

We will:

- make this plan available to all workers and contractors on this project and ensure they have the opportunity to read, understand, clarify and ask questions
- keep a copy of the WHS Management Plan readily available for the duration of the project
- review the plan regularly throughout this project and make any revisions known to those working on the project
- lodge the plan with the Queensland Parks and Wildlife Service

1.2 Principal contractor details

Business name:	Gainsdale Pty Ltd
Address:	168 Knapp St Fortitude Valley 4006
Contact person:	Ben O'Hara
Work phone:	07 3638 6562
Mobile phone:	0407 899 546
Fax:	n/a
Email:	Ben.ohara@grainsdale.com.au
ABN:	11 253 492 215
Contract licence number:	n/a
Principal contractor signature:	

1.3 Details of persons at workplace with WHS responsibilities

Name	Position	WHS responsibilities
Ben O'Hara	Director	Principal WHS Officer
Russell James	Project Manager	WHS Officer

1.4 Other contact details

Client name	Address	Contact number	Position	WHS responsibilities
Other relevant contacts	**Address**	**Contact number**		

1.5 Scope of work

Description of project:	Scenic Rim Trail
Location of project:	Thornton to Spicers Canopy
Start and finish dates:	Commence March 2017, constructed by October 2017.

2 Roles and responsibilities

2.1 Principal contractor

The principal contractor of this project is responsible for:

- preparing, updating and implementing this WHS Management Plan, including all associated procedures
- identifying and observing all legal WHS requirements
- ensuring that all works are conducted in a manner without risk to workers
- planning to do all work safely
- participating in the planning and design stages of trade activities
- identifying WHS training required for an activity
- ensuring workers undertake identified WHS training
- communicating and consulting with workers
- investigating hazard reports and ensuring that corrective actions are undertaken
- assisting in rehabilitation and return to work initiatives
- dispute resolution

2.2 Contractors

Contractors who are engaged for this project are responsible for:

- fulfilling the duties of PCBU for their own operations
- identifying all high risk construction work associated with their activities and ensuring safe work method statements are developed and implemented
- complying with the duties as listed under 'Workers' (see 2.3)
- following all safety policies and procedures and site rules
- complying with this WHS Management Plan
- complying with any direction given to them by the principal contactor
- undertaking site-specific induction before starting work and signing off that they have completed this induction
- ensuring the workers they engage undertake site specific
- ensuring they have the correct tools and equipment and these are in a serviceable condition for the task

2.3 Workers

All workers on this project (including those employed by contractors) are responsible for:

- taking reasonable care of their own health and safety
- taking reasonable care that their conduct does not adversely affect others
- complying with instruction, so far as they are reasonably able
- cooperating with reasonable notified policies or procedures

2.4 People with specific WHS roles and responsibilities

Russell James - WHS Officer

3 General WHS information

3.1 Legislation

Relevant legislation	Tick if applicable
Work Health and Safety Act 2011	☑
Work Health and Safety Regulations 2011	☑
Work Health and Safety & Other Legislation Amendment Act 2015	☑

3.2 Codes of Practice and other guidance

Relevant Codes of Practice [1]	Tick if applicable
Electrical Safety	☑
First Aid in the Workplace	☑
How to manage work health and safety risks	☑
Managing noise and preventing hearing loss at work	☑
Managing risks of plant in the workplace	☑
Managing the work environment and facilities	☑
Mobile Crane operation	☑
Safe design of structures	☑
Scaffolding	☑

3.3 WHS policy

Gainsdale Pty Ltd WHS Policy provided as Attachment 1.

3.4 Insurances

Insurance type	Company	Policy number	Expiry date
Public and Products Liability	AAI Limited	LCB019225512	31 August 2017

[1] Note that these are the Codes of Practice available at date of publication. It is the responsibility of the principal contractor to be aware of the latest available Codes. These are available at www.worksafe.tas.gov.au

4 Risk management

4.1 Identifying hazards and managing risks

We will systematically identify hazards and assess risks before the project starts by using the hierarchy of control (see 4.2) in conjunction with:

- developing Safe Work Method Statements (SWMS) to control risks associated with high risk construction work
- using a risk management form to control general construction risks where necessary

We will also identify risks:

- before we buy or re-order any chemicals
- when introducing a new task
- when new information is received about tasks, procedures, equipment or chemicals.

All hazards that are identified throughout the project must be reported immediately to the principal contractor.

We will inform our workers of our risk management procedures and ensure they are trained in risk management (see 7).

4.2 Hierarchy of control

We will control all risks we identify by applying the Hierarchy of Controls as follows:

- Eliminate
- Substitute
- Isolate
- Engineering controls
- Administrative controls
- Personal Protective Equipment.

Where possible, we will implement risk controls that are high in the order and will implement multiple controls where necessary.

5 Emergency and incident response

5.1 Emergency preparedness

To ensure we are prepared for an emergency we:

- show all workers and subcontractors the emergency point as part of their induction (this is included in our induction checklist)
- display emergency procedures in the site office or other visible location
- check and mark fire extinguishers at the beginning of the project and six-monthly after that

Emergency procedure

In the event of a fire or similar emergency evacuation:

- stop work immediately and vacate the workplace
- assist anyone in the workplace who may not be familiar with the evacuation procedures
- call emergency services on 000 or on 112 from a mobile phone. Other emergency numbers are on display in the site office (if applicable) and QPWS office on 4666 1133
- notify the principal contractor
- assemble in the nominated assembly points until you receive further instructions from the principal contractor or emergency services personnel

Emergency meeting point

Our emergency meeting point is:

For Mt Mistake Farmhouse – the Tennis Court

For Amphitheatre View Wilderness Ecocamp – the western fire management road

For Woodcutters Ecocamp – the Dalrymple Track Management Road adjoining the site

Emergency contact list for the site

Our emergency contact list will be provided to all contractors and staff

We will maintain emergency contact details for all workers on our sign-in register

5.2 Incident procedure

If an incident occurs at the workplace the procedure is:

- immediately notify the principal contractor
- do not interfere with the scene of the incident
- depending on the nature and severity of the injury, the principal contractor will notify Worksafe Queensland (see 6.3).

The principal contactor may record details of the incident and will ensure any remedial action is taken.

5.3 Notifiable incidents

We will report the following incidents to Worksafe Queensland:

- a fatality

- an incident requiring hospitalisation
- a dangerous incident, which could have resulted in someone being killed, or suffering a serious bodily injury (see 6.3 of Part A for definition).

In the event of such an occurrence:

- notify the principal contractor who must notify Worksafe Queensland by the quickest means possible. The Worksafe Queensland number is **1300 362 128** – this number is on the emergency contact list
- email an **Incident Notification Form** to Workplace Queensland as soon as possible following the incident (must be within 48 hours)
- do not disturb the site until given clearance by the principal contractor who will take advice from Workplace Standards
- the principal contractor will confirm the reporting requirements required by Worksafe Queensland, Queensland Police Service if required and QPWS
- the principal contractor shall only give permission to disturb the site when notified by Worksafe Queensland that a formal investigation is not required
- if a formal investigation is required, the principal contractor will secure the site

5.4 First aid

- We will supply adequate first aid equipment, which will be available at each worksite, in each vehicle and at the base stations
- If anyone becomes aware that an item of first aid is out of stock or out of date, they are to notify the principal contractor immediately
- First aid should be administered by trained first aid personnel. A trained First Aid officer will be required with each remote area work crew.

In the event of a person being injured, trained first aid personnel should:

- stabilise the person and administer first aid
- phone/make radio contact with emergency services (depending on the extent of the injuries)
- if emergency services are called, notify the principal contractor immediately. In all other circumstances notify the principal contractor as soon as practicable.

6 Induction and training

6.1 Worker induction

The principal contractor will work with other contractors to ensure a site-specific induction is provided for all workers before starting work.

This induction must outline:

- the expectations outlined in this WHS Management Plan, including all policies and procedures
- the emergency meeting point
- the site rules
- the facilities
- any site specific hazards (incl environmental eg stinging trees, ticks, snakes, wildfire)
- high risk construction work activities

6.2 Worker training

The principal contractor will:

- ensure workers are trained and competent for the work to be carried out
- ensure workers are trained to deal with any risks associated with the work and understand the control measures in place
- ensure all workers have had relevant white card training (or other appropriate training from another jurisdiction)
- ensure on-site training and supervision is provided
- organise external training for specific tasks where required
- seek high risk licences for all high risk work and maintain a register of licences
- communicate with other contractors to ensure their workers are appropriately trained and competent.

7 Consultation and communication

7.1 Consultation

We will consult with all workers and contractors on WHS issues for this project:

- at toolbox meetings where anyone can raise issues for discussion
- informally during the planning of activities or the development of Safe Work Method Statements
- when changes to workplace arrangements could affect the health and safety of workers
- during investigations into any incident to establish details of the incident or to formulate corrective action to prevent the incident re-occurring

We will also consult with contractors and suppliers on WHS issues associated with any products or services provided for the contract:

- during the negotiation phase before agreeing on the work requirements
- before starting any contractor operations
- when any changes to workplace arrangements occur that could affect the health and safety of the contractors or affect their work procedures

7.2 Communication

We will ensure our workers and other contractors are aware of WHS requirements by providing them with this WHS Management Plan before starting work on the project. Contractors are expected to make their workers aware of all WHS requirements.

We will communicate relevant WHS information to everyone involved in this project by:

- induction
- pre-work meetings
- toolbox meetings
- incident reports and outcomes
- distributing safety alerts or guidance material about industry specific hazards/incidents

7.3 Disciplinary procedures

If anyone does not comply with the requirements of this Plan, the following will apply:

- **First violation**: verbal warning (and advise contractor if it involves their worker/s)
- **Second violation**: written notification (and advise contractor if it involves their worker/s)
- **Third violation**: complete removal/suspension from the project.

For a serious breach of safety, workers can be immediately dismissed or removed from the site without notice.

8 Site safety procedures

8.1 Site rules

- Comply with reasonable direction from the principal contractor or any PCBU on site.
- Comply with the WHS Management Plan.
- No removal of plant material, rocks, soil or animals without the approval of the site manager (operating under approval conditions).
- All workers and contractors must complete a site safety induction prior to starting work.
- Comply with personal and equipment and material washdowns undertaken to remove the chance of the spread of pathogens.
- Do not walk through barricaded areas.
- Keep work areas clean and tidy at all times.
- No smoking anywhere on site.
- No fighting, bullying or aggressive behaviour.
- Use personal protective equipment in accordance with manufacturer's instructions and where directed by the principal contractor and in accordance with site signage.
- No illegal drugs or other substances are permitted on site or are to be consumed on site. If you are required to take strong prescription medication that warns against driving or using machinery, you must advise the principal contractor.
- Report any incidents, dangerous events, serious bodily injuries or work-caused illnesses to the principal contractor.
- Maintain all site amenities in a clean, tidy and hygienic state.
- Follow safe lifting procedures at all times.
- Place all rubbish in bins provided.

A copy of the site rules is displayed in the site office.

8.2 Site amenities

- Toilets and drinking water will be provided on site.
- All workers are to have good hygiene standards and clean up after themselves.
- Workers shall establish a lunch area under the shade of trees along the management tracks or if required under a temporary weather proof membrane canopy over the management track to avoid trampling of vegetation. Informal lunch locations would be selected along the trail alignment, in situ.

8.3 Site security

The principal contractor will, so far as reasonably practicable, secure the site by:

- keeping the building secure during the project
- erecting a fence to prevent unauthorised access
- locking gates to the site outside normal hours of operation
- maintain locks on the National Park gates at all times

Workers and contractors are expected to keep the site secure, for example by closing or locking gates.

8.4 Site signage

At a minimum, we will display the following signs on the entrance to the site:

- the principal contractor's name, contact details and after-hours telephone number
- the location of the site offices.

The principal contractor will also display:

- any signage required by QPWS.

All signage will be clearly visible from outside the workplace (ecocamp locations, swing bridge and the sunrise deck) and at the current work area (for the trail) where the construction is being undertaken.

8.5 Personal protective equipment

We will provide the personal protective equipment (PPE) to workers at the workplace, unless the PPE has been provided by another contractor.

The person providing the PPE must ensure that the PPE is:

- suitable for the nature of the work and any hazard associated with the work
- a suitable size and fit and reasonably comfortable for the worker who is to use or wear it
- maintained, repaired or replaced so that it continues to minimise risk to the worker who uses it, including by:
    - ensuring it is clean and hygienic
    - ensuring it is in good working order
    - ensuring it is used or worn by the worker, so far as is reasonably practicable.

The person supplying the PPE must also:

- provide workers with information, training and instruction in the proper use, wearing, storage and maintenance of PPE
- ensure that any other person at the workplace (such as home owners, clients or inspectors) is appropriately provided with PPE to wear as required.

Workers must:

- follow all instructions to wear and use PPE
- take reasonable care of PPE

8.6 Managing construction hazards specified in the Regulations

Falls from heights

We will manage the risks associated with falls from heights by:

- ensuring that where practicable, any work involving the risk of a fall is undertaken on the ground or on a solid construction (such as an elevated work platform)
- where this is not practicable, providing a fall prevention device such as secure fencing, edge protection, working platforms and/or covers
- where this is not practicable, providing a work positioning system such as plant or a structure (other than a temporary work platform) that enables a person to be positioned and safely supported
- where this is not practicable, providing a fall arrest system such as a safety harness system. Workers will be trained in emergency procedures for fall arrest systems

When undertaking work involving the risk of a fall from height, workers must:

- follow all instructions
- work with a buddy when using a ladder
- only use approved work platforms

Falling objects

Where practical, we will provide adequate protection against the risk of falling objects through the use of control measures such as barrier screen, toe-boards and by storing and stacking materials safely.

Where this is not possible, a risk assessment must be undertaken and appropriate control measures implemented to manage the risk of injuries from falling objects.

Excavation work/trenching

Anyone undertaking excavation work must abide by Safe Work Method Statements (SWMS) are included in this WHS plan for trenches of at least 1.5 metres. Workers must be familiar with and implement the control measures in the SWMS.

Electrical

- Power supplied to the site must only come from:
    - a compliant low voltage generator
    - a compliant inverter.
- Switchboards and distribution boards used on site must:
    - be of robust construction and materials capable of withstanding damage from the weather and other environmental and site influences (IP23 minimum rating)
    - be securely attached to a post, pole, wall or other structure unless it is of a stable freestanding design able to withstand external forces likely to be present
    - incorporate suitable support and protection for flexible cords and cables and prevent mechanical strain to the cable connections inside the board
    - protect all live parts at all times
    - be individually distinguished by numbers, letters or a combination of both (where multiple boards are present).
- Flexible cords used on construction sites must be rated heavy duty.
- To avoid confusion with individual earthing conductors, green sheathed flexible power cords must not be used on site.
- Flexible cords must be either protected by a suitable enclosure or barrier (flexible or rigid conduit) or located where they are not subjected to mechanical damage, damage by liquids or high temperature (elevated on stands or hung from nonconductive support brackets).
- We will ensure our cords do not exceed the maximum length as stated in Table 1 of AS3012 below:

Rated current	Conductor size	Maximum length in metres
10amp	1.5mm 2.5mm 4.0mm	35 60 100
15/16 amp	1.5m 2.5m 4.0mm	25 40 65
20 amp	2.5mm 4.0m 6.0mm	30 50 75

- We will maintain an in-service inspection and test regime for all portable electrical leads, tools and earth leakage devices.
- We will ensure that after the equipment has been inspected and tested, it will be fitted with a durable, non-reusable, non-metallic tag. The tag will include the name of the person or company who performed the test and the test and re-test date.
- Records of all inspections, tests, repairs and faults related to all electrical equipment will be recorded in a testing and tagging register.
- RCDs and portable equipment must be inspected, tested and tagged every 3 months.
- Workers must conduct an RCD push button test after connection to a socket and before connection to equipment at least once a day.
- Workers must report any damaged electrical equipment to the principal contractor. It will be removed from service and either repaired or replaced and subsequently inspected and tested as required.
- New electrical equipment must be recorded in the register and subjected to the in-service testing regime within the first 3 months of service.

Plant

To ensure all plant used complies with the requirements of the WHS Regulations:

- only use plant for the purpose for which it was designed
- use all health and safety features and warning devices on plant
- follow all information, training and instruction provided
- guarding must be permanently fixed and is not permitted to be removed
- no person other than the operator may ride on the plant unless the person is provided with a level of protection that is equivalent to that provided to the operator

We will ensure that:

- all plant is regularly maintained, inspected and tested by a relevant competent person
- the plant has a warning device that will warn persons who may be at risk from the movement of the plant
- all plant that lifts or suspends loads is specifically designed to lift or suspend that load.

Scaffolds

We will ensure:

- that the scaffold is erected by a competent person (having regard for high risk licence for above 4 metres)

- that before we use the scaffold, the competent person has advised (in writing) that it is safe
- that scaffolding is inspected by a competent person:
    - before use of the scaffold is resumed after an incident occurs that may reasonably be expected to affect the stability of the scaffold
    - before use of the scaffold is resumed after repairs
    - at least every 30 days.
- that, if an inspection indicates that any scaffold or its supporting structure creates a risk to health or safety:
    - any necessary repairs, alterations and additions will be made or carried out
    - the scaffold and its supporting structure will be inspected again by a competent person before use of the scaffold is resumed.

Workers must:

- not use incomplete scaffolding
- report any scaffolding issues to the principal contractor
- comply with the directions of any tags attached to the scaffold

We will prevent unauthorised access to the scaffold by:

- removing ladders where there is no site fencing

8.7 Managing other construction hazards

Ladder safety

We will manage hazards associated with ladders by:

- using ladders according to the manufacturer's instructions
- only allowing one person at a time on a ladder
- performing all work from a ladder while facing the ladder
- not setting up ladders on scaffolds or elevated work platforms to gain extra height

Manual handling

We will manage hazards associated with manual handling by:

- ensuring all users follow good manual handling practices
- assessing risk assessments
- providing mechanical lifting aids where applicable

Slips, trips and falls

We will manage hazards associated with slips, trips and falls by:

- using a slips, trips and falls checklist as required
- checking for hazards that could cause someone to slip, trip or fall by doing a visual check
- ensuring workers keep the site tidy as part of the written site rules

Hand operated and power tool use

We will manage hazards of hand operated and power tool use by:

- regularly checking all tools to ensure they are in a safe working order
- recording all electrical tools in a tag and testing register
- testing and tagging electrical tools every 3 months
- communicating any issues identified with power tools to workers through a toolbox meeting.

Before using power tools, workers must ensure:

- electrical connections are secure
- electricity supply is through an RCD
- safety guards are in position
- the machine is switched off before activating the electricity supply
- appropriate PPE is used as required by manufacturer's guidelines or as guided by the principal contractor

Workers must report any issues with power tools to the principal contractor. Unsafe tools will be tagged and removed from service

Sun safety

All persons on site should:

- wear adequate clothing (eg hats) and other protection methods (eg sunscreen) to protect themselves from the effects of working while exposed to UV rays.
- manage working in the sun to avoid dehydration and heat stress related illnesses

Any other construction hazards

Stinging trees and insects

- trail work in closed forest areas may have stinging trees, ticks, leeches, mosquitoes and plants with spines. Workers should wear insect repellent and in areas of stinging trees, protective clothing to limit exposure of bare skin.

- Personal first aid kits will be providd with insect repellent and stingose (or equivalent).

ATTACHMENT 1

GAINSDALE PTY LTD WHS POLICY

Gainsdale Pty Ltd

WORKPLACE, HEALTH AND SAFETY POLICY

July 2016 update

Goals

This policy:

- sets out the commitment of Gainsdale Pty Ltd to workplace health and safety;
- aims to remove or reduce the risks to the health, safety and welfare of all workers, contractors and visitors, and anyone else who may be affected by our business operations; and
- aims to ensure all work activities are done safely.

Responsibilities

The management of Gainsdale Pty Ltd is responsible for providing and maintaining:

- a safe working environment;
- safe systems of work;
- a risk management plan that identifies hazards and manages risks;
- an emergency response plan;
- plant and substances in safe condition;
- facilities for the welfare of all workers; and
- any information, instruction, training and supervision needed to make sure that all workers are safe from injury and risks to their health.

Workers are responsible for:

- ensuring their own personal health and safety, and that of others in the workplace
- complying with any reasonable directions (such as safe work procedures, wearing personal protective equipment) given by management for health and safety

We expect visitors and contractors to:

- comply with any reasonable requests and directions given by representations of management in relation to workplace health and safety (such as safe work procedures, wearing personal protective equipment, safe use of equipment safe and safe practice relating to bush/forest activities).

Date: 4 July 2016

Date to be reviewed: July 2017

APPENDIX 10

Construction Environmental Management Plan - Ecocamps

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

Amphitheatre View Wilderness and Woodcutters Ecocamps

SCENIC RIM TRAIL

(Main Range National Park)

Issue	Description	Approved By	Signed	Date
V1	CEMP Amphitheatre View & Woodcutters Ecocamps	Tony Charters		

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APPENDICES

1 Description of Works

The project aims to locate two Ecocamps at intervals along a new long distance walking trail within Main Range National Park north of Cunningham's Gap. The Ecocamps are designed to provide comfortable but basic camp facilities for up to 10 guests and two staff. A small common building will provide for dining, food preparation and protection in bad weather. Separate, shared bathroom buildings will service the guests. Small separate cabins are to be constructed of lightweight materials and apply sustainable building principles. The facilities would be for the exclusive use of The Scenic Rim Trail and Gainsdale Pty Ltd guests. The Ecocamp sites would be obscured from the walking trail so as to provide privacy and security and to minimise impact upon other park users.

The Ecocamps will be established to achieve minimal reliance on reticulated services. Given the absence of nearby mains power they would be self-sufficient for power, using a combination of solar and gas with a small back-up generator for emergency power. Water would be sourced from roof capture. Solid waste would be removed from the site by each walking party. All other waste generated by the Ecocamps (grey water, black water) will be captured on-site, blended and periodically removed by pumping out into a small tanker truck. Structures will be prefabricated to the greatest practical extent, and assembled on site on screw piles that enable surface water flows to continue unaffected. Services will be attached to underfloor/underdeck areas wherever feasible.

The Amphitheatre View Wilderness Ecocamp is to be located within *Eucalyptus* Open forest with a shrubby/low tree understorey and a mixed open ground layer on the crest of the Great Dividing Range west of Mt Castle Look-out (Appendix A). The placement of the Ecocamp avoids larger trees. However, ground stratum vegetation and shrubs and saplings will need to be removed to enable the camp facilities to be constructed. An area of around 0.05ha will be disturbed. The ridge-top site is relatively flat.

The location for the Woodcutters Ecocamp is within regenerating Wet Sclerophyll. As such it has some buffering due to clumps of native rainforest colonisers and the presence of the road (Cascades Trail) downslope. Ground stratum vegetation and shrubs and saplings will need to be removed to enable the camp facilities to be constructed. An area of around 0.05ha will be disturbed.

The anticipated number of SRT walkers using the Scenic Rim Trail route and facilities is less than 32 per week for the 44 operational weeks of the year. Road access to the Ecocamps for logistics and emergencies is via limited access national park management roads. Some upgrading of sections of these roads is envisaged to increase serviceability where the clayey surface remains wet for periods after rain.

This would entail gravelling sections of the road surface and drainage works to control runoff.

Parties involved in the construction project need to be aware of a number of constraints associated with the two sites including:

1. Access may not be feasible or permitted during and just after wet weather
2. There is no or very limited mobile phone coverage
3. The limited access roads can be blocked by tree fall at any time

2 Project management and contractor details

Name	Position	Contact Number/s	Email
Andrea Slingsby	Director, Scenic Rim Trail	0418 750611	andrea.slingsby@gainsdale.com.au
Russell James	CEO, Russell James Project Management	0419 702 220	russell_james@bigpond.com
Contractors	TBA		

3 Environmental Policy and Goals

For details refer to Master document:

Tony Charters and Associates 2016, Scenic Rim Trail – Mt Mistake to Spicers Peak Nature Refuge Proposal and Environmental Management Plan. Consultancy Report prepared for Scenic Rim Trail, Brisbane.

The goals for the project recognise the cardinal principal for national park management which is to provide, to the greatest possible extent, for the permanent preservation of the area's natural condition and the protection of the area's cultural resources and values (https://www.npsr.qld.gov.au/managing/principles/index.html). Specific goals for the two Ecocamp sites include:

- No net loss of vegetation at an ecosystem level
- Minimal interruption of ecological processes
- No net loss or diminution of the outstanding conservation values recorded for the northern section of Main Range National Park

4 Risk Assessment

Qualitative risk assessment has been applied to highlight those issues that should guide project planning, management, monitoring and research. Risks are assessed by identifying potential impacts, determining the likelihood of those impacts occurring, and describing the consequences of those impacts should they occur, applying the categories shown in Table 4.1.

Table 4.1 Qualitative Risk Matrix

Likelihood Level	Consequence Level: Insignificant	Minor	Moderate	Major	Catastrophic
Almost certain					
Likely					
Possible					
Unlikely					
Very Unlikely					

Risk Rating
Extreme
High
Moderate
Low

The consequence of each impact is categorised as 'catastrophic', 'major', 'moderate', 'minor' or 'insignificant' in terms of its effect on the element in question. Briefly put,

- 'catastrophic' impacts would result in the extinction of a species
- 'major' impacts may be notably detrimental to the species on a population scale
- 'moderate' impacts may result in a substantial change to a local population
- 'minor' impacts may result in small decreases to a local population that would be overcome without mitigation, and
- 'insignificant' impacts are those that are likely to be undetectable.

The results of the risk assessment are provided in Table 4.2.

Section 5 specifies the environmental management measures to be applied to avoid or mitigate identified risks.

Table 4.2. Risk assessment of potential impacts of construction of Amphitheatre View Wilderness and Woodcutters Ecocamps

Risk rating: **Extreme** **High** **Moderate** **Low**

Activity	Potential impact	Potential consequences	Comments	Likelihood of the impact occurring	Expected severity of the impact
Removal of ground and shrub/low tree layer vegetation from 0.05 ha at both sites	Loss of individuals of plant species listed under Queensland and Commonwealth legislation	No loss	No conservation significant species recorded from a 0.1 ha plots enveloping Amphitheatre View and Woodcutters sites (see CEMP Appendix C).	Unlikely	Insignificant
	Localised loss of *Eucalyptus* Open forest understorey diversity within 0.05ha area	Localised decline in least concern species' populations	The ground stratum and shrub/low tree layers will be removed within an area of 0.05 ha at both sites. The *Eucalyptus* Open Forests (RE 12.8.1, 12.8.14) has a Least Concern VMA and Biodiversity status and is relatively widespread within Main Range NP. The understorey would recover upon withdrawal of the facilities especially if soil compaction was reversed.	Likely	Insignificant
		Very small, localised decline in fauna habitat availability	The habitat types are relatively widespread within Main Range NP. The understorey would recover upon withdrawal of the facilities.	Likely	Insignificant
		Impact on adjacent Hastings River Mouse habitat at Woodcutters	Adjacent habitat to be cordoned off and protected from any disturbance.	Unlikely	Minor
	Mechanical damage to individual overstorey trees (e.g. removal of bark, root disturbance)	Decline or death of individual trees	There will be limited ground disturbance at sites. Impacts to trunks close to work areas could be avoided by applying a temporary "stocking" to base of stems.	Possible	Insignificant
	Soil erosion, siltation	Transport of soil downslope and potential localised siltation of stream headwaters	Low risk due to flattish ground and heavy vegetation cover. Sediment traps to be employed where there is risk of soilwash at both sites.	Unlikley	Minor
	Cohort of short-lived weeds likely to respond to creation of bare ground	Short-term decline in vegetation condition around Amphitheatre View facility.	Short-lived (ruderal) weeds for example Cobbler's Pegs, Indian Weed, Billygoat Weed are present in open sunny places near the sites (e.g. roadsides). The ruderal weeds die	Almost certain	Minor

Activity	Potential impact	Potential consequences	Comments	Likelihood of the impact occurring	Expected severity of the impact
			out through time and are replaced by native ground layer species unless there is a cycle of repeated disturbance. Mulching bare ground will greatly reduce likelihood of occurrence.		
	Introduction of weeds, pests, pathogens new to area	Potential for the introduction of a range of organisms some of which would have serious impacts.	Risks during construction to be minimised by prior wash down/cleaning of vehicles, equipment and footwear.	Unlikley	Moderate
Introduction or increase of feral animals present at Ecocamp sites	Increased predation on conservation significant fauna species	Potential for increased predation to decrease population of conservation significant species	Construction workers will not bring domestic animals to the site during site preparation and construction. No food scraps will be exposed during the day or left on site overnight.	Very unlikely	Minor
Fuel storage and refuelling machinery and equipment	Contamination of soils resulting from fuel leakage and/or spillage	Localised soil contamination impacting soil flora and fauna	Protocols to be developed to ensure that fuel storage areas are impermeable and that refuelling procedures ensure that there is no spillage or that there is complete containment of spillage	Possible	Minor
Change in fire management regime locally due to presence of Ecocamps	Alteration in the *Eucalyptus* Open Forest understorey due to withdrawal of periodic planned use of fire	The understorey has a presence of rainforest species and their abundance and density is expected to increase through time in the absence of fire.	This ecological process occurs widely in moist *Eucalyptus* Open Forests in southern Queensland when periodic fire is withdrawn from the landscape due to changes in land use/land management. Lantana *Lantana camara* may increase in abundance. It would be readily controlled through weed management practices.	Almost certain	Minor

5 Environmental management – site and surroundings

5.1 Vegetation Clearing

Objectives	To confine removal of native vegetation for construction and associated activities to the ground layer and shrubs/saplings and to minimise area of bare ground resulting from disturbance

Requirements	Responsibility	Timing
Actions		
Survey ecological community containing the Amphitheatre View Wilderness Ecocamp site (Appendix C) and check Woodcutters Ecocamp site.	SRT	Prior to construction commencing
Baseline survey of Hastings River Mouse in habitat adjacent to Woodcutters Ecocamp	SRT	Prior to construction commencing
Design of Woodcutters Ecocamp to ensure all activity, particularly light and noise, is directed away from the Hastings River Mouse habitat.	SRT	Design and construction phases
Clearly mark building envelopes and access routes to be brushed/cleared (ensure access points required during operation of facilities are included, for example entry points to enable pumping of black water and grey water storage tanks). Ensure there is no disturbance upslope of the Woodcutters site and no Hastings River Mouse habitat is included in the Woodcutters Ecocamp footprint.	SRT, Building Contractor	Prior to construction commencing
Mulch larger woody plants (shrubs, saplings). Store material near road verge to spread on bare ground around buildings post-construction. Dispose of any finer plant (un-mulchable) material by spreading amongst forest litter in surrounding area.	Building Contractor	Prior to construction commencing. Co-ordinate mulching with re-opening of Winder Management Road which will also require conversion of woody material to mulch
Protection of tree trunks from mechanical damage	Building Contractor	Construction
Performance Indicators		
Completed assessment of biodiversity and environmental conditions	SRT	Prior to construction commencing
Removal of vegetation confined to designated footprints for structures and access routes	Building Contractor	Construction
At Amphitheatre View Wilderness Ecocamp site, plant waste converted to mulch.	Building Contractor	Site preparation
All bare ground covered with mulch.	Building Contractor	End of construction
Bark of trees on sites free of injury	Building Contractor	Construction
Monitoring		
Weekly inspection of the construction site and surrounds for signs of impacts outside of the designated infrastructure footprints	SRT, Building Contractor	Site preparation and construction
Post construction inspection	SRT	Post construction
Reporting		
Report Hastings River Mouse baseline	SRT	Prior to construction

Requirements	Responsibility	Timing
survey results to QPWS		
Result of weekly inspections included in weekly environmental reporting to SRT	SRT, Building Contractor	Construction
Result of post construction inspection included in monthly environmental reporting to QPWS	SRT	Post construction
Corrective Actions		
Engage arborculturalist to advise on treatment for any recorded tree damage	Building Contractor in consultation with SRT	Site preparation and construction
If any damage to vegetation has occurred outside of the demarcated building envelop areas, develop a rehabilitation and following agreement by QPWS enact, manage and monitor re-establishment of the vegetation	Building Contractor in consultation with SRT	Site preparation, construction and post-construction
Report all corrective actions, their success and outcomes to SRT in weekly environmental reporting	Building Contractor	Site preparation, construction and post construction
Report all corrective actions, their success and outcomes to QPWS in monthly environmental reporting	SRT	Site preparation, construction and post construction

5.2 Introduction of weeds and diseases

Objective	To minimise risk of introduction or spread of weeds and plant and animal diseases

Requirements	Responsibility	Timing
Actions		
Wash down/clean all vehicles, equipment and footwear that been operating/used on site work previously.	Building Contractor	Site preparation and construction
Sand/gravel and associated material introduced to site and to access roads to be certified as low-risk for weeds	Building Contractor	Construction
Performance Indicators		
No new weeds or organisms introduced to site	Building Contractor	Site preparation and construction
Monitoring		
Weekly inspection of the construction site and surrounds for signs of weed establishment and obvious decline in tree health	SRT	Construction
Post-construction inspection for signs of weed establishment and obvious decline in tree health	SRT	Post construction
Reporting		
Results of continuous monitoring included in weekly environmental reporting to SRT	Building Contractor	During site preparation and construction
Results of continuous monitoring and post-construction inspection included in monthly reporting to QPWS	SRT	During site preparation and construction
Corrective Actions		
Appropriate weed and other pest control actions to be determined in consultation with QPWS	SRT	During and post construction
Implementation of weed and other pest control actions, monitor success and report outcomes	SRT	During and post construction

5.3 Introduction of feral animals

Objective	To minimise risk of introduction or spread of feral animals

Requirements	Responsibility	Timing
Actions		
No domestic pets allowed on site during the construction period	Building Contractor	Site preparation and construction
Food scraps to be immediately stored in sealed containers and removed from the site at the end of each day	Building Contractor	Site preparation and construction
Performance Indicators		
No domestic pets brought to the site during the construction period	Building Contractor	Site preparation and construction
No food scraps left exposed on site during the day or overnight	Building Contractor	Site preparation and construction
Monitoring		
Regular (weekly), unannounced inspections	SRT with optional involvement of QPWS	During site preparation and construction
Continuous monitoring for sightings and signs of feral animals	Building contractor/SRT	During site preparation and construction
Reporting		
Results of continuous monitoring included in weekly environmental reporting to SRT	Building contractor	During site preparation and construction
Results of continuous monitoring included in monthly reporting to QPWS	SRT	During site preparation and construction
Corrective Actions		
Appropriate feral animal control actions to be determined in consultation with QPWS	SRT	During and post construction
Implementation of feral animal control	SRT	During and post construction

5.4 Erosion and Sediment Control

Objective	To reduce potential for construction activities to cause erosion and the release of sediment.

Requirements	Responsibility	Timing
Actions		
Use sediment control below any bare sloping ground caused by construction activities (e.g. around footings for lookout at Amphitheatre View Wilderness Ecocamp and on all sloping ground at Woodcutters site)	Building Contractor	Prior to construction commencing
Rainwater storage overflows to be located where they will not cause erosion.	Building Contractor	Construction
Maintain sediment control devices until ground re-vegetated/stabilised	Building Contractor/SRT	Construction and post construction
Performance Indicators		
Entrained sediment from bare, sloping ground is trapped on site	Building Contractor	Throughout construction works and post construction
No observable erosion from rainwater storage overflow.	Building Contractor	Post construction
Monitoring		
Regular (weekly) inspection of sediment traps, include dated photographic record	Building Contractor	Site preparation and construction
Inspection of sites three months post construction, include dated photographic	SRT	Post construction

Requirements	Responsibility	Timing
record		
Reporting		
Results of weekly monitoring included in weekly environmental reporting to SRT	Building contractor	During site preparation and construction
Results of construction monitoring and post construction inspection included in monthly environmental reporting to QPWS	SRT	Construction and post construction
Corrective Actions		
Repair all sediment trapping devices as soon as any breach is recorded, report corrective actions in weekly environmental reporting to SRT	Building contractor	Construction
Repair all sediment trapping devices as soon as any breach is recorded, report corrective actions in monthly environmental reporting to QPWS	SRT	Post construction
Address any instances of erosion occurring on site through the implementation of standard stabilisation practices, monitor success, report corrective actions and outcomes in weekly environmental reporting to SRT	Building contractor	Construction
Address any instances of erosion occurring on site through the implementation of standard stabilisation practices, monitor success, report corrective actions and outcomes in monthly environmental reporting to QPWS	SRT	Post construction

5.5 Construction waste

Objective	To appropriately manage solid and liquid waste material during construction activities

Requirements	Responsibility	Timing
Actions		
Appropriate waste receptacles to be provided on site and removed as required/end of project	Building Contractor	Construction
Food scraps to be removed from site daily	Building Contractor	Construction
Provision of Portable toilet	Building Contractor	Construction
Performance Indicators		
No waste materials or food scraps left lying around site and surrounds	Building Contractor	Construction
Monitoring		
Weekly site inspection	Building Contractor/SRT	Construction
Post-completion inspection	SRT	Post construction
Reporting		
Results of weekly inspection included in weekly environmental reporting to SRT	Building contractor	Construction
Result of post-completion inspection included in monthly reporting to QPWS	SRT	During site preparation and construction
Corrective Actions		
Immediate clean-up of any waste materials (including food scraps) and reporting of corrective action in weekly environmental reporting to SRT	Building contractor	Construction
Immediate clean-up of any waste on site at the time of the post-completion inspection	SRT	Post-construction

5.6 Surrounding environment

Objective	To manage construction and associated activities with the potential to impact on surrounding national park

Requirements	Responsibility	Timing
Actions		
Locate and mark suitable area for vehicle turn-around that does not require disturbance of native vegetation, ensure habitat for Hastings River Mouse is not impacted by construction and associated activities	SRT/Building Contractor in consultation with QPWS	Prior to construction commencing
Locate and mark suitable area for location of camp, lay down/storage of materials (preferably within existing road corridors)	SRT/Building Contractor in consultation with QPWS	Prior to construction commencing
Hazardous liquids (fuels) to be stored at a specific site approved by QPWS – storage of materials to comply with Guide for Flammable and combustible liquids under the Queensland *Work Health and Safety Act 2011* and relevant Australian Standards	Building Contractor in consultation with QPWS	Construction
Confinement of accidental spillage	Building Contractor in consultation with QPWS	Construction
Develop a protocol for preventing accidental fire	Building Contractor/SRT	Construction
Develop a protocol for removal of fallen trees that may obstruct access roads	SRT/Building Contractor	Construction
Develop a protocol for wet weather/post wet weather to avoid damage to access roads	Building Contractor in consultation with SRT and QPWS	Construction
Performance Indicators		
Turn-around and camp and storage areas located and marked	Building Contractor	Construction
No contamination of environment through spillage or leakage of hazardous liquids	Building Contractor	Construction
No accidental fire from construction activities	Building Contractor	Construction
Procedure in place for dealing with fallen trees on access roads	Building Contractor	Construction
Procedure in place to allow for wet conditions	Building Contractor	Construction
Monitoring		
Weekly site inspection	SRT/Building Contractor	Construction
Post-completion inspection	SRT	Post construction
Reporting		
Results of weekly inspection included in weekly environmental reporting to SRT	Building contractor	Construction
Results of weekly inspections included in monthly reporting to QPWS	SRT	Construction
Result of post-completion inspection included in monthly reporting to QPWS	SRT	Post construction
Corrective Actions		
Engage arborist to advise on treatment for any recorded tree damage	Building Contractor in consultation with SRT	Site preparation and construction
If any damage to vegetation has occurred outside of the demarcated areas, develop a rehabilitation and following agreement by QPWS enact, manage and monitor re-establishment of the vegetation	Building Contractor in consultation with SRT	Site preparation, construction and post-construction

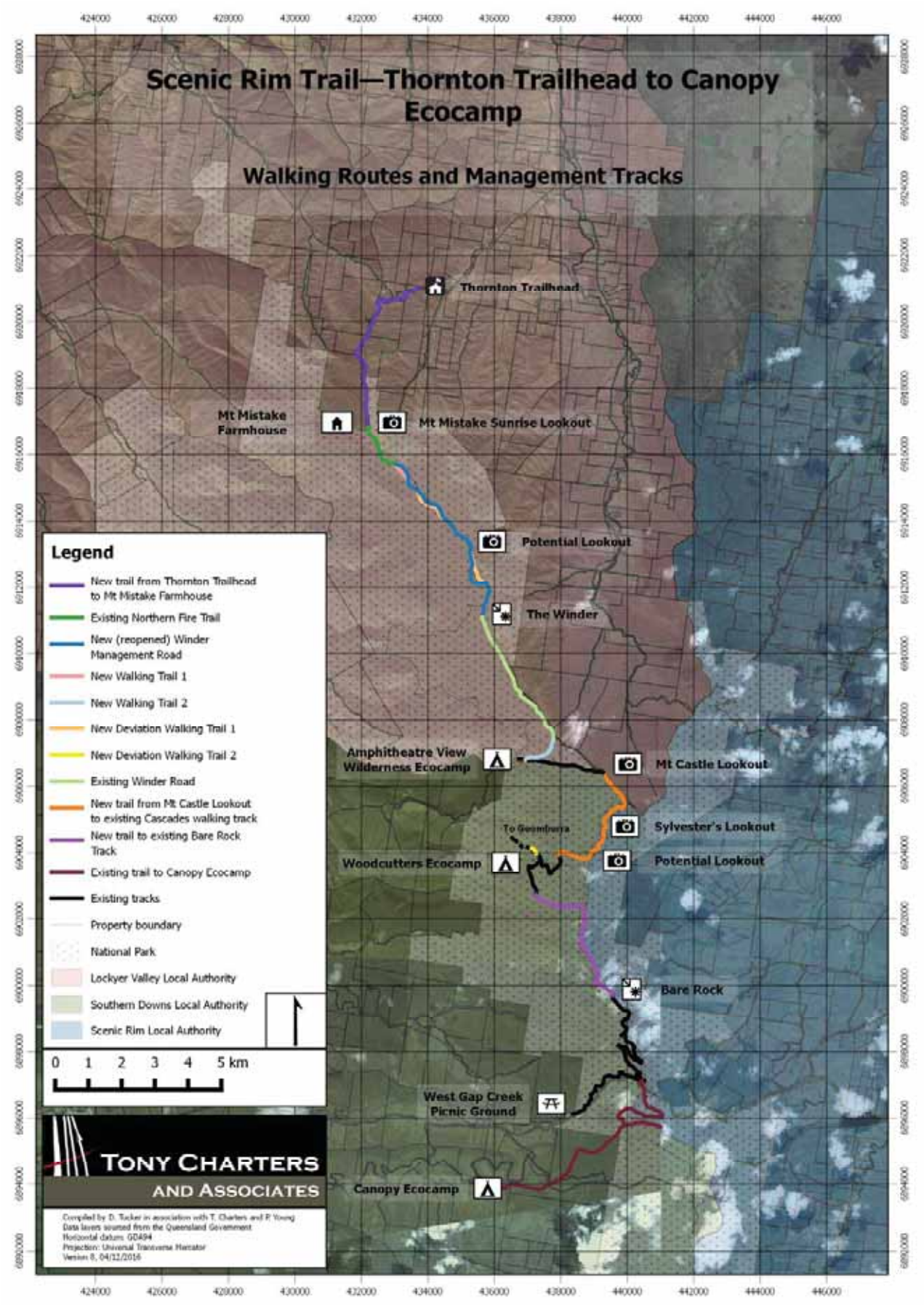
Requirements	Responsibility	Timing
Any signs of the release of hazardous materials to be immediately addressed	Building Contractor in consultation with SRT	Site preparation and construction
Report all corrective actions, their success and outcomes to SRT in weekly environmental reporting	Building Contractor	Site preparation, construction and post construction
Report all corrective actions, their success and outcomes to QPWS in monthly environmental reporting	SRT	Site preparation, construction and post construction

5.7 Safety

Objective	To ensure risks to humans from the environment are taken into account during construction

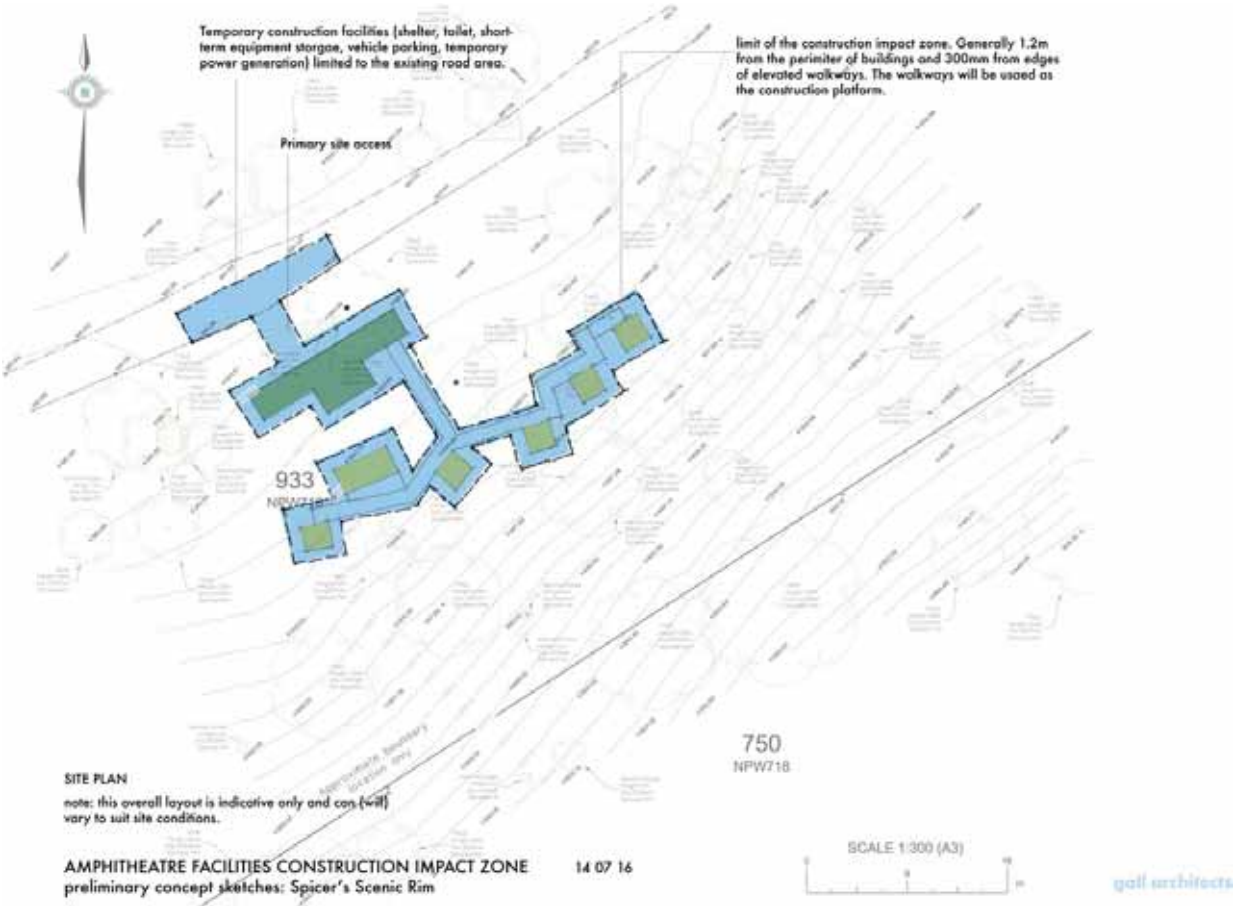
Requirements	Responsibility	Timing
Actions		
Any dangerous branches in large trees overhanging structures are identified and trimmed	SRT in consultation with QPWS and Arborist	Prior to construction commencing, conducted at same time as brushing/ clearing understorey
Fire risk awareness covering work practices (e.g. welding) and protocol for planned burn or wildfire in vicinity of site or access roads	Building Contractor and SRT in consultation with QPWS	Prior to construction commencing
Performance Indicators		
No high risk branches present	SRT and Building Contractor	Site preparation and construction
Fire evacuation plan in place	Building Contractor	Site preparation and construction
Monitoring		
Weekly site inspection for dangerous branches	Building Contractor	Construction
Reporting		
Results of weekly inspection included in weekly environmental reporting to SRT	Building contractor	Construction
Corrective Actions		
Cease work if any additional dangerous branches are recorded during the weekly inspections, notify SRT immediately. Do not recommence work until the danger has been assessed and managed	Building contractor	Construction
Immediate assessment and treatment of any dangerous branches noted by the Contractor	SRT in consultation with QPWS	Construction
Reporting of corrective actions in monthly environmental report to QPWS	SRT	

Appendix A – Location of Amphitheatre View Wilderness Ecocamp and Woodcutters Ecocamp within Main Range National Park

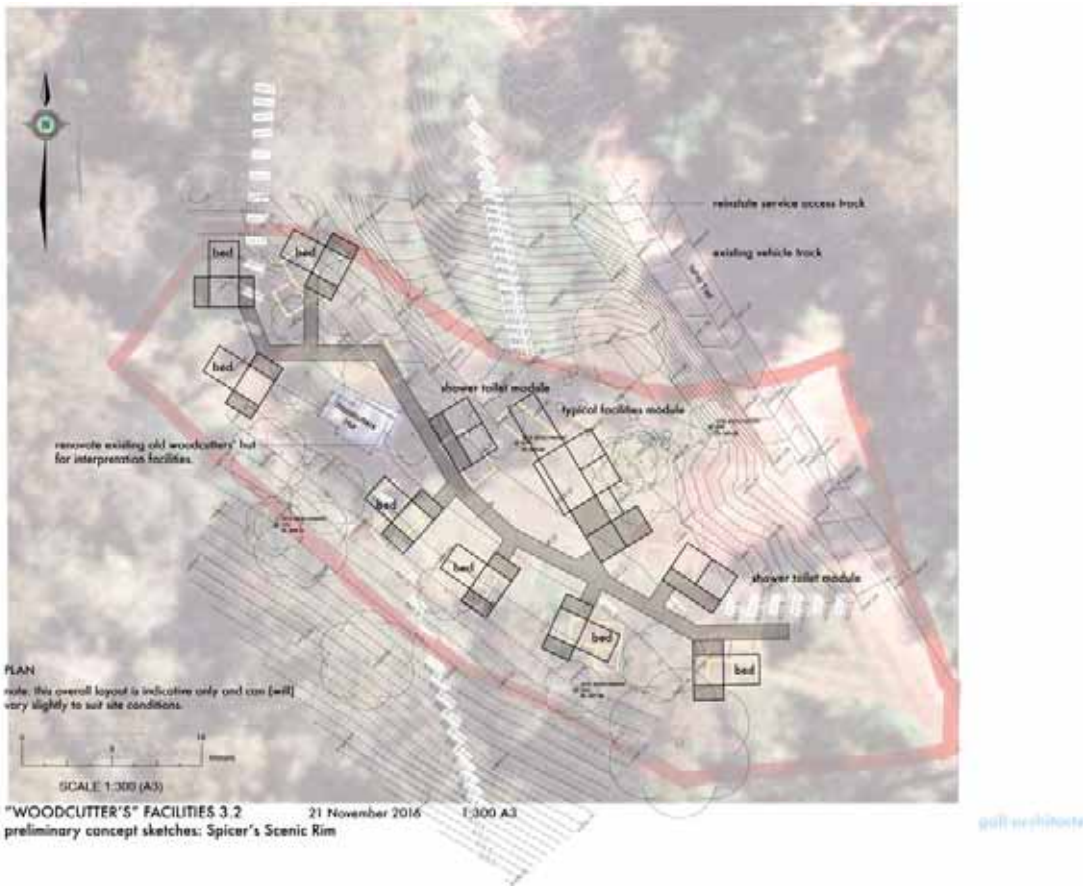


Appendix B. Site Plans

Amphitheatre View Wilderness Ecocamp:



Woodcutters Ecocamp:



APPENDIX C. VEGETATION SURVEY PRO FORMA, AMPHITHEATRE VIEW WILDERNESS ECOCAMP SITE

CORVEG - VEGETATION SITE SURVEY RECORDING FORM

Project: WAB SEQ
Bioregion:
Map sheet:
Site No.: P30

Sample Level: (circle)	Sample floristics: (circle)	Complete list (min. required, for 2° with BA and stem counts)	Woody species	Woody species & perennial herbs (min. required, for 3°)	Dominant characteristic species	Other	Unrepresentative of ground strata	Date:
2°(A) 3°(D) 4°(Q)	A B C D E F							20 12 2015

Position derivation: (A) B C — GPS / Topographic map / Other ..... Precision: ± 10 m Recorders: P. YOUNG

Locality: Great Dividing Range forming watershed of Upper Blackfellows and N. Dalrymple Creeks, Mistake Mtns, Main Range National Park

Site context (description): Eucalyptus quadrangulata-E, eugenioides-E, biturbinata-E, melliodora

General notes: upon Brest

Community width: A: <35m wide B: 35-75m C: 75-150m (D: 150-300m) E: >300 m F: not linear

Community area: A: site only (point) B: <1 ha C: 1-5 ha D: 5-<20 E: 20-50 ha F: >50 ha

Photo: Image number(s): Map Unit No: Regional ecosystem: 12.8.14

Mapped: (Yes) No Reference Site: Yes No

ZONE	EASTING	NORTHING	LATITUDE (dd mm ss)	LONGITUDE (dd mm ss)
56	436403	6906685		

Landform: Situation*	Element*	Eros Pattern*	Pattern* (VM)	Slope: Type*	Slope (°)	Aspect (°)	Altitude
CREST OF MOUNTAIN	HILLCREST	VERY STEEP MOUNTAINS	MOUNTAINS	RIDGE	4	162	950

Site sketch/notes:

Soils

Source	Reliability	Code*	Add info.	Isbell code /MU	Top soil Colour*	Top soil Texture*
I. Map / E. Cutting / B. Core / S. Surface observation	High / Med / Low*		*		DARK BROWN	CLAY LOAM

Notes: KRASNOZEM (BROWN-RED)

Geology

Source	Reliability	Code*	Geology unit
I. Map / E. Cutting / B. Core / O. Outcrop	High / Med / Low*	BAS-ALT (S)	TERTIARY BASALT (MAIN RA VOLCANICS)

Notes:

Structure form (Specht): DF Litter %: 60% Rock %: 0 Bare ground %: 5 Cryptogam %: 0

Rainforest structure: Structural complexity: S X C Leaf Size: Leaf fall: Floristic Structure: M S X Indicator growth form: (1 – 6)

Site No.:

Disturbance	Proportion *	Age*	Height*	Disturbance	Count / No.	Disturbance	
Storm damage	0 1 2 3	1 2		Logging	# STUMPS	Grazing	No Present Severe
Roadworks	0 1 (2) 3	1 (2)		Ringbarking/ thinning	#	Feral digging	No Yes
Fire	0 1 2 (3)	1 (2)	1 (2) 3 4	Extensive clearing	No Yes	Flood	
Salinity	0 1 2 3			Weeds	Cover %: 0.6	Non-remnant	Yes

*Proportion: 0 = 0; 1 ≤ 1%; 2 1-5%; 3 ≥ 5%
*Age: 1: ≤ 3 years (short term impact still evident); 2: > 3 years
*Fire height: 1 ≤ 1m; 2 1 - 6m; 3 6-12m; 4 ≥ 12m.

Erosion type:		Type: 0 none; 1 Sheet; 2 Rill; 3 Gully; 4 Tunnel; 5 Stream bank; 6 Mass movement.
Erosion Severity:		Severity: 1 minor; 2 moderate; 3 severe

Crown Cover calculations:										
0 m	5 m	10 m	15 m	20 m	25 m	30 m	35 m	40 m	45 m	50 m

Structural Summary: Record 'Individual Covers' for Tertiary sites only

Stratum	Med. Canopy Height	Range in strata height	Total Crown Cover	Key Species	Individual Covers
Emergent					
Tree 1	26	24-28	60	EUCALYPTUS QUADRANGULATA	35
				E. EUGENIOIDES	10
				E. BITURBINATA	10
				E. MELLIODORA	5

Stratum	Med. Canopy Height	Range in strata height	Total Crown Cover	Key Species	Individual Covers	Key species	Individual Covers
Tree 2	9	8-10	8	AS FOR T1			
Tree 3	5	4-6	12	ACACIA IRRORATA	7		
Shrub 1	3.25	3-4	10 (patchy)	MYRSINE VARIABILIS	5		
Shrub 2	1.8	1.5-2.75	17	XANTHORRHOEA GLAUCA	5		
Ground	.3	.1-.65	35				

Site Number:

Factor (circle): 1 = (1cm) | 0.5 = (.71cm) | 0.25 = (.5cm)

BASAL AREA (number) = 1

Cover method: L = Photographic | V = Visual estimate | I = Line intercept

Cover measure: C = Crown cover | P = Projective foliage cover (Ground)

Misc. = Off-site

Ident = C, V, F

Assessment area: 1600 m²

E	T1	T2	T3	S1	SPECIES	Cr. Don%	Misc	Ident	COVER (%) E	T1	T2	T3	S1	S2	G	STEM COUNT (number) _m²	250 m² E	T1	250 m² T2	T3	250 m² S1	S2
	3				Dead tree (present if cover % or stem count given)												1	2	1	1		
	14		1		EUCALYPTUS QUADRANGULATA					35	3						4			3	1	
	7				E. IGNEANOIDES					10	2	.5	.5				2	1	2	3		
	4				E. BITURBINATA					10	3	.5	.5				2			2	1	
	3				E. MELLIODORA					5												
			3		ACACIA IRRORATA							7							14			
					ACACIA MELANOXYLONA							2	2						2	3	1	
					MYRSINE VARIABILIS								5							18		
	TOTAL				DENHAMIA SILVESTRIS									3							6	
	BA = 32				CLEMATIS GLYCINOIDES									2	1							
					SOLANUM STELLIGERUM									2								
					XANTHORRHOEA GLAUCA									5	3						18	
					BREYNIA OBLONGIFOLIA									4							10	
					POLYSCIAS ELEGANS							1		1						1		
					PITTOSPORUM UNDULATUM									1							3	
					CISSUS ANTARCTICA							1	1	1	1							
					PANDOREA FLORIBUNDA							1	3	2	2							
					LANTANA CAMARA *WEED									.5								
					OLEA PANICULATA									.2						2		

Site Number:

Factor (circle)	1 = (1cm)	0.5 = (.71cm)	0.25 = (.5cm)
BASAL AREA (number)			

Cover method:
L = Photographic
V = Visual estimate
I = Line intercept

Cover measure:
C = Crown cover
P = Projective foliage cover (Ground)

Misc. = Off-site
Ident. = C, V, F

COVER (%)

Assessment area: _____ m^2

STEM COUNT (number)

_m^2	_m^2	_m^2	_m^2	_m^2	_m^2
E	T1	T2	T3	S1	S2

E	T1	T2	T3	S1	SPECIES	Cr. Den%	Misc	Ident	E	T1	T2	T3	S1	S2	G
					Dead tree (present if cover % or stem count given)										
					TETRASTIGMA NITENS									.1	
					POLYSCIAS SAMBUCIFOLIA									.1	
					EXOCARPOS CUPRESSIFORMIS									.1	
					MYOPORUM ACUMINATUM									.1	
					EUSTREPHUS LATIFOLIUS									1	1

Site Number: (Ground layer only)

GROUND SPECIES	Cr Den %	Misc	Ident	G %	G1	G2	G3	G4	G5	GROUND SPECIES	Cr Den%	Misc	Ident	G%	G1	G2	G3	G4	G5
BA LABILLARDIERI				15	-														
PLECTRANTHUS PARVIFLORUS				1															
CORNELINA DIFFUSA				2															
SMILAX AUSTRALIS				.2															
GALIUM LEPTOGONIUM				.2															
DESMODIUM GUNNII				.2															
LOMANDRA LONGIFOLIA				2															
MENTHA DIMENCA				.2															
OPLISMENUS AEMULUS				.5															
CYPERUS LAEVIS			✓	.1															
LOBELIA PURPURASCENS				.5															
VIOLA HEDERACEA				.1															
ZEHNERIA CUNNINGHAMII				.1															
DIANELLA CAERULEA				.2															
LEPTOSPERMA LATERME				.2															
ARTHROPODIUM MILLEFLORUM			✓	.2															
VIOLA BETONICIFOLIA				.1						Litter									
DOODIA ASPERA				2						Rock									
RUBUS ROSIFOLIUS				.2						Bare Ground									
(SIEGESBECKIA ORIENTALIS)				.1						Cryptogam									
HYBANTHUS STELLARIOIDES				.1						TOTAL GROUND COVER									

Site Number: | (Ground layer only)

GROUND SPECIES	Cr Den %	Misc	Ident	G %	G1	G2	G3	G4	G5	GROUND SPECIES	Cr Den%	Misc	Ident	G%	G1	G2	G3	G4	G5
SOLANUM NIGRUM				.1		weed													
GLYCINE CLANDESTINA				.1															
THEMEDA TRIANDRA				.1															
WAHLENBERGIA COMMUNIS			✓	.1															
VERONICA PLEBEIA				.1															
GAHNIA ASPERA				.5															
GYMNOSTACHYS ANCERS				.1															
Echinopogon ovatus			✓	.2															
Rytidosperma racemosum			✓	.1															
Anthosachne scabra			✓	.1															
										Litter									
										Rock									
										Bare Ground									
										Cryptogam									
										TOTAL GROUND COVER									

APPENDIX 11

Construction Environmental Management Plan - Trails

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

Walking trails

SCENIC RIM TRAIL

Issue	Description	Approved By	Signed	Date
V1	CEMP Walking Trails	Tony Charters		

TABLE OF CONTENTS

APPENDICES

1 Description of Works

The proposed Class 5 walking trails follow a section of the route of the legendary Scenic Rim walk along the crests and scarps of the Mistake and Main Ranges (Appendix A). Some parts of the route show evidence of usage (e.g. visible footpads) and there is an existing section of rough track (comparable to Class 4/5 standard trail) from Sylvester's Look-out to Hole in the Wall exit. The planned sections of trail have been traversed and marked/recorded using GPS. There is a gap in the trail along the eastern scarp where it detours westwards to access the Cascades Plantation Ecocamp exiting on a ridge to the south (Appendix A).

The proposed trail is predominantly Australian Standard Class 5 with little modification to land surfaces and rudimentary signage at key intersections (for walkers from the general public who are not guided). However, there are limited parts of the trail where some modification to the land surface is proposed as well as sections where brushing a narrow path or swathe is recommended to prevent diffuse environmental degradation (soil and rock slips, exposing loosened soil to rainwash, ripping and trampling of vegetation). These include:

- short sections of extremely steep, unstable slope
- steep bouldery slopes with unstable rock
- dense low viney growth where it traverses logged/regrowth rainforest and rainforest growing on exposed ridges and slopes

There are also points along the route where the convergence of ridges can be confusing without navigational aids and use of a marker system is recommended for user safety. This is principally for walkers other than SRT guests who may access the trails.

The route is predominantly rainforest comprising Cool Subtropical and Warm Temperate types. Small areas of Wet Sclerophyll Forest are also traversed. Parts of the route have been affected by historical logging, while wind damage and landslip affect vegetation in places, especially along the scarp. A number of plant species of conservation importance are present (e.g. species at limits of geographical range), although no listed species have been recorded from, or observed along the proposed route. The rainforest provides habitat for a number of listed fauna species. Myrtle rust and the frog pathogen chytrid fungi and are known to be present in the uplands of southern Queensland – Myrtle rust has not been observed along the route to date. Dieback from Phytophthora is also likely to affect the area periodically.

Parties involved in the construction project need to be aware of a number of constraints and risks associated with the route including:

1. Access may not be feasible or permitted during and just after wet weather
2. There is no or limited mobile phone coverage
3. There is limited access to water along much of the route
4. Hazardous plants occur in places, for example, Giant Stinging Tree which has the potential to cause extremely painful injuries that require a long period to

heal. Venomous snakes, for example, Red-bellied Black Snake are also present.

2 Project management and contractor details

Name	Position	Contact Number/s	Email
Andrea Slingsby	Director, Scenic Rim Trail	00418 750 611	andrea.slingsby@gainsdale.com.au
Russell James	CEO, Russell James Project Management	0419 702 220	Russell_jamesconpl@bigpond.com
Contractors	TBA		

3 Environmental Goals

For details refer to Master document:

Tony Charters and Associates 2016, Scenic Rim Trail – Mt Mistake to Spicers Peak Nature Refuge Proposal and Environmental Management Plan. Consultancy Report prepared for Scenic Rim Trail, Brisbane.

The goals recognise the cardinal principal for national park management which is to provide, to the greatest possible extent, for the permanent preservation of the area's natural condition and the protection of the area's cultural resources and values (https://www.npsr.qld.gov.au/managing/principles/index.html). For the Class 5 trail network they specifically include:

- No net loss of vegetation at an ecosystem level
- Minimal interruption of ecological processes
- No net loss or diminution of the outstanding conservation values recorded for the northern section of Main Range National Park

4 Environmental issues – route and surroundings

4.1 Removal of ground and shrub layer vegetation

Objectives	1. To confine removal of native vegetation to brushing/trimming a 60cm wide swathe through dense rainforest regrowth, viny rainforest understorey and dense fern understorey. 2. To confine clearing of ground layer vegetation to a small number of steep slopes requiring construction of a track (or steps) to minimise erosion and stabilisation of loose boulders (or steps).

Requirements	Responsibility	Timing
Actions		
Undertake reconnaissance of route based upon the long-recognised Scenic Rim route used by long distance bushwalkers	SRT in consultation with QPWS	Prior to construction commencing
Discuss details of route with Track contractor	SRT, QPWS, Track Contractor	Prior to construction commencing
Cut a narrow path (maximum width 60cm) through areas with dense low growth	Track Contractor	Construction
Construct a formed track on very steep slopes (>35^0) with loose soil/rock. This may involve rock steps or steps off the ground based on engineering advice	SRT/Track Contractor	Construction
Stabilise a route on steep bouldery slopes which may include construction of steps in places based on engineering advice	Track Contractor	Construction
No removal of woody plants along route	Track Contractor	Construction
Performance Indicators		
Route finalised	SRT, QPWS	Prior to construction commencing
Cut/brushed swathe restricted to areas where dense growth restricts movement	Track Contractor	Construction
Very steep slopes stabilised	Track Contractor	Construction
Steep bouldery slopes stabilised	Track Contractor	Construction
No woody plants removed	Track Contractor	Construction
Monitoring		
Weekly review of construction areas and surrounds for signs of impacts outside of the designated trail footprint	SRT	Construction
Track completion inspection	SRT	Post construction
Reporting		
Result of weekly inspections included in weekly environmental reporting to SRT	Building Contractor	Construction
Result of weekly inspections and post construction inspection included in monthly environmental reporting to QPWS	SRT	Post construction
Corrective Actions		
If any damage to vegetation has occurred outside of the demarcated trail route, develop a rehabilitation and following agreement by QPWS enact, manage and monitor re-establishment of the vegetation	Track Contractor in consultation with SRT	Construction and post-construction

Requirements	Responsibility	Timing
Report all corrective actions, their success and outcomes to SRT in weekly environmental reporting	Building Contractor	Construction and post construction
Report all corrective actions, their success and outcomes to QPWS in monthly environmental reporting	SRT	Site preparation, construction and post construction

4.2 Introduction of weeds and diseases

Objective	To minimise risk of introduction or spread of weeds and plant and animal diseases

Requirements	Responsibility	Timing
Actions		
Wash down/clean all vehicles, equipment and footwear that been operating/used on site work previously.	Track Contractor	Construction
Sand/gravel and associated material introduced to site and to access roads to be certified as low-risk for weeds	Track Contractor	Construction
Avoid/detour patches of dead trees that may be affected by Phytophthora	Track Contractor in consultation with SRT and QPWS	Construction
Performance Indicators		
No new weeds or organisms introduced to site	Track Contractor	Construction
No patches of dead trees traversed by route	Track Contractor	Construction
Monitoring		
Weekly inspection of the route and surrounds for signs of weed establishment and obvious decline in tree health	SRT	Construction
Post-construction inspection for signs of weed establishment and obvious decline in tree health	SRT	Post construction
Reporting		
Results of continuous monitoring included in weekly environmental reporting to SRT	Building Contractor	During site preparation and construction
Results of continuous monitoring and post-construction inspection included in monthly reporting to QPWS	SRT	During site preparation and construction
Corrective Actions		
Appropriate weed and other pest control actions to be determined in consultation with QPWS	SRT	During and post construction
Implementation of weed and other pest control actions, monitor success and report outcomes	SRT	During and post construction

4.3 Introduction of Feral Animals

Objective	To minimise risk of introduction or spread of feral animals

Requirements	Responsibility	Timing
Actions		
No domestic pets allowed on site during the construction period	Track Contractor	Construction
Food scraps to be immediately stored in sealed containers and removed from the site at the end of each day or end of overnight camping shift.	Track Contractor	Construction
Performance Indicators		
No domestic pets brought to the site during the construction period	Track Contractor	Construction
No food scraps left exposed on site during the day or overnight	Track Contractor	Construction
Monitoring		
Regular (weekly), unannounced inspections	SRT	Construction
Continuous monitoring for sightings and signs of feral animals	Track contractor	Construction
Reporting		
Results of continuous monitoring included in weekly environmental reporting to SRT	Track contractor	Construction
Results of continuous monitoring included in monthly reporting to QPWS	SRT	Construction
Corrective Actions		
Appropriate feral animal control actions to be determined in consultation with QPWS	SRT	During and post construction
Implementation of feral animal control	SRT	During and post construction

4.4 Erosion and Sediment Control

Objective	To reduce potential for construction activities to cause erosion and the release of sediment into creek headwaters.

Requirements	Responsibility	Timing
Actions		
Use sediment control below any bare sloping ground caused by construction of track on steep slopes	Track Contractor	Site preparation and construction
Maintain sediment control devices until ground re-vegetated/stabilised	Track Contractor/SRT	Construction and post construction
Performance Indicators		
Entrained sediment from bare, sloping ground is trapped on site	Track Contractor	Throughout construction works and post construction
No observable erosion within and surrounding construction areas	Track Contractor	During and post construction
Monitoring		
Regular (weekly) inspection of sediment traps, include dated photographic record	Track Contractor	Site preparation and construction
Inspection of sites three months post construction, include dated photographic record	SRT	Post construction

Requirements	Responsibility	Timing
Reporting		
Results of weekly monitoring included in weekly environmental reporting to SRT	Track contractor	During site preparation and construction
Results of construction monitoring and post construction inspection included in monthly environmental reporting to QPWS	SRT	Construction and post construction
Corrective Actions		
Repair all sediment trapping devices as soon as any breach is recorded, report corrective actions in weekly environmental reporting to SRT	Track contractor	Construction
Repair all sediment trapping devices as soon as any breach is recorded, report corrective actions in monthly environmental reporting to QPWS	SRT	Post construction
Address any instances of erosion occurring on site through the implementation of standard stabilisation practices, monitor success, report corrective actions and outcomes in weekly environmental reporting to SRT	Track contractor	Construction
Address any instances of erosion occurring on site through the implementation of standard stabilisation practices, monitor success, report corrective actions and outcomes in monthly environmental reporting to QPWS	SRT	Post construction

4.5 Construction waste

Objective	To appropriately manage solid and liquid waste material during construction activities

Requirements	Responsibility	Timing
Actions		
Appropriate waste receptacles to be carried on site and removed as required/end of project	Track Contractor	Construction
Food scraps to be removed from site daily	Track Contractor	Construction
QPWS requirements for bush toilets are followed	Track Contractor	Construction
Performance Indicators		
No waste materials or food scraps left lying around route and surrounds	Track Contractor	Construction
Monitoring		
Weekly site inspection	SRT/Track Contractor	Construction
Post-completion inspection	SRT	Post construction
Reporting		
Results of weekly inspection included in weekly environmental reporting to SRT	Building contractor	Construction
Result of post-completion inspection included in monthly reporting to QPWS	SRT	During site preparation and construction
Corrective Actions		
Immediate clean-up of any waste materials (including food scraps) and reporting of corrective action in weekly environmental reporting to SRT	Building contractor	Construction
Immediate clean-up of any waste on site at the time of the post-completion inspection	SRT	Post-construction

4.6 Surrounding environment

Objective	To manage construction and associated activities with the potential to impact on surrounding national park

Requirements	Responsibility	Timing
Actions		
Locate and mark suitable area for location of lay down/storage of materials (preferably within existing road corridor)	SRT/Track Contractor in consultation with QPWS	Prior to construction commencing
Hazardous liquids (fuels) to be stored at a specific site approved by QPWS – storage of materials to comply with Guide for Flammable and combustible liquids under the Queensland *Work Health and Safety Act 2011* and relevant Australian Standards	Track Contractor in consultation with QPWS	Construction
Confinement of accidental spillage	Track Contractor in consultation with QPWS	Construction
Develop a protocol for preventing accidental fire	SRT/Track Contractor	Construction
Develop a protocol for removal of fallen trees that may obstruct access roads	SRT/Track Contractor	Construction
Develop a protocol for wet weather/post wet weather to avoid damage to access roads	Track Contractor in consultation with SRT and QPWS	Construction
Performance Indicators		
Storage areas located and marked	Track Contractor	Construction
No contamination of environment through spillage or leakage of hazardous liquids	Track Contractor	Construction
No accidental fire from construction activities	Track Contractor	Construction
Procedure in place for dealing with fallen trees on access roads	Track Contractor	Construction
Procedure in place to allow for wet conditions	Track Contractor	Construction
Monitoring		
Weekly site inspection for evidence of vegetation damage outside of the route and laydown areas, fuel leakage or spillage or accidental fire	SRT/Track Contractor	Construction
Post-completion inspection	SRT	Post construction
Reporting		
Results of weekly inspection included in weekly environmental reporting to SRT	Track Contractor	Construction
Results of weekly inspections included in monthly reporting to QPWS	SRT	Construction
Result of post-completion inspection included in monthly reporting to QPWS	SRT	Post construction
Corrective Actions		
Engage arborist to advise on treatment for any recorded tree damage	Track Contractor in consultation with SRT	Construction
If any damage to vegetation has occurred outside of the demarcated areas, develop a rehabilitation and following agreement by QPWS enact, manage and monitor re-establishment of the vegetation	Track Contractor in consultation with SRT	Construction and post-construction

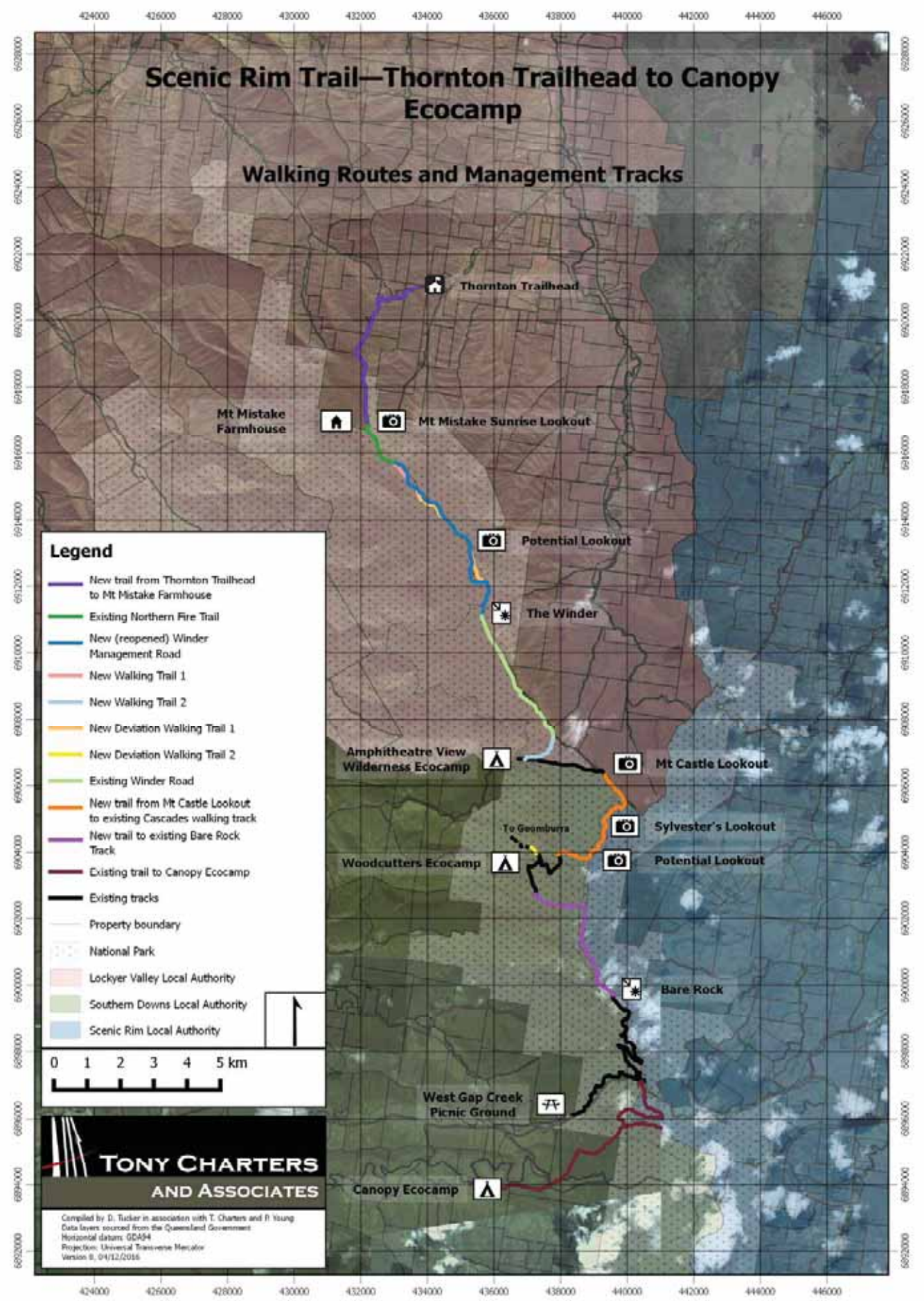
Requirements	Responsibility	Timing
Immediate clean-up of any fuel leakage or spillage	Track Contractor with SRT	Construction
Report all corrective actions, their success and outcomes to SRT in weekly environmental reporting	Building Contractor	Construction and post construction
Report all corrective actions, their success and outcomes to QPWS in monthly environmental reporting	SRT	Construction and post construction

4.7 Safety

Objective	To ensure risks to humans from the environment are taken into account during construction

Requirements	Responsibility	Timing
Actions		
Personnel become familiar with hazardous plants especially Giant Stinging Tree	SRT in conjunction with Track Contractor	Prior to construction commencing
Bushfire awareness for parts of route or road access that traverse *Eucalyptus* Open Forest	SRT in conjunction with Track Contractor	Prior to construction commencing
Place limited, temporary signage in places where direction of route is not readily apparent	SRT	Prior to construction commencing
Develop a protocol for regular call-ins (by satellite phone if necessary) from construction workers to project manager and develop an action plan for recovering lost or injured workers	Track Contractor	
Performance Indicators		
No injuries from hazardous plants	Track Contractor	Construction
Fire evacuation plan in place	Track Contractor	Construction
Safety signage in place along parts of route where necessary	Track Contractor and SRT	Construction
Site safety and rescue protocols in place	Track Contractor	Construction
Monitoring		
None required		
Reporting		
Immediately report any injuries from hazardous plants, incidents involving fire and incidents involving workers becoming lost to SRT	Track contractor	Construction
Corrective Actions		
Reinforce training for construction personnel for avoiding hazardous plants if any incidents are reported	Track Contractor	Construction
Reassess temporary signage if any workers become lost	Track Contractor	Construction
Reporting of corrective actions in monthly environmental report to QPWS	SRT	

Appendix A – Proposed trail network


Scenic Rim Trail—Thornton Trailhead to Canopy Ecocamp
Walking Routes and Management Tracks
Thornton Trailhead
Mt Mistake Farmhouse
Mt Mistake Sunrise Lookout
Potential Lookout
The Winder
Amphitheatre View Wilderness Ecocamp
Mt Castle Lookout
Sylvester's Lookout
To Geomburra
Woodcutters Ecocamp
Potential Lookout
Bare Rock
West Gap Creek Picnic Ground
Canopy Ecocamp
Legend
New trail from Thornton Trailhead to Mt Mistake Farmhouse
Existing Northern Fire Trail
New (reopened) Winder Management Road
New Walking Trail 1
New Walking Trail 2
New Deviation Walking Trail 1
New Deviation Walking Trail 2
Existing Winder Road
New trail from Mt Castle Lookout to existing Cascades walking track
New trail to existing Bare Rock Track
Existing trail to Canopy Ecocamp
Existing tracks
Property boundary
National Park
Lockyer Valley Local Authority
Southern Downs Local Authority
Scenic Rim Local Authority
0 1 2 3 4 5 km
TONY CHARTERS AND ASSOCIATES
Compiled by D. Tucker in association with T. Charters and P. Young
Data layers sourced from the Queensland Government
Horizontal datum: GDA94
Projection: Universal Transverse Mercator
Version 8, 04/12/2016
424000 426000 428000 430000 432000 434000 436000 438000 440000 442000 444000 446000

APPENDIX 12

Construction Environmental Management Plan – Reopening of Winder Management Road

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

Winder Management Road (disused section of a former logging road)

SCENIC RIM TRAIL

(Main Range National Park)

Issue	Description	Approved By	Signed	Date
V1	CEMP Winder Management Road	Tony Charters		

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APPENDICES

1 Description of Works

The re-opening of an approximate 6.2 km long section of disused former logging road (The Winder Management Road) is proposed as part of the overall concept for the Scenic Rim Trail. This old road alignment will be used in large part for the walking trail and also as a management road to operate the SRT and to provide emergency access/egress in the event of fire, flood, evacuation of walkers etc. This road was used for many years by logging trucks and management vehicles. As such the design of the road had to take into account retaining a gradient that laden trucks could negotiate. Drainage features such as whoa–boys have largely weathered away (refer to the image below) and will require re-instatement. Some on the steep sections show evidence of a gravel road base (see image below). Drainage of sections that cross drainage lines will require remedial work to reinstate drainage and to ensure sediment traps are installed.

Gravel on steep section of old road

A 2.5 m wide section of the road will be re-opened using small scale, specialised earth moving equipment including very narrow track and blade (990-1280 mm) excavators, dingoes and bobcats. Extreme care will be taken to identify the precise alignment that avoids small trees that have colonized on the road. A road engineer with experience in low impact road building will be contracted onto the team to provide specific advice along the road alignment, surfacing and drainage. The entire length of the old road has had an ecological survey undertaken (at approximately 100 m intervals). This survey provides detailed information to guide the final trail selection. At the point when the final trail alignment is being defined the specialist ecologist and sustainability and ecotourism advisor will work side by side with the road construction crew to identify individual plants that should be avoided. Minimal impact is critical from an environmental perspective but also from an ecotourism experience perspective.

To minimise impacts on the environment it is proposed to undertake the minimum possible disturbance to the surface of the road in the first instant and to undertake road finishing with clean sourced road base only at points where there is a clear drainage or surface problems. Close monitoring of the track conditions will then be maintained on a trip by trip basis to establish if additional surfacing or drainage works need to be undertaken.

The road will provide access by 4WD ATVs or similar vehicles from The Winder Track to the north of Main Range National Park where the route joins an existing 4wd management road which runs to the national park boundary with the Gainsdale, Mt Mistake property (Appendix A). The route primarily traverses rainforest (Cool Subtropical type) heavily impacted by historical logging as well as a Rainforest – *Eucalyptus* Open Forest ecotone and a 200 m length of *Eucalyptus* Open Forest. The rainforest exhibits some features of Warm Temperate rainforest on highest ridges. The Vulnerable grass Bunya Mountains Bluegrass *Bothriochloa bunyensis* was recorded from the vicinity of the road corridor in the short section traversing Open Forest. No other listed species have been recorded from, or observed along the proposed route, although a number of least concern plant species of conservation importance are present (e.g. species at limits of geographical range).

The former road has been relocated and marked with flagging tape and points recorded using GPS, approximately every 100 m. The road could not be relocated in some of the more heavily disturbed sections (a total of several hundred meters). It follows the undulating crest of the Mistake Range for the entire route. Some sloping sections of roadway have become washed out over the decades since abandonment, and will require remedial action to repair the surface to establish whoa-boys and re-instating drainage to prevent wash-outs. The road surface has been colonised by ferns especially Shield Fern *Lastreopsis decomposita*, the shrub Scrub Pepperbush (*Tasmannia insipida*), vines, palms, tree saplings as well as tree ferns in sheltered places. The colonising vegetation will be removed to re-instate the road although the proposed 2.5m corridor is narrower than the original 4 m wide road (and up to 8-10 m wide in places). This provides flexibility with respect to retaining some of the colonising vegetation especially larger regrowth trees.

There are a number of conditions along the road that will require different re-instatement processes:

a) Existing road alignment heavily weed infested and blocked by fallen trees

The far northern end of the Winder Management Road emerges from the Rainforest and shows signs of heavy disturbance, and as a result is heavily chocked with weeds and fallen timber. This short section of trail (several hundred metres) will require detailed surveying to pick up the exact location of the old trail and use of small excavators to move fallen timber and reform the road. This is a very hot and exposed area and it is planned to divert the walking trail away from this road and into the adjoining rainforest for several hundred metres until the road and the trail can merge in the rainforest. Below are typical examples from this area.

b) Existing road alignment clearly visible with minimal regrowth and no likely drainage issues

Significant sections of the trail are relatively flat and the road alignment is clearly visible. This situation occurs for the majority of the road alignment. Roadworks will be limited to any re-shaping of the surface profile, in the case of any small tree removal, stump grinding or removal and filling and compacting with soil will be required. The images below depict examples.


Elevation Angle -26.0
Horizon Angle +32.1
Zoom 1X
edge if rainforest

c) Existing road alignment visible but contains vine and woody scrub regrowth

There are sections of the old road where the alignment is visible but contains regrowth of some vine, fern and woody scrubs. These sections are similar to b) above but have greater density of regrowth. In these sections roadworks will be limited to any re-shaping of the surface profile, in the case of any small tree removal, stump grinding or removal and filling and compacting with soil will be required. The images below depict examples.

c) Existing road alignment visible but has drainage issues associated with hollows

There are a couple of locations where the road has developed depressions in forming wet muddy hollows. These sites will be properly drained and re-profiled to prevent water retention. The images below depict typical examples.

e) Existing road alignment visible but has drainage issues associated with gradient

There are a small number of locations with extended sections of quiet steep road that have lost their drainage capacity and require rectification. This will involve re-instating whoa-boys and re-profiling. These sections have some re-growth of ferns and woody scrubs. The image below depicts a typical example.

Parties involved in the construction project need to be aware of a number of constraints and risks associated with the route including:

1. Access may not be feasible or permitted during and just after wet weather
2. There is no or very limited mobile phone coverage
3. There is no water in the vicinity of the route
4. Hazardous plants occur widely especially Giant Stinging Tree which has the potential to cause extremely painful injuries that require a long period to heal. Venomous snakes, for example, Red-bellied Black Snake are also present.

2 Project management and contractor details

Name	Position	Contact Number/s	Email
Andrea Slingsby	Director, Scenic Rim Trail	0418 750 611	andrea.slingsby@gainsdale.com.au
Russell James	CEO, Russell James Project Management	0419 702 220	russell_jamesconpl@bigpond.com
Contractors	TBA		

3 Environmental Goals

For details refer to Master document:

Tony Charters and Associates 2016, Draft Scenic Rim Trail – Mt Mistake to Spicers Peak Nature Refuge Proposal and Environmental Management Plan. Consultancy Report prepared for Scenic Rim Trail, Brisbane.

The goals for the project recognise the cardinal principal for national park management which is to provide, to the greatest possible extent, for the permanent preservation of the area's natural condition and the protection of the area's cultural resources and values (https://www.npsr.qld.gov.au/managing/principles/index.html). For the Winder management road they specifically include:

- No net loss of vegetation at an ecosystem level
- Minimal interruption of ecological processes
- No net loss of the outstanding conservation values identified for the northern section of Main Range National Park

4 Environmental issues – site and surroundings

4.1 Vegetation Clearing

Objective	To confine removal of native vegetation to a 2.5m wide corridor aligned within or approximating the former road footprint (generally around 3.5-4 m width).

Requirements	Responsibility	Timing
Actions		
Conduct preliminary survey of route	SRT	Project scoping
Finalise route and liaise with Road contractor(s)	SRT, QPWS, Road Contractor	Prior to construction commencing
Locate any individuals of Bunya Mountains Bluegrass and/or other MNES or MSES species growing within the road corridor. Prepare a translocation plan for approval by Commonwealth Department of the Environment (for MNES) and the Queensland Department of Environment and Heritage Protection (for MSES.	SRT, QPWS, Road Contractor	Prior to construction commencing
Undertake protected plant translocation actions in accordance with approvals/ permits	SRT	Prior to construction commencing
Conduct a survey for animal breeding places in areas proposed for clearing. Prepare a Species Management Program and other relevant documentation for approval by DHEP before clearing commences.	SRT	Prior to construction commencing
Ensure that a fauna spotter/catcher is present during clearing of regrowth vegetation	SRT	Construction
Clear and mulch larger woody plants from road corridor (shrubs, saplings) and spread mulch evenly on verges of road. Place un-mulchable material thinly on ground surface away from road and tree trunks.	Road Contractor	Construction
Protection of tree trunks outside of the project area from mechanical damage.	Road Contractor	Prior to and during construction
Performance Indicators		
Route of road and specifications finalised	SRT in consultation with QPWS	Prior to construction commencing
Any salvaged Bunya Mountains Bluegrass or other MNES or MSES plant species salvaged and relocated in accordance with approval conditions from DOE and permit conditions from DEHP	SRT	Prior to commencing construction
Removal of vegetation restricted to a 2.5m corridor	Road Contractor	Construction
Weed-free plant waste converted to mulch. Weedy material disposed of in an approved landfill.	Road Contractor	Construction
Ground surface near road thinly covered with weed-free mulch and other removed weed-free plant material	Road Contractor	Construction

Requirements	Responsibility	Timing
Bark of trees on sites free of injury	Road Contractor	Construction
Monitoring		
Monitoring of protected plant translocation as required by approvals/ permitting	SRT	Construction and post construction
Weekly inspection of the construction site and surrounds for signs of impacts including exposed soils and mechanical damage to trees	SRT/Road Contractor	Site preparation and construction
Post construction inspection	SRT with QPWS	Post construction
Reporting		
Results of protected plant translocation activities and monitoring	SRT reporting to DOE and/or DEHP	Prior to construction and post construction
Results of fauna spotting/catching activities during clearing	SRT/Road Contractor to QPWS and DEHP	Post clearing
Result of weekly inspections included in weekly environmental reporting to SRT	SRT/Road Contractor	Construction
Result of post construction inspection included in monthly environmental reporting to QPWS	SRT	Post construction
Corrective Actions		
Corrective actions for protected plant translocation as per the approved translocation management plan	SRT	During and post construction
Engage arborculturalist to advise on treatment for any recorded tree damage	Road Contractor in consultation with SRT	Site preparation and construction
If any damage to vegetation has occurred outside of the demarcated building envelop areas, develop a rehabilitation and following agreement by QPWS enact, manage and monitor re-establishment of the vegetation	Road Contractor in consultation with SRT	Site preparation, construction and post-construction
Report all corrective actions, their success and outcomes to SRT in weekly environmental reporting	Road Contractor	Site preparation, construction and post construction
Report all corrective actions, their success and outcomes to QPWS in monthly environmental reporting	SRT	Site preparation, construction and post construction

4.2 Introduction of weeds and diseases

Objective	To minimise risk of introduction or spread of weeds and plant and animal diseases

Requirements	Responsibility	Timing
Actions		
Wash down/clean all vehicles, equipment and footwear that been operating/used on site work previously.	Road Contractor	Site preparation and construction
Road base and other materials introduced to site and to access roads to be certified as low-risk for weeds	Road Contractor	Construction
Performance Indicators		
No new weeds or organisms introduced to site	Road Contractor	Site preparation and construction

Requirements	Responsibility	Timing
Monitoring		
Weekly inspection of the construction site and surrounds for signs of weed establishment and obvious decline in tree health	SRT/Road Contractor	Construction
Post-construction inspection for signs of weed establishment and obvious decline in tree health	SRT	Post construction
Reporting		
Results of continuous monitoring included in weekly environmental reporting to SRT	Road Contractor	During site preparation and construction
Results of continuous monitoring and post-construction inspection included in monthly reporting to QPWS	SRT	During site preparation and construction
Corrective Actions		
Appropriate weed and other pest control actions to be determined in consultation with QPWS	SRT	During and post construction
Implementation of weed and other pest control actions, monitor success and report outcomes	SRT	During and post construction

4.3 Introduction of Feral Animals

Objective	To minimise risk of introduction or spread of feral animals

Requirements	Responsibility	Timing
Actions		
No domestic pets allowed on site during the construction period	Road Contractor	Site preparation and construction
Food scraps to be immediately stored in sealed containers and removed from the site at the end of each day	Road Contractor	Site preparation and construction
Performance Indicators		
No domestic pets brought to the site during the construction period	Road Contractor	Site preparation and construction
No food scraps left exposed on site during the day or overnight	Road Contractor	Site preparation and construction
Monitoring		
Regular (weekly), unannounced inspections	SRT in conjunction with QPWS	During site preparation and construction
Continuous observation for sightings and signs of feral animals	Road contractor	During site preparation and construction
Reporting		
Results of continuous monitoring included in weekly environmental reporting to SRT	Road contractor	During site preparation and construction
Results of continuous monitoring included in monthly reporting to QPWS	SRT	During site preparation and construction
Corrective Actions		
Appropriate feral animal control actions to be determined in consultation with QPWS	SRT	During and post construction
Implementation of feral animal control	SRT	During and post construction

4.4 Erosion and Sediment Control

Objective	To reduce potential for construction activities to cause erosion and the release of sediment

Requirements	Responsibility	Timing
Actions		
Use sediment control below any bare sloping ground caused by construction/drainage activities	Road Contractor	Prior to construction commencing
Evaluate whether surface would benefit from addition of gravel especially parts of long sloping cut 1.2 km north-west of The Winder Management Road. Depending upon outcome of the evaluation, improve serviceability and minimise erosion risk by adding gravel to surface of localised parts of road.	Road Contractor in consultation with SRT and QPWS	Prior to construction commencing
Maintain sediment control devices until ground re-vegetated/stabilised	Road Contractor/SRT	Construction and post construction
Performance Indicators		
Entrained sediment from bare, sloping ground is trapped on site	Road Contractor	Throughout construction works and post construction
No observable erosion within or outside of the construction area.	Road Contractor	During and post construction
Monitoring		
Regular (weekly) inspection of sediment traps, include dated photographic record	SRT/Road Contractor	Site preparation and construction
Inspection of sites three months post construction, include dated photographic record	SRT	Post construction
Reporting		
Results of weekly monitoring included in weekly environmental reporting to SRT	Road contractor	During site preparation and construction
Results of construction monitoring and post construction inspection included in monthly environmental reporting to QPWS	SRT	Construction and post construction
Corrective Actions		
Repair all sediment trapping devices as soon as any breach is recorded, report corrective actions in weekly environmental reporting to SRT	Road contractor	Construction
Report corrective actions in monthly environmental reporting to QPWS	SRT	Post construction
Address any instances of erosion occurring on site through the implementation of standard stabilisation practices, monitor success, report corrective actions and outcomes in weekly environmental reporting to SRT	Road contractor	Construction
Address through the implementation of standard stabilisation practices, monitor success, report corrective actions and outcomes related to any instances of erosion on site in monthly environmental reporting to QPWS	SRT	Post construction

4.5 Construction waste

Objective	To appropriately manage solid and liquid waste material during construction activities

Requirements	Responsibility	Timing
Actions		
Appropriate waste receptacles to be provided on site and removed as required/end of project	Road Contractor	Construction
Food scraps to be removed from site daily	Road Contractor	Construction
Provision of Portable toilet	Road Contractor	Construction
Performance Indicators		
No waste materials or food scraps left lying around site and surrounds	Road Contractor	Construction
Monitoring		
Weekly site inspection	SRT/Road Contractor	Construction
Post-completion inspection	SRT	Post construction
Reporting		
Results of weekly inspection included in weekly environmental reporting to SRT	Road contractor	Construction
Result of post-completion inspection included in monthly reporting to QPWS	SRT	During site preparation and construction
Corrective Actions		
Immediate clean-up of any waste materials (including food scraps) and reporting of corrective action in weekly environmental reporting to SRT	Road contractor	Construction
Immediate clean-up of any waste on site at the time of the post-completion inspection	SRT	Post-construction

4.6 Surrounding environment

Objective	To manage construction and associated activities with the potential to impact on surrounding national park

Requirements	Responsibility	Timing
Actions		
Locate and mark suitable area for vehicle turn-around that does not require disturbance of native vegetation	SRT/Road Contractor in consultation with QPWS	Prior to construction commencing
Locate and mark suitable area for location of lay down/storage of materials (preferably within existing road corridor)	SRT/Road Contractor in consultation with QPWS	Prior to construction commencing
Hazardous liquids (fuels) to be stored at a specific site approved by QPWS – storage of materials to comply with Guide for Flammable and combustible liquids under the Queensland *Work Health and Safety Act 2011* and relevant Australian Standards	SRT/Road Contractor in consultation with QPWS	Construction
Confinement of accidental spillage	SRT/Road Contractor in consultation with QPWS	Construction
Develop a protocol for preventing accidental fire	Road Contractor	Construction
Develop a protocol for removal of fallen trees that may obstruct access roads	SRT/Road Contractor	Construction

Requirements	Responsibility	Timing
Develop a protocol for wet weather/post wet weather to avoid damage to access roads	SRT/Road Contractor in consultation with SRT and QPWS	Construction
Performance Indicators		
Turn-around and storage areas located and marked	Road Contractor	Construction
No contamination of environment through spillage or leakage of hazardous liquids	Road Contractor	Construction
No accidental fire from construction activities	Road Contractor	Construction
Procedure in place for dealing with fallen trees on access roads	Road Contractor	Construction
Procedure in place to allow for wet conditions	Road Contractor	Construction
Monitoring		
Weekly site inspection	SRT/Road Contractor	Construction
Post-completion inspection	SRT	Post construction
Reporting		
Results of weekly inspection included in weekly environmental reporting to SRT	Road contractor	Construction
Results of weekly inspections included in monthly reporting to QPWS	SRT	Construction
Result of post-completion inspection included in monthly reporting to QPWS	SRT	Post construction
Corrective Actions		
Engage arborist to advise on treatment for any recorded tree damage	Building Contractor in consultation with SRT	Site preparation and construction
If any damage to vegetation has occurred outside of the demarcated areas, develop a rehabilitation and following agreement by QPWS enact, manage and monitor re-establishment of the vegetation	Building Contractor in consultation with SRT	Site preparation, construction and post-construction
Any signs of the release of hazardous materials to be immediately addressed	Building Contractor in consultation with SRT	Site preparation and construction
Report all corrective actions, their success and outcomes to SRT in weekly environmental reporting	Building Contractor	Site preparation, construction and post construction
Report all corrective actions, their success and outcomes to QPWS in monthly environmental reporting	SRT	Site preparation, construction and post construction

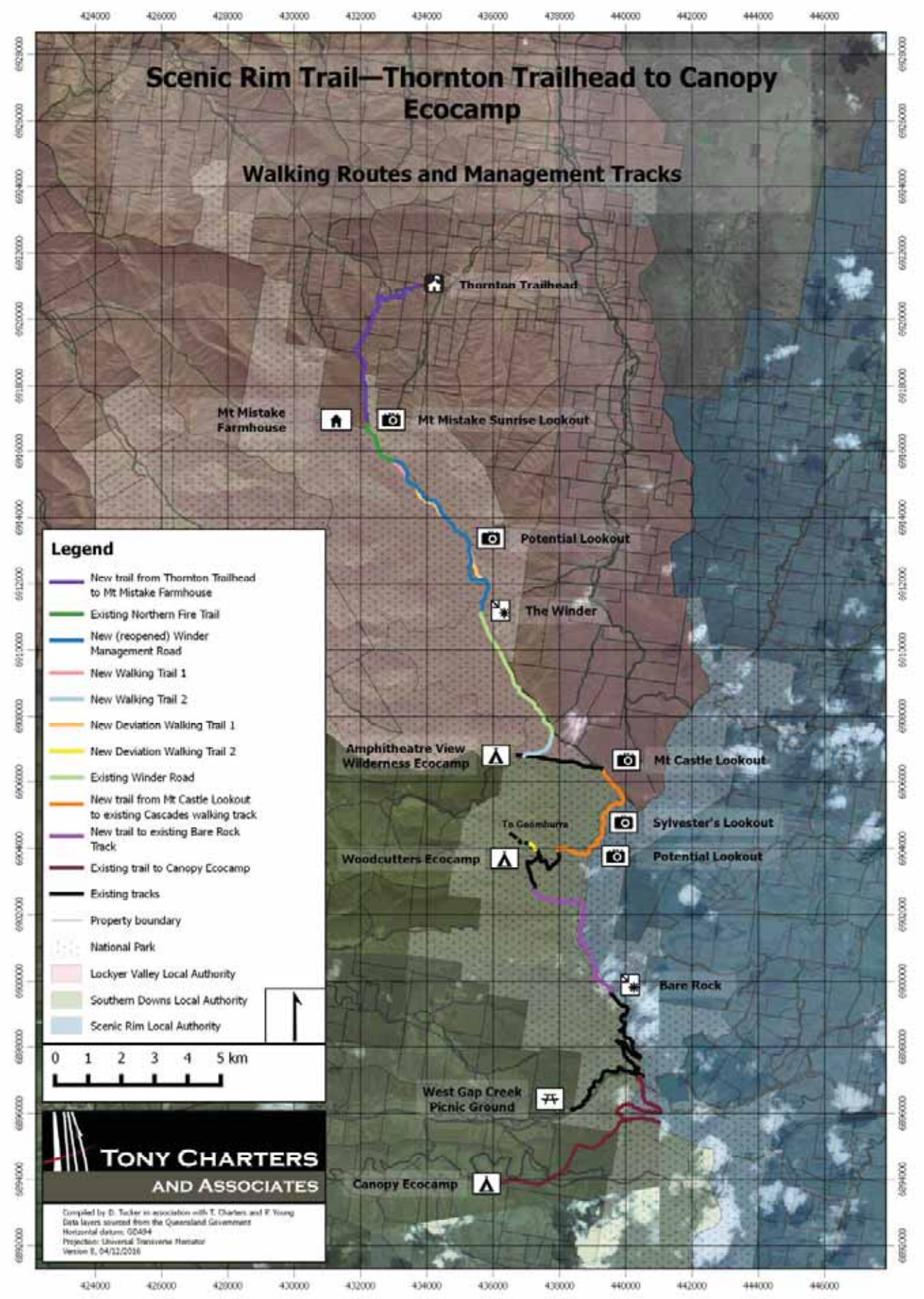
4.7 Safety

Objective	To ensure risks to humans from the environment are taken into account during construction

Requirements	Responsibility	Timing
Actions		
Personnel become familiar with hazardous plants especially Giant Stinging Tree - Stinging trees not to be mulched	SRT in conjunction with Road Contractor	Prior to construction commencing
Fire risk awareness covering work practices and protocol for planned burn or wildfire in vicinity of site or access roads	SRT in conjunction with Road Contractor	Prior to construction commencing

Requirements	Responsibility	Timing
Performance Indicators		
No injuries from hazardous plants	Road Contractor	Construction
Fire evacuation plan in place	Road Contractor	Construction
Site safety and rescue protocols in place	Road Contractor	Construction
Monitoring		
None required		
Reporting		
Immediately report any injuries from hazardous plants or incidents involving fire to SRT	Road Contractor	Construction
Corrective Actions		
Reinforce training for construction personnel for avoiding hazardous plants if any incidents are reported	Road Contractor	Construction
Reporting of corrective actions in monthly environmental report to QPWS	SRT	Construction

Appendix A – Proposed route


Scenic Rim Trail—Thornton Trailhead to Canopy Ecocamp
Walking Routes and Management Tracks
Thornton Trailhead
Mt Mistake Farmhouse
Mt Mistake Sunrise Lookout
Potential Lookout
The Winder
Amphitheatre View Wilderness Ecocamp
Mt Castle Lookout
Sylvester's Lookout
To Geombura
Woodcutters Ecocamp
Potential Lookout
Bare Rock
West Gap Creek Picnic Ground
Canopy Ecocamp
Legend
New trail from Thornton Trailhead to Mt Mistake Farmhouse
Existing Northern Fire Trail
New (reopened) Winder Management Road
New Walking Trail 1
New Walking Trail 2
New Deviation Walking Trail 1
New Deviation Walking Trail 2
Existing Winder Road
New trail from Mt Castle Lookout to existing Cascades walking track
New trail to existing Bare Rock Track
Existing trail to Canopy Ecocamp
Existing tracks
Property boundary
National Park
Lockyer Valley Local Authority
Southern Downs Local Authority
Scenic Rim Local Authority
0 1 2 3 4 5 km
TONY CHARTERS AND ASSOCIATES
Compiled by D. Tucker in association with T. Charters and P. Young
Data layers sourced from the Queensland Government
Horizontal datum: GDA94
Projection: Universal Transverse Mercator
Version 8, 04/12/2016
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