

# Canyon Resources Reserve



## Management Statement 2020



Prepared by: **Queensland Parks & Wildlife Service (QPWS), Department of Environment and Science**

© State of Queensland, 2020.

March 2020

Front cover photo: Canyon Resources Reserve. © DES 2019, Queensland Government.

*Aboriginal and Torres Strait Islander people should be aware that this document may contain images or names of deceased persons in photographs and printed material that some people may find distressing.*

The Queensland Government supports and encourages the dissemination and exchange of its information. The copyright in this publication is licensed under a Creative Commons Attribution 3.0 Australia (CC BY) licence.



Under this licence you are free, without having to seek our permission, to use this publication in accordance with the licence terms.

You must keep intact the copyright notice and attribute the State of Queensland as the source of the publication.

For more information on this licence, visit <http://creativecommons.org/licenses/by/3.0/au/deed.en>

#### Disclaimer

This document has been prepared with all due diligence and care, based on the best available information at the time of publication. The department holds no responsibility for any errors or omissions within this document. Any decisions made by other parties based on this document are solely the responsibility of those parties.

If you need to access this document in a language other than English, please call the Translating and Interpreting Service (TIS National) on 131 450 and ask them to telephone Library Services on +61 7 3170 5470.

This publication can be made available in an alternative format (e.g. large print or audiotape) on request for people with vision impairment; phone +61 7 3170 5470 or email <[library@des.qld.gov.au](mailto:library@des.qld.gov.au)>.

# Contents

<b>1. Introduction.....</b>	<b>2</b>
1.1 Approach to best practice management.....	2
1.2 Management planning .....	3
<b>2. The Ewamian people .....</b>	<b>4</b>
2.1 Ewamian people .....	4
2.2 Ewamian Aboriginal Corporation .....	4
2.3 Ewamian Aboriginal Corporation and QPWS Partnership .....	5
<b>3. Canyon Resources Reserve.....</b>	<b>6</b>
3.1 Management statement and thematic strategies .....	6
3.2 Park overview .....	6
3.3 Resource use .....	6
<b>4. Key values.....</b>	<b>7</b>
4.1 Ewamian culture and Connection to Country — <i>Wamin abu-dha</i> .....	9
4.2 Upland plateau – <i>Madha</i> .....	11
4.3 Upland woodlands – <i>Wúndu</i> .....	12
4.4 Wetland ecosystems – <i>Arburə kogo</i> .....	13
<b>5. Management direction .....</b>	<b>14</b>
5.1 Fire management .....	15
5.2 Pest management .....	16
5.3 Natural values management.....	17
5.4 Historic cultural heritage management.....	18
5.5 Visitor management.....	19
5.6 Community, partnerships and other interests.....	20
5.7 Field management capability.....	21
5.8 Operational planning and management support .....	22
<b>6. References .....</b>	<b>23</b>
<b>Appendix 1. Summary of strategic management directions.....</b>	<b>24</b>
Table 1. Summary of strategic management direction for Ewamian People .....	24
Table 2. Summary of strategic management direction for key values .....	24
Table 3. Summary of strategic management direction for management direction.....	25
<b>Appendix 2. Glossary .....</b>	<b>26</b>

# 1. Introduction

QPWS works with First Nations Peoples to ensure the protection of Country and culture. We pay our respects to all peoples, and to the Elders past, present and future, for land and sea on which we work, live and walk.

## 1.1 Approach to best practice management

Queensland's parks, forests and reserves are places we want to protect for future enjoyment and wellbeing. What makes these places special are the presence and diversity of natural, cultural, social and economic values. These areas experience natural cycles—they live and breathe—and therefore our management needs to be dynamic too. Queensland Parks and Wildlife Service (QPWS), within the Department of Environment and Science (DES), applies a contemporary management process that is based on international best practice and targets management towards the most important features of each park—its **key values**.

The **Values-Based Management Framework** (VBMF) is an **adaptive management** cycle that incorporates planning, prioritising, doing, monitoring, evaluating and reporting into all areas of our business. This enables the agency to be more flexible and proactive and to improve management effectiveness over time. We want to keep our parks, forests and reserves healthy by:

- managing and protecting the things that matter most—our key values
- strategically directing management effort towards priorities
- delivering our custodial obligations as a land manager
- setting a level of service for all parks, forests and reserves
- building systems that support decision making for adaptive management
- building support for what we do through accountability and transparency
- striving for improvement through structured learning and doing.

As a land manager, QPWS has a **custodial obligation** to ensure our estate is managed to provide appropriate and safe access, protect life and property, be a good neighbour and work cooperatively with partners across the landscape. The agency does this as part of setting **levels of service** for each park. Levels of service is a management standard that considers an area's values, threatening processes, custodial obligations, risks and overall management complexity.

By assessing an area's key values and levels of service, QPWS can prioritise management efforts, balancing the importance of values and threats with our custodial obligations. Each year, we track work programs, monitor the condition of values and evaluate our performance across all aspects of management. The evaluation process documents how efficiently and effectively we are working toward achieving the objectives we set for managing parks, forests and reserves, and how the condition of key values is changing in response to our management efforts. This evaluation supports transparent and accountable reporting, enabling us to continuously improve park management and demonstrate outcomes to the community.

Figure 1 illustrates phases of the VBMF cycle for management planning. A glossary of the key concepts (in **bold**) used throughout the document is listed in Appendix 2.

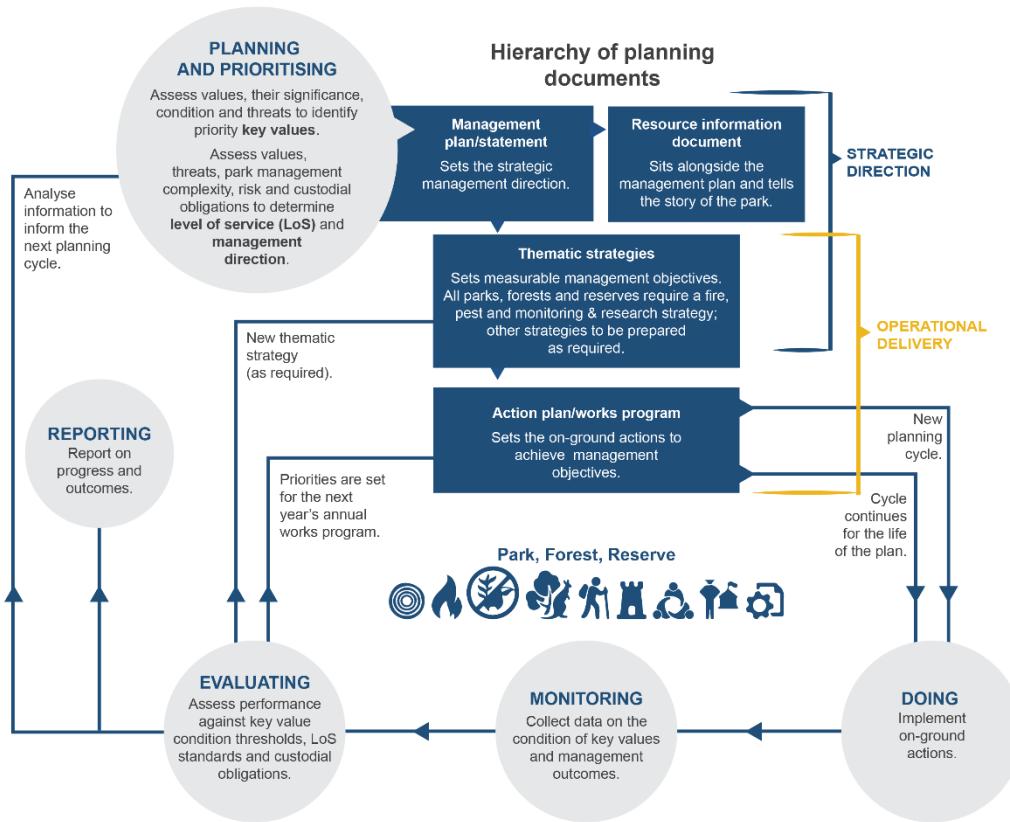


Figure 1. Phases of the VBMF cycle for planning and the hierarchy of planning documents

## 1.2 Management planning

Management plans and statements are developed through a process of research, assessment and consultation to establish priorities and set **strategic management direction** for the park. They are legislative requirements under the *Nature Conservation Act 1992* (Qld). Some planning areas may include forest and reserves (*Forestry Act 1959* (Qld)) and marine parks (*Marine Parks Act 2004* (Qld)). All plans are prepared in keeping with legislative management principles, supporting regulations, government policies and procedures, and international agreements. Planning for each park is brought together and communicated through planning documents:

- Management plans and management statements provide the high-level strategic direction for managing an area's key values, levels of service and custodial obligations. Management plans and statements are statutory documents and are generally reviewed every 10 years.
- Resource information documents support management plans and statements and provide a compendium of park information that tells the story of the park. These documents accompany management plans and management statements, providing contextual information. They support information provided in the plan but do not provide management direction.
- Thematic strategies provide specific objectives to achieve the strategic management directions identified in management plans and statements. While all parks and forests require a fire strategy, pest strategy and a monitoring and research strategy, others are developed based on a protected area's management requirements and priorities. Thematic strategies are generally reviewed every three to five years to enable adaptive management.
- Action plans outline the work program for delivering on-ground actions.

Further information on the VBMF, copies of management plans/statements and resource information documents are available on the department's website at [www.des.qld.gov.au](http://www.des.qld.gov.au).

## 2. The Ewamian people

### 2.1 Ewamian people

Canyon Resources Reserve lies within part of the lands of the Ewamian (pronounced *Oor-a-min*) people who have an ongoing connection to Country. The ancestors of present-day Ewamian people were born, lived and hunted in this area long before the arrival of Europeans. Ewamian people are the Traditional Owners of Country located in Queensland's Gulf of Carpentaria savannah lands in the upper Gilbert and Einasleigh River catchments. The boundaries of Ewamian Country broadly align with Etheridge Shire local government area that includes the townships of Georgetown, Forsayth, Einasleigh and Mount Surprise. They have a successful Native Title determination (QUD6018/2001) over part of the area.

### 2.2 Ewamian Aboriginal Corporation

***"We care for country, we share country and we respect country and each other"***

**Ken Georgetown, Board Member, Ewamian Aboriginal Corporation 2019.**

The Ewamian people play an active role in caring for Country. QPWS works collaboratively with the Ewamian Aboriginal Corporation (EAC), across the protected area estates within Ewamian Country, to ensure both cultural and environmental values are conserved.

The EAC was established in 1994 and is registered under the Office of the Register of Indigenous Corporations (*Aboriginal and Torres Strait Islander Act 2005* (Cwlth) and the *Corporations (Aboriginal and Torres Strait Islander) Act 2006* (Cwlth)). In 2019, the corporation had 330 Indigenous members and is governed by a board of seven Indigenous Directors.

The EAC provides services to the Ewamian people, with the vision of enhancing their culture and connection to Country through positive change, and partnering with key stakeholders.

Services provided by the EAC include:

- implementing the Ewamian Strategic Plan (2016)
- managing the EAC's Talaroo Indigenous Protected Area/Nature Refuge
- implementing the Department of Environment and Science's Indigenous Land and Sea Ranger Program (five rangers in 2019)
- facilitating employment opportunities (for example, Indigenous Protected Area (IPA) projects, working on Country employment with various land management agencies, Commonwealth funded works programs)
- managing native title rights and interests
- managing and protecting cultural heritage (such as cultural heritage assessments, cultural heritage database)
- administering community funding, and
- identifying business opportunities and developing skills through training.

As at 2019, a major project currently being developed by the EAC is the Talaroo Hot Springs Tourism Infrastructure Project. Since developing the Ewamian Strategic Plan in 2016, the EAC has been planning to reopen the springs to tourists and has undertaken significant planning, design, business development and experience planning in preparation for opening a 'culturally and environmentally sensitive' tourism offering that allows people to visit the springs, spend time with Ewamian people, and participate in a range of activities on Talaroo and Ewamian Country. Funding for the project is being finalised and it is hoped to open to the public in 2021.

## 2.3 Ewamian Aboriginal Corporation and QPWS Partnership

***“Our people are here, they are watching over us, and we can feel they are proud of us, for working together with you fellas [QPWS] to build a better future for our people and country”***

**Jenny Lacey, Board Member, Ewamian Aboriginal Corporation 2019.**

QPWS works in partnership with the EAC, across the protected area estates that are within Ewamian Country, to ensure both cultural and natural values are conserved.

To foster this approach between EAC and QPWS, both parties have identified strategies to be implemented and considered in managing Canyon Resources Reserve.

### Desired outcome and strategic management directions

Desired outcome		
Threatening process	Strategic management direction	Priority
<b>Loss of connection to Country</b>	<b>Involvement in decision making</b> Improving connection to Country by incorporating the EAC in planning, implementing, monitoring and evaluation of park management across Ewamian Country.	1
	<b>Sharing knowledge</b> Increase capacity and knowledge of both the EAC and QPWS through joint participation in park management activities.	1
	<b>Getting back on Country</b> Provide opportunities and support to Ewamian Elders and People to visit and connect with Country on Canyon Resources Reserve.	1

***“We are turning the negatives of the past into positives of the future”***

**David Hudson, Board Member, Ewamian Aboriginal Corporation 2019.**

As part of the efforts by today's Ewamian people to reconnect with Country and culture, they are working to rebirth the Ewamian language that is derived from Agwamin society. QPWS is working with Ewamian to include the Wamin language on QPWS interpretive materials across Ewamian Country. Some of the key values within this document have also had Wamin language names included as provided by the EAC. A glossary for these terms including pronunciation is provided in **Table 1**.

**Table 1. Wamin language glossary**

Wamin word	Definition	Pronunciation
<i>Wamin abu-dha</i>	Ewamian land	<i>Wa-min ar-boo-da</i>
<i>Wúndu</i>	Forest country	<i>Woo-n-doo</i>
<i>Arburè kogo</i>	Flat country water	<i>Ar-bor-er gu-gu</i>
<i>Madha</i>	Mountain, rock/stone	<i>Ma-da</i>

## 3. Canyon Resources Reserve

### 3.1 Management statement and thematic strategies

The Canyon Resources Reserve Management Statement provides the strategic direction for managing its key values (Section 4) and meeting our custodial obligations across eight **management themes** (Section 5). The management statement is supported by the *Canyon Resources Reserve Resource Information* document, a compendium of park information that tells the story of the park. The strategic management direction set out in this management statement link to a set of thematic strategies that detail management objectives, providing the connection between high-level strategies and on-ground operations. The complexity of a park's values and custodial obligations determine the requirements for specific strategies. Canyon Resources Reserve has four thematic strategies:

- Fire
- Pest
- Monitoring and research
- Ewamian peoples' engagement and cultural heritage

### 3.2 Park overview

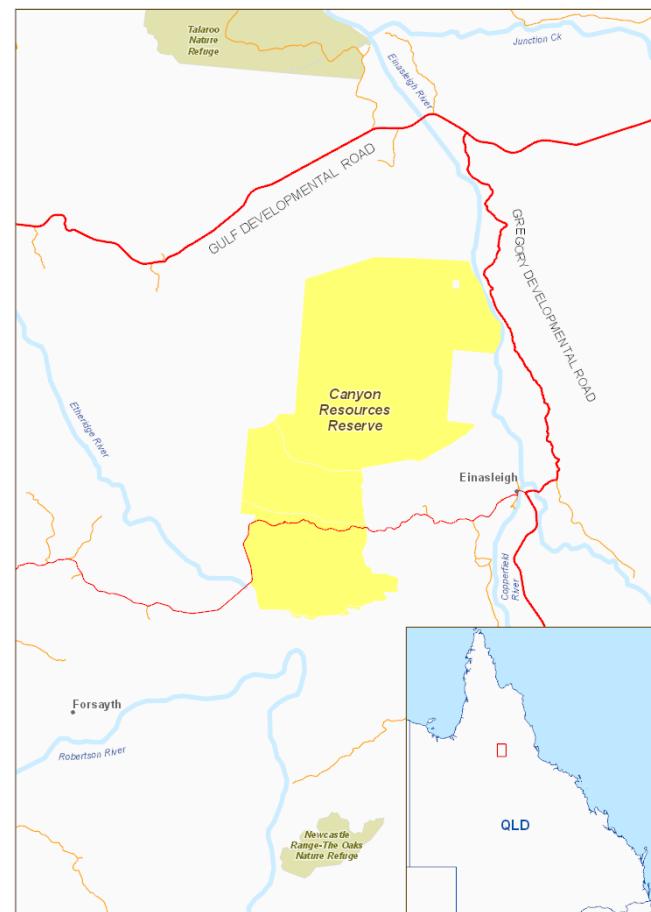
Canyon Resources Reserve is located 16km west of Einasleigh and is in the Queensland Government electorate of Traeger and the local government area of Etheridge Shire, **Map 1**.

Canyon Resources Reserve was purchased in 2015, with assistance from the National Reserve System component of the Australian Government's *Caring for our Country* initiative. Canyon Resources Reserve forms an extensive part of a continuous area of relatively undisturbed, spectacular and rugged country. The reserve protects a range of ecosystems that are poorly represented across Queensland's parks, particularly those associated with the northern end of the Einasleigh Uplands bioregion, which has been identified as a national biodiversity hotspot. Canyon Resources Reserve is within the Kidston subregion of the Einasleigh Uplands, and includes a wide range of unrepresented ecosystems that are considered refugia and a centre of endemism.

Canyon Resources Reserve includes a plateau area, rising from an already elevated landscape, as well as lower areas bordering the Einasleigh River. This includes parts of the northern end of the Newcastle Range, adding to the reserve's scenic values. The reserve has significant natural values, including springs and spring-fed watercourses, scarps and gorges within a plateau area. The reserve has a low level of disturbance, varies in altitude and provides a local refuge for plants and animals.

### 3.3 Resource use

Canyon Resources Reserve enables reasonable access to the mineral resources within the reserve and management of the area needs to both consider this access and the rights of current leaseholders within the reserve. Note that when current resource authorities expire it is anticipated that the tenure of Canyon Resources Reserve will be transferred to National Park.



Map 1. Canyon Resources Reserve location map

## 4. Key values

All parks, forests and reserves have an array of natural, cultural, social and/or economic values that are important and contribute to the state's comprehensive and representative protected area and forest estate. The VBMF supports a process for identifying and protecting the most important values, the key values, and this directs the allocation of resources.

In this section, a **key value statement** is provided for each key value, identifying the current **condition and trend**, and a desired condition. The main threatening processes are identified and rated from high to low. A strategic management direction provides a broad strategy to address the threatening process to achieve the **desired outcome** over time. Each strategic management direction is prioritised according to the need for action to prevent further decline, stabilise current condition, or restore and enhance the value (refer to **priority rating** in Appendix 2).

The condition of all key values is (or will be) assessed through regular **health checks** or other monitoring. The monitoring and research strategy outlines opportunities and needs for scientific monitoring and research programs that will enhance our knowledge. Any change to a key value's condition will be identified through health checks and/or monitoring, enabling QPWS to act quickly, applying best practice adaptive management.

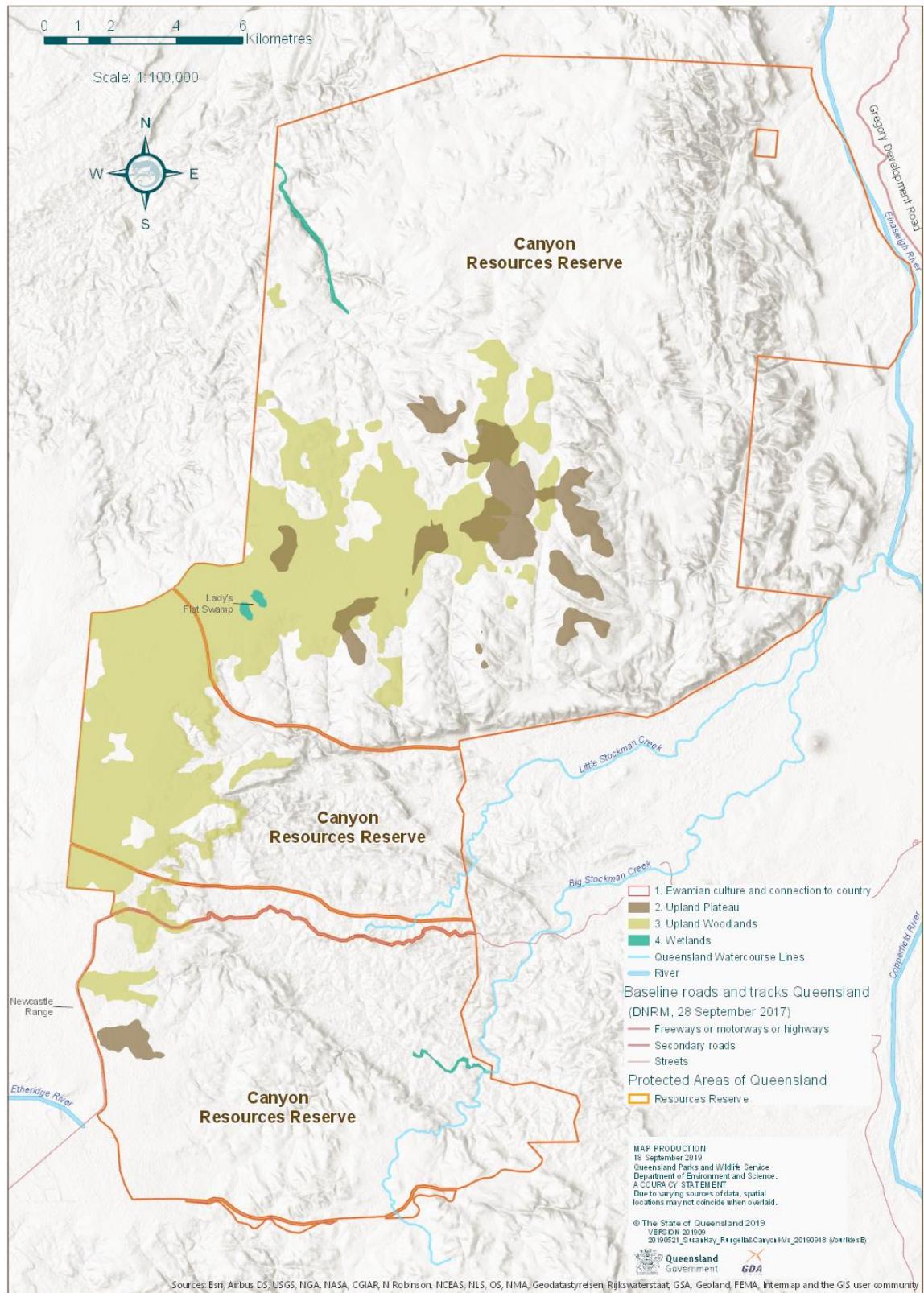
### Summary of key values

A summary of the key values for Canyon Resources Reserve is detailed below. The location of each key value is shown in Map 2. Figure 2 provides a key to interpreting the condition and trend icons used in this section.

	Current condition	Confidence in condition assessment	Current trend	Confidence in trend assessment	Desired condition
4.1 Ewamian culture and connection to country — <i>Wamin abu-dha</i> -	● ● ●	Adequate	↑	Adequate	● ● ● ●
4.2 Upland plateau — <i>Madha</i>	● ● ● ●	Adequate	↔	Adequate	● ● ● ●
4.3 Upland woodlands — <i>Wúndu</i>	● ● ● ●	Adequate	↔	Adequate	● ● ● ●
4.4 Wetlands and associated ecosystems — <i>Arbure kogo</i>	● ●	Limited	↔	Limited	● ● ●

Figure 2: Key to condition, trend and confidence icons

Condition of key value	 The value is in good condition and is likely to be maintained for the foreseeable future, provided that current measures are maintained	 The value is likely to be maintained over the long-term with minor additional conservation measures to address existing concerns	 The value is threatened by a number of current and/or potential threats. Significant additional conservation measures are required to preserve the value over the medium to long-term	 The value is severely threatened. Urgent additional large-scale conservation measures are required or the value may be lost
Trend rating of condition	 Improving	 Stable	 Deteriorating	 No consistent trend
Confidence in assessment	 Inferred	 Limited	 Adequate	



**Map 2: Canyon Resources Reserve key values**

## 4.1 Ewamian culture and Connection to Country — *Wamin abu-dha*

### Key value statement

Description	Condition and trend	Current condition	Current trend	Desired condition
Assessment confidence	2018 	Adequate 	Adequate 	

***“Our culture is more than just the physical, it is the spiritual connection that we feel when we are on Country; it’s the old People here.”***

**Jenny Lacey, Board Member, Ewamian Aboriginal Corporation 2019.**

Ewamian Country is a diverse cultural landscape that encompasses a spiritual connection to places and sites. Ewamian people connect with cultural sites including rock art, scar trees, artefacts, occupation sites, bora grounds, stone groovings and ceremonial grounds. The recent history of the Ewamian people includes their displacement from, and dispossession of, traditional lands as European settlement expanded throughout the area. Despite these historical events that affected the continuous connection to Country for Ewamian people, they maintain a strong connection to their lands, traditional culture and lore.

The full range of cultural values of Canyon Resources Reserve remain relatively unknown. Initial surveys have identified rock art, grinding grooves, natural springs and bush tucker. The large number of grinding areas on exposed rocks within watercourses is evidence of the past occupation of the area by Ewamian people. These tangible cultural values are highly intact as they have largely been protected by the lack of access to the area when it was a pastoral station.

It is important to QPWS that cultural heritage management on Canyon Resources Reserve does not just seek to conserve the tangible cultural values but also respect the need for cultural practices to be maintained or reconnected with, by Ewamian people. Future cultural surveys across Canyon Resources Reserve will continue to help Ewamian people connect to Country and also increase our capacity to jointly protect cultural values. The capturing of Ewamian culture and connection to Country (*Wamin abu dha*) as a key value in this management statement will ensure this protection is integrated into future management decisions.

### Threats

**Primary threat:** Visitors without the appropriate education may negatively impact on the tangible cultural values of Canyon Resources Reserve, through carelessness, vandalism and theft. **Threat rating: Unknown**

**Secondary threat:** Deterioration to tangible cultural values can be caused by both native species, including wasps and termites (directly damaging timber artefacts and rock art), and feral animals, including cattle and horses (rubbing against artefacts and rock art). Natural erosion can also present a threat by deteriorating the tangible cultural values. **Threat rating: Unknown**

## Desired outcome and strategic management direction

Desired outcome		
	The condition of Ewamian peoples' culture and connection to Country will improve by continuing to protect cultural values from visitor and problematic species impacts.	
Threatening processes	Strategic management directions	Priority
<b>Visitor impacts</b>	Minimise impacts of visitors on cultural values.	<b>2</b>
<b>Pest animal</b>	Reduce impacts of termites and wasps on cultural values.	<b>2</b>
<b>Natural deterioration</b>	Minimise impacts of natural erosion on cultural values.	<b>2</b>
<b>Pest animal</b>	Reduce impacts of cattle and horses on cultural values.	<b>3</b>

See Appendix 2. Glossary for priority rating definitions.

## 4.2 Upland plateau – *Madha*

### Key value statement

Description	Current condition	Current trend	Desired condition
Condition and trend	2018 		
Assessment confidence	Adequate 	Adequate 	

Canyon Resources Reserve covers a significant area of Newcastle Range and provides exceptional examples of elevated Tertiary plateaus above 750m. These elevated plateaus include scenic scarp and deep gorges that also incorporate a red soil tableland. The plateau area provides a recharge surface for wetlands and adjacent springs and watercourses, offering important ecosystem services to the region.

The plateau area is identified as an extensive remnant of a residual Tertiary surface and its associated landforms, including intact lateritic soils and skeletal soils. Underlying the plateau surface, and exposed around its margins, is a sequence of Jurassic and Cretaceous period sediments that includes part of the Gilbert River Formation. The basement rocks of the plateau area are a mix of volcanics, granite, mudstones, siltstones and metamorphics.

### Threats

**Primary threat:** Resource exploration or extraction may damage geological features in the reserve (see section 3.3). **Threat rating:** Low

### Desired outcome and strategic management directions

Desired outcome		
	The condition of the scarp and geological features will be maintained as good, by minimising the impacts of resource exploration and mining activities.	
Threatening processes	Strategic management directions	Priority
Mining and quarrying	Reduce impacts of resource exploration and extraction on upland plateau formation through specific conditions in authorities granted. Upon expiry of current resource authorities, transfer the tenure of the resources reserve to national park.	2 1

## 4.3 Upland woodlands – Wúndu

### Key value statement

Description	Current condition	Current trend	Desired condition
The upland woodlands contain a vast array of differing ecosystems and are restricted to the upland areas above 600m. The regional ecosystems of this area include: RE 9.5.1, 9.10.5, 9.5.7 and 9.12.13.	Condition and trend	2018	
	Assessment confidence	Adequate	Adequate

The Newcastle Range is identified as a biogeographic isolate and a centre of endemism. The region also contains range-limited species and disjunct populations. These 'no concern at present' upland woodlands communities have no other protected area representation, which adds to the significance of the area (Morgan 2010). These regional ecosystems incorporate ironbarks *Eucalyptus crebra*, yellow jackets *Eucalyptus similis*, bloodwoods *Corymbia* spp., lancewood *Acacia shirleyi*, Cypress pine *Callitris intratropica* and the 'vulnerable' bonewood *Macropteranthes montana*.

Five regional ecosystems of these woodland communities are restricted to the Newcastle Range. These communities are restricted to elevated plateaus, mesas, tablelands, hills and steep hills. Some of these woodlands are known koala *Phascolarctos cinereus* habitat.

### Threats

**Primary threat:** High biomass grasses are present on neighbouring properties that threaten the environmental values of these restricted communities. Potential species for establishment include thatch *Hyparrhenia hirta* and grader grass *Themeda quadrivalvis* with a number of possible vectors. **Threat rating: Medium**

**Secondary threat:** Horses, cattle and pigs have a significant impact on the habitat structure, especially the ground cover of these restricted communities. **Threat rating: Medium**

**Other threat:** Wildfire has the potential to significantly impact on large parts of these regional ecosystems and communities. **Threat rating: High**

### Desired outcome and strategic management directions

Desired outcome		
	The condition of the upland woodlands will be maintained as good, by managing pest plants and animals and implementing appropriate fire regimes.	
Threatening processes	Strategic management directions	Priority
Pest plant	Prevent establishment of grader grass and thatch in the upland woodlands communities.	2
Pest animal	Reduce impacts of horses, cattle and pigs on upland woodlands communities.	3
Fire	Maintain structural elements and age class variation of upland woodland communities through the targeted application of fire.	3

## 4.4 Wetland ecosystems – Arbure kogo

### Key value statement

Description	Condition and trend	Current condition	Current trend	Desired condition
Springs, swamps and riverine areas contributing to biodiversity	Assessment confidence	2018	Limited	Limited
		●●	↔	●●●

Canyon Resources Reserve has a range of significant wetlands, many associated with spring-fed headwaters of creeks, swamps (such as Lady's Flat) and riverine areas. Wetland-associated regional ecosystems include 9.3.7 – ‘Wetlands and seasonally inundated grasslands with a fringing open woodland of mixed *Eucalyptus* spp. on Tertiary surfaces’ (not of concern), 9.3.12 – ‘River beds and associated waterholes on major rivers and channels’ (of concern) and 9.3.13 – ‘*Melaleuca* spp., *Eucalyptus camaldulensis* and *Casuarina cunninghamiana* fringing open forest on streams and channels’ (of concern).

Little Stockman Creek and Big Stockman Creek are the main waterways in the reserve that offer an oasis to an otherwise dry area, and the Einasleigh River flows along its north-east boundary. Lady's Flat swamp sits uniquely on the top of the plateau.

These wetland areas contribute significantly to the biodiversity of the reserve and provide habitat for a range of species. The wetlands are also a component of the Ewamian cultural landscape and represent an area of high cultural heritage potential.

### Threats

**Primary threat:** Pest animals, (particularly horses, cattle and pigs) damage vegetation, soils and water quality through grazing, trampling, wallowing and/or digging. **Threat rating:** High

**Secondary threat:** Pest plants, such as rubber vine *Cryptostegia grandiflora* and calotrope *Calotropis procera*, could change the ecosystem by forming dense stands along the riparian zone. **Threat rating:** High

**Other threat:** Wildfire has the potential to significantly impact on wetland ecosystems. **Threat rating:** High

### Desired outcome and strategic management directions

Desired outcome		
●●●	The condition of wetland areas will be improved to <i>good with some concern</i> , by minimising the impacts of pest plants and animals on the riparian zone and within wetland ecosystems.	
Threatening processes	Strategic management directions	Priority
Pest animal	Reduce impacts of pigs, cattle and horses on wetland ecosystems.	2
Pest plant	Reduce impacts of rubber vine and calotrope along fringes of wetland ecosystems.	2
Fire	Protect wetland ecosystems through appropriate fire management of adjacent fire adapted communities.	3

## 5. Management direction

QPWS manages protected areas and forests to protect their values and deliver our custodial obligations as a land manager. Levels of service (LoS) assessment allows QPWS to consider the management of each park in a state-wide context and determine desired levels of management effort for each park in a consistent and equitable way. LoS assessment lets QPWS staff and the public know what type or level of management activity to expect on each park, forest and/or reserve. There are five LoS ratings ranging from 'acceptable' to 'exceptional': an acceptable rating is the minimum standard required to deliver good management and meet our legislative and custodial obligations.

A greater focus will be required to improve the approach to managing natural values. The key areas to maintain a management focus for improving the condition of natural values are fire and pest management. This section provides a **management direction statement** for each management theme, identifying its current LoS, desired LoS and the strategic management direction for management.

### Summary of management direction

A summary of the current and desired LoS for Canyon Resources Reserve is shown below; Figure 4 provides a key to the LoS icons.

	Current LoS	Desired LoS
1. Fire management	 Medium	 High
2. Pest management	 Medium	 Medium
3. Natural values management	 Medium	 High
4. Historic cultural heritage management	 Acceptable	 Acceptable
5. Visitor management	 Acceptable	 Acceptable
6. Community, partnerships and other interest	 Acceptable	 Acceptable
7. Field management capability	 Medium	 Medium
8. Operational planning and management support	 Medium	 Medium

Figure 4. Key to condition, trend and confidence icons



## 5.1 Fire management

### Management direction statement

Description	Current level of service
Fire management for Canyon Resources Reserve.	

Fire control and prevention are vital for QPWS to protect life and property, mitigate wildfires and maintain natural diversity in accordance with the *Nature Conservation Act 1992* (Qld) (NCA); and the *Fire and Emergency Services Act 1990* (Qld). QPWS works cooperatively with First Nations Peoples, state and local government agencies, rural fire brigades, adjoining landholders, and local communities to manage fire across the landscape.

The strategic management direction in this management statement, combined with Ewamian people's knowledge of traditional burning practices and the Queensland Government's *Planned Burn Guidelines: Einasleigh Uplands Queensland Bioregion of Queensland*, will guide the formation of the Canyon Resources Reserve Fire Strategy.

The Ewamian people and QPWS consider fire critical to managing Country and maintaining Ewamian culture.

The *Canyon Resources Reserve Fire Strategy* will detail QPWS' custodial obligations for protecting life and property and fire management objectives for maintaining key values through the use of fire management zones and cultural burn practices.

### Desired level of service and strategic management direction

Desired level of service	
	Fire will be managed to a <i>high</i> LoS, through improved knowledge, engagement and increased priority, to manage natural and cultural key values and reduce risks associated with life and property.
Strategic management direction	Priority
Custodial obligations	
Mitigate the potential severity and impacts of wildfire on neighbouring properties.	1
Level of service	
Continue to engage with Ewamian people to ensure that cultural fire management obligations are met.	1
Improve knowledge of fire ecology and the impacts of fire on key values.	2
Improve the current level of stakeholder engagement with park neighbours.	2

\*KEY: Priority ratings: M – maintain current priorities; Scale 1 (extremely urgent and extremely necessary) to 5 (optional and not urgent).

## 5.2 Pest management

### Management direction statement

Description	Current level of service
Pest management for Canyon Resources Reserve.	 MEDIUM

Pest management is core business for QPWS to mitigate the threats to biodiversity in accordance with the NCA. QPWS has a responsibility under the *Biosecurity Act 2014* (Qld) to take all reasonable and practical steps to minimise the risks associated with plant and animal pests on lands under our control. Recognising that effective management of pests across the landscape is a shared responsibility, QPWS works cooperatively with First Nations Peoples, other state and local government agencies, landholders and natural resource management groups.

The strategic management directions in this management statement guide the formation of the *Canyon Resources Reserve Pest Strategy*. The strategy details pest management objectives for preventing and mitigating pest impacts on key values and QPWS's custodial obligations for managing pests and priority pest species.

### Desired level of service and strategic management direction

Desired level of service	
 MEDIUM	Pests will be managed to a <i>medium</i> LoS, through maintaining knowledge and engagement, to minimise threats to natural and cultural key values.
Strategic management direction	Priority
<b>Custodial obligations</b>	
Maintain the current level of engagement with stakeholders to mitigate the potential impacts of pests on neighbouring properties.	2
<b>Level of service</b>	
Maintain the current level of knowledge of pests and their impacts and investigate emerging threats.	2
Maintain current approach to pest management by ensuring that priority is placed on protecting key values from pest impacts.	2
Maintain the current level of engagement with EAC on managing pests in the vicinity of cultural values.	2

\*KEY: Priority ratings: M – maintain current priorities; Scale 1 (extremely urgent and extremely necessary) to 5 (optional and not urgent).

## 5.3 Natural values management

### Management direction statement

Description	Current level of service
Natural values management for Canyon Resources Reserve.	

QPWS manages natural values in accordance with Ewamian Traditional knowledge, the NCA, *Environmental Protection Act 1994* (Qld), *Environmental Protection and Biodiversity Conservation Act 1999* (Cwlth), and relevant international agreement guidelines.

Canyon Resources Reserve has significant values including endangered regional ecosystems and threatened species that are underrepresented across the protected area estate. The condition of natural values will be monitored through implementing the *Canyon Resources Reserve Monitoring and Research Strategy*.

Threatening processes will be managed through implementing Canyon Resources Reserve's fire and pest strategies.

### Desired level of service and strategic management direction

Desired level of service	
	Natural values will be managed to a <i>high</i> LoS, through improved knowledge, to improve the condition of the representative ecosystems and habitat niches.
Strategic management direction	Priority
Level of service	
Increase traditional ecological knowledge and baseline information on the natural values of the protected areas.	2
Health check monitoring	
Monitor the condition of natural key values through health check monitoring.	1

\*KEY: Priority ratings: M – maintain current priorities; Scale 1 (extremely urgent and extremely necessary) to 5 (optional and not urgent).

## 5.4 Historic cultural heritage management

### Management direction statement

Description	Current level of service
Historic cultural heritage management for Canyon Resources Reserve	

QPWS manages historic sites in accordance with the NCA and *Queensland Heritage Act 1992* (Qld).

No sites are listed on the Queensland Heritage Register or Australian National Heritage List.

### Desired level of service and strategic management direction

Desired level of service	Strategic management direction	Priority
	Historic cultural heritage will be managed to an acceptable LoS, through maintaining knowledge and awareness, to identify any values and associated threats.	
Level of service		
Maintain current approach to protecting the historic cultural heritage values.		5

\*KEY: Priority ratings: M – maintain current priorities; Scale 1 (extremely urgent and extremely necessary) to 5 (optional and not urgent).

## 5.5 Visitor management

### Management direction statement

Description	Current level of service
Visitor management for Canyon Resources Reserve	

Queensland's parks, forests and reserves provide local communities and visitors from around the world with opportunities to experience our rich natural and cultural heritage, and diverse recreational and ecotourism opportunities. QPWS and EAC seek a responsible balance between visitor opportunities and protecting the natural and cultural values of the area. Permitted commercial tour activities, agreements and events are administered in accordance with the NCA and other relevant legislation.

QPWS supports EAC's aspirations for greater engagement and involvement in the tourism sector.

The condition of, and visitor satisfaction with, visitor experiences will be monitored through the implementation of the *Canyon Resources Reserve Monitoring and Research Strategy*.

The visitor experience will be maintained through facilities that are appropriate for the remote setting of the area.

### Desired level of service and strategic management direction

Desired level of service	
	Visitor management will be managed to an acceptable LoS, through maintaining existing levels of visitor management. New visitor opportunities may be investigated to support a low level of visitor use.
Strategic management direction	Priority
Level of service	
Identify and develop new visitor opportunities with EAC.	3
Maintain visitor experiences through interpretation of park values via the agency website.	3
Culturally appropriate interpretive material is developed by EAC to enhance visitor experience.	2
Health check monitoring	
Monitor the condition of visitor key values through health check monitoring.	1

\*KEY: Priority ratings: M – maintain current priorities; Scale 1 (extremely urgent and extremely necessary) to 5 (optional and not urgent).

## 5.6 Community, partnerships and other interests

### Management direction statement

Description	Current level of service
Community, partnerships and other interests associated with Canyon Resources Reserve.	

Queensland's parks, forests and reserves provide sustainable environmental, economic and social benefits. The agency is committed to working with the community and its partners to ensure activities and infrastructure are ecologically sustainable and continue to benefit Queensland's economic and social wellbeing as outlined in Queensland Parks and Wildlife Service's *Master Plan* (QPWS, 2014). Permitted activities are administered in accordance with the requirements of the NCA and other relevant legislation.

### Desired level of service and strategic management direction

Desired level of service		Priority
	Community and commercial interests will be managed to an <i>acceptable</i> LoS, by maintaining levels of engagement, to address any significant community issues.	
Strategic management direction	Level of service	Priority
Maintain current approach to management of partnerships, community and other interests.		4

\*KEY: Priority ratings: M – maintain current priorities; Scale 1 (extremely urgent and extremely necessary) to 5 (optional and not urgent).

## 5.7 Field management capability

### Management direction statement

Description	Current level of service
Field management capability for Canyon Resources Reserve.	 MEDIUM

Managing natural and cultural areas has varying degrees of complexity. Field management capability is a measure of this complexity and considers the significance of the planning area's values, potential threats, intensity of visitor use and community expectations. It considers the required proximity, frequency and intensity of on-ground management that is needed to manage key values and meet custodial obligations. The rating provides QPWS with a means for gauging resource requirements and staff training needs.

### Desired level of service and strategic management direction

Desired level of service		Priority
 MEDIUM	Field management capacity will be managed to a <i>medium</i> LoS, through maintaining knowledge and understanding of operational needs, to manage key values.	
Strategic management direction	Level of service	Priority
Maintain operational capacity to actively manage the values of Canyon Resources Reserve.		2
Maintain knowledge of the values of Canyon Resources Reserve.		3

\*KEY: Priority ratings: M – maintain current priorities; Scale 1 (extremely urgent and extremely necessary) to 5 (optional and not urgent).

## 5.8 Operational planning and management support

### Management direction statement

Description	Current level of service
Operational planning and management support for Canyon Resources Reserve	 MEDIUM

Operational planning and management support covers all aspects of management direction including information, assessments, systems, tools and monitoring. As with field management capability, the area's values, potential threats, intensity of visitor use and community expectations are considered when determining the appropriate levels of service.

### Desired level of service and strategic management direction

Desired level of service	Priority
 MEDIUM	
Operational planning and management support has been managed to a <i>medium</i> LoS, by maintaining current levels of support, to manage key values.	
Strategic management direction	Priority
Level of service	
Ensure that EAC is included in operational planning and management.	2
Maintain support from regional technical experts around key management challenges, issues and planning.	3

\*KEY: Priority ratings: M – maintain current priorities; Scale 1 (extremely urgent and extremely necessary) to 5 (optional and not urgent).

## 6. References

Morgan, G. 2010, *Field Assessment of Environmental Values for Canyon Pastoral Holding*, Queensland Government, Department of Environment and Resource Management.

# Appendix 1. Summary of strategic management directions

A summary of strategic management directions for Ewamian people (Table 1), key values (Table 2) and management direction (Table 3).

**Table 1. Summary of strategic management direction for Ewamian People**

Strategic management directions	Priority (1-5) *
Improving connection to Country by incorporating EAC in planning, implementing, monitoring and evaluation of park management across Ewamian Country	1
Increase capacity and knowledge of both EAC and QPWS through joint participation in park management activities	1
Provide opportunities and support to Ewamian Elders and people to visit and connect with Country on Canyon Resources Reserve	1

**Table 2. Summary of strategic management direction for key values**

Key value	Current	Desired	Threatening processes	Strategic management directions	Priority (1-5) *
Ewamian culture and Connection to Country			Visitor impacts	Minimise impacts of visitors on cultural values.	2
			Pest animal	Reduce impacts of termites and wasps on cultural values.	2
				Reduce impacts of cattle and horses on cultural values.	3
			Natural deterioration	Minimise impacts of natural erosion on cultural values.	2
Upland plateau			Mining and quarrying	Upon expiry of current resource authorities, transfer the tenure of the Resources Reserve to National Park.	1
				Reduce impacts of resource exploration and extraction on upland plateau formation through specific conditions in authorities granted.	2
Upland woodlands			Pest plant	Prevent establishment of grader grass and thatch in the upland woodlands communities.	2
			Pest animal	Reduce impacts of horses, cattle and pigs on upland woodlands communities.	3
			Fire	Maintain structural elements and age class variation of upland woodland communities through the targeted application of fire.	3
Wetland ecosystems			Pest animal	Reduce impacts of pigs, cattle and horses on wetland ecosystems.	2
			Pest plant	Reduce impacts of rubber vine and calotrope along fringes of wetland ecosystems.	2
			Fire	Protect wetland ecosystems through appropriate fire management of adjacent fire adapted communities.	3

See Appendix 2. Glossary for key value priority rating definitions.

**Table 3. Summary of strategic management direction for management direction**

Management theme	Current LoS	Desired LoS	Strategic management directions	Priority (1-5) *
Fire	Medium 	High 	Mitigate the potential severity and impacts of wildfire on neighbouring properties.	1
			Continue to engage with the Ewamian people to ensure that cultural fire management obligations are met	1
			Improve knowledge of fire ecology and the impacts of fire on key values.	2
			Improve the current level of stakeholder engagement with park neighbours.	2
Pests	Medium 	Medium 	Maintain the current level of engagement with stakeholders to mitigate the potential impacts of pests on neighbouring properties.	2
			Maintain the current level of knowledge of pests and their impacts and investigate emerging threats.	2
			Maintain current approach to pest management by ensuring that priority is placed on protecting key values from pest impacts.	2
			Maintain the current level of engagement with EAC on managing pests in the vicinity of cultural values.	2
Natural values	Medium 	High 	Increase knowledge and baseline information on the natural values of the protected areas including incorporating Traditional knowledge.	2
			Monitor the condition of natural key values through health check monitoring.	1
Historic cultural heritage	Acceptable 	Acceptable 	Maintain current approach to protecting the historic cultural heritage values.	5
Visitor	Acceptable 	Acceptable 	Identify and develop new visitor opportunities with EAC.	3
			Maintain visitor experiences through interpretation of park values via the agency website.	3
			Monitor the condition of visitor key values through health check monitoring.	1
			Culturally appropriate interpretive material is developed by EAC to enhance visitor experience.	2
Community, partnerships and other interests	Acceptable 	Acceptable 	Maintain current approach to managing partnerships, community and other interests.	3
Field management capability	Medium 	Medium 	Maintain operational capacity to actively manage the values of Canyon Resources Reserve.	2
			Maintain knowledge of the values of Canyon Resources Reserve.	3
Operational planning and management support	Medium 	Medium 	Maintain support from regional technical experts around key management challenges, issues and planning.	3
			Ensure that EAC is included in operational planning and management.	2

\*KEY: Priority ratings: M – maintain current priorities; Scale 1 (extremely urgent and extremely necessary) to 5 (optional and not urgent).

# Appendix 2. Glossary

## Interpreting key values-based management framework concepts

<b>Adaptive management</b>	The process of adjusting and improving how we manage parks, forests and reserves after assessing the outcomes of previous strategies and on-ground actions.
<b>Condition and trend</b>	The condition of a key value is assessed as either good, good with some concern, significant concern or critical. Trend describes what is happening to the condition: is it improving, stable, or deteriorating. A key value's current condition is determined during the planning process. A desired condition is a realistic goal for the future condition of the key value. The ongoing condition of key values is assessed with regular health checks, monitoring and scientific assessment.
<b>Cretaceous Period</b>	The Cretaceous Period was the last and longest segment of the Mesozoic Era. It lasted approximately 70 million years, from the minor extinction event that closed the Jurassic Period about 145.5 million years ago to the Cretaceous-Paleogene (K-Pg) extinction event dated at 65.5 million years ago.
<b>Custodial obligations</b>	The requirements under law as a land manager to ensure that QPWS's parks, forests and reserves are lawfully managed and good neighbours. Management provides for the protection of life and property, biosecurity and positive relationships with adjacent communities and landholders, as well as enhancing and protecting our values.
<b>Desired outcome</b>	A statement in the key value and management direction statements about moving from the current status (condition or LoS) to a desired status. The goal for management.
<b>Disjunct population</b>	A colony of plants or animals, whose geographical locus is severed from the continuous range of the bulk of the species distribution.
<b>Endemism</b>	The ecological state of a species being unique to a defined geographic location, such as an island, nation, country or other defined zone, or habitat type; organisms that are Indigenous to a place are not endemic to it if they are also found elsewhere.
<b>Gilbert River Formation</b>	The Gilbert River Formation consists of interbedded conglomerate, quartz greywacke, quartz sandstone, siltstone, and shale.
<b>Health check</b>	Basic monitoring 'tool' that uses indicators and visual assessments to regularly evaluate the condition of key values. Regular health checks ensure QPWS & Partnerships can respond quickly to adverse change and redirect management priorities.
<b>Jurassic Period</b>	The Jurassic Period was the second segment of the Mesozoic Era. It occurred from 199.6 to 145.5 million years ago, following the Triassic Period and preceding the Cretaceous Period.
<b>Key value</b>	A natural, cultural, and/or social value that is of most significance to that area. It is what makes the area special and if lost, would diminish what makes the area distinct from others.
<b>Key value statement</b>	A statement in the management plan/statement that is developed for each key value. It describes the key value, current condition, desired condition, current threats and threat ratings, strategic management direction and priorities for further thematic strategy planning and on-ground management action.
<b>Lateritic soil</b>	Laterite is a soil and rock type rich in iron and aluminium and is commonly considered to have formed in hot and wet tropical areas.
<b>Level of service (LoS)</b>	A planning tool used to identify the acceptable management standard, or level of resourcing that is required to maintain an area based on its values, threats and the complexity of management. There are five LoS ratings ranging from 'acceptable' to 'exceptional' noting that an acceptable rating is the minimum standard required to deliver good management and meet our custodial obligations under law as a land manager. A 'current' LoS rating is the level at the time of planning, the 'desired' LoS is where we want to be.
<b>Management direction</b>	How we manage the each management theme to protect and enhance our key values and meet our custodial management obligations.
<b>Management direction statement</b>	A statement in the management plan/statement, developed for each management theme that describes the current LoS, desired LoS, custodial obligations, strategic management direction and priorities for further thematic strategy planning and on-ground management action.
<b>Management theme</b>	QPWS & Partnerships has identified a number of management theme that are common to most of the parks, forests and reserves in our estate: fire management; pest management; natural values management; historic cultural heritage management; visitor management; community, partnerships and other interest; field management capability; operational planning and management support.
<b>Management instrument</b>	A management plan or management statement.

<b>Priority rating (key value SMDs)</b>	A rating given to a strategic management direction according to the need for action to prevent further decline, stabilise current condition, or restore and enhance values, with consideration given to legislative obligations, cost, social, economic and political factors.
	Critical (1) Loss or very significant decline in the condition of key value/s is highly likely if action not taken OR significant improvement in the condition of key value/s is highly likely if action is taken.
	Very high (2) - Significant decline in the condition of key value/s is likely if action is not taken OR significant improvement in the condition of key value/s is likely if action is taken.
	High (3) -Decline in the condition of key value/s is likely if action is not taken OR improvement in the condition of key value/s is likely if action is taken.
	Moderate (4) -Some decline in the condition of key value/s is possible if action is not taken OR some improvement in the condition of key value/s is possible if action is taken.
	Desirable (5) - While decline in the condition of key value/s is not likely in the short term, the action, if taken would help build long-term resilience of key value/s.
<b>Priority rating (LoS SMDs)</b>	A rating given to a LoS or custodial obligation strategic management direction. A scale from 1 (extremely urgent) – 5 (not urgent or optional) is assigned, with consideration given to legislative obligations, cost, social, economic and political factors.
<b>Skeletal soil</b>	Skeletal soils refer to soils that contain 35 percent or more (by volume) of rock fragments, cobbles, gravel and laterite concretions or ironstones having diameters greater than 2 mm, within shallow depths (less than 50 cm).
<b>Strategic management direction</b>	A broad strategy aimed at mitigating or removing a threat to a key value and maintaining or improving the condition of a park's value; or addressing the gap between the current LoS and desired LoS for a management theme.
<b>Threat or threatening process and threat rating</b>	Based on IUCN's classifications, QPWS & Partnerships has identified threatening processes that have the potential to affect Queensland's values (e.g. natural systems modifications, invasive species etc.). Current threats to key values are identified and given a threat rating based on a combination of the extent of the impact, the severity of the impact, and the urgency of action.