South Australian
HERITAGE COUNCIL

BETTER HERITAGE INFORMATION
SUMMARY OF STATE HERITAGE PLACE

Ucontitchie Hill

Ucontitchie Hill SHP 17061, c.1999.

Source: DEW Files

ENTRY IN THE REGISTER

Description or notes with respect to a place entered in the South Australian Heritage Register in accordance with either the *South Australian Heritage Act 1978* or the *Heritage Places Act 1993.*

The South Australian Heritage Council may correct errors or inaccuracies in the entry in the Register in accordance with s21 of the *Heritage Places Act 1993.*

NAME: Ucontitchie Hilll **PLACE NO.:** 17061

ADDRESS: Wirangu and Nauo Country
Ucontitchie Road, Cocata SA 5654
CR 5772/130 D31914 A23
Hundred of Cocata

CONFIRMED IN THE SOUTH AUSTRALIAN HERITAGE REGISTER:

16 March 2000

DESIGNATED AS A PLACE OF GEOLOGICAL SIGNIFICANCE:

11 November 1999

S16 CRITERIA SATISFIED UNDER *HERTIAGE PLACES ACT 1993*

(c) it may yield in formation that will contribute to an understanding of the State's history, including its natural history

COMMENTARY ON THE LISTING

Additional information provided as a part of the content of the South Australian Heritage Register in accordance with s14(6) of the *Heritage Places Act* 1993 'hold information in association with the Register'.

KNOWN AS: Ucontitchie Hill [Designated as a place of geological significance]

STATEMENT OF HERITAGE SIGNIFICANCE

Ucontitchie Hill displays a wide variety of minor and major granite landforms that contribute to a site that is highly significant in understanding geological and erosional processes. The monolith, referred to as an 'inselberg' clearly records many features within the granite that are a result of previous weathering. Exceptional examples of tafoni, flared slopes, corestones and triangular wedges provide insight into poorly understood inselberg development and erosion, and hence can contribute to an understanding of the granite geology of the State.

STATEMENT OF DESIGNATION

Evidence of erosional processes at Ucontitchie Hill are highly likely to contribute to further understanding of the development of inselbergs in South Australia. The large granite inselberg displays examples of both fresh and highly eroded granites that have formed distinct features including but not limited to well-developed tafoni and erosional gutters.

Elements of Significance:

Elements of heritage significance include:

- Ucontitchie Hill surface and immediate surrounds,
- Tafoni, flared slopes, sheet structures, rillen, gnammas, corestones and triangular wedges associated with Ucontitchie Hill,
- Turrets, blocks, boulders and other features in the granite,

Elements not considered to contribute to significance of place include:

- Human-made objects, trails and roads, vegetation, fencing and signage and dam.

CRITERIA (under section 16 of the Heritage Places Act 1993)

(c) it may yield information that will contribute to an understanding of the State's history, including its natural history

Ucontitchie Hill provides geologists and geomorphologists with a wide variety of major and minor granite structures which contribute crucial evidence towards furthering an understanding of inselberg development.

Ucontitchie Hill provides opportunities to research the development and effects of continued erosion while exposed above the earth's surface, including how fractures in the rock have determined its shape. The influence of these natural processes is recorded clearly in exceptional and varied erosional features, most notably being the well-developed tafoni, triangular wedges and exposed and weathered 'corestones'. Other features of the place include flared slopes, rillen, gnammas, turrets, blocks, and boulders. These features provide crucial evidence for the past and continued process of erosion and inselberg formation.

SITE PLAN

Ucontitchie Hill **PLACE NO.: 17061**

Ucontitchie Road, Cocata SA

Parcel boundaries of Ucontitchie Hill, Ucontitchie Road, Cocata SA 5654, CR 5772/130 D31914 A23 Hundred of Cocata

N ↑

LEGEND

Parcel boundaries (Indicates extent of Listing)

SITE PLAN - DETAIL

Ucontitchie Hill **PLACE NO.: 17061**

Ucontitchie Road, Cocata SA

Outline of Elements of Significance of Ucontitchie Hill, Ucontitchie Road, Cocata SA 5654, CR 5772/130 D31914 A23 Hundred of Cocata

N ↑

LEGEND

Parcel boundaries (Indicates extent of Listing)

Outline of Elements of Significance for State Heritage Place*

*Red outline is indicative of elements of significance, noting imperfect alignment of aerial imagery with parcel cadastre for the place.

PHYSICAL DESCRIPTION

Ucontitchie Hill, sometimes known as Ucontitchie Rock, is a large protruding rock structure located to the north of Cocata Conservation Park. It is made up of several domed granite outcrops with flared slopes, well-developed rillen (erosional gutters) and boulders with large tafoni (cavities developed in the underside of rocks).[1]

Ucontitchie Hill protrudes from the surrounding plain and is thus recognised as an 'inselberg', an isolated hill that stands above the surroundings, like Uluru or the more comparable Pildappa Rock.[2] Pink-red, coarse-grained granites as a part of the Hiltaba Suite[3] make up a majority of the structures.[4] Ucontitchie Hill currently stands at approximately 35 metres above the plain, though some sources say it is as tall as 50m,[5] and is visible for many kilometres.[6] Ucontitchie Hill is roughly dome-shaped (a type of inselberg known as a bornhardt)[7] with bare slopes that become steeper towards the base. Atop the dome are also several boulders, blocks and taller blocks referred to as 'turrets'. These features can be found on flatter crest areas of the domed structure.

Ucontitchie Hill displays areas of fresh granite that are barely weathered but there are also areas with highly weathered granites. In some places, granite is so weathered it is described as 'rotten'. A great variety of features associated with granite structures in the Eyre Peninsula have developed as a part of the inselberg such as tafoni, flared slopes, sheet structures, rillen, gnammas.

The surrounding rocks are Pleistocene (2.58 Ma (million years ago) - 11.7 ka (thousand years ago)) sediments[8] of which some are altered into calcrete that overlies the plain with a thick crust in the semi-arid environment.

Elements of Significance:

Elements of heritage significance include:

- Ucontitchie Hill surface and immediate surrounds,
- Tafoni, flared slopes, sheet structures, rillen, gnammas, corestones and triangular wedges associated with Ucontitchie Hill,
- Turrets, blocks, boulders and other features in the granite,

Elements not considered to contribute to significance of place include:

- Human-made objects, trails and roads, vegetation, fencing and signage.

HISTORY OF THE PLACE

Geological Setting

Ucontitchie Hill is a Mesoproterozoic rock structure from approximately 1600-1575 Ma and is a part of the Hiltaba Suite. The Suite was formed in the last volcanic event to have affected the Eyre Peninsula[9] and parts of this formation can be found

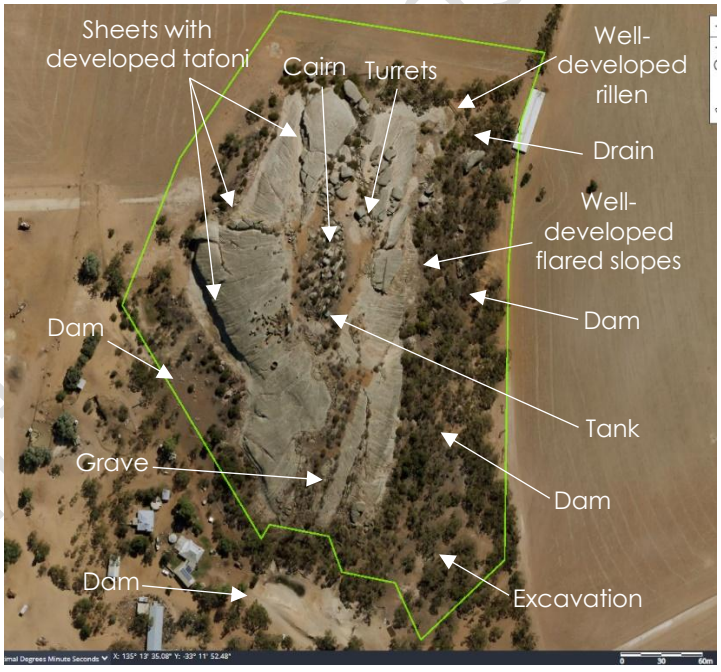
throughout the western and central areas of South Australia. The Hiltaba Suite granites often have a red or pink colour from abundant iron oxide inclusions within their grains.

Over millions of years, the granite extrusion was covered with sediment. Erosion and uplifting eventually revealed the rock as early as 70 million years ago,[10] which is demonstrated by duricrusts that have formed on the granites. Today, Ucontitchie Hill is surrounded by Pleistocene (2.58 Ma - 11.7 ka (thousand years ago)) sediments[11] of the Pooraka Formation.[12]

Several built structures dot the surrounding area including three dams, drainage pipes for water collection, a tank, a cairn, an excavation site[13] and a grave.

The granite demonstrates very few joints (breaks or fractures in the rock). This lack of joints may explain the homogenous and monolithic rock formation,[14] as it may have allowed for little alteration. It is believed that Ucontitchie Hill, with its limited joints, was eroded much slower than the surrounding, closely jointed granite plain. As a result, the surrounding landscape has revealed Ucontitchie Hill and allowed it to stand starkly in the landscape. Some joints have been eroded, forming distinct clefts in the rocks.[15]

Several features demonstrate erosion and weathering of the granite. The most obvious



Approximate locations of features of Ucontitchie Hill. c. 2025

Source: DEW Files, SARIG Map

are flared slopes that demonstrate subsurface weathering where water slowly eroded the granite beneath the plain's surface and created wave-like edges in the granite.

Ucontitchie Hill has fresh and 'rotten' granite exposures. Fresh granites are largely unweathered, whereas 'rotten' granites are highly weathered due to water-runoff.

Granite is particularly rotten in areas near the base of the outcrop and in some places surrounding Ucontitchie Hill, such as the excavated dam, highly eroded granites demonstrate joints 1-2 metres apart. This markedly contrasts with the 20-30 metre apart joints of the Ucontitchie Hill structure.[16] The weathered granite is overlain with calcrete, which in this case are Pleistocene-aged sands that have been hardened.[17] Granite at Ucontitchie Hill is mostly 'fresh' and has not been altered to a great extent by erosion, which differentiates it from some other granite structures nearby.[18] Differentiated weathering along the edges of the structure has also formed flared slopes, wave-like slopes that have been weathered over millions of years beneath the surface. The weathering profile at the base of some slopes is what forms these wave-like sides and provides insight into the evolution of the landscape. The often-stepped concave or convex slopes,[19] may be flared on one side or on two sides of the rock surface, such as an area on the west side of the hill.[20] Stepped slopes on the east side of Ucontitchie Hill are referred to as 'multiflared', demonstrating one flared slope directly above another.[21]

Sheet structures are present atop the structure and have been detached by weathering. Such structures are large slabs of rock,[22] and may also be in the form of boulders. They often form due to erosion along horizontal joints, which is the case at Ucontitchie Hill.

The formation of sheet structures and boulders can lead to formation of tafoni, which are cavities on the underside of the rock formed by erosion,[23] and can become well-developed and hollow out the rock considerably, creating eye-catching structures. Others may form pedestal rocks[24] and turrets, tall blocks of rock that are found predominantly on the flatter summit of the 'hill'.

Flow of water along joints in the granite may form interconnecting gutters called rillen. These can be found running down the bare slopes of Uncontitchie Hill.[25] However, for the most part, the rillen at Ucontitchie Hill run in fresh rock where joints are not present.[26] Fracture patterns[27] may also form in relation to jointing within the granite. These structures create distinct patterns in the rock.

In the northeastern and eastern sectors of the outcrop are large triangular wedges. [28] These are granite sheets that have been detached from the larger rock. Through compression and the release of compressive stress, these sheets may move differentially, pushing out the exposed edge and creating a triangular wedge that may be detached or in some cases further compressed.[29]

Pits and basins can often form as a result of erosional forces in a single area. Often flat pits and holes that, if they contain water, are referred to as gnammas and can be found on the upper surface of the rock.[30]

Some areas of granite, such as those near the base of Ucontitchie Hill nearby the excavated dam, contain 'corestones' or 'kernels' of fresh rock where water has infiltrated fractures and weathered them selectively. The cubic blocks of the granite then become gradually rounded. The rough size of these corestones demonstrate the original joints in the rock, demonstrating a history of the rock in situ and non-uniformly weathered granites.

Siliceous stalagmites and speleothems, are also present, though exact locations of these features are unknown. [31]

The intricate weathering at Ucontitchie Hill has led to it being recognised by geomorphologist Dr Charles Rowland Twidale 'as one of the most intricately sculptured inselbergs on [the] Eyre Peninsula' and that the inselberg '[demonstrates] the sharp and strong structural variation to which the inselbergs owe their origin'.[32] Dr Twidale has identified Ucontitchie Hill as being of exceptional scientific importance as it demonstrates clear inselberg development. Perhaps most notably, the tafoni and triangular wedges provide excellent opportunity for researching erosional processes affecting granite structures throughout the State.[33]

The method of fracturing demonstrated at Ucontitchie Hill led Dr Twidale to hypothesise that they were caused by horizontal movement of the earth's crust. He theorises that compressive and other forces generated by such movements have contributed to the linear fractures present here and also at the nearby Mt Wudinna & Environs (Mount Wudinna, Little Wudinna, Polda Rock and Turtle Rock) (SHP 17060). Moreover, he postulates that the horizontal movement also contributed to the domed shape of Ucontitchie Hill. The rock was likely under pressure until overlying sediment was eroded which then allowed for a convex structure to be formed when freed from stress.

Duricrusts (weathering horizons typified by the concentration of particular minerals) in the Eyre Peninsula have been used to approximately date the Ucontitchie Hill by correlation. This has demonstrated that the granite structure may have been exposed more than 70 million years ago.[34]

Human History

Ucontitchie Hill is part of Wirangu and Nauo Country. However, the historical and cultural importance of Ucontitchie Hill to First Nations people is currently not well documented. It is possible that First Nations people used gnammas on the rock surface as sources of water, as had been documented at Pildappa Rock. The word 'gnamma' itself is of First Nations origin, from the Nyunga language in the Western Desert and refers specifically to a rock hole with water. The name 'Ucontitchie' is also of First Nations origin[35] but the meaning is currently unknown.

As early as 1912, soak wells at Ucontitchie Hill were seen as potential water sources by Europeans and areas were identified as being suitable for masonry tanks.[36] Government funded water collection that occurred at Yarwondutta Rock (and Kolballa) informed decisions for further collections at other granite outcrops within the State. At Yarwondutta Rock, the water tank was close to the granite outcrop which was found to be less suitable than having a tank that was further away, even wholly or partly above ground. Therefore, water collection tanks at places such as Mt Wudinna, Peella, Cocata and Polda, among others could be designed in a more efficient manner. Though other non-government funded tanks such as those at Ucontitchie Hill continued to reflect the older, less efficient water collection methods.[37]

There is a marked grave present to the south of Ucontitchie Hill. There are two main stories regarding the identity of the person buried. The first story is that, in 1927, a road surveyor named Usher died of thirst on his way between Wudinna and Elliston. The other, originating from a surveyor who worked in the area in 1928, is that a shearer was found dead around the 1890s and was buried by police.[38] Neither story has been confirmed and the person's identity remains unknown.

Areas surrounding Ucontitchie Hill have been farmed since approximately the 1940s or 50s. Not only did collection of water runoff from the rock provide an opportunity for agriculture, it was further believed that the soils associated with Ucontitchie Hill might provide high yields due to the weathered granite and surrounding Pleistocene[39] clays that hold moisture well.[40]

In 1985, Dr Twidale, EM Campbell and Maxwell Richards Foale wrote a book detailing Ucontitchie Hill, adding greatly to an understanding of the site.

Aboriginal Cultural Considerations

The *Heritage Places Act 1993* makes provision for the identification, recording and conservation of places and objects of non-Aboriginal heritage significance. The protection and preservation of Aboriginal heritage is provided for under the *Aboriginal Heritage Act 1988*. Contact the Aboriginal Heritage Unit for listings.

CHRONOLOGY

Year	Event
~2500 - 538.8 Ma	Proterozoic Eon. Includes the **Mesoproterozoic Era (~1600 – 1000 Ma).** **The place is buried by jointed granites that are more easily eroded. As a result, Ucontitchie Hill remained as the surrounding rock eroded.**
2.58 Ma - present	**Surrounding sediment deposited.** **Likely Ucontitchie Hill used as a water source by First Nations People.**

Early 1900s	Likely time that dam constructed at Ucontitchie Hill.
1980	Recognised as a Geological Monument by the SA Division of the Geological Society of Australia in 'Geological Monuments in South Australia'.
1998	1 December – Nomination received.
1999	11 November – Provisionally entered in the State Heritage Register and designated as a place of geological significance.
2000	16 March – Confirmed in the State Heritage Register.

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Books and Book Chapters

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Twidale CR (2023), 'The origin, age, and conservation, of an 'elevated platform', Yarwondutta Rock, north-western Eyre Peninsula, South Australia', *Cadernos do Laboratorio Xeolóxico de Laxe*, Vol. 45, pp.33-58.

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SITE DETAILS

Ucontitchie Hill **PLACE NO.: 17061**

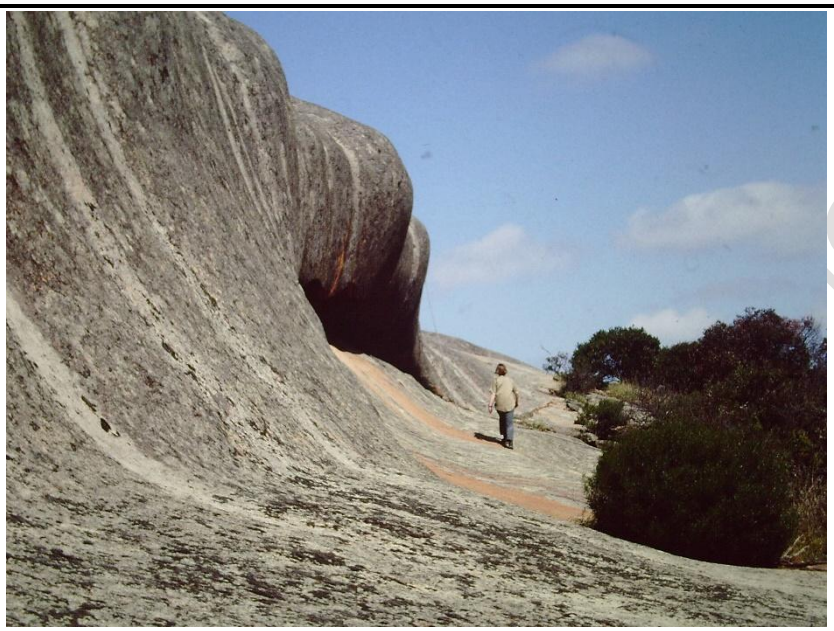
Ucontitchie Road, Cocata SA

DESCRIPTION OF PLACE:	Granite inselberg	
HISTORIC THEME/S	Theme 1 Natural Environment 1.1 Tracing climatic and topological change	
REGISTER STATUS:	Nominated received 1 December 1998 Provisionally Entered 11 November 1999 Confirmed 16 March 2000 Designated 11 November 1999	
CURRENT USE:	Dedicated Crown Land	
LOCAL GOVERNMENT AREA:	Wudinna District Council	
LOCATION:	**Street No.:**	NA
	Street Name:	Ucontitchie Road
	Town/Suburb:	Cocata
	Post Code:	5654
LAND DESCRIPTION:	**Title Reference:**	CR 5772/130 D31914 A23
	Hundred:	Hundred of Cocata

PHOTOS

Ucontitchie Hill **PLACE NO.: 17061**

Ucontitchie Road, Cocata SA



Flared slopes at Ucontitchie Hill. c.1999

Source: DEW Files

Eroded boulders with developed tafoni. c.1999

Source: DEW Files

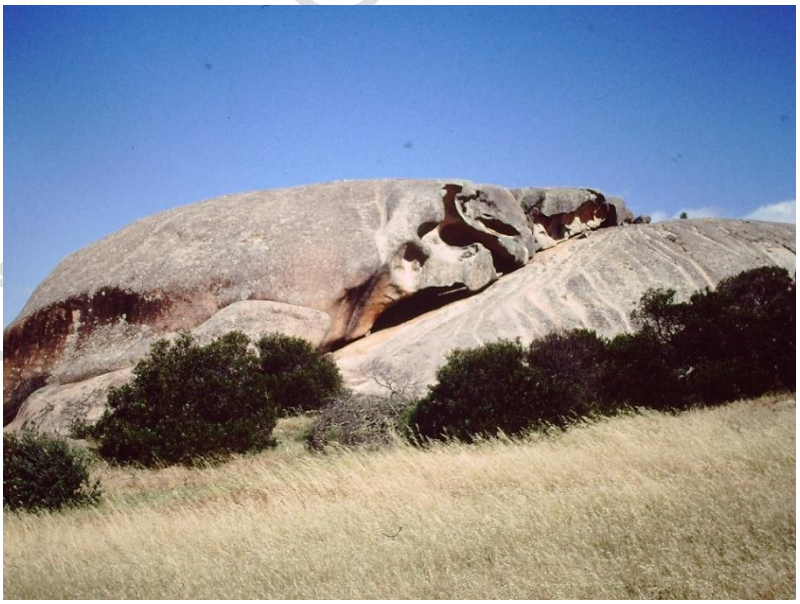
PHOTOS

Ucontitchie Hill **PLACE NO.: 17061**

Ucontitchie Road, Cocata SA

Structures at Ucontitchie Hill, including a human-made cairn. c.1999

Source: DEW Files



Slopes of Ucontitchie Hill. c.1999

Source: DEW Files

REVISIONS

Date	Changes
13 February 2026	SAHC modified template to include an image at the beginning of the document.

[1] Ferris GM, Gray ND & Pain AM (1998), 'Reconnaissance Granite Sampling of the Mesoproterozoic Hiltaba Suite Granite on Northern Eyre Peninsula, South Australia for Dimension Stone', *Primary Industries and Resources SA*, Report Book 97/28, pp.373.
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[15] DEW Files.
[16] DEW Files.
[17] McBriar, EM, Giles, CW and Mooney, MD (1980), 'Geological Monuments in South Australia Part 3'.
[18] DEW Files.
[19] Twidale CR, Campbell EM & Foale MR (1985), 'Ucontitchie Hill'.
[20] Twidale CR, Campbell EM & Foale MR (1985), 'Ucontitchie Hill'.
[21] Twidale CR (2023), 'The origin, age, and conservation, of an 'elevated platform', Yarwondutta Rock, north-western Eyre Peninsula, South Australia'.
[22] Twidale, CR and Campbell EM (1985), *Natural History of Eyre Peninsula*; and DEW Files
[23] Twidale CR, Campbell EM & Foale MR (1985), 'Ucontitchie Hill'.
[24] DEW Files.
[25] Twidale CR, Campbell EM & Foale MR (1985), 'Ucontitchie Hill'.

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