KEYWORDS: ***Petroglyph – Rock art – Murray River – Sandstone – South Australia***

WURRANDERRA'S SYMBOLS: AN EXPLORATION AND CONTEXTUALISATION OF THE THURK PETROGLYPH SITE (KINGSTON-ON-MURRAY) ON THE MURRAY RIVER, SOUTH AUSTRALIA

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Abstract. This article describes and contextualises the rock art at the Thurk Petroglyph Site on the Murray River in South Australia using multiple methods. The Thurk Aboriginal engravings comprise at least 524 motifs made up predominantly of geometric line elements as well as a small number of other 'simple' geometric motifs, two 'bird tracks', one figurative design (a 'fish') and a possible anthropomorphous figure. This paper provides the first synthesis of rock art sites/complexes and motifs from other sites on the Murray River as well as visual symbols recorded from senior Aboriginal 'knowledge carriers'. These syntheses allow us to consider the relationship of Thurk to other cultural places and to highlight and honour the traditional knowledges and beliefs which underpin the rock art. Thurk's placement within the riverscape, its unique geological canvas, lack of observable 'domestic' archaeological evidence combined with it being the likely upstream extent of Murray River rock art in South Australia contribute additional dimensions to its cultural significance. That Thurk's rock art, and the broader site, have been desecrated by gratuitous graffiti, vandalism and infrastructure brings into sharp focus Australia's poor record of heritage protection and provides a challenge to current and future generations of non-Aboriginal people to remedy this past.

Introduction

Aboriginal rock art has been recorded at various locations along the Murray River in South Australia (SA), though predominantly downstream of Morgan. Much of this rock art is in the form of engraved petroglyphs and is commonly found within limestone rockshelters. Documented examples of rock art upstream of Morgan are extremely rare with only two known sites having been published (Pudjinuk Rockshelters No. 1 and No. 2) (see Roberts et al. 2018, 2020) (Fig. 1).

In this paper we detail new research concerning a petroglyph site near Kingston-on-Murray (Fig. 1). Our research contextualises this site in relation to others found along the Murray River and considers the broader symbolic context of the petroglyphs via ethnohistorical records. Our work also documents and analyses the site and its petroglyphs in significant detail as an essential archive for a site type that is both rare and vulnerable to human and natural impacts. Documentation methods in our research included high-resolution photography, laser imaging, detection and ranging (LIDAR), aerial and terrestrial photogrammetry, DStretch enhancement, the creation of a comprehensive catalogue/database of all elements/motifs and total station surveying. Electrical resistivity tomography (ERT) and ground penetrating radar (GPR) were employed to investigate the nature of sedimentary deposits and bedrock in the immediate area of the rock art. We consider the future archaeological potential of the area in light of these results.

This work has been undertaken in collaboration with the Aboriginal traditional owners for the region who are represented by the River Murray and Mallee Aboriginal Corporation (RMMAC). RMMAC's membership is made up of the descendants of apical ancestors who originated from Aboriginal groups occupying sections of the Murray River corridor and adjoining mallee country (Fig. 1).

Documented rock art along the Murray River in South Australia

A total of 16 rock art sites/complexes have been reported in various journal articles, archival documents and government records relating to the Murray River in SA (Fig. 1; Table 1). To date, there has been no regional synthesis of these sites. All of the sites contain engraved petroglyphs while the Haylands site also includes motifs painted in red, purple and

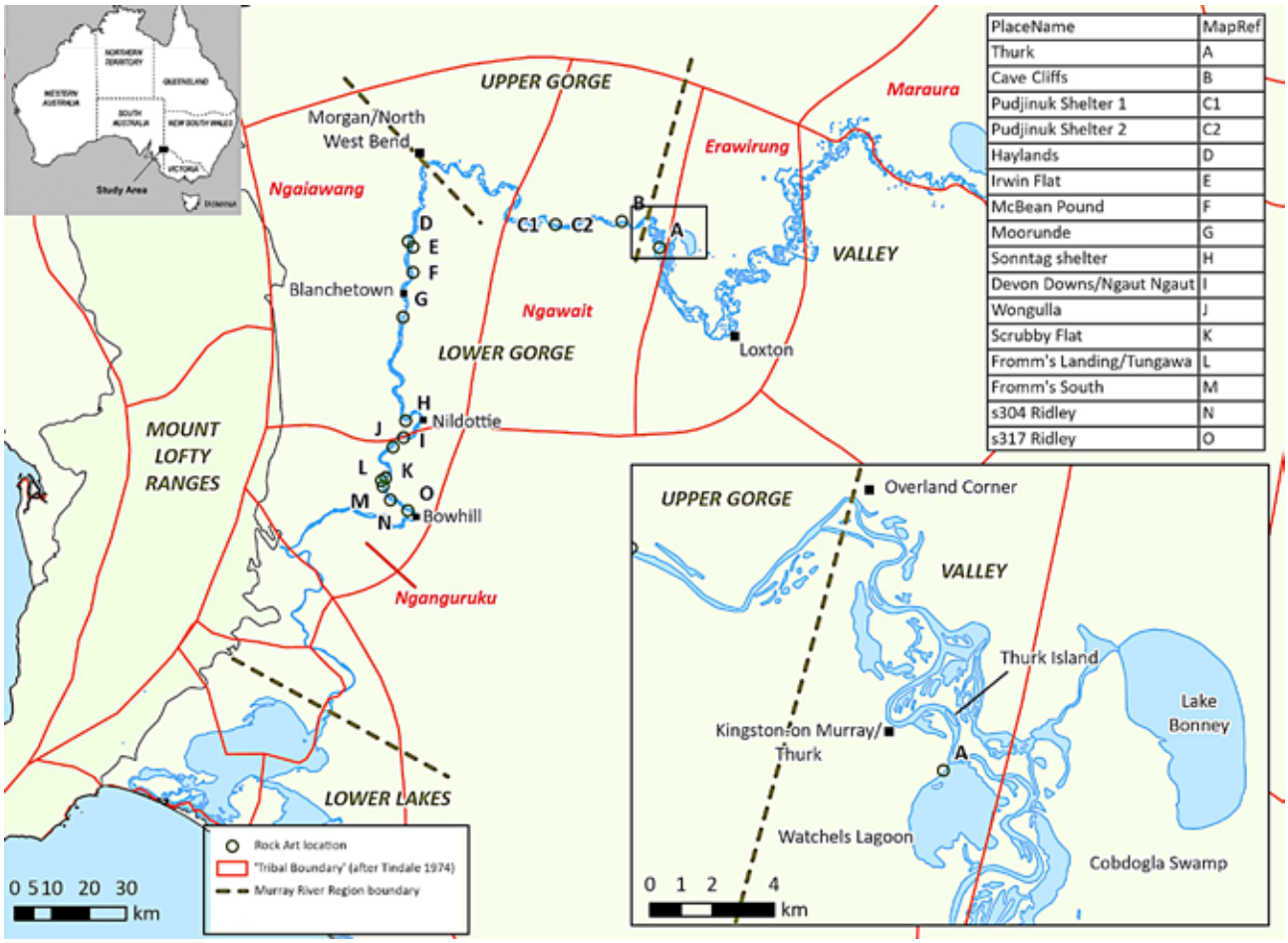


Figure 1. *The locations of rock art recorded on the Murray River in SA together with other locations mentioned in the text. Also shown are some of the relevant 'tribal boundaries', as identified in Tindale (1974), although we acknowledge that such 'boundaries' are not definitive and that numerous other iterations exist in the ethnohistorical literature (after Roberts et al. 2021).*

yellow ochre as well as charcoal drawings (Pretty 1977; Sheard 1928). The Haylands site is unique in this respect, although other painted/drawn sites are known to occur in the adjacent Mount Lofty Ranges rock art province including along major tributary streams of the Murray River to the west of the river tract, e.g. the Marne River (e.g. Tindale 1940–1956; Mountford 1957; Pretty 1977; Coles and Hunter 2010). As noted above, the majority of rock art sites on the Murray River are located in the gorge downstream of Morgan and occur in two broad groupings centred around Blanchetown and between Bowhill and Nildottie (Fig. 1). The site described in this paper is the only Murray River rock art reported, to date, that occurs in a valley rather than gorge context (Fig. 1). The sites/complexes comprise shallow overhangs and rockshelters as well as open-context cliff lines and outcrops.

Table 1 provides a basic summary of the various sites, including the references, context, associated cultural deposits (where known), the mode of art manufacture and the motif classes reported for each site. Where available, representative suites of motifs are illustrated in the table based on redrawn sketches from the original references. This summary demonstrates that a range of motif types have been recorded, though geometric line elements and 'simple' geometric designs dominate the assemblages, and these occur within most of the art sites. Lesser elements include tracks, fauna, anthropomorphs and more 'complex' geometric figures. Drilled holes also occur, particularly at Ngaut Ngaut (Devon Downs) and Tungawa (Fromms Landing), and represent a major component of the assemblage in the latter (Roberts 1998). Relatively diverse motif assemblages occur in a small number of sites: Haylands, Ngaut Ngaut and Tungawa. The rock art recorded in relation to Moorunde comprised a portable tabular sandstone slab with an engraved circle and line. This block was possibly found in association with a stone arrangement, although the detail available for this site is vague (Tindale 1940–1956).

Toponymy

The Thurk site was recorded in 1985 by South Australian Government employees from the Department of Aboriginal Affairs as the 'Kingston Engraving Site'. In this article we refer to the rock art site as the 'Thurk Petroglyph Site', privileging the Aboriginal name for this general location (see below). As argued elsewhere

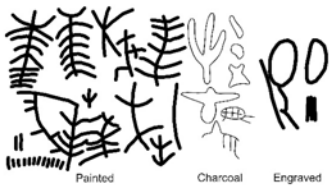
Site Name	Reference/s used in this compilation	Context	Associated cultural deposit	Art type*	Motif class (after Mulvaney 2010:133)	Representative suite of illustrated and/or described motifs (images are not to scale)
Thurk (Kingston) Petroglyph Site	Government Records; new data from this research	Low cliff/ sandstone outcrop	None exposed on surface	E	Geometric; Faunal; Tracks?; Anthropomorphic?; Historic	 All images from this article, see below
Cave Cliffs/Warnes Cave Area	Tindale 1961–1965: Government Records	Large rockshelter at base of limestone cliff	Deep stratified shell midden and oven materials	E	Geometric?; Tracks?	Described as 'broad arrow upside down'
Pudjinuk (Hawkers) Rockshelters	Tindale 1961–1965; Roberts et al. 2018; Roberts et al. 2020; Government Site Register	Rockshelters at base of limestone cliff	Stone artefact found on surface of Pudjinuk Rockshelter No. 2—likely shallow deposits in at least one of the shelters	E	Geometric; Tracks; Historic	
Haylands Rockshelter	Sheard 1928; Pretty 1977	Rockshelter high on limestone cliff	Ash and shell	E/P/C	Geometric; Tracks; Other?	 Painted Charcoal Engraved
Irwin Flat Engraving Site	Government Records	Exposed cliff	*No information	E	*No information	*No information
McBean Pound Rock Engraving Site	Government Records	*No information	*No information	E	*No information	*No information
Moorunde Stone Arrangement?	Tindale 1940–1956; South Australian Museum	Portable block	Stone arrangement?	E	Geometric	
Sonntag Rockshelter?	Tindale 1965–1971	'Rock markings on cliffs'	*No information	E	*No information	*No information
Ngaut Ngaut (Devon Downs)	Sheard 1926; Hale and Tindale 1930; Bellchambers 1931; Pretty 1977; Roberts et al. 2012, 2014b, 2014c, 2015a, 2015b	Large rockshelter complex at base of high cliff	Deep deposit including artefacts, faunal and oven material and more in the primary rockshelter—the oldest date obtained was 5180±100 years BP (6186–5609 cal BP)	E	Geometric; Faunal; Tracks; Historic	
Wongulla Series/ Linkilunkli	Hale and Tindale 1925; Sheard 1927; Bellchambers 1931; Pretty 1977	Exposed cliff and rockshelters	Artefacts, ash, fish and shell—deposits around three feet in depth	E	Geometric; Tracks; Historic	
Scrubby Flat Series	Sheard 1927; Mulvaney et al. 1960; Roberts 1998 (*motifs from South Australian Museum photographs, originally thought to relate to Tungawa)	Small rockshelters at the end of a 'ragged end' of cliff line	'Debris' on floor including quandong kernels (*Santalum acuminatum*) remains, fish bones and shell	E	Geometric; Historic	
Tungawa Rockshelters (Fromms Landing)	Sheard 1927; Tindale 1930–1952a; Mulvaney 1960; Roberts 1998; Wilson et al. 2022	A series of rockshelters at the base of limestone cliffs	Deep deposits of artefacts, faunal and oven material at some of the rockshelters—the oldest date obtained 4850±100 years BP (5848–5314 cal BP) at Rockshelter No. 2	E	Geometric; Faunal; Tracks; Anthropomorphic?; Historic	

Table 1 continued on next page

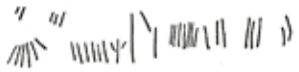
South of Fromms Landing	Sheard 1927	'Markings on the cliffs'	*No information	E	Geometric	'Fern-like markings'
s304 Hd Ridley Rockshelter	Tindale 1930–1952a	Rockshelter at base of cliff	Three feet of shell and ash	E	Geometric	
s317 Hd Ridley Rockshelter	Tindale 1930–1952a	A rockshelter with 'a low rocky projection some 8 feet above the highest floodmark'	'Probably some 10 feet of debris...bones and one piece of quartzite implement on the surface'	E	Geometric; Tracks?	

Table 1. *A summary of recorded rock art sites along the Murray River in SA, including redrawn sketches where available (note that for some of the sites/complexes listed information is limited). Rock art manufacture type: E - engraved, P - painted and C - charcoal drawing.*

(e.g. Roberts et al. 2014a, 2014b, 2016; Fowler et al. 2015, 2016; Pongérard 2017), the re-naming of Aboriginal places by the British and other Europeans has been complicit with the 'colonial silencing of [I]ndigenous cultures' (Vuolteenaho and Berg 2009: 1). Further, colonial naming has been demonstrated to be intimately tied to power relations (Berg and Kearns 2009), particularly white patriarchal structures (Beck 2021). In contrast, Aboriginal toponyms signal meaningful connections to lands and waters (Pongérard 2017).

The name Thurk (also Thu-urk [Cockburn 1984: 218] and θurk [see Tindale c. 1934–c. 1991]) was retained for a period following European invasion and settlement as the name for the first pastoral lease established in 1851 by Thomas Wigley that covered this general location (e.g. anon. 1862; Jackson 1978). The traditional toponym is primarily associated with the area surrounding the Kingston Village Settlement (anon. 1895; Cockburn 1984: 218; Tindale c. 1934–c. 1991), although some sources indicate it may have also been used for an area further downstream towards Overland Corner (Jackson 1978). Development of the Kingston Village Settlement began in 1894 as part of a scheme of co-operative settlements along the Murray River aimed at alleviating high unemployment in the metropolitan area (Playford 2006). The settlement was named after Charles Cameron Kingston who was the South Australian Premier at that time (Playford 2006). Charles Kingston, a renowned South Australian politician, is credited as being a 'strong advocate' and 'originator' of the 'White Australia Policy' as well as influencing a significant range of other political issues (Playford 2006). Attempts were made to 'restore' the name Thurk given the prevalence of 'Kingston' in geographical nomenclature; however, the re-naming was short-lived, and the town's name was ultimately changed to Kingston-on-Murray (Cockburn 1984: 218). The name Thurk is retained as the toponym for a small island in the Murray floodplain approximately 500 m upstream from the township (Figure 1).

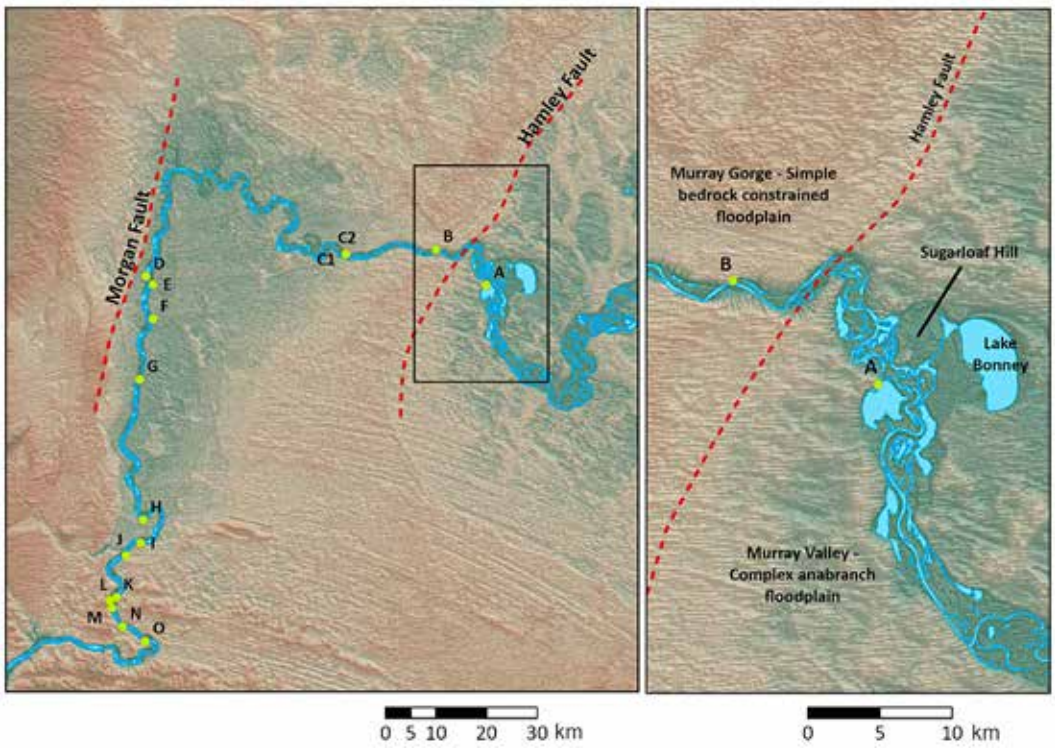


Figure 2. *The location of the reported rock art sites along the Murray River in respect to regional physiography (see Fig. 1 for map references for each rock art site). Note the significant narrowing of the river tract corresponding with the Hamley Fault (elevation data sourced from ALOS Global Digital Surface Model - AW3D30).*

Charles Kingston's involvement in the genesis of the 'White Australia Policy' clearly demonstrates the unsettling nature of colonial naming. The expression 'White Aus-

tralia Policy' refers to a group of policies and legislation that were intended to stop non-European people from immigrating to Australia (Tavan 2005). Whilst this idea was primarily targeted at specific groups (e.g. Chinese people) it was bound up with the racist attitudes that all non-white people were inferior, and of 'white Australia's' determination to have an 'all white' country (see Dixon 2021: 97). Given this history, retaining the name 'Kingston' for an Aboriginal heritage place is highly problematic.

Manning (1990: 310) states that Thurk is derived 'from an Aboriginal word meaning "the mouth" '; however, he provides no primary reference for this information. Aboriginal word lists from the broader region record the following for the word mouth: *tark* (in Ngaiawang [Hawker/Scott n.d.]) and *taako* (for the 'Murray River Language' [Moorhouse 1846: 54]), both of which bear some similarity to the recorded Aboriginal place name. Manning (1990: 310) implies that 'the mouth' refers to the river's entrance into the upper section of the Murray River Gorge, the point at which the river tract narrows significantly between high cliff lines approximately 3 km downstream of Kingston-on-Murray (Fig. 2). The geographical context for the Thurk Petroglyph Site is discussed further below. Tindale (c. 1934–c. 1991) includes Thurk in his 'Erawirung Tribe' language data cards. However, his later publication places the Thurk Petroglyph Site within, or on the boundary of, the 'Ngawait Tribe' (Tindale 1974: 216) (Fig. 1). Other variations of Aboriginal land tenure, social organisation, group names and boundaries in the region exist (e.g. Eyre 1845; Taplin 1879; Radcliffe-Brown 1918; Berndt and Berndt 1993), however, as noted above, a detailed examination of these sources is beyond the scope of this paper.

Ethnohistorical context

The ancestral creation ancestor Wurranderra (a cognate name is Ngurunderi, see Roberts et al. [2023]) is ascribed as the originator of rock art in the Murray River Gorge when he gives the symbols that are '[c]arved or painted on the stone' to Aboriginal people (Bellchambers 1931: 106). The Wurranderra narrative was told to the naturalist Thomas Paine Bellchambers (1931) in the late 1800s by an Aboriginal man he identified as 'Old Natune' (AKA Charles Nattoon and his traditional family name Net:ingi) (Tindale c. 1931–c. 1991). Nattoon, a 'Nganguruku/Ngaiawang' man, is an important ancestor for the RMMAC community (*Turner v. State of South Australia 2011*). Wurranderra also creates the territorial boundaries for the 'tribes' (e.g. 'Yooyoo, Ecrow and Nauwich' — which are interpreted here as cognates for the Erawirung, Ngawait and Ngaiawang 'tribes' referred to by Tindale [c. 1934–c. 1991, 1974]) (Bellchambers 1931: 106; Roberts et al. 2023).

In interviews with Norman Tindale, Tarby Mason (AKA Robert Joseph Mason), a 'Nganguruku/Ngarkat' man, sketched symbols in the ground to explain the meaning of certain engravings, particularly in relation to the Ngaut Ngaut area (Table 2) (Tindale 1930–1952a: 310). Descendants of Tarby Mason's relatives also form part of the RMMAC membership, and he is remembered fondly by community Elders today (*Turner v. State of South Australia 2011*). The 'Maraura' man Peter Boney (also known by traditional names that probably include Kuli and Wutmiruk) also sketched symbols for Tindale (Table 2) (Tindale 1930–1952b, 1939). Boney's sketches relate to the telling of the

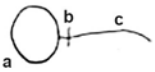
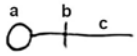
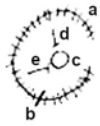
Symbol	Description	Reference
	Moon people.	Tarby Mason in Tindale (1930–1952a).
	Sun people.	Tarby Mason in Tindale (1930–1952a).
	Double cross people.	Tarby Mason in Tindale (1930–1952a).
	Crow's foot people.	Tarby Mason in Tindale (1930–1952a).
	A 'travelling' man.	Tarby Mason in Tindale (1930–1952a).
	A 'travelling' man.	Tarby Mason in Tindale (1930–1952a).
	Wa:ku (the ancestral Crow) sleeping between two sisters.	Peter Boney in Tindale (1939).
	Women fishing: a) a lake; b) a net; and c) a creek.	Peter Boney in Tindale (1939).
	A magical tree: a) a camp; b) a gall lump; and c) the tree.	Peter Boney in Tindale (1939).
	An old woman's camp: a) round camp of old woman in a cave; and b) two sisters asleep.	Peter Boney in Tindale (1939).
	Men asleep around the magic tree: a) ring of sleeping men; b) the man Nankuru; c) the magic tree; and d) and e) the two women.	Peter Boney in Tindale (1939).
*No image available	'[A]long this cliff [Wongulla/Linkilunkli] there is said to be the image of a six-legged dog, mention of which is made in legend'.	Bellchambers (1931).

Table 2. *Symbols recorded by Tindale (from Tarby Mason and Peter Boney) and Bellchambers (1931).*

Figure 3. *Left: view looking north-west to the sandstone outcrop comprising the main panels of the Thurk Petroglyph Site. The separate bedrock exposure is obscured by the tree in the right of the image, 14 June 2022. Right: view of the sandstone outcrop looking south-east. The detached boulder is visible under the tree in the left of the image, 14 June 2022.*

'Eagle and Crow' traditional narrative which travels down the Darling and Murray Rivers. Peter Boney is related to current members of RMMAC through the Pennyfather/Lindsay family line (*Turner v. State of South Australia 2011*). Tindale (1939: 258) records that Peter Boney learned lower Murray River traditional knowledge from Moorunde people, considered by Tindale to be a 'horde or clan of the Ngaiawang tribe'.

Mason and Boney's symbolic representations form part of a 'community of culture' and are vital to understanding the cultural worlds of Aboriginal peoples along the Murray and Darling Rivers (after David 2002: 67) — a 'communication through visual forms' (Layton 1992: 1). Indeed, as argued by Morphy and Banks (1997: 2–3), visual systems are 'an important component of human cultural, cognitive and perceptual processes'.

Landscape setting

The Thurk site lies near a distinct change in the morphology of the Murray River corridor coinciding with the Hamley Fault. This change is evident in Figure 2 and sees the broad, complex, terraced anabranch floodplains that characterise the Murray River Valley give way to a significantly narrower (less than 1 km wide), deeply incised, bedrock-constrained gorge. The valley–gorge transition also corresponds with a change in the geology incised by the river and exposed in the valley/gorge walls as a canvas for the various rock art sites. In general terms, the valley is bounded by cliffs formed in shallow marine/fluviatile quartzose sandstone of the Pliocene Loxton and Parilla Sands, while the gorge is typically bounded by limestones, calcarenites and marls of the Oligocene-Miocene Murray Group (Firman 1972; Gallagher and Gourley 2007; Hou and Petts 2021).

The engraved surface at Thurk comprises a small, low promontory of lithified, bedded, pebbly coarse to fine-grained sandstone (i.e. Loxton Sand) (Fig. 2). The outcrop emerges from under a shallow cover of loose aeolian sand that drapes over the cliff. The sand and rubble scree form a short, moderately steep slope extending to a narrow flat that separates the base of the slope from the edge of a large backplain swamp. The lower part of the slope has been impacted by high water events and was severely incised by the 2022–23 flood. The engraved outcrop is vertical, though highly convoluted, and is partitioned into typically narrow pillars by a series of crevices (Fig. 3). A small bedrock slab emerges from the sandy slope approximately 2 m out from the base of the main outcrop. A large boulder also appears to have collapsed from the north-eastern side of the outcrop (Figs 3 and 4).

Additional, unengraved sandstone surfaces are partitioned by the sand drape along the adjoining cliff line. The relatively high (>2–3 m) engraved outcrop is atypical of these additional exposures which tend to include softer, more friable interbeds between thin, hard units. A more extensive outcrop of Loxton Sand also protrudes around the southern edge of Sugarloaf Hill, a small, though prominent bedrock inlier measuring approximately 120 hectares and rising 30 m above the valley floor 1.6 km to the northeast of the Thurk site (see Fig. 2). No rock art has been identified at Sugarloaf Hill to date, however, the area comprises a large archaeological complex comprising a significant chert/silcrete quarry, freshwater shell middens and more (and is the subject of a separate study). The canvas of Loxton Sand at the Thurk site is unique in respect to the set of regional rock art described in this paper, with all other examples of engraved rock art located on Murray Group limestones, marls and calcarenites (see Table 1).

The site has been impacted through the development of water infrastructure which has included several pumping sheds, the installation of underground piping and an inspection valve (see Fig. 4). The underground piping continues immediately past the

southern edge of the bedrock outcrop. Further impacts have arisen through fencing across the top of the outcrop (see description below).

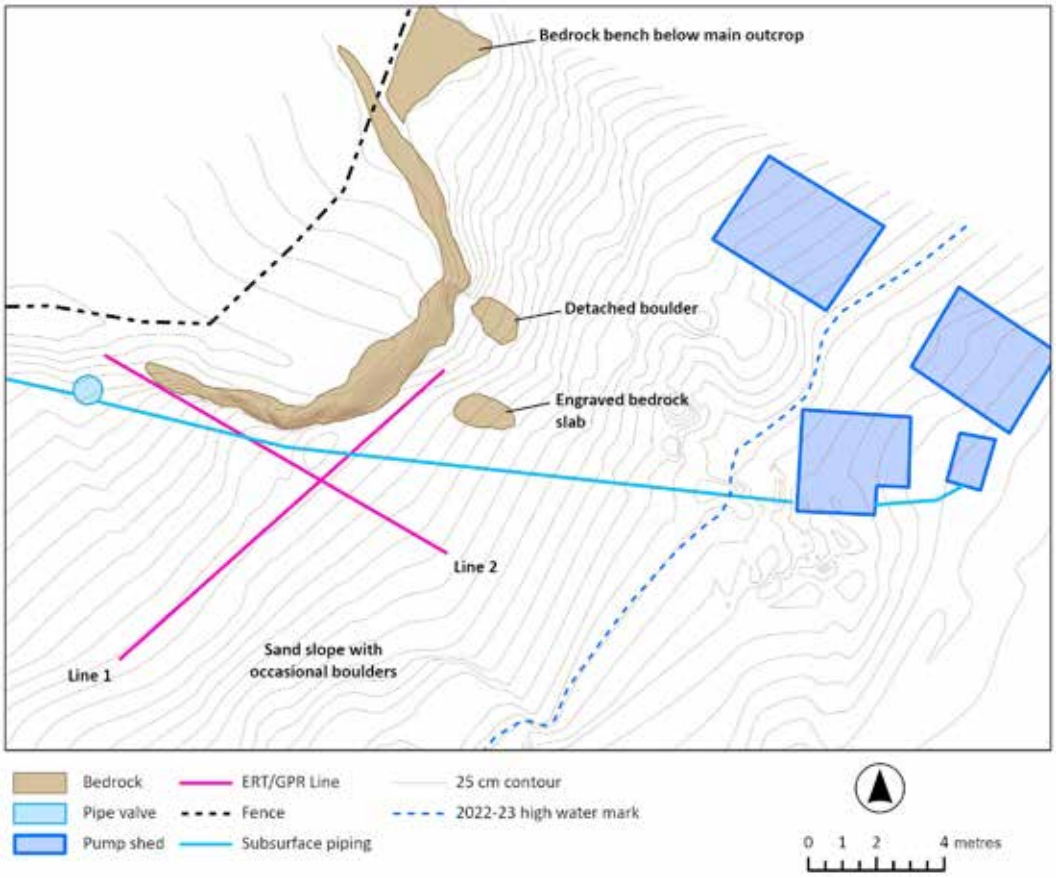


Figure 4. *Plan of the Thurk Petroglyph Site.*

Methods

The Thurk Petroglyph Site was documented over three days in May and June of 2022 and April 2023. The site was recorded using high resolution photography, laser imaging, detection and ranging (LIDAR), aerial and terrestrial photogrammetry, DStretch enhancement, the creation of a comprehensive catalogue/database of all discernible motifs, total station surveying, electrical resistivity tomography (ERT) and ground penetrating radar (GPR).

Locating the engraved rock art

In order to systematically record all rock art motifs, the main outcrop was divided into natural sections defined by vertical pillars in the outcrop. These were further sub-divided into lower, middle and upper sections that were often demarcated by natural bedding and joints. A note was made where motif groups or panels extended across these section boundaries. The small bedrock exposure below the main outcrop, together with the detached boulder, were recorded as discrete panels. Each pillar/panel was photographed at a range of scales to ensure thorough coverage of both the rock art and other physical features in the outcrop. A portable battery-powered LED lamp (which delivered c. 950 lumens at 1 m distance and c. 630 lumens at 0.5 m distance) was used on duplicate shots to assist with motif identification.

High resolution photography

A Nikon D3500 digital camera with an AF-S DX Zoom-NIKKOR 18-55 mm f/3.5-3.6G lens was used to conduct high-resolution photography with images recorded in .jpg and .nef (RAW) formats.

LIDAR and 3D modelling

An in-field LIDAR scan was captured by hand on an iPhone 13 Pro running iOS 16.1.1 and using the Scaniverse 3D capture application. The scan was set to 'Large Object/Area' at a range of 5 m. The outcrop was captured in one single scan, beginning at Panel 1, and moving smoothly around the outcrop to ensure the whole feature was captured at various angles and distances. The raw model was processed using the 'Detail/Photogrammetry' mode. The model was exported from Scaniverse as a .obj file and sent as a compressed .zip file to a desktop (Windows) computer with Microsoft 3D Builder installed.

Terrestrial and aerial photogrammetry

Aerial photogrammetry was undertaken using a DJI Mavic Air UAV. The survey was undertaken over a total area of approximately 5 ha at a maximum altitude of 50 m. Flight planning and control was undertaken using the Drone Deploy application on an Apple Iphone 13 Pro. Ground control was provided by cloth targets positioned using a Leica GS16 GNSS sensor with base corrections provided via the HxGN SmartNet network. A total of 198 images were processed to create an orthophoto and DEM using Agisoft Metashape Professional software. Ground-based photogrammetry was undertaken using a Nikon D3400 SLR camera with a fixed focal length of 18 mm. A total of 379 images were processed using Agisoft Metashape

Professional software to create a comprehensive, close-range model of the engraved surfaces. Spatial control from the aerial survey and cloth targets was included to position and scale close-range photogrammetry with the aerial model.

DStretch enhancement

Motifs which were difficult to interpret visually (either onsite during photographic recording or from the .jpg and .nef images) were enhanced using the mobile application iDStretch V2.2 installed on an iPad (8th generation) running iPad OS 16.2. Copies of the original DSLR images were subsequently enhanced using the fixed enhancement options available in the application.

Rock art cataloguing

An adapted version of Mulvaney's (2010: 150) recording fields was employed in cataloguing the motifs whereby all motifs were prescribed to 'class', 'group' and 'type' classifications. Adaptations to this schema included the addition of an 'historic' class (to catalogue the graffiti/vandalism) and a 'riverine' group under the 'fauna' class (for a 'fish' motif, see below). Motifs were identified and hand-traced from hardcopy prints of a selection of photogrammetry images. Images of each panel were also reproduced from the close-range photogrammetry model. These images were produced by separating each panel's geometry into an isolated section. An individual orthomosaic image of each panel was generated from a unique fixed planar projection which was positioned to maintain an orthogonal viewing angle for each panel. Where geometric curvature was deemed to be too large within an individual panel's surface, multiple projections were used to minimise projection distortion within individually generated photomosaic images (Kowlessar et al. 2022). Orthomosaic images of each panel were imported into ESRI ArcGIS Pro where the motifs were digitised through line tracings. The digitised motifs were assigned IDs corresponding with the hand-traced images.

Data were entered into a spreadsheet (Microsoft Excel version 16.67) with attribute fields capturing: 1) photograph number; 2) motif number/ID; 3): pillar number; 4) motif position on pillar (lower, middle, upper); 5) separate panels within pillars; 6) surface texture; 7) manufacture technique; 8) motif class; 9) motif group; 10) motif type; 11) motif form; 12) motif morphology; 13) motif orientation; 14) superimposition; 15) motif length; 16) motif width; 17) motif relief; 18) use of natural features; 19) motif condition; and 20) other relevant notes.

Total station survey

The positions of all ERT pegs, GPR lines and the major rockshelter features were surveyed using either a Leica TS09 or TS16 total station that was georeferenced using two ground control points collected using a Leica GS16 GNSS sensor with base corrections provided via the HxGN SmartNet network.

Geophysical survey

Two 15.6 m long lines of geophysical data were collected, line one running approximately north-east to south-west along a transect immediately to the east of the rock outcrop and line two running approximately north-west to south-east to the south of the rock outcrop (as shown in Fig. 4). GPR and ERT data were collected along both of these lines. GPR data were collected with a Malå X3M using a 500 Mhz antenna. Data collection parameters included collecting to a maximum time of 60.8 ns using 1024 samples, a 2 cm trace increment and 2 stacks. Data were processed in ReflexW software using the move start time, subtract mean (dewow), bandpass butterworth, energy decay, background remove, time cut and correct 3D topography filters. Lines were adjusted using the remove range and flip Y profile filters when necessary to match the acquisition and display parameters of the ERT lines.

ERT data were collected with a ZZ FlashRES-Universal with 0.25 m spacing between the 64 electrodes. Data were collected using Wenner (k=20) and Dipole-Dipole (k=15, l=5) arrays at 120 V with an on time of 1.2 second and an off time of 0.2 seconds. Electrodes were watered to decrease contact resistance, but measured values remained relatively high, in the range of 1000–5000 Ω. Data were exported using the ZZ RdatacheckU64 software, reformatted using a custom R script and combined with the topography from the total station and then processed using Res2D using the L1-norm (robust) function. Display colours were calculated for each array type across both lines using the getJenksBreaks functions within the BAMMtools R package. RMS values for the ERT inversion are high, ranging from 9–17.4% for Wenner and 22.1–24.5% for Dipole-Dipole arrays.

Results

Rock art

A total of 524 Aboriginal-made motifs, 47 graffitied letters/borders and two vandalised machine-cut lines were catalogued at the Thurk Petroglyph Site. Three of the Aboriginal motifs were on the fallen boulder and 14 were engraved into the smaller bedrock exposure. A digitised tracing of this inventory in relation to the various panels of the primary outcrop is shown in Figure 5 with summaries provided in Table 3 and in the text below (the full data set will be stored digitally by RMMAC). Of the Aboriginal-engraved petroglyphs there were eight motif types, of which geometric line elements are the most common. Only one to three examples of each of the remaining seven motif types were noted, including other geometric designs, 'tracks', fauna and a single figure that we have tentatively classed as 'anthropomorphous'. All motifs are either linear or outline in form. It must be noted

that these counts represent a minimum number of the motifs at Thurk. A number of highly weathered and indistinct features could not be confidently identified as engravings, and lichen and other micro-organisms on the outcrop's surface potentially obscured some engravings. Vegetation also hindered a full examination of the smaller bedrock exposure and fallen boulder.

As noted above, a number of natural processes are affecting the rock art these include: water erosion, salt weathering, surface concretions, lichen growth and other micro-organisms. An example of the latter includes the insect capping over the possible 'eye' feature of the fish engraving (Fig. 6). This capping is similar to the cellophane-type lining created by some masked bees (Hylaeinae) to seal nest entrances (Ben Parslow pers. comm. 20 February 2023). The fish motif also demonstrates an example of concretions obscuring the engraved surface. We interpret the fish engraving as an original Aboriginal engraving, contrary to the 1985 site card which suggested it was post-contact graffiti. Our interpretation is based on the existence of a corresponding motif at Tungawa (Table 1 and Roberts 1998) in combination with the degree of weathering and concretions observable for this engraving (see additional discussion below). The general site location has also been damaged through the installation of infrastructure around the rock outcrop for the purposes of installing irrigation pipes and inspection points (see Fig. 4). The 1985 site card also referred to the dumping of garden clippings on the outcrop and some rabbit burrowing (which were not evident at the time of our survey). No associated archaeological materials are described on the site card, either on the surface or exposed in or around the rabbit burrows or buried infrastructure. A survey conducted along the adjoining cliff line during the current recording of the site, also failed to identify any associated archaeological evidence. The impression, therefore, based on both previous and current recordings, is that the site was used specifically for the production of rock art and was unrelated to a domestic space where other material evidence would be expected to accumulate (see also discussion in later sections).

Motif Type, Group and Class	Example Illustrations (not to scale)	Number of Motifs	Murray River Correlations for Aboriginal Motifs A = Archaeological E = Ethnographic
Line, element, geometric (often in groups and with variations on the theme)		514	A = Pudjinuk, Haylands, Ngaut Ngaut, Wongulla, Scrubby Flat, Tungawa, Ridley E = Peter Boney
Forked, simple, geometric		3	*No information
Three-toed, bird, track		2	A = Cave Cliffs, Tungawa, Ngaut Ngaut
Rayed, simple, geometric		1	A = Haylands, Ngaut Ngaut
Circle, element, geometric		1	A = Haylands, Moorunde E = Peter Boney
Stick figure?/Other?, human?, anthropomorphic?		1	*No information
Fish, riverine, fauna		1	A = Tungawa
Cross, simple, geometric		1	E = Tarby Mason
Historic, graffiti, letter/s (often in groups as names or initials, some with borders)		47	NA

Table 3. *Aboriginal and non-Aboriginal engravings represented at Thurk and correlations to other Murray River art sites in SA and relevant ethnographic symbols.*

Excluding the two machine cuts that have vandalised the surface of the main outcrop, all the other engravings, both Aboriginal and historic, were manufactured by manual abrasion. All engraved profiles displayed either U or V-shaped morphology, suggesting some variation in engraving tool and/or technique. When considering the placement of the Aboriginal engravings on the main outcrop in relation to the current ground level (e.g. see Fig. 5), all engravings are at a level that is accessible from a general standing or kneeling position. A sitting position may have been

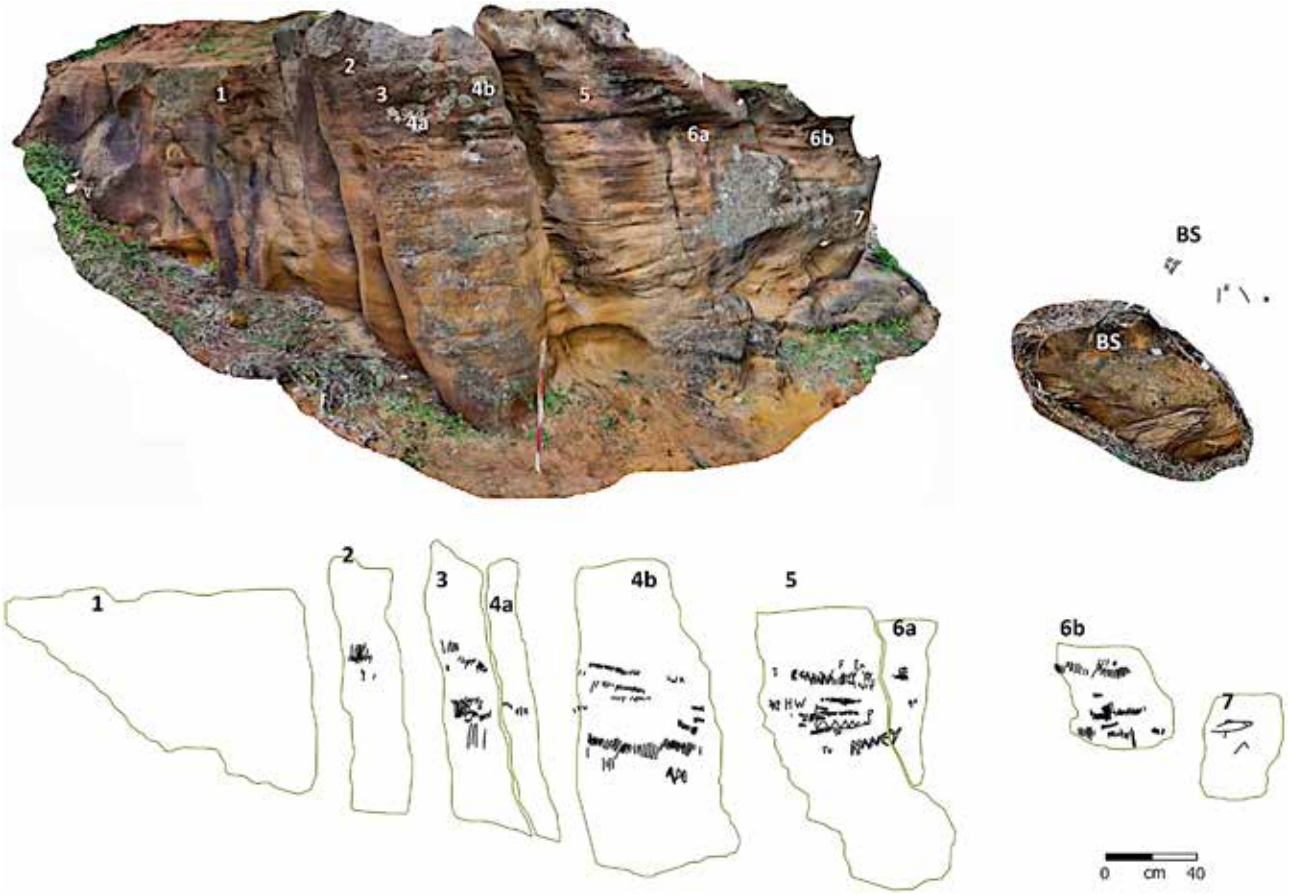


Figure 5. *3D models of the Thurk Petroglyph Site and smaller bedrock exposure together with line tracings of the motifs and outlined pillars and panels based on the flattened photogrammetry model.*

used for the additional outlying bedrock exposure and boulder. No engravings were observed extending to, or potentially below, the current ground surface.

For the most part, the rock art has been selectively engraved onto the beds of finer-grained sandstone. Motifs (and motif sets) also commonly terminate at the boundaries of the coarse pebbly beds (Fig. 6). Similarly, natural cracks or ridges in the outcrop were used to demarcate the start/end point for line elements (Fig. 6). In total, there are 272 instances where Aboriginal engravings utilise these natural forms. All of the engraved graffiti (n=20) also conforms to the finer-grain sandstone beds.

Excluding the superimposition of historic graffiti/vandalism (n=20) over or through Aboriginal engravings (Fig. 6D), there are eight instances of Aboriginal engravings that superimpose other Aboriginal engravings (Fig. 6E). Such instances, together with the differential effects of weathering, contribute to the consideration of time-depth at the site.

Geophysical results

As noted above, geophysical data were collected to explore the nature of sedimentary deposits and bedrock in the area of the sandstone promontory in order to provide information relating to site use and and to consider possible areas for excavation (Fig. 7). In the absence of any direct subsurface information, it is difficult to determine exactly the minimum subsurface resistivity of the sandstone but we estimate that everything greater than 600 Ω.m (and possibly greater than 484 Ω.m) is consolidated material. The ERT data from line one show a resistive feature (>634 Ω.m) indicative of shallow bedrock from ~1 m to ~2 m from the start of the line. Another similarly resistive feature (>634 Ω.m) exists from ~2.8 m to ~9.2 m from the start of the line. Bedrock may also continue between these two sections where the resistivity values are greater than 484 Ω.m. A final small piece of bedrock with resistivity values greater than 634 Ω.m is present from ~10.8 to ~11.6 m from the start of the line. It is unclear whether all, or some of these high resistivity features, relate to a contiguous bedrock shelf or blocks that have detached from the rock face, though the large block in the center of the line does appear to be sitting on unconsolidated material (<484 Ω.m). There appears to be no more than ~0.5 m of low resistivity (unconsolidated) material over this moderate to high resistivity (consolidated) material at any point along the line, and in several places, the high resistivity features occur immediately below the surface, though below the depth of the ERT pegs.

The GPR data from line one shows a high amplitude anomaly at a depth of ~0.3 m below the surface

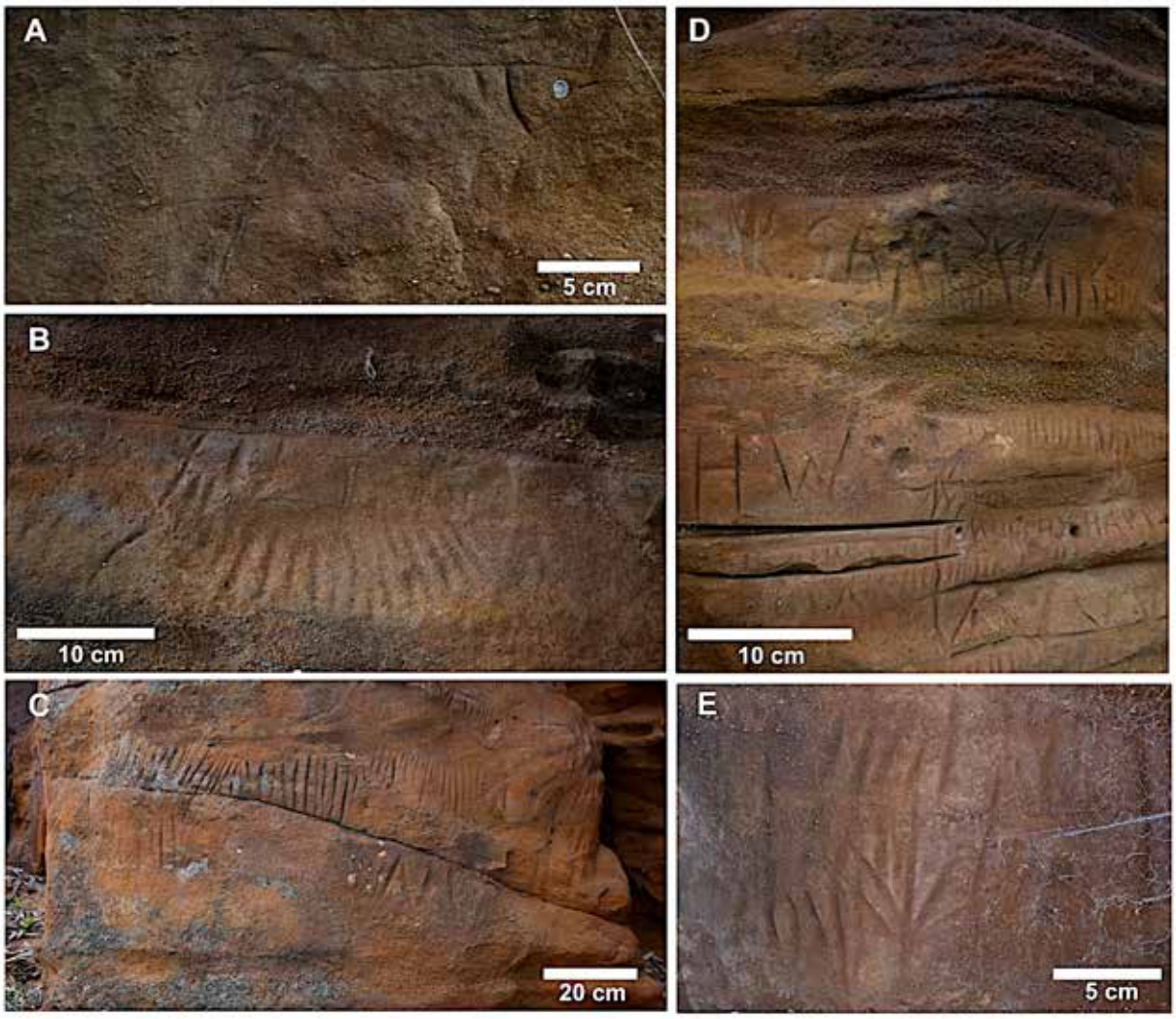


Figure 6. *Examples of motifs and their contexts, including: A) engraved fish motif; B) a series of weathered line elements conforming to a band of finer-grain sandstone; C) line elements conforming to a band of fine-grained sandstone as well as a natural crack in the outcrop; D) engraved groups of line elements conforming to bands of finer-grained sandstone and natural ridges in the outcrop (this figure also illustrates some of the graffiti at Thurk and the vandalised machine-cut lines superimposing Aboriginal engravings); and E) an example of superimposition with the rayed motif overlying line elements. All images taken on 14 June 2022.*

from ~3.1 m to ~4.8 m from the start of the line. This feature correlates approximately with the interpreted irrigation infrastructure in the subsurface in this part of the site (Fig. 4). The extended width of this feature is interpreted to be the result of crossing this infrastructure at an oblique angle. A moderate amplitude feature ranging in depth from ~0.1 m to ~0.55 m appears to extend from ~1 m to ~9 m from the start of this line, correlating approximately with the feature seen in the ERT line. The continuous (albeit topographically irregular) nature of this feature supports the interpretation that it is one rather than two pieces of bedrock (as discussed above). This feature is difficult to distinguish from the interpreted irrigation infrastructure between ~3.1 m to ~4.8 m and so presumably sits immediately underneath it. A low amplitude anomaly is present at a depth of ~0.3 m from ~11 m to ~12.2 m which approximately correlates to the resistive feature in this region identified in the ERT data. The GPR signal is attenuated at depth, particularly away from the thick section of bedrock in the middle of the line, restricting the depth of penetration to ~0.6 m in some locations.

The ERT data from line two shows a number of high resistivity (>775 Ω.m) features at ~0.4 m to ~1 m, ~2.2 m to ~2.8 m, ~4.3 m to ~5.2 m, ~6.4 m to ~7.6 m to ~8.1 m to ~10.6 m and ~11.1 m to ~12 m. These features are connected by deeper, moderately resistive (>635 Ω.m) material from ~2.8 m to ~4.3 m and ~7.6 m to ~8.1 m. This moderately resistive material may represent consolidated material with a slightly different lithology or it may represent unconsolidated material. Regardless, the large block of resistive material from ~8.1 m to ~10.6 m correlates with our interpretation of the location of bedrock from line one. The high resistivity materials present at the start (~0.4 m to ~1.2 m) and end (~11.2 m to ~12 m) of line two are interpreted as bedrock, although the ERT provides insufficient depth of investigation to determine whether these

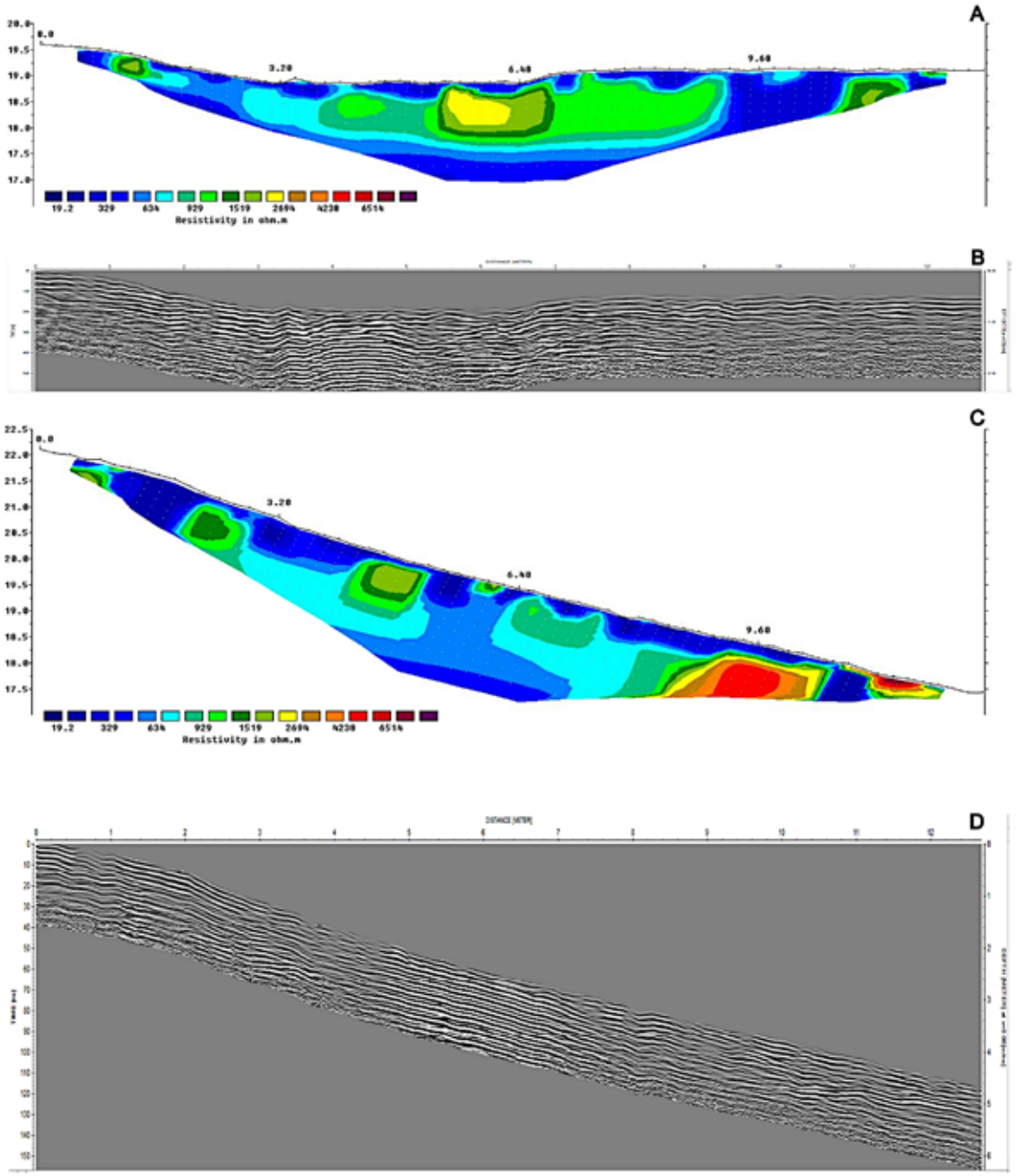


Figure 7. *Geophysical data from the Thurk Petroglyph Site. Line one data for ERT (A) and GPR (B) is displayed from the north-east (left) to the south-west (right). Line two data for ERT (C) and GPR (D) is displayed from the north-west (left) to the south-east (right). Distance along the line is in metres and elevation is provided in AHD for the ERT data and in relative values for GPR data.*

form a contiguous shelf or detached blocks. The resistive features from ~4.3 m to ~5.2 m and ~6.4 m to ~7.6 m are, however, underlain by more conductive (<634 Ωmm) material and are likely to be detached blocks.

The GPR data from line two shows a number of high-amplitude ringing anomalies at a shallow depth at ~1 m to ~3.1 m and ~4.57 m to ~7.18 m from the western end of the line. We interpret these to represent the irrigation infrastructure which runs approximately parallel to, but may occasionally cross, this line. A high-amplitude feature is present in the shallow subsurface from ~0 m to ~0.4 m along this line, which approximately correlates with a resistive ERT feature described above. An approximately horizontal moderate amplitude reflector is visible in the subsurface from ~10.2 m to the end of the line. This approximately correlates in position to two resistive features seen in the ERT data from this line but has a different geometry. The remaining resistive features seen in the ERT data are not well represented in the GPR data.

In summary, the geophysical data suggest an irregular bedrock topography extending out from the main outcrop face and below a shallow cover of unconsolidated sediment that has been disturbed to

some degree through the installation of buried infrastructure. The covered bedrock is likely to include some blocks that have detached from the main rock face as well as a contiguous shelf. An example of the latter extends to the north of the main outcrop while a number of large boulders emerge out of the sand slopes below the outcrop (see Fig. 4). Given the relatively steep topography extending below the rock face, any buried shelf is likely to be narrow.

Discussion and conclusions

On the basis of currently documented rock art sites, the Thurk Petroglyph Site potentially represents the upstream limit of rock art along the SA Murray River corridor (Fig. 1). Furthermore, as remarked by Bednarik (2020: 7–8), the Murray River largely forms the south-eastern extent of above-ground petroglyph art in mainland Australia (underground cave art is well-represented in the karst topography through the Millicent to Portland region). He further comments that the near absence of petroglyphs (excluding the limestone caves) in Victoria 'remains intriguing and tantalising' (Bednarik 2020: 10).

The Thurk Petroglyph Site lies near the Erawirung/Ngawait boundary, as described by Tindale (1974), as well as near the river's entrance to the Murray River Gorge and opposite from a significant archaeological complex (Sugarloaf Hill). The site is also unique amongst the documented rock art sites on the Murray River in relation to its geological (sandstone) and geomorphological (anabranch floodplain/valley) settings. The apparent lack of associated archaeological material adjacent to the sandstone outcrop (despite the apparent digging that took place at the site to bury pipes etc.) also indicates that the site was probably unrelated to domestic activities. As such, we would argue that the Thurk site represents a significant and culturally constructed place in the riverscape (after Langton 2006: 159).

Thurk also demonstrates the physical relationship of the Aboriginal artists with the rock face through a response to its natural forms (particularly bedding and joints). As with other sites along the Murray River (e.g. Ngaut Ngaut, see Roberts et al. 2015a), the Thurk Petroglyph Site demonstrates the global human phenomenon of the use of natural features in rock art which also 'speaks of human relationships to places and spaces' (Taçon 1999: 34).

Our work has significantly expanded our knowledge of Murray River Aboriginal rock art — both through the detailed recording of 524 motifs at Thurk as well as our synthesis and comparisons to other documented rock art in the Murray River Gorge (and beyond) and the consideration of ethnographic symbols. The motif types at Thurk, excluding the possible anthropomorphous figure and the geometric forked elements, can all be correlated with archaeological motifs or ethnographic symbols recorded for the Murray-Darling region. We explore each of the motif types in more detail below.

Sets of 'geometric line elements', often arranged as groups of parallel, vertical to oblique lines, are a common feature of Murray River rock art, being present in at least seven rock art sites/complexes (Tables 1 and 3). Painted and 'scratched' line elements are also noted for the neighbouring rock art province to the west (Mount Lofty Ranges) (Coles and Hunter 2010: 156). These line elements dominate the Thurk Petroglyph Site (n=514). Line elements have also been referred to as abraded grooves in this region (cf. Roberts et al. 2014b) and much has been written about their meaning and function in the Australian context. Flood (2006), for example, recorded a diverse selection of ethnographies from across Aboriginal Australia that relate the making of abraded grooves to releasing the power of ancestral beings, marking the visit of an individual to a site ('gestural art'), as 'tally marks' to record the number of 'people attending a ceremony or the number of days or moons they had been at a site' (see also Layton 1992: 145–146) and/or as reference to cicatrices or cultural body scarring and more. In relation to the Murray River, the ethnographic symbols described by Peter Boney included the use of geometric line sets to depict specific events in the Eagle and Crow narrative, including representations of the ancestral Crow, the two sisters and a group of men (see Table 2 and Tindale 1939). In Boney's 'community of culture' these lines (whether representing an ancestral being or human) indicate a sleeping individual.

The Thurk Petroglyph Site has three 'forked' motifs. There are no known archaeological or ethnographic correlations for the Murray River Gorge. However, in the Mount Lofty Ranges a number of painted 'forked' motifs are known (see Coles and Hunter 2010: 139–140, 152, 187, 199). Other correlations between the Murray River and Mount Lofty Ranges rock art have also been described (see Coles and Hunter [2010] as well as text above and below) suggesting some shared 'visual forms' between these regions. Future research to more comprehensively compare motifs across these rock art provinces would be beneficial.

Following Mulvaney's (2010) classification system we identified two 'three-toed bird tracks' at the Thurk Petroglyph Site as well as at three other petroglyph sites on the Murray River (Tables 1 and 3). Bird track motifs are also reported for the Mount Lofty Ranges (Coles and Hunter 2010). Whilst there are no matching ethnographic symbols for the Murray River we would note that a 'four-toed bird track' is representative of 'crow's foot people' and that other arrow-like motifs are representative of 'travelling men' (Tarby Mason in Tindale [1930–1952a: 310]). Given the latter we note the subjectivity of some motif designations. The issue of differentiating 'bird tracks' from 'geometric style' motifs (i.e. 'tridents') has been previously discussed by Layton (1992: 149).

One 'rayed' motif is observable at the Thurk site and correlates specifically to two other rock art places

in the Murray River Gorge (Tables 1 and 3). However, as is evident in our Table 1 synthesis, there are numerous examples of similar geometric forms in the Murray River Gorge (variously described in Australian rock art literature as tridents, stars, bars or 'fern-like' and 'tree-like' — e.g. Gunn 1987; Layton 1992: 154; Roberts et al. 2018, 2020). As summarised by Layton (1992: 154), such 'rayed' or 'fern-like' and 'tree-like' designs may derive from the 'adding to' or by combination of 'simpler forms' (see also Forbes 1983). The 'fern-like' and 'tree-like' designs are also repeated in the Mount Lofty Ranges rock art province (e.g. painted/drawn in red and white 'ochres' [Coles and Hunter 2010: 170–171]).

The Thurk Petroglyph Site contains one 'circle' motif (Table 3). Circle elements and circular designs are represented in the Murray River rock art corpus, including on a portable stone that was potentially part of a stone arrangement (Table 1). As with other motifs, circles also appear in the rock art of the Mount Lofty Ranges. Circles and circular designs are also a feature of the ethnographic symbols for the region. Such features were ascribed multiple meanings by Peter Boney (in Tindale 1939) and included 'a lake', 'a camp' and 'a magic tree'. Other Australian Aboriginal ethnographic studies of meanings attributed to geometric forms have revealed similar complexities. Munn's (1973) work in relation to Walbiri iconography, for example, demonstrated that 'simple' forms revealed a 'complexity' of 'religious thought' which likely emerged over time (see also summary in Layton 1992). Layton (1992: 158) has argued that the analysis of the geometric motifs should 'primarily be carried out in formal terms' in cases where specific ethnographic information is absent.

The possible anthropomorphous figure is, according to our current knowledge, a unique motif within the Murray River corpus (Tables 1 and 3). We have also been unable to identify any similar motifs within other rock art assemblages (either nearby or further afield). Philip Johnson, a traditional owner, commented that the engraving reminded him of the bats that he regularly observes on his Country (Interview 20 July 2023). This correlation caused him to recall stories he was told by his Elders about a bat-like creature that could steal children. Malignant spirits or supernatural beings that can cause harm to children are well-known amongst Aboriginal peoples of the Murray River (e.g. Berndt and Berndt 1993: 203). We have, therefore, designated it as a possible anthropomorph noting its potential 'head' and symmetrical shape (possibly including out-streatched arms/wings). However, we note the discussion in Layton (1992: 142) that cautions that 'representational qualities of human and animal bodies [in Aboriginal rock art]' are complex.

One unambiguous figurative, faunal motif is extant at the Thurk site, a 'fish' engraving (Tables 1 and 3). Figurative motifs in the Murray River corpus are primarily found at Ngaut Ngaut (see Roberts 2014b). However, the most comparative example is another sole figurative motif, also a 'fish', at Tungawa (Roberts 1998) (Tables 1 and 3). As noted previously, the distal freatures of the Thurk 'fish' are partially obscured due to concretions while a probable Hylaeinae capping covers a likely eye cavity. As argued above we have interpreted this as an Aboriginal engraving due to the concretions and its correlation with the Tungawa 'fish'. Both fish engravings are depicted from a lateral viewpoint and are linear or outline in form, with 'mouths', 'gill' line/s and taking into account the above qualification also 'eyes' — the dorsal fins/rays are, however, different. Despite conducting comparisons with known Murray-Darling Basin fish species (native and introduced) we have been unable to make any ascriptions for the 'fish' engravings. Vinnicombe (1980), albeit in relation to engravings of fish in the Sydney region, similarly concluded that they were 'rarely recognisable as particular species'.

The solitary 'cross' motif is located on the fallen boulder. Whilst no other crosses are currently known to exist within our data for the Murray River rock art corpus a 'cross' design is provided in the suite of ethnographic symbols that Tindale (1930–1952a: 310) recorded from Tarby Mason (Tables 1 and 3). Tindale (1930–1952a: 310) records the symbol as meaning 'double cross people', but provides no further exegesis. However, in the related discussion about 'moon people' on the page prior to the sketched symbols it is clear that he is referring to totemic (*ti:nda*) associations with country. So it is possible, at least in an ethnographic sense, that the 'cross' symbol has similar connotations. We attempted to understand the potential relationship (refit) of the boulder to the main sandstone outcrop, but due to weathering of the boulder and because it was partly obscured by vegetation and sediment this was not possible.

The instances of graffiti and vandalism (n=47) of the rock art at the Thurk Petroglyph Site are substantial (particularly on Panel 5) (Figs 5 and 6D). The nature of the graffiti and vandalism at this site is gratuitous. In most cases the lettering cannot be fully interpreted and the machine cut lines were presumably either an attempt to steal rock art or wanton vandalism. This historic desecration, for example, is largely different from the historic inscription assemblage at Pudjinuk Rockshelter No. 1 (see Roberts et al. 2020). Indeed, whilst the assemblage at Pudjinuk is also desecrating, the historic inscriptions often exhibit more purpose—i.e. full names and associated dates are inscribed to mark events, time, familial relationships and more (Roberts et al. 2020). The damage to the Thurk petroglyphs, combined with the additional post-contact impacts of infrastructure to the site (e.g. pipes, sheds and fences [Figure 4]) and the natural processes affecting the art highlight the vulnerable nature of these culturally significant riverscape places (see below). These impacts also underscore the imperative to continue to promote heritage protection in the region as well as fully record

them for future generations.

While we are unable to provide a timeline for the rock art, the variable weathering of the art, and the superimposition, albeit limited, indicates an extended period for art production and the repetitive use of this site. Given the consistent location of the motifs in relation to the current ground surface, it can be inferred that the artists were presented with a site topography that is essentially replicated in the modern landscape. A Mid to Late Holocene age has been suggested for at least some engravings at other sites along the Murray River based on the related sediments (e.g. Ngaut Ngaut and Tungawa [Mulvaney 1960; Roberts et al. 2014b]), and we see no evidence at this stage for a deeper antiquity for the Thurk site. However, more work would be required to investigate these preliminary inferences.

The geophysical data do not make a compelling case for the use of excavation to locate subsurface rock art or establish a chronology for the use of the site. As discussed above, whilst there is some depth of unconsolidated sediment (~0.5 m) in locations to the south-west of the main rock art panel, the presence of buried irrigation infrastructure in this location suggests that this sediment will be disturbed and, as such, would be unsuitable for establishing a reliable depositional chronology. The large rock slab located in the shallow subsurface near the intersection of the two ERT lines may overlay unconsolidated sediment. However, the practicalities of excavating under this large, shallow block would be difficult. It appears that the small, outlying block to the east of both ERT lines forms part of the bedrock shelf continuing in the shallow subsurface. As noted above, there were no instances where a motif extended to the natural ground surface. The geophysical surveys also show no evidence of material culture items or human burials, however these would be difficult to locate with these techniques in this location (i.e. Moffat 2015).

As the ethnography for the region makes clear, the symbols expressed in Murray River rock art can be broadly attributed to the ancestral being Wurranderra (Ngurunderi). Further, the symbolic representations shared by senior Aboriginal 'knowledge carriers' (after Atalay 2020) bring into focus the broader 'community of culture' (after David 2002: 67) in the worlds of Aboriginal peoples along the Murray and Darling Rivers. That many of these symbols can be correlated to the rock art at Thurk and sites downstream potentially speaks to the continuities of visual systems.

The cultural significance of the Thurk Petroglyph Site in the riverscape cannot be overstated. It is tied to complex traditional narratives and beliefs and it is connected through the life-giving waters of the river to rock art places hundreds of kilometres downstream and beyond — the river, its tributaries, lakes and related environments symbolic of the body of Wurranderra/Ngurunderi (Berndt and Berndt 1993: 13; Roberts et al. 2023). This knowledge demands that Australians accord Thurk with the respect it demands and to remedy past desecrations.

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