

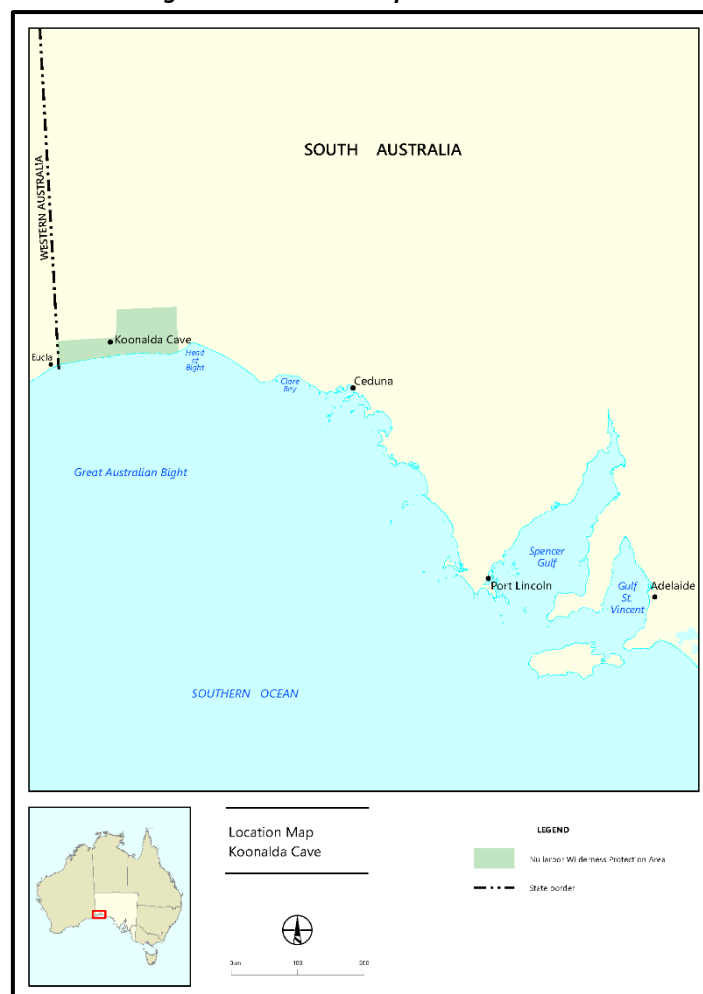
CONSULTATION INFORMATION PACK

Application for authorisation under the *Aboriginal Heritage Act 1988* (SA)

Establishing baseline data for the conservation of Koonalda Cave

- Applicant:** Department for Environment and Water
- Application Type:** Section 23 of the *Aboriginal Heritage Act 1988* (SA)
- Application Area:** The underground area of Koonalda Cave, located on the Nullarbor Plain, limited to the extent shown in Attachment 1
- Proposed Activities:** Digital recording of engravings, laser scanning of cave passages, collecting water samples to establish ground water quality and climate monitoring.

Figure 1 – Location map Koonalda Cave



Information in this document is based primarily on information provided by the Applicant

LIST OF ACRONYMS AND ABBREVIATIONS

AAR	Attorney-General's Department - Aboriginal Affairs and Reconciliation
Act	<i>Aboriginal Heritage Act 1988 (SA)</i>
Activities	Digital recording of engravings, laser scanning of cave passages, collecting water samples to establish ground water quality and climate monitoring.
Applicant	Department for Environment and Water (DEW)
Application Area	The underground area of Koonalda Cave limited to the extent shown on Attachment 1
CMP	Koonalda Cave Conservation Management Plan
Committee	State Aboriginal Heritage Committee
DEW	Department for Environment and Water
EOI	Expression of Interest
FWCAC	Far West Coast Aboriginal Corporation RNTBC
Minister	Minister for Aboriginal Affairs
MCE	Mirning Council of Elders
NPAC	Nullarbor Parks Advisory Committee
RNTBC	Registered Native Title Body Corporate

INTRODUCTION

The Minister for Aboriginal Affairs (Minister), who is responsible for the *Aboriginal Heritage Act 1988* (SA) (Act), has received an application for authorisation under section 23 of the Act from the Department for Environment and Water (DEW) (Applicant) to undertake digital recording, laser scanning, climate monitoring and water quality sampling (activities) inside Koonalda Cave (together, the Project).

Koonalda Cave, located on the Nullarbor Plain, is a highly significant site for Mirning Custodians and the Aboriginal peoples of the Far West Coast. The cave is protected under Commonwealth and state legislation and is recognised for its Aboriginal heritage, archaeology, and natural features at international, national, and state levels. Its most important values come from the evidence of Aboriginal occupation dating back to 30,000 years ago, evidence of flint mining, some of the world's earliest known cave art in the form of finger flutings and engravings on its cave walls.

The Applicant, in making this application, plans to engage appropriately skilled and qualified practitioners to capture baseline data about the cave through an Expression of Interest (EOI) process. The data collected will record the current condition of the artwork, test the quality of the water and record the humidity levels and temperature inside the cave.

The proposed activities are supported by the Far West Coast Aboriginal Corporation Registered Native Title Body Corporate (FWCAC) and the Nullarbor Parks Advisory Committee (NPAC). Some representatives of the Mirning Community have expressed in-principle support for the nature and purpose of the activities, as an important part of plans to conserve and protect the values of the cave. However, they hold concerns regarding cultural protocols and consider that entering the cave and recording Aboriginal heritage features may amount to interference with Aboriginal heritage.

For this reason, authorisation under section 23 of the Act has been sought by the Applicant.

Prior to considering whether to grant an authorisation, section 13 of the Act requires the Minister to understand and consider the views of a range of interested Aboriginal parties. Aboriginal Affairs and Reconciliation (AAR) conducts this consultation on the Minister's behalf, seeking the views of Traditional Owners, the State Aboriginal Heritage Committee (Committee) and other Aboriginal parties that the Minister considers may have an interest in the matter.

OVERVIEW

The Applicant and its responsibility for Koonalda Cave

The Applicant is the state government agency responsible for managing the Nullarbor Wilderness Protection Area, a protected area administered by the Applicant under the *Wilderness Protection Act 1992* (SA). Koonalda Cave is located within the Nullarbor Wilderness Protection Area.

NPAC is an advisory committee, established to provide advice on the management of the Nullarbor Parks, including the Nullarbor Wilderness Protection Area. NPAC comprises Mirning members nominated by FWCAC and employees of the Applicant.

The Koonalda Cave Conservation Management Plan (CMP), finalised in early 2025, outlines the strategic management priorities for Koonalda Cave and the Nullarbor Wilderness Protection Area. A copy of the CMP is available on AAR's website agd.sa.gov.au/heritage-applications.

Project Background

Following vandalism to finger flutings in the cave identified in 2022, an Australian Government National Heritage Grant was awarded to the Applicant in 2023 to better protect Koonalda Cave. This included the development of a CMP, installation of improved site security measures, and research to establish condition benchmarks and to better understand any impacts of climate change to the cave.

The CMP has been developed in partnership with NPAC, with input from the FWCAC, the Mirning Council of Elders (MCE) and Far West Coast Aboriginal people. Park managers, researchers, technical experts and representatives from the Federal Department for Climate Change, Energy Environment and Water and AAR also contributed to the CMP.

The outcome of this consultation was that FWCAC and NPAC gave their support for DEW to progress the activities outlined in this proposal. The MCE provided in-principle support, subject to concerns regarding traditional decision making and cultural protocols, particularly cultural authority for approving entry into the cave, gender sensitivities and indigenous cultural intellectual property rights.

Cultural heritage significance of Koonalda cave and legislative protections

Koonalda cave is an Aboriginal site of profound significance to Mirning custodians and other Far West Coast Aboriginal people.

The site is a determined Aboriginal site under the Act, for its significance to Aboriginal archaeology, anthropology and tradition. Koonalda Cave is a National Heritage Place, recognised and protected under Commonwealth law, for its outstanding heritage value to the nation and for its role in establishing our contemporary understanding of the age of Aboriginal art, archaeology and occupation in Australia.

Further information about the values of Koonalda Cave, and the management framework for the protection and conservation of these values, are described in the CMP.

Application Area

Koonalda Cave is in the Nullarbor Wilderness Protection Area, about 80 km east of the Western Australian border and 22 km north of the Great Australian Bight. It is located on the Native Title Land of the Far West Coast Aboriginal Peoples as recognised in 2013 through the Far West Coast Native Title Determination. The FWCAC manages native title on behalf of the common law holders, including Mirning.

The Application Area is the underground area of the cave limited to the extent included in the map at Attachment 1.

PROJECT DESCRIPTION

Background and rationale for the Project

Koonalda Cave contains extremely significant and fragile engravings and finger flutings on the cave walls that are at least 27,000 years old. Despite the legislative protections in place, closure to the public, and physical barriers to keep people out, the engravings and finger flutings have been subject to permanent damage from vandalism resulting from unauthorised entry.

The most recent occurrence was identified in 2022, following which FWCAC, Mirning leaders and researchers sought urgent assistance from the Australian and state governments to stop further damage from occurring. The Applicant installed security cameras to address the threat of unauthorised entry and vandalism, but there remain other threats to the engravings, including changing environmental conditions. Currently, these threats are not well understood and require further investigation.

There are also critical knowledge gaps in understanding the relationship between the cave's climate and the condition of the finger flutings, in particular, changes in water quality of the subterranean lakes and the role that water plays in regulating humidity and temperature in the cave.

The Applicant says that while the entirety of the Koonalda Cave site, both above and below ground, is significant, it is the below ground component that is considered the highest priority to protect, as the engravings, particularly the finger flutings, are highly vulnerable to environmental and human impacts.

The Applicant states that the proposed activities will help identify how risks, to the engravings in particular, can be mitigated. This will be achieved through establishing baseline data for use in monitoring change and identifying key threats to better inform the ongoing management of the site. According to the Applicant, this will help the Applicant, Mirning Custodians and Far West Coast Aboriginal people to *“build knowledge to support adaptive management to ensure long-term conservation and protection”*. This is the basis for the Applicants proposal.

Layout of Koonalda Cave

The entrance to Koonalda cave is located at the bottom of a large doline (sinkhole). The cave's network features several large chambers, and three subterranean lakes. The cave contains two main chambers: the Northern Passage and the North West Passage. The Northern Passage contains historic elements associated with the pastoral era. The North West Passage contains Aboriginal heritage features (engravings, evidence of flint quarrying etc). Most of the Aboriginal rock art within Koonalda Cave is located within what is called the Art Chamber. The Art Chamber is reached by ascending a wide passage known as 'The Ramparts'. The key features of the caves network, and the location of the proposed activities, described in further detail below, is depicted on the map at Attachment 1.

Proposal

The objective of the activities is to obtain reliable, accurate and repeatable data through:

1. the capture of high-resolution digital photography and laser scanning (photogrammetry) of the engravings and finger flutings in the Art Chamber and cave passages

2. using this data to produce high-quality digital flat and 3D images of the engravings in the Art Chamber and a 3D model and 'flythrough' of the Art Chamber and cave passages
3. collecting water samples to establish ground water quality
4. monitoring the climate within the cave, to track changes over time by placement of small data loggers to record temperature and humidity.

The information gathered will help clarify any relationship between the climate within the cave and the preservation of the finger flutings, enable ongoing monitoring of changes and the identification and management of environmental or other risks.

The capture of digital images, laser scanning, water sampling and placement of data in the cave is expected to take approximately 7 to 10 days.

The data gathered will be processed off site to generate:

- high-quality 3D and flat images of the engravings in the Art Chamber
- a 3D model and flythrough of the Art Chamber and cave passages
- analysis of water samples to determine salinity, dissolved oxygen, chemical quality, organic content and hydrocarbons.

The data loggers will be left on-site to collect information on temperature and humidity over time.

Importantly the Applicant states that the activities are considered non-invasive, and do not require ground disturbance or involve physical contact with the engravings or damage or destruction to Aboriginal heritage.

METHODOLOGY

The area of the cave where each of the activities outlined below are proposed is marked on Attachment 1.

Digitally record engravings in the Art Chamber

A digital camera on a tripod will be used by a suitably qualified operator to systematically take overlapping high-resolution photographs of the engravings from multiple angles. There will be no fixing of any equipment to any part of the cave, no interference with the cave walls and no damage or disturbance to the engravings during the fieldwork.

Following the fieldwork component, specialised software will be used to convert the photos into 3D digital models of the engravings.

Laser scanning cave passages

A handheld device using LiDAR (Light Detection and Ranging) technology will be used to scan the Northwestern (including Art Chamber), Northern (up to but not past First Lake- refer to Attachment 1) and Western passages. The scanning involves walking along the passages while the device uses laser pulses/beams to measure distances. Data captured will be used to generate a 3D model of the cave and its features using specialised software.

Water sampling

The Applicant plans to use its staff to manage collection of water samples using in-house expertise.

It will collect and test water samples from four 'Sample Sites' (some of which are indicated on Attachment 1). One x 250ml water sample will be taken at each Sample Site. Samples will be transported to Adelaide for testing by an independent laboratory. The Applicant has provided the following information on the location, and aims associated with, each Sample Site:

- Sample Site 1: *"Small freshwater inflow site at base of entrance rockfall. Test salinity, dissolved oxygen, chemical quality and organic content of the rainwater seepage. This information is unobtainable anywhere else in the cave system"*
- Sample Site 2: *"First Lake near western wall. First Lake received a great deal of organic material, including sheep manure, following rainstorms during the pastoral era. Test for salinity, dissolved oxygen, chemical quality and organic content of the standing water."*
- Sample Site 3: *"Side pool near old bore site. Previous location of a diesel pump. Test for salinity, dissolved oxygen, chemical quality, organic content and hydrocarbons (for presence and density of diesel)"*.
- Sample Site 4: *"Lookdown Lake shoreline. Test for salinity, dissolved oxygen, chemical quality, organic content and hydrocarbons (to see if they reached the lake)"*.

Climate data

The Applicant proposes that its staff will undertake the placement of up to 15 data loggers that record temperature and humidity. Data loggers will be placed at strategic locations including within the Art Chamber. Some of these locations are indicatively marked on Attachment 1. The units are free standing requiring no ground disturbance and are around the size of a USB flash drive. The units will need to be recharged after 12 months and data downloaded from the units. This will require re-entry into the cave.

OUTCOMES

The Applicant states that the primary outcomes of the proposed activities aim to improve understanding of Koonalda Cave and support better management, protection and conservation by:

1. developing datasets that can be used as a baseline for future monitoring and to inform effective, targeted site management
2. improving understanding of changes over time to enable targeted, effective and timely conservation measures to be implemented
3. producing a permanent digital record of the engravings
4. providing the ability to undertake research on engravings, geology, water and climate through use of digital datasets without having to re-enter the cave (subject to further approvals)
5. increasing opportunities for Mirning Custodians and Far West Coast Aboriginal people to engage and interact with the site and their heritage through sharing, presenting and interpreting the images and digital models of the Art Chamber and cave system, and
6. contributing to the delivery of strategies and actions in the Koonalda Cave CMP.

UNDERTAKING THE ACTIVITIES

Subject to authorisation under the Act, the activities will be coordinated by the Applicant in consultation with NPAC.

The Applicant will seek Expressions of Interest (EOI) from appropriately qualified and skilled practitioners to undertake the digital recording and laser scanning activities and development of digital images and 3D models.

The EOI project brief and assessment criteria will be developed by the Applicant in consultation with NPAC, Mirning Custodians and the FWCAC. Key considerations will include both technical ability and capacity to work effectively with Aboriginal people in a culturally sensitive environment.

The Applicant will keep NPAC, Mirning Custodians and FWCAC informed throughout the EOI process and implementation of the activities.

SCOPE OF AUTHORISATIONS

The Applicant seeks for the authorisation to apply to itself, its staff, and contractors, subcontractors and agents of the practitioners and organisations engaged to undertake the work. The proposed activities will be conducted over a 5-year period between October 2025 and December 2030, dependent on funding.

MONITORING, PERMITS AND PERSONAL SAFETY

Mirning cultural monitors, facilitated by FWCAC, will be engaged for the duration of activities in the Art Chamber at a minimum.

Should authorisation be granted, the Project will then require approval of a scientific research permit and permission to access the cave by the Applicant as required under the *Wilderness Protection Act 1992* (SA) and Wilderness Protection Regulations 2021. This approvals process involves the Applicant, with advice from, NPAC reviewing the applications received.

Personal safety for people authorised to enter the cave will be managed in accordance with the Applicant's Work Health and Safety policies and procedures. Pre-visit information will be provided as part of induction to the site. The Australian Speleological Federation (ASF) Minimum Impact Caving Code will be used as a benchmark to guide the minimisation of impacts in the cave. A link to the Caving code can be found on AAR's website agd.sa.gov.au/heritage-applications

Access through the cave from the entrance to The Ramparts and Art Chamber, and the entrance into the Northern Passage, will be by foot only via the pre-defined trails that have been in use since the 1940s.

DATA MANAGEMENT AND INDIGENOUS CULTURAL INTELLECTUAL PROPERTY

The digitisation and laser scanning activities will require the recording of sensitive cultural images in raw data formats, and digital imagery and models. The collection, storage, management and use of this data, cultural knowledge and Indigenous Cultural Intellectual Property associated with the Project will be managed through discussion and written agreement with Mirning Custodians and the FWCAC. The terms and conditions of the written agreements will inform the relevant requirements of the EOI project brief and EOI assessment criteria.

The Applicant says there will be no public release of any data collected or imagery produced as part of this Project unless otherwise agreed. The use and protection of Aboriginal cultural knowledge and Indigenous Cultural Intellectual Property will be managed through written agreements with on-going advice from NPAC and engagement with Mirning Custodians and FWCAC.

Any use of this information to undertake investigation or research outside the scope of this proposal will be subject to further approvals and agreements with Mirning Custodians, the FWCAC and the Applicant.**ABORIGINAL ENGAGEMENT**

The Applicant has undertaken engagement with NPAC, FWCAC, MCE and other interested parties over eighteen months to develop the CMP. The activities in this proposal are aligned and contribute to the research and monitoring priorities identified in the CMP. These priorities were developed from feedback at workshops held by the Applicant with NPAC, FWCAC, MCE, Far West Coast Aboriginal people and key researchers between August 2023 and December 2024 where participants were asked what the key threats to Koonalda Cave are and what research would help manage these threats.

Further discussions regarding the proposed activities took place between the Applicant and NPAC, FWCAC and Mirning Council of Elders in late 2024. While FWCAC and NPAC agreed to the proposal, agreement could not be reached between the groups about cultural protocols including who should enter the cave and who has the cultural authority to speak for the site.

The Applicant states that it will continue to engage with the interested groups regarding the activities proposed and the EOI process at the same time as it seeks this authorisation under the Act. The Applicant proposes that any concerns raised during the consultation process for the authorisation will be considered during its ongoing discussions with the groups.

PROPOSED MANAGEMENT OF ABORIGINAL HERITAGE AND REPORTING

The Applicant states that, in acknowledging the deep cultural significance of the site to the Mirning people, it will continue to work to protect and conserve its values, in collaboration with Mirning Custodians, in accordance with the management framework set out in the CMP. The activities proposed have been guided by the outcomes from the engagement undertaken through the development of the CMP.

Those authorised to enter the cave will be subject to conditions including a site induction regarding risk management and the protection of Aboriginal heritage, keeping to established routes, and compliance with AAR's Aboriginal Heritage Discovery Protocols. Mirning cultural monitors on site during the fieldwork will provide further advice as needed for the avoidance of impacts to Aboriginal heritage in the Art Chamber and other areas of the cave.

The Applicant states it will report initial and all ongoing results to all parties involved in the consultations.

AAR's Aboriginal Heritage Discovery Protocols

AAR's Aboriginal Heritage Discovery Protocols outline the steps to be followed if Aboriginal heritage is discovered during the Project.

If the authorisations are granted, the Applicant acknowledges that compliance with AAR's Aboriginal Heritage Discovery Protocols is likely to be a condition. The Applicant has committed to adhering to these protocols.

Visit agd.sa.gov.au/heritage-applications for a copy of AAR's current Aboriginal Heritage Discovery Protocols.

SECTION 13 CONSULTATION

Prior to considering whether to grant any authorisation under the Act, section 13 requires the Minister to take all reasonable steps to consult with the Committee, Traditional Owners, and any other Aboriginal persons or organisations that in the opinion of the Minister have a particular interest in the matter.

Invitation for submissions from interested Aboriginal parties

Submissions are now invited from all interested Aboriginal parties about the Project. Consultees may make a submission to AAR in person, by phone, letter, or email. Anyone in receipt of this consultation information pack is encouraged to share it with other Aboriginal parties who may have an interest in the Project.

This document, the CMP, AAR's Aboriginal Heritage Discovery Protocols and the Nullarbor Parks Management Plan is available online at agd.sa.gov.au/heritage-applications. If you would like a copy of any of this information sent to you, please contact AAR.

CONSULTATION CLOSES ON 5 JULY 2025.

The Committee will consider all submissions received by the due date.

Aboriginal people with an interest in this matter are encouraged to contact AAR to learn more about the Project and to lodge a submission. **AAR is available to arrange a meeting between consultees, AAR and the Applicant to discuss this application. Please contact AAR if you would like to meet with AAR and the Applicant.**

All consultation feedback, RSVPs, submissions and/or requests for further information should be addressed to:

Joanne Fleer
Senior Project Officer (Heritage), AAR
Mail : GPO Box 464, ADELAIDE SA 5001
Email: AAR.CIR@sa.gov.au
Telephone: (08) 8363 8622

When making a submission, consultees should consider and respond to at least the following questions:

1. **Should the authorisation sought by the Applicant be granted? Why or why not?**
2. **If the authorisation is granted, what conditions (if any) should be imposed on it?**
3. **Will the Project provide you with any direct or indirect benefits (e.g. cultural, financial, or personal)?**
4. **Are there any other matters the Minister should consider when deciding this application?**

Consultees may request AAR to keep any cultural information in their submission confidential. Where possible AAR will accommodate that request; however, procedural fairness considerations may require that the Applicant be provided with a right of response to information that is relevant (or at least so much of the information as is relevant).

Otherwise, all submissions will be forwarded to the Applicant in full for comment. Once the consultation period has closed, consultee submissions and the Applicant's comments about them will be forwarded to the Committee, and the Committee's advice will then be sought.

AAR will collate all submissions, the Applicant's responses to them, the Committee's advice, and its own recommendations to the Minister to assist them to make a final decision about the application.

AAR is available to answer questions or provide further information about the application at any time **prior to consultation closing on 5 July 2025**.

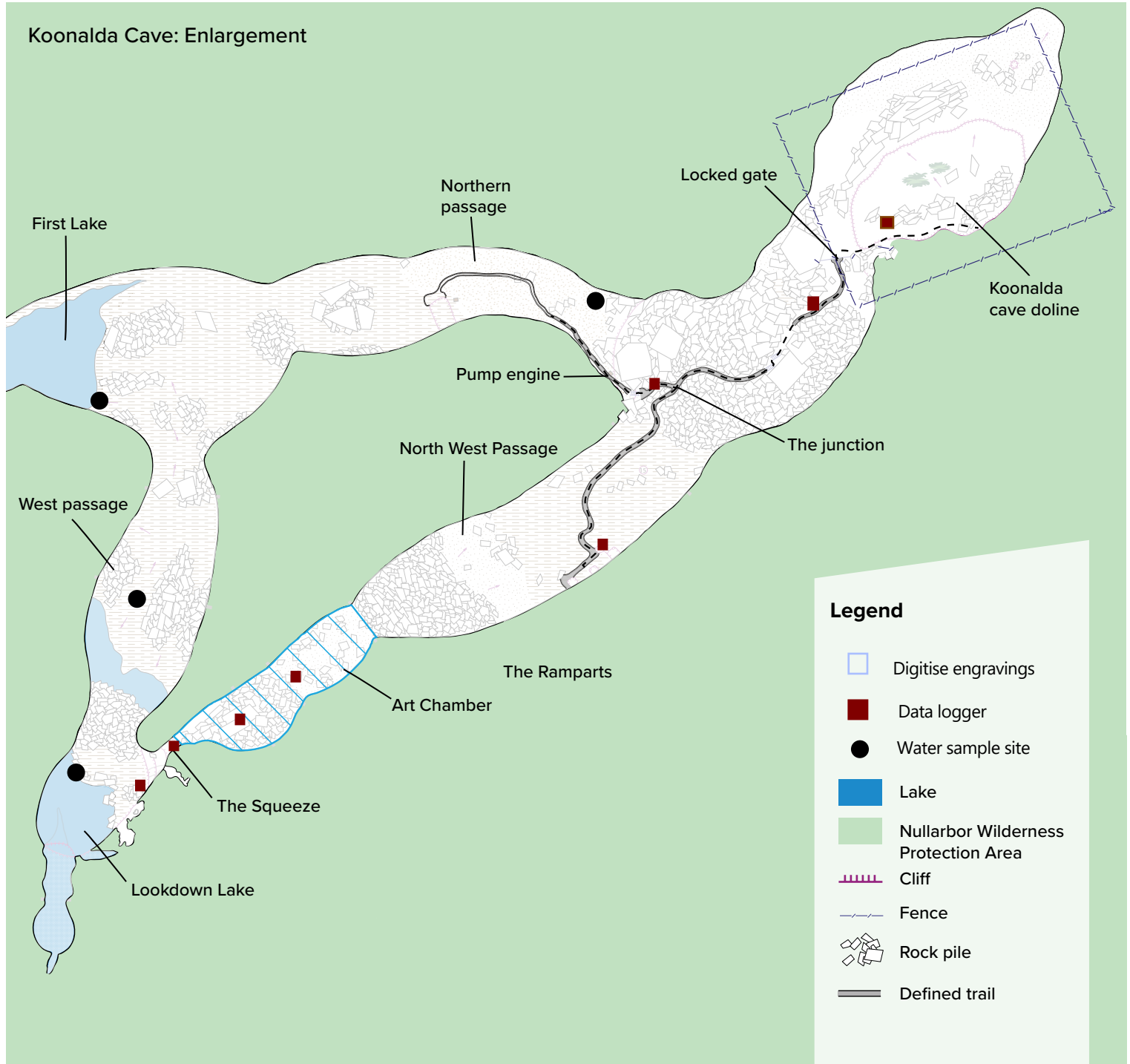
Thank you for taking the time to consider this document. If you are an interested Aboriginal party, AAR encourages you to make a submission about this application.

AAR is available to assist people to record submissions if they have any difficulty in doing so.

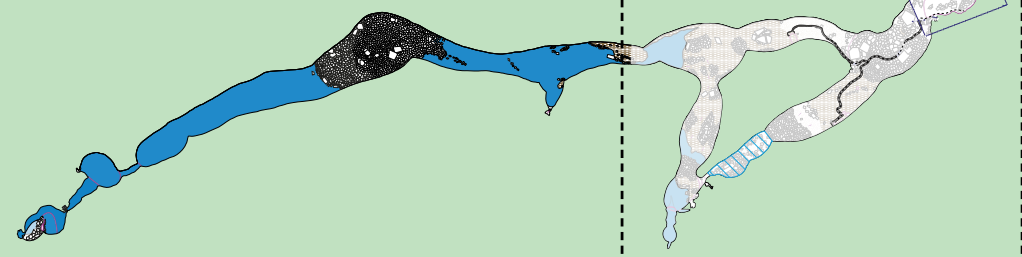
Attachments:

Attachment 1: Map of Application Area and proposed activities

Koonalda Cave: Enlargement



Koonalda Cave: Plan view



Koonalda Cave: Elevation view