

# Undara Volcanic National Park



**Management Statement**

**2023**

This management statement has been prepared and co-designed by Ewamian Limited and Queensland Parks and Wildlife Service (QPWS), Department of Environment and Science.

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# 1. Introduction

The Department of Environment and Science recognises, respects and values First Nations peoples and cultures. We recognise that First Nations people have rights and interests in the country on which we work. We are committed to progressing self-determination by working with First Nations peoples to incorporate their priorities and perspectives in decision-making and operations.

The DES *Gurra Gurra Framework 2020–2026* prioritises and accelerates this commitment. Throughout its development, it has considered what has worked well and what can be done better to improve the way we do business into the future.

The Queensland Parks and Wildlife Service 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 the 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. The 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: their **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 a level of service for each park. Level 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 level 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 the phases of the VBMF cycle for management planning. A glossary of the key concepts (in **bold**) used throughout the document is listed in Appendix 1.

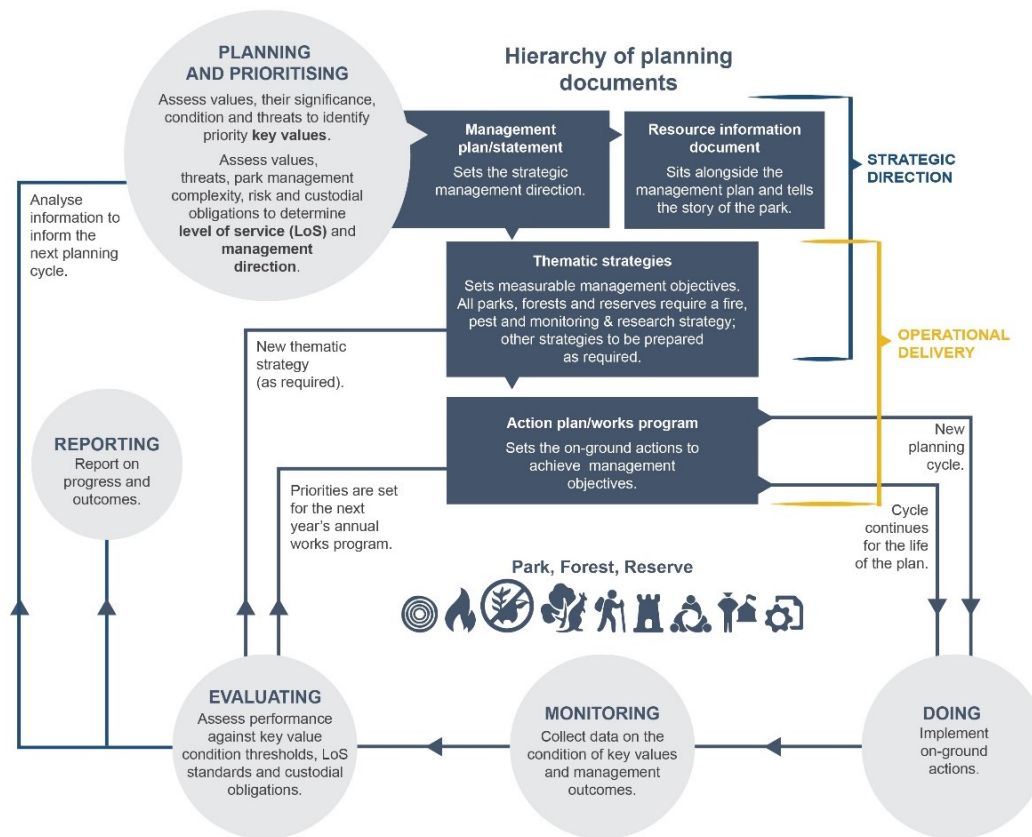


Figure 1. Phases of the VBMF cycle for planning and the hierarchy of planning documents

## 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 forests and reserves (*Forestry Act 1959* (Qld)) and marine parks (*Marine Park Act 2004* (Qld)). All plans are prepared in keeping with legislation's management principles, supporting regulations, government policies and procedures, and international agreements. Planning for each park is brought together and communicated through a number of 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 and pest 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. First Nations peoples

### 2.1 Ewamian People

Undara Volcanic National Park lies within part of the lands of the Ewamian (pronounced *You-a-min*) People, the traditional owners who have an ongoing connection to this Country. The ancestors of present-day Ewamian People were born, lived and hunted in this area before the arrival of Europeans. The Ewamian People's Country is located in the Gulf of Carpentaria's savannah lands in the upper Gilbert and Einasleigh catchments. The boundaries of Ewamian Country broadly align with Etheridge Shire local government area, which includes the townships of Georgetown, Forsyth, Einasleigh and Mount Surprise.

The Ewamian People have a non-exclusive native title determination (QCD2013/007) over the majority of the park (Map 1). The Ewamian People, and their native title interests, are represented by the Ewamian People Aboriginal Corporation, a registered native title body corporation.

### 2.2 Ewamian People Aboriginal Corporation

***“We care for Country, we share Country and we respect Country and each other.”***

**Ken Georgetown, Board Member, Ewamian Limited 2019**

The Ewamian People Aboriginal Corporation (EPAC) was established in 2013 and is registered under the *Corporations (Aboriginal and Torres Strait Islander) Act 2006*. The corporation has 330 Indigenous members and is governed by a board of seven Indigenous directors.

EPAC is supported by Ewamian Limited, the administrative entity of the Ewamian corporate group, which provides a range of services to the Ewamian People, with the vision of enhancing Ewamian People's culture and connection to Country through positive change and promoting partnerships with key stakeholders.

Services provided by Ewamian Limited on behalf of EPAC are:

- owning and managing the Talaroo Indigenous Protected/Nature Refuge since 2012 (divested from the Indigenous Land and Sea Corporation in 2017)
- managing the Ewamian Rangers, supported by the Queensland Indigenous Land and Sea Ranger Program (DES)
- managing and implementing the Indigenous Protected Area (IPA) Jobs, Land and Economy Program (two rangers), supported by the National Indigenous Australians Agency under the guidelines of the Plan of Management for Talaroo according to International Union for Conservation of Nature's categories II and IV
- providing employment opportunities for Ewamian People on country
- managing native title rights and interests on behalf of Ewamian People
- managing and protecting Ewamian cultural heritage
- establishing and maintaining a cultural heritage database
- administering funds for community purposes
- identifying business opportunities for Ewamian People
- identifying training and skills needs of Ewamian People.

The *Ewamian Aboriginal Corporation Strategic Plan 2016–2021* prioritised the planning and redevelopment of Talaroo Hot Spring for tourism. Ewamian Limited successfully developed a 'culturally and environmentally sensitive' tourism offering that allows people to visit the springs with an Ewamian tour guide, spend time with the Ewamian People, and participate in a range of activities on Country at beautiful Talaroo. The Talaroo Hot Springs attraction welcomed its first visitors in late June 2021 and was officially opened in August 2021.

## 2.3 The Ewamian People Aboriginal Corporation and Queensland Parks and Wildlife Service's 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 Limited 2019**

QPWS and EPAC work collaboratively across the protected area estates that are within Ewamian Country to ensure cultural and environmental values are conserved.

To support this partnership arrangement, EPAC and QPWS have identified a number of strategies for collaborative management of Undara Volcanic National Park.

### Desired outcome and strategic management directions

Desired outcome		
The relationship with the Ewamian People and the protection of their cultural heritage will be managed by improved knowledge and partnership, recognising their connection to Country and role in managing the cultural heritage values that occur across protected areas within the Ewamian People's traditional lands.		
Threatening process	Strategic management direction	Priority
Loss of connection to Country	Incorporate EPAC in planning, implementation, monitoring and evaluation of park management across Ewamian Country.	1
	Increase accessibility to the park for the Ewamian People.	1
	Improve collaborative management arrangements to ensure the Ewamian People are connecting to country.	1
	Participate jointly in activities to increase capacity of both QPWS and EPAC.	1

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

**David Hudson, Board Member, Ewamian Limited 2019**

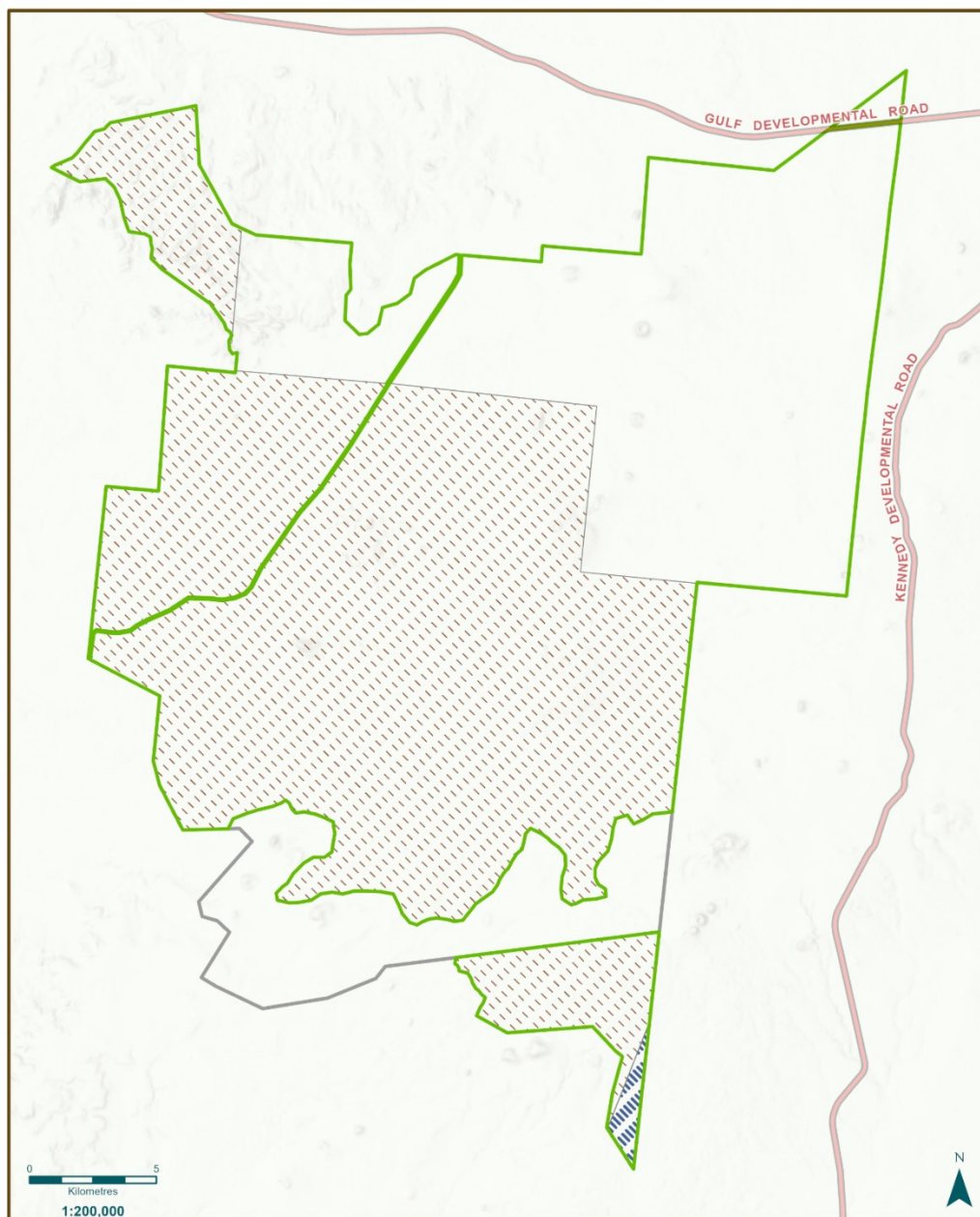
The Ewamian People are reconnecting with Country and culture and are working to revive the Ewamian language (Wamin) that is derived from the Agwamin society. QPWS is working with Ewamian Limited to include the Wamin language in interpretive materials for Undara Volcanic National Park (*Wamin abu-dha*). Some of the key values within this document incorporate Wamin language names provided by EPAC. A glossary for these terms, including pronunciation, is provided in **Table 1**.

**Table 1. Glossary of Wamin words referenced in the management plan**

Wamin word	Meaning	Pronunciation
<i>Wamin abu-dha</i>	Ewamian land	<i>wa-min ar-boo-da</i>
<i>wundu</i>	forest country	<i>woo-n-doo</i>
<i>arbure kogo</i>	flat country water	<i>ar-bor-er gu-gu</i>
<i>yirrbari</i>	wallaroo, antilopine	
<i>wə:r</i>	rock wallaby	
<i>bəran</i>	kangaroo, eastern grey	
<i>yugarra</i>	snake (any)	

## 2.4 Gugu Badhun People

The Gugu Badhun People have a non-exclusive native title determination (QCD2012/002) in the south-east corner of the park, an area of approximately 2.9 square kilometres (**Map 1**). This area is inaccessible. Gugu Badhun's Country extends from the eastern side of the Great Dividing Range from Undara Volcanic National Park down to Paluma State Forest. QPWS works with the Gugu Badhun People, through the partnership with Giringun Aboriginal Corporation, to ensure values of protected areas across the Gugu Badhun traditional lands are conserved.



**Undara Volcanic National Park Key Value Map 2**

**Key Values**

-  Ewamian people #3 Registered Native Title Determination
-  Gugu Badhun people #2 Registered Native Title Determination
-  Main Road
-  Protected Areas of Interest
-  National Park
-  Other Protected Areas of Queensland



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**Map 1: Undara Volcanic National Park First Nations map**



## 3. Undara Volcanic National Park

### 3.1 Management statement and thematic strategies

The *Undara Volcanic National Park Management Statement* provides the strategic management direction for managing its keys values (Section 4) and meeting our custodial obligations across eight **management themes** (Section 5). The statement is supported by the *Undara Volcanic National Park 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 links 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. Undara Volcanic National Park has four thematic strategies:

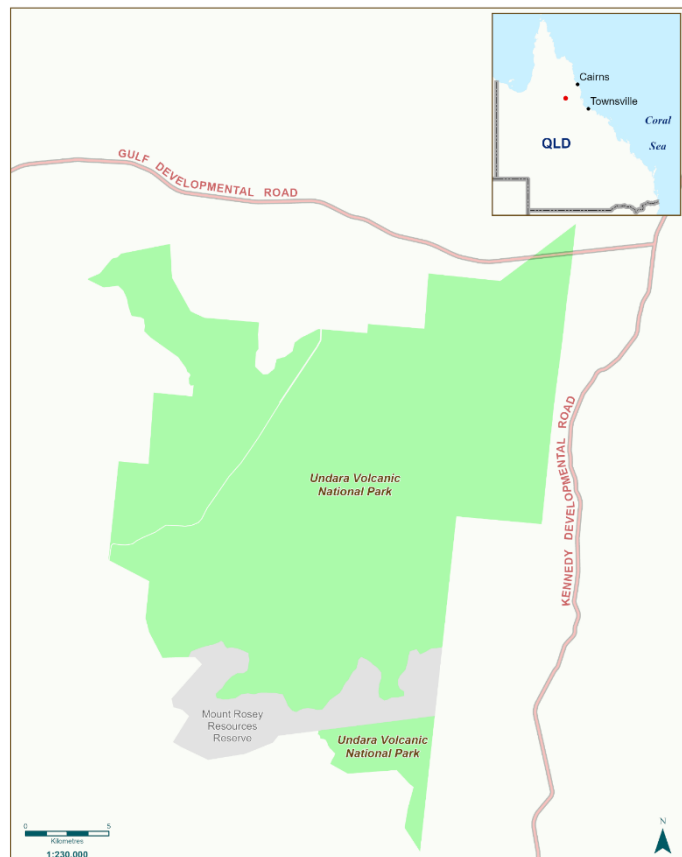
- fire
- pest
- visitor
- monitoring and research.

### 3.2 Park overview

Undara Volcanic National Park was gazetted in 1989 as a 600 hectare national park covering part of the geologically and botanically significant Undara Crater. Subsequent additions have incorporated 60 lava tube caves, 43 additional volcanic vents, several perennial springs and an area of granite hills, increasing the park's size to 68,313 hectares.

The park is located south-west of the intersection of the Gulf and Kennedy development roads, approximately 30 kilometres east of Mount Surprise (**Map 2**). Most of the park is within the Etheridge Shire, with the north-eastern part of the park extending into the Tablelands Regional Council area. The park covers part of the McBride Plateau, and its elevation averages approximately 800 metres, ranging from 500 metres along its western boundary to just over 1000 metres at the Undara and Racecourse craters (Queensland Government, 2000).

Undara Volcanic National Park consists of basalt plains covered with grassy, open woodlands interspersed with natural wetlands. The geology through the park makes it an exceptional attraction. Volcanic vents, lava flows and tubes, caves and craters create an impressive landscape and reminders of past eras. Pockets of semi-evergreen vine thickets cling to the collapsed sections of ancient lava tubes, dotting the land with deep green islands in an otherwise red-brown landscape. The fragile dependencies between species and habitat demand specialist care, and low-impact and respectful interaction between visitors and this environment.



**Map 2. Undara Volcanic National Park location map**

## 4. Key values

All parks, forests and reserves have an array of natural, cultural, social and 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 1).

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 or monitoring, enabling QPWS to act quickly, applying best practice adaptive management.

### Summary of Undara Volcanic National Park key values

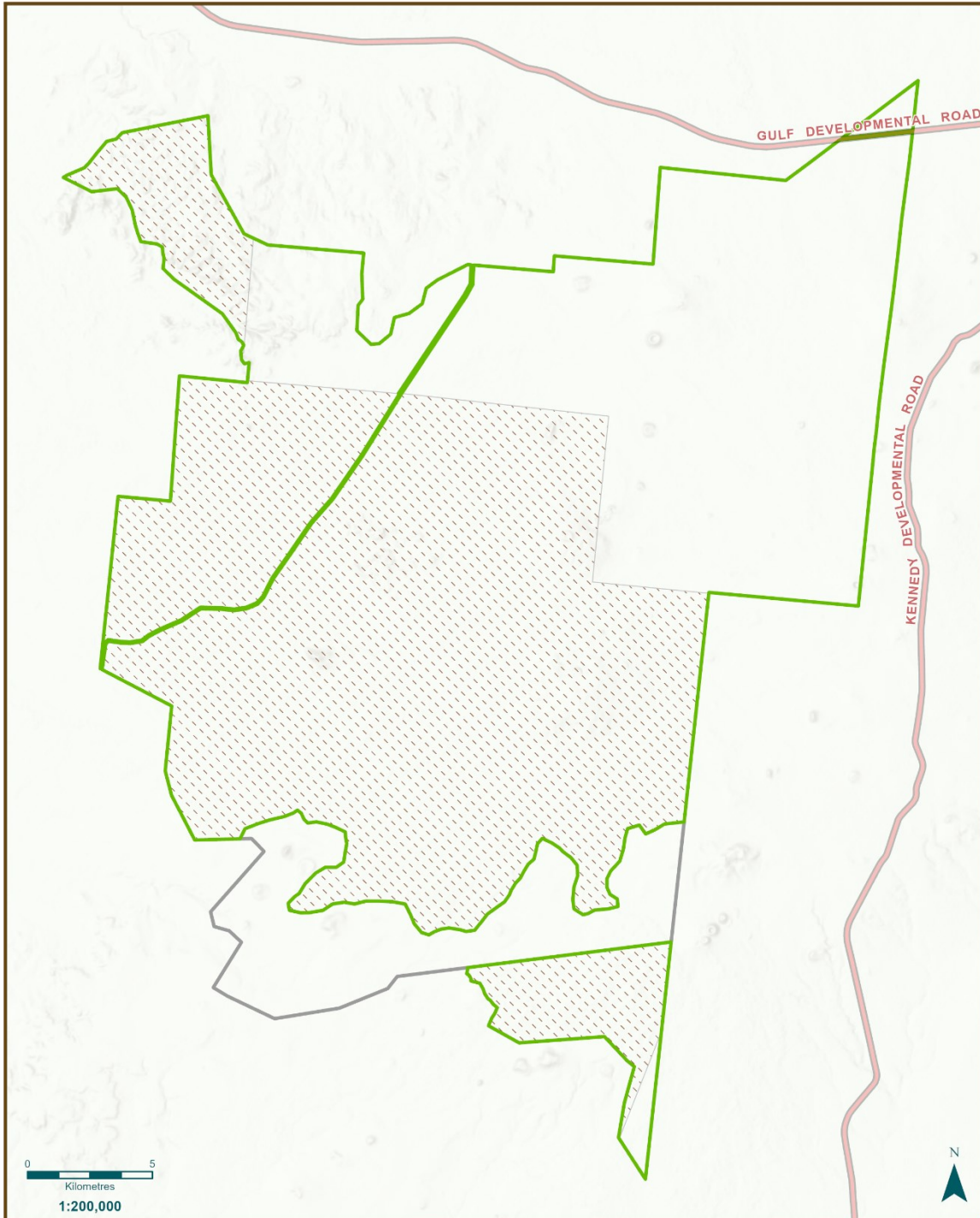
A summary of the key values for Undara Volcanic National Park is detailed below. The location of each key value is shown in Maps 3, 4 and 5. Figure 2 provides a key to interpreting the condition and trend icons used in this section.

	Current condition	Confidence in condition assessment	Current trend	Confidence in trend assessment	Desired condition
4.1 Ewamian culture and connection to Country					
4.2 Undara lavafields of McBride Plateau					
4.3 Semi-evergreen vine thickets					
4.4 Wetlands and associated vegetation					
4.5 Cave experience					





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

Figure 2. Key to condition, trend and confidence icons



**Undara Volcanic National Park Key Value Map 1**

**Key Values**

-  Connection to country, Ewamian culture (Wamin abu-dha)
-  Main Road
- Protected Areas of Interest**
-  National Park
-  Other Protected Areas of Queensland

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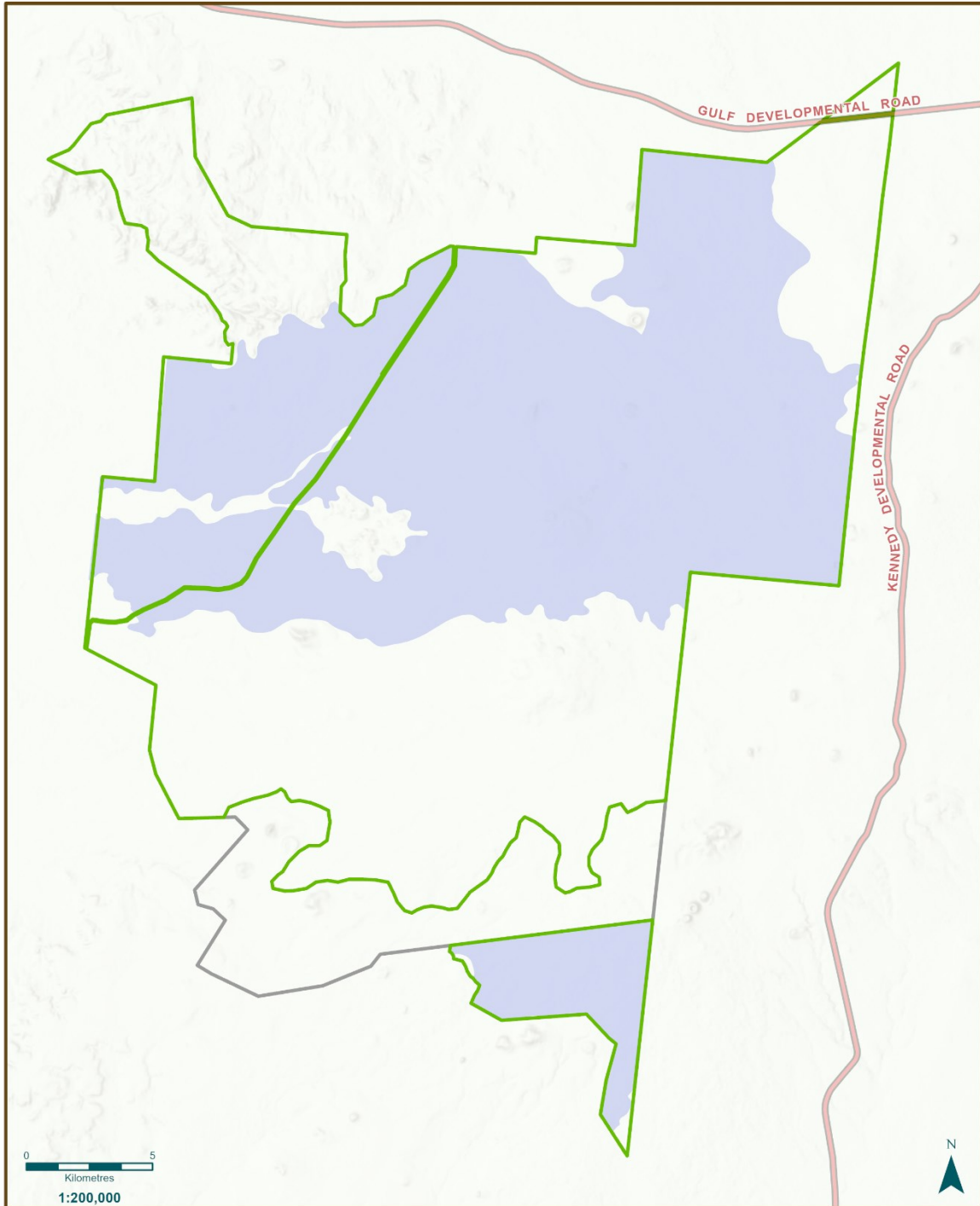
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**Map 3: Undara Volcanic National Park Key Value Map 1**



**Undara Volcanic National Park Key Value Map 2**

**Key Values**

- Undara lavafields of McBride Plateau
- Main Road
- Protected Areas of Interest
- National Park
- Other Protected Areas of Queensland

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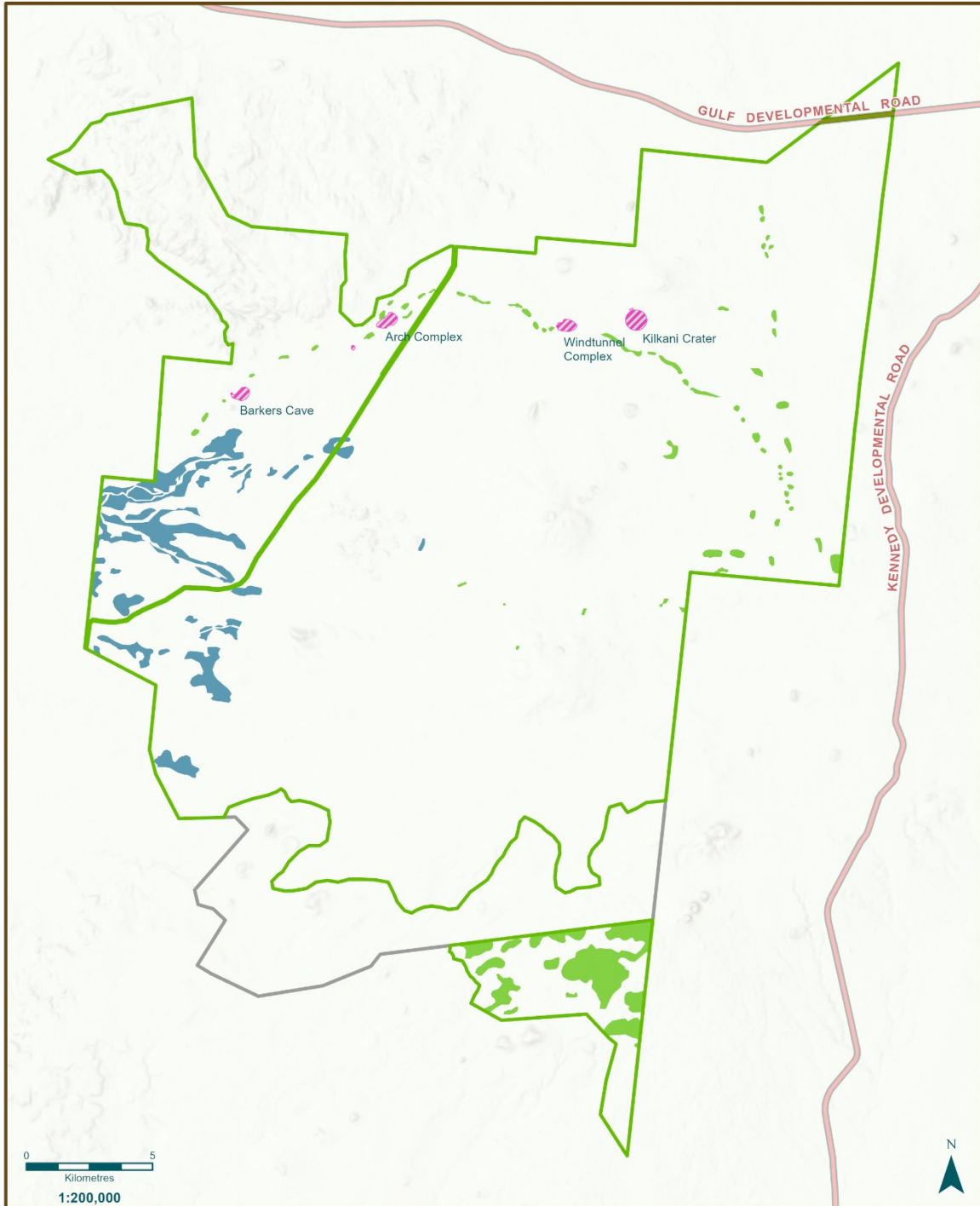
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
**Map 4: Undara Volcanic National Park Key Values Map 2**





**Undara Volcanic National Park Key Value Map 3**

**Key Values**

-  Cave experience
-  Wetlands and associated vegetation
-  Semi-evergreen vine thickets
-  Main Road

- Protected Areas of Interest**
-  National Park
  -  Other Protected Areas of Queensland

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**Map 5: Undara Volcanic National Park Key Value Map 3**

## 4.1 Ewamian culture and connection to Country – *Wamin abu-dha*

### Key value statement

Description		Current condition	Current trend	Desired condition
Undara Volcanic National Park is a part of the traditional lands of the Ewamian People and remains an important area for protecting and exploring cultural heritage.	Condition and trend	2018 		
	Assessment confidence	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 Limited 2019**

Undara Volcanic National Park (68,313ha), and much of the Etheridge Shire, is regarded as part of the traditional country of the Ewamian People.

Ewamian Country is a diverse cultural landscape that encompasses a spiritual connection to places and sites. The Ewamian People connect with a range of 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, which affected the continuous connection to country for Ewamian People, today they still maintain a strong connection to their lands, traditional culture and lore. This connection extends across Undara Volcanic National Park and is continually being reconnected to. Some of the lava tubes across the park have evidence of human occupation and are thought to have been utilised by the Ewamian People for a number of reasons, including spiritual, shelter, and hunting and gathering practices.

There is a lack of knowledge about the number and location of cultural heritage sites within Undara Volcanic National Park and this is a key issue for protecting cultural assets. Although the lava tubes and vine thickets were known to be important occupation sites for the Ewamian People, only nine sites are recorded within the park out of a total 300 registered sites across Ewamian Country. These sites were recorded during one short survey in 1991, without Ewamian involvement. An Aboriginal burial collected (and since returned to Country) by the Chillagoe Caving Club from inside a lava tube indicates the high significance of the formations to the Ewamian People.

It is important to QPWS and the Ewamian People that Ewamian culture and cultural heritage is managed to conserve the tangible cultural values, and respects the need for people to maintain connection or reconnect with Country and cultural practices. Cultural surveys across Undara Volcanic National Park are continuing to assist the Ewamian People to connect to Country and increase capacity to collaboratively 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:** Difficulty of access to Country for Ewamian People threatening connection to Country. **Threat rating: High**

**Secondary threat:** Damage by fire to Ewamian People’s cultural resources. **Threat rating: High**

**Secondary threat:** Lack of knowledge of cultural heritage sites. **Threat rating: High**

**Other threat:** Visitor impacts, including dust, can impact the integrity of cultural artefacts. **Threat rating: Low**

**Desired outcome and strategic management direction**

Desired outcome		
Threatening process	Strategic management direction	Priority
 <p>The condition of Ewamian cultural heritage values are improved to ‘good’ by identifying sites and places of cultural significance, and increasing access, support and involvement of the Ewamian People.</p>		
<b>Loss of connection to Country</b>	Improve access to cultural heritage sites.	<b>1</b>
<b>Fire</b>	Protect cultural resources of the Ewamian People that are sensitive to fire damage.	<b>1</b>
<b>Lack of knowledge</b>	Increase knowledge of Ewamian People’s cultural heritage sites.	<b>1</b>

See Appendix 1. Glossary for priority rating definitions.

## 4.2 Undara lavafields of McBride Plateau

### Key value statement

Description		Current condition	Current trend	Desired condition
The Undara lavafields of McBride Plateau protect the outstanding volcanic landscape in the north-western part of the lava province. The park contains craters, lava flows and tubes, caves, arches, vents, shields and cones.	Condition and trend	2017 		
	Assessment confidence	Adequate 	Adequate 	

Undara Volcanic National Park has nationally recognised landscapes unique to Australia. The lava tubes, created 190,000 years ago, were formed when rivers of lava confined to a valley crusted over and formed a roof. Insulated in its casing of solidified lava, the lava flow carried on for tens of kilometres before draining out, leaving an empty tube of lava. Weaker sections of the roof of the tubes later collapsed to form caves and depressions. More than 50 caves have been found in the park.

The Undara lava tube system is Australia's, and one of the world's, longest. It is unusual, if not unique, for developing on a granitic basement. The lava tube caves in this national park are the finest examples in Australia and contain specialised ecosystems that are internationally significant. Other examples of well-preserved volcanic features in the park include craters, lava ponds and flows, and perennial springs.

These significant geological features offer unique environments for a range of highly specialised organisms such as troglobitic invertebrates, fungal colonies and aquatic amphipods. These organisms that inhabit the subsurface wetlands can be vulnerable to small changes in their environment, and therefore require some protection from the introduction of foreign matter.

It is of particular importance to note that researchers have identified the Bayliss Cave as one of the world's most biologically diverse caves. The cave supports 24 species of specialised troglobites. This phenomenon is attributed in part to the high carbon dioxide levels, stagnant air and high relative humidity, creating a highly specialised habitat (Howarth & Stone, 1990). For many years, it was thought troglobitic organisms were not adapted for living in the tropics. The Undara research has substantiated that troglobitic organisms are capable of subsisting, and thriving, in tropical cave systems.

Barkers Cave is also ecologically significant as the host cave to maternity colonies of common bent-wing bats *Miniopterus schreibersii*. This cave is believed to be one of the only host locations for maternity colonies in the broader area that these bats populate.

The broad range of species found in the lava tubes of Undara Volcanic National Park are important indicators for the health of these unique ecosystems.

### Threats


**Primary threat:** Visitors can have a negative impact on the fauna species inhabiting the lava tubes through heavy use, trampling and dust impacts. **Threat rating: Medium**

**Secondary threat:** The use of inappropriate materials in caves (e.g. galvanised steel and treated timber) can contaminate subterranean wetlands. **Threat rating: Medium**

**Other threat:** Climate change events, such as floods and storms that are uncharacteristic for the region, can negatively impact the landscape. **Threat rating: Low**



**Desired outcome and strategic management directions**

Desired outcome		
Threatening processes	Strategic management directions	Priority
 <p>The condition of the Undara fields is maintained at 'good' by reducing visitor impacts, managing climate change stressors and reducing impacts from contamination.</p>		
<b>Contamination</b>	Minimise the risk of establishment of pathogens and microbes not originally found in the subterranean wetlands.	<b>2</b>
<b>Visitor impacts</b>	Minimise impacts caused by permitted activities, including trampling and dust on lavatubes.	<b>3</b>
<b>Climate change</b>	Monitor the condition of the Undara lava tubes and adapt management where required to minimise associated impacts of uncharacteristic weather events.	<b>4</b>

See Appendix 1. Glossary for priority rating definitions.

## 4.3 Semi-evergreen vine thickets

### Key value statement

Description		Current condition	Current trend	Desired condition
Semi-evergreen vine thicket on cones, craters and rocky basalt flows with little soil development.	Condition and trend	2017 		
	Assessment confidence	Adequate 	Adequate 	

The lava tubes function like huge stormwater drains that collect and carry much of the summer rain, and where ceilings have collapsed, vegetation flourishes in the damp interiors. Semi-evergreen vine thicket is probably a remnant of vegetation that was much more widespread across the continent before it entered a drier phase. The rocky terrain it now inhabits has provided protection from fire and drought. It features some distinctive and ancient plants that have strong affinities with Gondwanan species. Vine thickets in Undara's crater contain the only known occurrence of a small-leaved myrtaceous shrub *Backhousia* sp., yet to be fully described, and the rare, white-flowered onion vine *Ipomoea saintronanensis* also occurs in the park.

In addition to unique floral assemblages, the vine thickets exist in fire refugia that present the ideal habitat for persistence of faunal assemblages not represented in the surrounding savannah. Included in these faunal assemblages are land snail communities that persist here due to the availability of food, moisture, shelter and calcium (Stanisic, 1999). The vine thickets also offer great habitat for a number of *yugarra* (snakes) that prey on bats as they emerge from the lava tubes.

Semi-evergreen vine thicket is an 'of concern' regional ecosystem (RE) (RE 9.8.7; Broad vegetation group BVG 7a), with many co-dominant species and vines and no clearly defined layers. The RE includes helicopter tree *Gyrocarpus americanus*, bottle tree *Brachychiton australis*, Burdekin plum *Pleiogynium timorense*, *Bridelia leichhardtii*, *Psydrax odorata*, *Cupaniopsis anacardioides*, *Diospyros humilis* and *Homalium brachybotrys*. It may be a closed forest with milky pine *Alstonia scholaris*, damsonwood *Terminalia sericocarpa*, Leichhardt tree *Nauclea orientalis*, cluster fig *Ficus racemosa* and strangler fig *Ficus virens* on creeks and around springs, or an open woodland of Moreton Bay ash *Corymbia tessellaris* or blue gum *Eucalyptus tereticornis*, with an open mid layer of vine thicket species. It occurs on lava flows, cones and craters, and rocky substrates with no soil development on Quaternary and Tertiary basalts. The regional ecosystem softwood scrubs on rocky basalt substrates (RE 9.8.7a) also occurs in these areas.

### Threats


**Primary threat:** Vine thickets are fire sheltered ecosystems and are naturally protected from bushfire as long as regular, natural fire processes are managed in adjacent ecosystems. Bushfires can negatively impact the fire sensitive vegetation within vine thickets. **Threat rating: Low**

**Secondary threat:** Vine thickets are prone to invasion by weeds including rubber vine *Cryptostegia grandiflora* and lantana *Lantana camara*. These weeds are most likely to contribute further to vine thicket attrition when combined with late dry season fires. The increased risk of fire encroachment can be a direct result of disturbance, high biomass grasses and lantana invasion. Other weeds, including tobacco bush *Solanum mauritianum* and Mossman river grass *Cenchrus echinatus*, also impact the vine thickets. **Threat rating: Low**

**Other threat:** Introduced animals, including feral pig *Sus scrofa* and stray cattle *Bos taurus*, negatively impact vine thickets through digging, rooting and trampling. **Threat rating: Low**

**Other threat:** Permitted activities such as research in non-visitation areas can have an indirect impact on the vine thickets through introduction of weeds and trampling. **Threat rating: Low**





## Desired outcome and strategic management directions

Desired outcome		
Threatening processes	Strategic management directions	Priority
 The condition of vine thickets is improved to 'good' by maintaining planned burn programs and reducing the impacts of pest plants and animals.		
Pest plant	Prevent the establishment of rubber vine <i>Cryptostegia grandiflora</i> in semi-evergreen vine thicket communities.	1
	Reduce impacts of Mossman river grass <i>Cenchrus echinatus</i> and tobacco bush <i>Solanum mauritianum</i> in vine thicket communities.	2
	Eradicate lantana <i>Lantana camara</i> from the semi-evergreen vine thicket within the Undara Crater.	2
Fire	Protect the fire sensitive semi-evergreen vine thicket communities by implementing planned burning in adjacent vegetation communities.	2
Pest animal	Reduce impacts of pigs <i>Sus scrofa</i> in semi-evergreen vine thicket communities.	3
	Reduce impacts of stray stock <i>Bos taurus</i> in semi-evergreen vine thicket communities.	3
Human activity	Minimise impacts caused by permitted activities in semi-evergreen vine thicket communities.	3

See Appendix 1. Glossary for priority rating definitions.

## 4.4 Wetlands and associated vegetation – *Arburæ kogo*

### Key value statement

Description		Current condition	Current trend	Desired condition
Surface wetlands (including ephemeral) with aquatic species and fringed with <i>Eucalyptus</i> spp. communities within basalt plains and flows.	Condition and trend	2017 		
	Assessment confidence	Adequate 	Adequate 	

Undara's only surface water is found in wetlands (RE 9.3.11) and basalt plain swamps (RE 9.3.10), and plays a critical role in sustaining biodiversity across the park. The park is home to 10 macropod species, all of which rely on these wetland ecosystems. Of particular importance is the *yirrbari* (antelope wallaroo *Macropus antilopinus*), a grassy woodland inhabitant, which reaches its southern limit in this area and is particularly common around Fifteen Mile Spring. Other species include the *wæ:r* (Mareeba rock wallaby *Petrogale mareeba*), *bəran* (eastern grey kangaroo *Macropus giganteus*), agile wallaby *Macropus agilis*, swamp (black) wallaby *Wallabia bicolor*, black-striped wallaby *Macropus dorsalis* and rufous bettong *Aepyprymnus rufescens*.

The 'of concern' wetlands (RE 9.3.11; BVG 34d) (sometimes ephemeral) may be fringed by grasses and sedges or woodland that can contain river red gum *Eucalyptus camaldulensis*, blue gum *E. tereticornis* or tea tree *Melaleuca fluviatilis*. It occurs in pockets surrounded by rocky basalt walls, run-on areas and areas of alluvial deposition on basalt geologies. Low closed forest to woodland of *Melaleuca bracteata* and *Eucalyptus* spp. emergents or vine thicket species make up RE 9.3.10 (BVG 21b). This regional ecosystem occurs on swamps and occasionally along creek lines on basalt plains.

A number of the surface wetlands, including Lamb Spring, Tobacco Spring, Six Mile, Nine Mile and Fifteen Mile creeks, are spring fed. These drain the western part of the park and form part of the Einasleigh River catchment via Junction Creek.


### Threats

**Primary threat:** Weeds such as rubber vine *Cryptostegia grandiflora*, calotrope *Calotropis procera* and corky passionflower *Passiflora suberosa* negatively impact wetlands. **Threat rating: Very high**

**Secondary threat:** Vertebrates such as stray cattle *Bos taurus*, stray horses *Equus ferus* and feral pigs *Sus scrofa* negatively impact wetlands. **Threat rating: High**

**Other threat:** The associated vegetation of wetlands contain a high proportion of fire sensitive species. Dry late season bushfires can negatively impact these species. To prevent these impacts, low severity burns are required in adjacent communities. **Threat rating: Medium**

### Desired outcome and strategic management directions

Desired outcome		
	The condition of wetlands is improved to 'good with some concern' by maintaining planned burn programs and reducing the impacts of pest plants and animals.	
Threatening processes	Strategic management directions	Priority
Fire	Maintain healthy wetland communities by implementing planned burning in adjacent vegetation communities.	2
Pest animal	Reduce impacts of feral pigs <i>Sus scrofa</i> in wetlands and associated ecosystems.	2
	Reduce impacts of stray cattle <i>Bos taurus</i> and horses <i>Equus caballus</i> in wetlands and associated ecosystems.	3
Pest plant	Contain rubber vine <i>Cryptostegia grandiflora</i> , calotrope <i>Calotropis procera</i> and passionfruit vine <i>Passiflora suberosa</i> within wetlands and associated vegetation.	3
Human activity	Minimise impacts caused by permitted activities in wetlands and associated vegetation.	3



## 4.5 Cave experience

### Key value statement

Description		Current condition	Current trend	Desired condition
The cave experience at Undara Volcanic National Park is offered to visitors through guided tours provided by commercial operators.	Condition and trend	2018 ●●●●	↔	●●●●
	Assessment confidence	Adequate ●	Adequate ●	

Undara Volcanic National Park is a nationally recognised tourist destination. Visitors can experience outstanding and unique volcanic caves at several sites across the park. Accordingly, the visitor experience at Undara strives to preserve the remote, natural and undeveloped qualities of the environment in a safe manner. The key sites (lava tubes or caves) are experienced by visitors through organised and guided commercial operations.

Thousands of tourists visit Undara every year. For safety reasons, the public is only allowed to visit the tubes on organised tours run by Savannah Guides working for Undara Experience and Bedrock Village. There is an annual quota on the permitted numbers on these tours to ensure protection of the values of the caves and safety of visitors. Using the park as the primary attraction with tours, buses and a wide range of visitor facilities, these tour operators have been successful in creating a unique experience on the park.

Visitors can experience several volcanic caves, including Barkers Cave, Road Cave, Arch Complex and Windtunnel Complex. Visitors can also experience unique animal behaviour and walk volcanic rims at Kalkani day-use area and the Sunset bluff.

The most prominent cave experience for guided tours includes a viewing platform and a boardwalk down to Barkers Cave, which is a nursery cave for the eastern bent-wing bat. To experience the bats emerging for feeding, tour groups are allowed to access the site in the early evening.

The Wind Tunnel Complex is also used by tour groups as it travels through culturally significant Mikoshi Cave and onward to the Wind Tunnel.

The most popular of the presentation lava tubes for tour groups is the Arch Complex. This complex sees visitors move through Archway, Ewamian (Figure 3) and Stevensons caves. The unique lava formations and subsequent weathering processes present a very high-quality visitor experience for guided tours. After heavy wet seasons, visitors can also experience this lava complex, specifically Ewamian Cave, with a deep pool of freshwater in it.

### Threats


**Primary threat:** While restricted access area conditions apply to the lava tubes and caves for the general public, the cave experience for visitors to Undara Volcanic National Park is reliant on the ongoing operation of commercial tours. **Threat rating: Low**

**Secondary threat:** Visitor impacts can degrade facilities and experiences within the lava tubes across the park. **Threat rating: Low**

**Other threat:** Introduced animals present a threat to the cave experience through degradation of the surrounding communities and impacting visitor experience. **Threat rating: Medium**

**Other threat:** Introduced plants in surrounding communities impede the scenic amenity of the cave experience. **Threat rating: Low**

**Desired outcome and strategic management directions**

Desired outcome		
Threatening processes	Strategic management directions	Priority
	The condition of the cave experience is maintained as 'good' by continuing to collaborate with external stakeholders on the visitor experience and manage threats of pest animals and pest plants.	
<b>Pest plant</b>	Reduce impacts of Brazilian nightshade <i>Solanum seaforthianum</i> , passionfruit vine <i>Passiflora suberosa</i> , morning glory <i>Ipomoea indica</i> and cobbler's peg <i>Bidens pilosa</i> in communities surrounding presentation caves.	2
<b>Visitor impacts</b>	Manage visitor safety in the presentation caves by reducing risks associated with low light levels and uneven surfaces.	2
	Minimise visitor impacts on key fauna species during the cave experience.	2
	Minimise visitor impacts, including dust and trampling, through education and interpretation.	3
<b>Pest animal</b>	Enhance the visitor experience through maintaining adequate visitor facilities and infrastructure.	3
	Reduce impacts of cats <i>Felis catus</i> on significant species within the presentation caves.	3
	Reduce impacts of stray stock <i>Bos taurus</i> on the presentation caves.	3
<b>Restricted access</b>	Reduce impacts of cane toads <i>Rhinella marina</i> on the presentation caves.	3
	Enhance the visitor experience by exploring a self-guided tour at a lava tube.	5

See Appendix 1. Glossary for priority rating definitions.

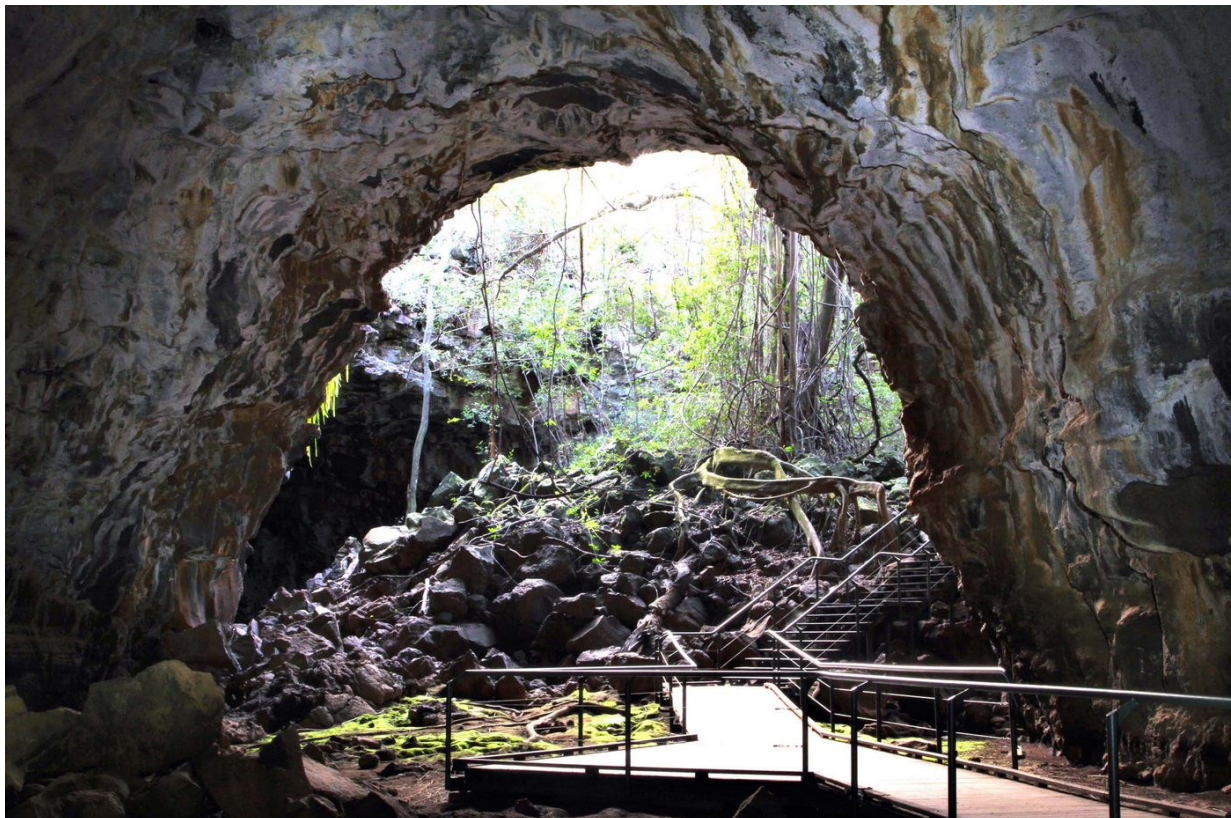


Figure 3. Ewamian Cave, Undara Volcanic National Park © David Gutry, DES 2018, Queensland Government

## 5. Management direction

QPWS manages protected areas and forests to protect their values and deliver our custodial obligations as a land manager. Level 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 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 custodial obligations.

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 Undara Volcanic National Park is shown below; Figure 4 provides a key to the LoS icons.


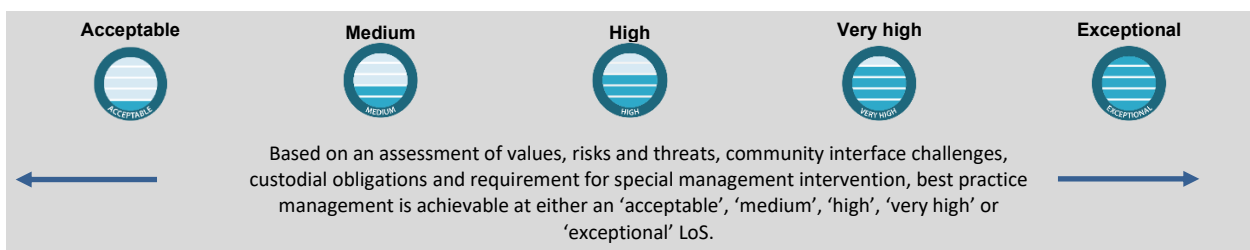

	Current LoS	Desired LoS
1. Fire management	 Very high	 Very high
2. Pest management	 High	 High
3. Natural values management	 Very high	 Very high
4. Post-contact cultural heritage management	 High	 High
5. Visitor management	 Very high	 Very high
6. Community, partnerships and other interests	 High	 High
7. Field management capability	 Very high	 Very high
8. Operational planning and management support	 Medium	 Very high

Figure 4. Key to condition, trend and confidence icons



## 5.1 Fire management


### Management direction statement

Description	Current level of service
Fire management for Undara Volcanic National Park	

Fire management is core business 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) for the control and prevention of fires. QPWS will work cooperatively with First Nations people, 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 the 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 *Undara Volcanic National Park Fire Strategy*. The fire strategy details QPWS's custodial obligations for protecting life and property, and fire management objectives for maintaining key values using fire management zones.

### Desired level of service and strategic management direction


Desired level of service	
	Fire will be managed to a 'very high' LoS through maintaining burn programs, including adequate monitoring.
Strategic management direction	Priority
<b>Custodial obligations</b>	
Protect life and property, visitor facilities and QPWS management infrastructure from fire impacts.	1
Promote cooperative fire management and liaise with neighbours and key stakeholders.	1
<b>Level of service</b>	
Maintain annual burn programs in accordance with planned burn guidelines, ongoing fire history analysis and seasonal risk assessment.	1
Maintain operational skill to achieve desired fire outcomes for the protection of key values.	1
Maintain current approach to engaging stakeholders for fire operations and planning.	2
Maintain an adequate monitoring program to inform and review fire management decisions and approach.	2
Improve understanding of the germination requirements of <i>Melaleuca bracteata</i> to ensure fire management of wetlands is promoting recruitment.	4

\* Priority ratings 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 Undara Volcanic National Park	

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 people, other state and local government agencies, neighbouring landholders and natural resource management groups.

The strategic management directions in this management statement will guide the formation of the *Undara Volcanic National Park 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	
	Pests will be managed to a ‘high’ LoS through maintaining pest programs and maintaining monitoring programs for known pest species.

Strategic management direction	Priority
<b>Custodial obligations</b>	
Align pest management activities to prioritise protection of key values consistent with the <i>Biosecurity Act 2014</i> (Qld).	1
<b>Level of service</b>	
Maintain level of engagement with stakeholders to protect key values.	1
Maintain current approach to pest management by ensuring key values are protected from pest threatening processes as a priority.	2
Maintain the knowledge of pests and their impacts on key values and investigate emerging threats.	3

\* **Priority ratings** 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 Undara Volcanic National Park	

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

Undara Volcanic National Park has significant values, including endangered regional ecosystems, species listed in international agreements, and threatened species such as cave-dwelling bats listed in the national recovery plan for cave-dwelling bats, *Rhinolophus philippinensis*, *Hipposideros semoni* and *Taphozous troughtoni*. The condition of natural values will be monitored through the implementation of the *Undara Volcanic National Park Monitoring and Research Strategy*.

Threatening processes will be managed through the implementation of Undara Volcanic National Park’s fire, pest and visitor strategies.


### Desired level of service and strategic management direction

Desired level of service	
	Natural values will be managed to a ‘very high’ LoS through increasing knowledge of the values and their threatening processes.
Strategic management direction	Priority
<b>Level of service</b>	
Maintain current approach to increasing knowledge of natural values in accordance with the <i>Monitoring and Research Strategy</i> .	3
Maintain current level of service for natural values (such as training, collaboration with partners, management capacity etc).	3
<b>Health check monitoring</b>	
Monitor the condition of natural key values through health check monitoring.	1

\* **Priority ratings** Scale 1 (extremely urgent and extremely necessary) to 5 (optional and not urgent)

## 5.4 Post-contact cultural heritage management

### Management direction statement


Description	Current level of service
Post-contact cultural heritage management for Undara Volcanic National Park	

The lava tubes were well recognised in the area by the late 1800s—becoming features of interest and receiving intermittent, unmanaged visitation. Before becoming a national park, Undara was part of a large pastoral station known as Rosella Plains. The station belonged to the Collins family and was named after the native rosella plants, of which seven species are found in the national park. The Collins family were the driving force behind the gazettal of the park for the protection of the caves. Relics of pastoral activity include a wooden fork whip used for water extraction at the Fifteen Mile Spring, and an assortment of corrugated iron/pole and concrete/pole sheds at Yaramulla.

The electric telegraph line that tracked through the park was part of the section of the Cardwell to Junction Creek line that operated in the 1870s. This line was an important connection for the Overland Telegraph, which extended from Cardwell to the Gulf of Carpentaria.

QPWS manages historic sites in accordance with the NCA and *Queensland Heritage Act 1992* (Qld). However, 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	
	Post-contact cultural heritage will be managed to a 'high' LoS.

Strategic management direction	Priority
<b>Level of service</b> Maintain current level of service for historic cultural heritage values (such as training, collaboration with partners, management capacity etc).	2

\* **Priority ratings** 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 Undara Volcanic National Park	

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, as well as a diverse range of recreational and ecotourism opportunities. QPWS seeks a responsible balance between visitor needs and sensitive park resources in accordance with the NCA and government policies and procedures. Permitted commercial tour activities, agreements and events are administered in accordance with the NCA and other relevant legislation.

The strategic management direction in this management statement guides the formation of the *Undara Volcanic National Park Visitor Strategy*. The strategy details management objectives for key values and the desired management outcomes for visitor sites through zoning. Zoning and visitor site management objectives consider the physical, social and managerial impacts of the visitor experiences and sustainability of the sites. Visitor strategies clearly state the desired site capacity to provide a diversity of experiences for visitors and achieve site sustainability. The strategy also explores visitor opportunities that complement other experiences in the landscape and region.

The condition of, and visitor satisfaction with, visitor experiences will be monitored through the implementation of the *Undara Volcanic National Park Monitoring and Research Strategy*.


### Desired level of service and strategic management direction

Desired level of service	
	Visitor values will be managed to a 'very high' LoS through engagement with stakeholders, maintaining visitor facilities and enhancement of the visitor experience.
Strategic management direction	Priority
<b>Level of service</b>	
Increase communication and engagement with First Nations people to improve QPWS and commercial operator knowledge of cultural heritage.	1
Increase knowledge of potential visitor impacts on key lava tube fauna species.	1
Increase knowledge of visitor numbers to Undara Volcanic National Park.	2
Maintain current efforts to engage with commercial tour operators providing guided tours, including helicopter tours over the park.	2
Maintain current approach to facility maintenance.	2
Increase ranger knowledge of park values to enhance the visitor experience.	3
Improve the approach to visitor management by understanding visitor impacts.	3
Improve the visitor experience and create realistic expectations for the public by providing pre-visit information.	3
Maintain current efforts to collaborate with commercial operators on the park to provide social value to surrounding communities of Undara Volcanic National Park.	4
<b>Health check monitoring</b>	
Monitor the condition of visitor key values through health check monitoring.	1

\* **Priority ratings** 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 Undara Volcanic National Park	

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’s Protected Area Strategy 2020-2030*. Permitted activities are administered in accordance with the requirements of the NCA and other relevant legislation.

Undara Volcanic National Park is an important park for tourism and remote area recreation and provides a number of social values for the surrounding community.


### Desired level of service and strategic management direction

Desired level of service	
	Community, partnerships and other interests will be managed to a 'high' LoS.
Strategic management direction	Priority
<b>Level of service</b>	
Maintain current level of service for community and third-party interests (such as training, collaboration with partners, management capacity etc).	3

\* **Priority ratings** 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 Undara Volcanic National Park.	

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	
	Field management capacity will be managed to a 'very high' LoS.


Strategic management direction	Priority
<b>Level of service</b>	
Assist Ewamian Limited to build capacity through collaborative management across Ewamian Country.	1
Increase efforts to fulfil obligations in relation to cultural heritage and native title.	1
Maintain current approach to increasing ranger knowledge for various park management activities.	3
Maintain current level of service for field management capability (such as training, collaboration with partners, management capacity etc).	3

\* **Priority ratings** 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 Undara Volcanic National Park	

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	
	Operational planning and management support will be managed to a ‘very high’ LoS through increasing the efforts to engage with internal stakeholders on park management issues.

Strategic management direction	Priority
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Level of service	
Improve current level of service for operational planning and management support through increased efforts to plan and gain management support.	3

\* Priority ratings Scale 1 (extremely urgent and extremely necessary) to 5 (optional and not urgent)

## 6. References

- Ewamian Aboriginal Corporation (2016). *Ewamian Aboriginal Corporation Strategic Plan 2016–2021*. Available at: <https://www.ewamian.com.au/>.
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- Stanisic, J. (1999) Land snails and dry vine thickets in Queensland: using museum invertebrate collections in conservation, *The Other 99%. The Conservation and Biodiversity of Invertebrates* (eds. Ponder, W. and Lunney, D), pp. 258-263

# Appendix 1. 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>Custodial obligations</b>	The requirements in legislation and government policies that we, as the land management agency, have to ensure 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>Health check</b>	Basic form of monitoring that uses indicators and visual assessments to regularly evaluate the condition of key values. Regular health checks ensure QPWS can respond quickly to adverse change and redirect management priorities.
<b>Key value</b>	A natural, cultural 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>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 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 instrument</b>	A management plan or management statement.
<b>Management theme</b>	QPWS has identified a number of management themes that are common to most of the parks, forests and reserves in our estate: fire management; pest management; natural values management; post-contact cultural heritage; visitor management; community, partnerships and other interests; field management capability; operational planning and management support.
<b>Priority rating (key value SMDs)</b>	<p>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, and social, economic and political factors.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p>
<b>Priority rating (LoS SMDs)</b>	A rating given to an LoS or custodial obligation strategic management direction. A scale from 1 (extremely urgent) to 5 (not urgent or optional) is assigned, with consideration given to legislative obligations, cost, and social, economic and political factors.
<b>Strategic management direction (SMD)</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 International Union for Conservation of Nature (IUCN) classifications, QPWS has identified threatening processes that have the potential to affect Queensland's values (e.g., natural systems modifications, invasive species). 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.