Archaeology of animate ancestors and entanglement at Mayarnjarn in the Wellington Range region, Northern Territory

Archaeology in Oceania

Archaeology in Oceania, Vol. 0 (2023): 1–11
DOI: 10.1002/arco.5290

Archaeology of animate ancestors and entanglement at Mayarnjarn in the Wellington Range region, Northern Territory

Duncan Wright, Ladislav Nejman, Steve Skitmore, Wayne Brennan, Rebecca Parkes, Ronald Lamilami and Paul S. C. Taçon

DW: *DW, the Australian National University;* LN: *LN, Archaeoconverge, Brisbane, Queensland;* SS: *SS, Extent Heritage, Melbourne, Victoria;* WB: *WB, Department of Archaeology, University of Sydney, NSW;* RP: *RP, Lantern Heritage, Wallagoot, New South Wales;* RL: *RL, Namunidjbuk Aboriginal Corporation, Darwin, Northern Territory;* PSCT: *PSCT, Place, Evolution and Rock Art Heritage Unit, Griffith Centre for Social and Cultural Research and Australian Research Centre for Human Evolution, Gold Coast campus, Griffith University, Queensland, Australia*

ABSTRACT

The Wellington Range region, in far Northern Australia, provides a remarkable record of cultural encounter. Cathedral-sized rock art galleries include contact imagery referencing Macassan and European visitors while lithic artefact assemblages echo social mobility between Indigenous groups occurring from at least the mid Holocene period. In this paper, we continue the trajectory of archaeological research in this region by examining community entanglement over the longue durée, focusing on the Mayarnjarn rock-shelter complex. Specifically, and following advice from traditional custodians, the authors complement archaeological excavation results with reflections on interactions between Traditional Mawng speaking Owners and archaeologists occurring during the 2016 and 2018 field seasons. This paper provides a cultural chronology built around both OSL and radiocarbon dates, a first for the region, indicating site activities dating from the terminal Pleistocene. An increase in exotic artefacts and presence of paintings belonging to a pan-Arnhem land rock art tradition suggests widening social networks during the Holocene. Insight into the nuanced nature of interactions, also the role of animate objects as relationship referents, emerge through ethnography and experience as the field season unfolds.

Keywords: trade beads, archaeology practice, entanglement, community archaeology, ancestors, materiality , perles de commerce, Pratique de l'archéologie, Enchevêtrement, Archéologie communautaire, Ancêtres, Matérialité

RESUME

La région de Wellington Range, dans l'extrême nord de l'Australie, offre un remarquable témoignage de rencontres culturelles anciennes. Les galeries d'art rupestre de la taille d'une cathédrale figurent des contacts avec des visiteurs macassans et européens, tandis que les assemblages d'artefacts lithiques font écho à la mobilité sociale entre les groupes autochtones remontant au moins au milieu de l'Holocène. Dans cet article, nous poursuivons les efforts archéologiques dans cette région en examinant l'imbrication des communautés sur la longue durée, en nous focalisant sur le complexe d'abris sous roche de Mayarnjarn. En suivant les conseils des dépositaires traditionnels, les auteurs cherchent à compléter les résultats des fouilles archéologiques avec des réflexions collectives sur les interactions anciennes conduites avec les propriétaires et locuteurs traditionnels durant les missions de terrain en 2016 et 2018. Cet article propose une chronologie culturelle construite à partir des dates OSL et radiocarbone, une première pour la région, indiquant une occupation du site remontant au Pléistocène final. Une augmentation du nombre d'artefacts exogènes et la présence de peintures appartenant à une tradition d'art rupestre pan-Arnhem suggèrent l'élargissement des réseaux sociaux pendant l'Holocène. A travers l'ethnographie et l'expérience progressive du terrain, on voit ainsi émerger une vision nuancée de la nature des interactions, ainsi que du rôle des objets animés en tant que référents relationnels.

Correspondence: Duncan Wright, The Australian National University, 44 Linnaeus Way, Acton ACT 2601 Australia.
Email: duncan.wright@anu.edu.au

[Correction added on 25 April 2023, after first online publication: The affiliations of the authors have been corrected.]

INTRODUCTION

Archaeologists and anthropologists have long been interested in isolating the materiality of cultural entanglement (Hodder, 2011; Thomas, 1991). Entanglement theory identifies human relationships with material things as a defining characteristic of human history and culture (e.g., Der & Fernandini, 2016). Complex historical trajectories are assumed, incorporating radical transformations but also recognising that human responses to outsiders may also be guided by previous experience. Objects are considered animate, "always falling apart, transforming, growing, changing, dying, running out" and therefore may provide insights into evolving and multi-faceted cross-cultural encounters (Hodder, 2011: p. 154; see also Der & Fernandini, 2016: p. 11). Community-based archaeology is particularly well suited to investigate these histories, also identifying a reality that "artefacts and spaces in colonial worlds are fraught with ambiguity, alternative functions, and multiple users" (Silliman, 2016: p. 32). Torrence and Clarke (2000: p. 2) extend this logic, recognising that "the social, economic and political trajectories initiated by the enforced cononisation and settlement of Indigenous lands did not stop at some pre-ordained moment in time fifty or one hundred years ago, but the processes and consequences of historical cross-cultural encounters continue into the present day". It is important they suggest for archaeologists to monitor entanglements occurring during archaeological fieldwork and make careful note of Aboriginal perspectives about their cultural places and objects (Clarke, 1994; Torrence & Clarke, 2000). Not to do so limits understanding about nuanced and multi-faceted cross-cultural entanglement while also creating an artificial separation between communities in the past and present. These observations represent a departure point for our paper, which records excavation results of two Wellington Range rock-shelters and fieldwork experiences south of the Goulburn Islands in northwest Arnhem Land (Figure 1).

Long term entanglement in the Wellington Range

Based on current archaeological evidence the Traditional Owners of the Wellington Range, including the extended Lamilami family, can claim an enduring and arguably unprecedented (for Australia) history of cross-cultural encounters involving Aboriginal, European and south-east Asian communities. This is evident in rock art, which includes "the earliest age for a depiction of a Southeast Asian watercraft" (Taçon et al., 2010; 2020), also a plethora of nineteenth and twentieth centuries introduced items, vessels and planes including those post-dating World War II (e.g., May et al., 2010, 2013; Wesley & Viney, 2022). Histories of interactions between Aboriginal communities and outsiders is further evident in lithic artefacts and midden materials associated with trepang processing plants on Anuru Bay (e.g., MacKnight, 1969: p. 236; see Mitchell, 1994 for a comparable case study on the Cobourg peninsula) as well as trade beads and other introduced items recovered in Aboriginal camps some distance away from the immediate contact zone (e.g., Wesley & Litster, 2015). Ethnographic records suggest two-way voyaging, including Aboriginal people who sailed on praus to Macassar and Singapore (Macknight, 1976: p. 86; Patrick Lamilami pers. comm. 2017). There are also multiple accounts of Macassans fathering children with Aboriginal women (Macknight, 1976).

Archaeological observations suggest long histories of cultural entanglement between communities in the Wellington Range and those elsewhere in Arnhem Land. Specifically, "raw material diversity in the late Holocene, alongside a variety of emergent pan-Arnhem Land rock art styles [e.g., x-ray and complete figures] in the Wellington Range, supports the proposition of increasing exchange between Indigenous groups" within the past 2000 years (Wesley et al., 2018: p. 108; see also Chaloupka, 1993; Chippindale & Taçon, 1998; May et al., 2013). The Maliwawa site complex (also known as Bald Rock), for example, contained artefacts manufactured from "locally available sandstone, quartz, quartzite, dolerite, and claystone", but also a small number (1.5%) made from "tuff, chert, silcrete, fine-grained sedimentary and other igneous stone" (Wesley et al., 2018: p. 124). Using geological information, it was suggested that these likely originated "between 80 and 150 km to the south east of the Wellington Range within the Pine Creek Geosyncline" which was indicative of increased "social mobility or exchange" (Wesley et al., 2018: p. 124). This was further supported at Maliwawa through the presence of curated stone artefacts such as points that are frequently interpreted as trade items (Hiscock & Maloney, 2021). This interpretation is plausible, although authors of this paper note that the Kombolgie geological unit, within which the Pine Creek Geosyncline sits, continues well beyond Pine Creek (and indeed Milingimbi; e.g., Needham, 1984; Sweet et al., 1999), suggesting distances may be exaggerated. Additionally, until detailed geological assessment occurs it is not possible to rule out local outcropping. Either way, archaeological patterns (including rock art) suggest introduction of exotic raw materials during recent centuries was by no means unprecedented, rather fitting within well-established social networks that had become increasingly open during the late Holocene (see similar arguments by Wesley & Litster, 2015; Wesley et al., 2018).

Despite a long history of Wellington Range cultural encounters, archaeologists to date have spent little time exploring contemporary human–human and human–object entanglements. A limited number of texts identify echoes of past entanglements within contemporary pursuits including present-day Aboriginal "camps" established in the immediate vicinity of the Anuru Bay processing plant (MacKnight, 1969: p. 236). Subsequent researchers recognise that encounter and engagement are deeply engrained within the cultural make-up and memories of Wellington Range Traditional Owners, particularly the Lamilami family, as "rock art sites were like books full of stories and really big sites were libraries with records of

FIGURE 1. Location of Mayarnjarn in the Wellington Range and other sites mentioned in the text.

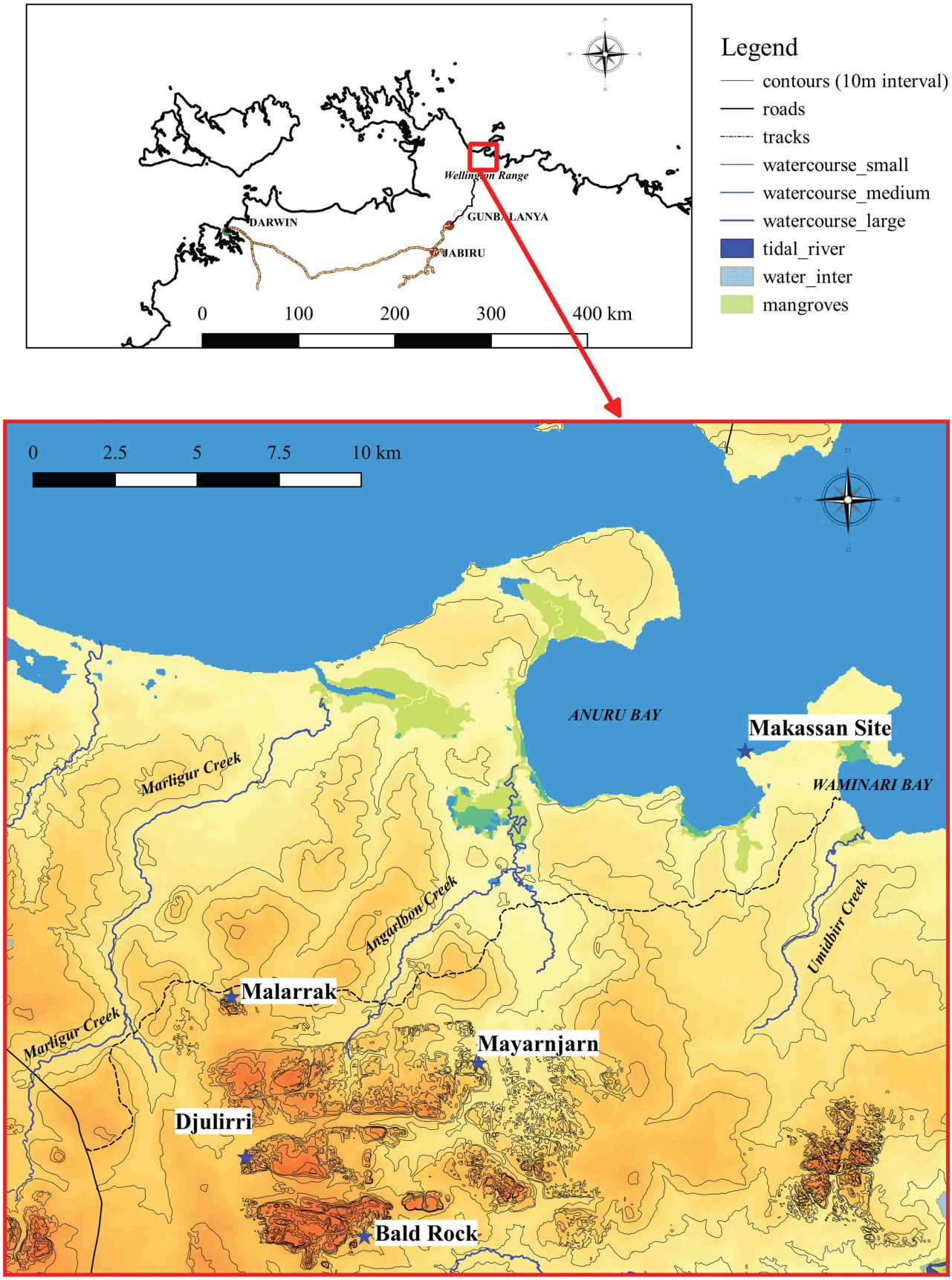


FIGURE 2. Two contact era paintings photographed at Mayarnjarn (photographs PT).

everyone who had passed through the region" (e.g., Ronald Lamilami cited in Taçon et al., 2021: p. 221). It is further acknowledged that elders have played important roles guiding field research (e.g., Taçon et al., 2021). The complexity of these inter-relations and role played by cultural artefacts (past and present) in this process, however, are yet to be fully articulated. This being the case, the subsequent sections focus on long-term entanglement at Mayarnjarn, before recounting negotiations occurring behind the scenes of these excavations.

Introducing Mayarnjarn

Mayarnjarn is a sandstone complex of platforms and tors on the eastern margins of the Mamadawerre Formation (Figure 1), approximately 10 km south of the Anuru Bay trepang processing site. Mayarnjarn is part of the Naminidjbuk clan estate of the Manganowal people, an area reputedly used "during my great grandfather time" as a camping place for initiation and funerary activities (Leonard Lamilami pers. comm. 2018; also, Ronald Lamilami pers. comm. 2018). Human remains were observed in this area and were frequently visited by members of the Lamilami family during archaeological field seasons.

The Mayarnjarn site consists of two rock-shelters on either side of a large sandstone tor – a large (53 × 2 m) shelter faces southeast, and a smaller (5 × 0.5 m) shelter faces west. The former was observed to contain significant quantities of artefactual materials and cup – shaped grinding hollows. Artwork covers much of the back wall and roof of this shelter, the majority of which is consistent with a pan-Arnhem Land tradition emerging after the "Estuarine Period" (between 8000 and 1500 years ago, e.g., Chaloupka, 1993). This includes a large, red "large naturalistic" kangaroo, a red infill dingo with yellow stripes, yellow and red striped fish, a red infill fish, a red and white turtle, black (charcoal) and red (ochre) anthropomorphic figures, a red serpent, a large red infill goanna and a beeswax anthropomorphic figure and associated dots. Art also includes yellow and white ships, most likely pearl/trochus shell luggers known to frequent this coastline in the late nineteenth and early twentieth centuries (Figure 2; Chaloupka, 1993), and "Dynamic style" figures, believed to be early in the Arnhem Land art corpus (e.g., Chaloupka, 1977; Taçon et al., 2020).

FIGURE 3. OSL samples being collected by WB and DW from Unit D (photograph SS).

ARCHAEOLOGY AT MAYARNJARN

In 2016 and 2018, two excavations were completed at Mayarnjarn, focusing on a small tor at the gateway to this restricted area. The first 1 × 1 m test pit (Unit A) targeted the shallow, smaller, west-facing rock-shelter. This excavation was designed to test the depth of Dynamic figures painted on the back wall which were observed to continue beneath the current ground surface. A second 2 × 1 m trench (compartmentalised into Units B, C and D; Figure 3) was placed 5 m from the back wall of the larger, south-east facing rock-shelter and (at least) 2 m outside the drip line, in an area characterised by large quantities of archaeological surface material. The shelter contained a

FIGURE 4. West wall of Units D, B and C at Mayarnjarn (photograph DW, illustration BP).

significant surface scatter of contact materials including 34 pieces of light-green, olive-green, dark-green and pink glass (including 18 flaked glass artefacts) and one piece of unworked purple, solarised amethyst glass with a relative date of 1890–1930 (Bolton, 2005). The surface scatter also included 31 quartz and one silcrete flaked artefacts, 3 grindstones, 2 broken hammer-stone fragments, a worked ochre nodule and (in the western portion of the site) two *Ngarlwak* (freshwater mud mussel) shells and a single burnt *Anadara* sp. (estuarine clam).

In 2016, Unit A was excavated to sandstone bedrock at a depth of 60 centimetres below surface (cmbs; 8 XUs). Sediment consisted of two distinctive horizons (SU1 – a 10 cm thick layer of grey, silty sediment and SU2 a cemented layer of yellow clay). No cultural materials or charcoal samples were recovered at this site.

Excavation of Unit B occurred during the same year and reached a depth of 119 cmbs (15 XUs). Bedrock was not exposed nor were the authors convinced that culturally sterile deposits had been encountered. Time constraints meant that the test pit was backfilled (using a tarpaulin lining) to be re-excavated in 2018. During this second field-season, Unit B excavation continued to a depth of 165 cmbs with the pit stepped out using two 50 × 100 cm units on either end (henceforth Units C and D). Unit D continued until 125 cmbs while Unit C was closed at the top of roof fall at 55 cmbs (Figure 4). The 2018 excavation confirmed culturally sterile deposits below SU3 (i.e., 95 cmbs).

Site formation and chronology

Units B and C (and to a lesser extent Unit D) revealed four SUs and considerable disturbance (Figure 4). SU1 consisted of very dark grey (10YR 3/1, 1–30 cm depth), fine-grained sandy silt and overlay SU2 a greyish brown (10YR 5/2; approximately 30–70 cm) sand. The latter contained large quantities of water-rolled rocks, with a centipede nest causing additional disturbance within Unit B. This layer was strikingly similar to gravel observed in a wet season creek bed located at the base of the Mayarnjarn platform. SU3 consisted of dark yellowish brown (10YR 4/4; 70–95 cm) silty clay grading to consolidated, culturally sterile clay (SU4; 10YR 4/4); 95–165 cm).

Particle size analysis of Unit B sediments guided OSL sampling. This identified sediment disconformities at the interface between SUs 1 and 2, including a substantive change in particle size and a shift towards well-sorted, water-rounded sand grains. This became more pronounced in SU3, with clay content increasing towards the base and into SU4. Results suggest major disturbance associated with intrusive, water-born sediments and pebbles from SU2.

Two dating techniques (Radiocarbon 14 and OSL; Tables 1 and 2) were applied to develop a robust chronology despite disturbance within SU2 and SU3. As few organic samples survived the acidic Arnhem Land sediments, five in situ fragments of charcoal were submitted to ANU Radiocarbon dating laboratory for AMS dating.

Radiocarbon dates (ANU50814), fragments of flaked bottle glass and oral histories suggest this site was used

Table 1. Radiocarbon dates from Mayarnjarn. Calibrated using Calib 7.1 (Stuiver et al., 2017). As Mayarnjarn 1 lies at the southern boundary of the Inter-tropical Convergence Zone (ITCZ), an area that may be influenced by northern hemisphere air masses, calibrations were performed using the IntCal13 dataset (Reimer et al., 2013).

Lab Cade	SU	XU	Depth (cm's)	δ13C (‰)	RC14 age (BP)	Calibrated date (at 2δ)
S-ANU50814	1	2	4–9	–22.84705	152 ± 25	0–36 (18.8%) 66–118 (15.5%) 125–127 (0.3%) 130–154 (11.1%) 167–231 (37.1%) 244–283 (17.3%)
S-ANU50816	2	5	29–34	–26.09613	1023 ± 26	911–978 (100%)
S-ANU50815	2	8	44–49	–22.3726	18287 ± 68	21915–22367 (100%)
S-ANU53339	3	11	71–75	–24.05	14227 ± 45	17132–17506 (100%)
S-ANU50817	3/4	15	101–109	–25.07164	8860 ± 36	9780–9853 (10.4%) 9856–10159 (89.6%)

during the post-contact period (upper 10 cm within all Units). Ephemeral activity was also noted within SU2, with a charcoal sample dating between 978 and 911 calBP (ANU50816). The site chronology was complicated by disturbance encountered below SU1 evident in sediment analysis also a flawlessly reversed distribution of radiocarbon dated samples spanning 22367 – 9780 calBP (ANU50817; ANU53339).

To improve site chronology three additional OSL samples were collected from Unit D. Sediment samples (and field observations) suggested this Unit had received less disturbance than Unit B and it was anticipated that multi-grain aliquots might better capture sedimentation events than small fragments of charcoal. The OSL chronology provided no inversions with a settlement history spanning 1.58 ± 0.14 ka (in SU1, GL18020) and 23.77 ± 1.91 ka (GL18022, at the interface between SU3 and SU4). An OSL sample, collected from immediately above SU3, dated to 7.85 ± 0.67 (GL18021).

Radiocarbon and OSL chronologies suggest people visited Mayarnjarn consistently from the Terminal Pleistocene to the present. A pair of OSL and radiocarbon dates collected between 20 and 34 cm compare favourably, suggesting cultural activity occurred throughout the late Holocene. SU2 appears to develop during the mid-Holocene (GL18021), indicated also through a regional shift between high rainfall during the early Holocene and increased aridity after 4000 years ago (e.g. Shulmeister & Lees, 1995; see a similar post 4710–7850 feature recorded at Bald Rock 1 by Wesley et al., 2018). It is plausible that communities occupying the Wellington Range may have responded to higher rainfall and localised flooding events through differential subsistence activities and site use. It is acknowledged that some doubt surrounds chronology of SU2 into SU3 due to disturbance noted within these layers and radiocarbon date inversions. Finally, an OSL date of 14850–23770 cBP, at the interface between SU3 and SU4 (underlying basal cultural materials), corresponds favourably (and does not predate) radiocarbon dates (ANU53339–50815; 22367–17132). The density of culturally sterile clay in SU4 and clear stratigraphic layering (visually and through particle size analysis within Unit D) suggests this to be a reasonable maximum age for human activity at Mayarnjarn.

Cultural materials

Unit B contained 521 lithic and glass artefacts, 20 fragments of unworked glass, one piece of tin, 28 fragments of unworked ochre and seven mussel shell valves. Small quantities of charcoal were observed throughout the assemblage, as well as four burnt seeds (between XU2 and XU4; Table 3; Figure 5). A clear pattern was observed in artefact distribution, with glass (flaked dark green × 10; flaked light green × 9; un-flaked dark green × 16; un-flaked light green × 4) and one fragment of corroded tin excavated within the upper 2 XUs (0–8 cm; Table 3). In addition, artefacts manufactured from claystone, chert and tuff were only recovered in upper six XUs, while quartzite and silcrete primarily occur below this. Basal layers were also associated with unworked ochre nodules. Quartz artefacts were prominent throughout the excavation.

Unique items include one oblate, red-purple glass European trade bead (3 mm diameter) which was recovered from XU1 (Figure 6). Microscopic analysis shows wear-lines on the inner rim consistent with suspension. The bead is near identical to those found in pre-Mission/early Mission deposits at Bald Rock 1 = 1668–1780 AD; Malarrak 1 = 1810–1921 AD and Malarrak 4 = 1720–1819 AD; Wesley & Litster, 2015). The upper two XUs were further associated with five of the six excavated grindstone fragments, including three conjoining pieces from a single upper grinding stone (Figure 6). A ground stone fragment was recovered from XU5 in deposits dating to approximately 911–978 calBP.

In Units C and D, fewer lithic artefacts were recovered (although see comment on methodology in Supplementary Materials 1; Table 4, Table 5). These reveal consistency in reduction techniques (primarily bipolar) on all flaked materials (quartz, silcrete and glass) and in all SUs. In keeping with artefacts recorded from Unit B, quartz (of

FIGURE 5. Cultural materials (excluding artefacts) excavated from Unit B (Y Axis = grams per 10 kg of total excavated materials; X axis = XU).

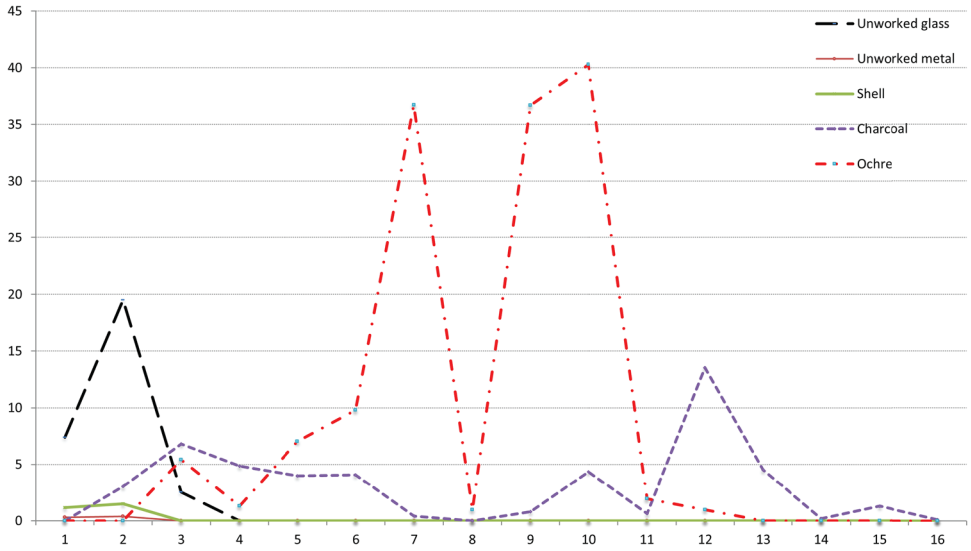
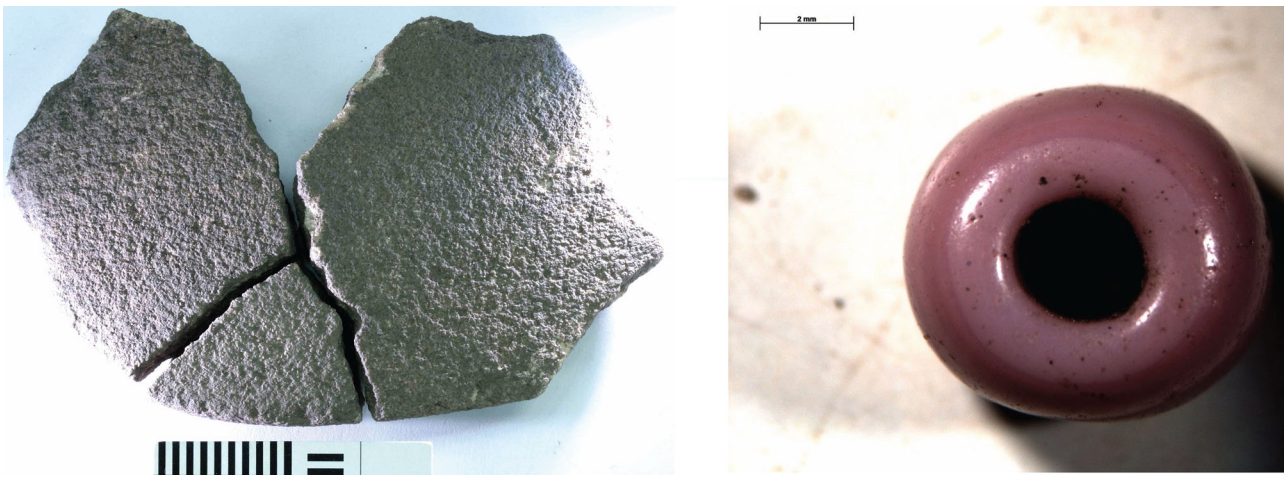


FIGURE 6. Trade bead and conjoined grinding stone with adhering residues (photographs DW).



varying quality) was used throughout the deposit (88% of the Units C and D total by material), however, shifts in raw materials were also noted. Glass was excavated in large quantities in XU1 (both units), including two fragments with attributes consistent with bipolar flaking. The upper 20 cm included a dolerite pounder in Unit C (XU1) and a worked fragment of yellow ochre (XU3). Conversely, silcrete (5% of the total) was observed to cluster between XUs 5 and 15 (i.e., SU2), corresponding with a granite artefact (Unit D, XU11, SU3) and unworked, yellow and red ochre fragments (Unit C, XU7, SU2). There were at least three different types of silcrete used at the site, light-coloured, grey and maroon. It is not known if these different colours reflect different sources or a single source with the colour variation occurring along a continuum. A silcrete core from Unit D, XU13 graded from light to maroon-coloured. This could suggest that these two varieties are from the same outcrop. In summary, excavations contained locally manufactured artefacts (quartz, quartzite, dolerite and claystone) suggesting opportunistic use but also tuff, chert and granite which are likely introduced from elsewhere. Most of these raw materials (and all curated artefacts, e.g., hammer/grinding technologies) were associated with upper excavation layers, however, a single granitic and large numbers of silcrete artefacts in lower deposits suggest either local sources of these materials or wide-ranging artefact movements occurring during early Holocene and Pleistocene times.

ARCHAEOLOGISTS AT MAYARNJARN

While archaeological and ethnographic records for Mayarnjarn undoubtedly echo elements of the contact experience, it is considered unlikely that this (or other case studies) will ever do justice to nuanced and dynamic

Table 2. OSL dates from Mayarnjarn.

Lab code	SU	Depth (cm)	Moisture (%)	K (%)	Th (ppm)	U (ppm)	Cosmic D_r (Gy/ka)	Total D_r (Gy/ka)	Optical age (ka)
GL18020	1	21	3 ± 1	0.36 ± 0.06	19.78 ± 0.96	2.87 ± 0.17	0.20 ± 0.03	2.50 ± 0.12	1.58 ± 0.14
GL18021	2	54	3 ± 1	0.60 ± 0.06	21.02 ± 1.00	2.93 ± 0.17	0.19 ± 0.02	2.82 ± 0.13	7.85 ± 0.67
GL18022	3	88	5 ± 1	0.82 ± 0.07	23.34 ± 1.07	2.84 ± 0.17	0.18 ± 0.02	3.09 ± 0.14	23.77 ± 1.91

histories of entanglement. Indeed, we echo previous scholars (e.g., Clark & Torrence, 2000) who suggest archaeological research runs the risk of creating artificial divides between peoples in the past and present. The authors do not wish to perpetuate populist notions that Aboriginal communities were unchanging and their culture continuous over millennia, nor do they want to deny cultural continuity and the important role of contemporary custodians also archaeologists within this site's story. We now examine two events that occurred during fieldwork that provide a starting point for looking at these processes in a way that is not possible through archaeology alone.

During both field seasons, negotiation between the Lamilami family and the archaeology field crew occurred daily, with major shifts made to methodology following these discussions. Ronald Lamilami was concerned that the field team might disturb ancestors (including his father who was interred in a nearby rock-shelter) and Patrick Lamilami was instructed to report back to his father should there be any signs that the ancestors were unhappy. Over lunch one day, Patrick revealed that all was going well with Unit A excavation. He had observed a butterfly floating into the site, settling at the base of this excavation and visiting sieving and artefact analysis stations. This symbolised to Patrick and the Lamilami family a visit by ancestors who were ensuring that cultural protocols were being imposed and maintained.

Halfway through the 2018 field season there was another sign. A monsoonal storm occurred in the middle of the dry season and late at night, initiating a flurried race to erect fly sheets, to protect storage boxes of food and equipment.[1] The next morning Ronald informed us that stone artefacts must now be reburied along with the excavation backfill. On route to the site Jimmy Kris (Ronald's son in law) explained that removal of artefacts from this site may have caused these unexpected weather conditions which were likely to continue should methodologies go ahead as originally planned. During reburial of artefacts, an emotional Patrick Lamilami (pers. comm. August 2018; Figure 7) explained, 'when I touched that ochre it was like finding them [the ancestors] again … when we buried that ochre it was like burying those ancestors' (Patrick Lamilami pers. comm. August 2018). An intriguing extension of this occurrence occurred later, with archaeologists asked to leave behind trowels used during the excavation. This, alongside a t-shirt from Injalak Arts Centre kept by Patrick, was necessary as it materialised negotiations (including those averting dangers recorded above) between our field team, the ancestors (including those interred in nearby rock shelters) and contemporary custodians.

[1] Namarrgon (a creation ancestor associated with storms in Arnhem Land) may have been responsible (Sally May pers. comm. 2018). Stories (and paintings) associated with this ancestor suggest that he used stone axes (on his head, feet and shoulders) to split the clouds and create thunder and lightning.

Table 3. Lithic artefacts from Unit B. CH = chert; CL = claystone; Q = Quartz; QZ = quartzite; S = silcrete; T = tuff; G = unidentified glass.

			Flaked artefacts						
XU	**Bead**	**Grindstone fragments**	**Glass**	**Quartz**	**Quartzite**	**Silcrete**	**Claystone**	**Tuff**	**Chert**
Surface			7	4	2				
1	1	4	13	17					
2		2		13					1
3				13	1	1			
4				22					1
5		1		47	5	1	1		1
6				79	7	7		2	
7				66	5	7			
8				80	5	1			
9				50	9	2			
10				18	7	2			
11				4	7				
12				7	5				
13									
14				1					
15				1					

Table 4. Breakdown of artefacts excavated from Unit C. BP = Bipolar; Unidentified Flaked piece = FP.

XU	**Flake**		**Attributes BP**		**Consistent BP**	
	Silcrete	**Quartz**	**Glass**	**Quartz**	**Quartz**	**Silcrete**
Surface	1					
1			2	2	2	
2				1	8	
3				1	7	
4		3		9	14	
5	2	2		7	35	
6	1	2		1	23	
7	4	1		21	40	2
TOTAL	8	8	2	42	129	2

Table 5. Lithic artefacts from Unit D.

XU	**Flake**		**Attributes BP**		**Consistent BP**	
	Silcrete	**Quartz**	**Quartz**	**Silcrete**	**Quartz**	**Silcrete**
1			5		6	
2		1	1		9	
3					7	
4			1		4	
5			1		7	
6	1		1		16	
7	2	2	5		15	
8			3	2	22	
9		1	9		21	
10		1	5		15	
11			1	1	5	
12			1		6	
13		2			4	
14			1			
15		1				
TOTAL	3	8	34	3	137	

FIGURE 7. Patrick Lamilami reburies excavated artefacts as we backfill Mayarnjarn (photograph DW).

DISCUSSION/ CONCLUSIONS

Mayarnjarn excavations add to a growing body of knowledge surrounding the deep history of northern Australia. An age estimate of 15000–24000 years supports previous archaeological research in this region identifying low intensity activity from Terminal Pleistocene through the Holocene (e.g., Maliwawa and Malarrak; Wesley et al., 2018).

The proposition that social mobility, exchange and rock art production increased long before European arrival (from the mid-Holocene and peaking between 1000 and 2000 years ago; Wesley et al., 2018) is partially supported by results from Mayarnjarn. This site complex contains rock art characteristic of a pan Arnhem Land tradition, the majority of which date within the mid-late Holocene

periods. Increase in rock art during this period is further suggested by worked ochre, only detected in upper layers of the excavation. Additionally, lithic artefact raw materials diversify during the late Holocene, with layers dating to this period also containing curated artefact types used for pounding and grinding. The balance of evidence suggests early phases of entanglement; however, without further geological survey the authors acknowledge that arguments based on artefact raw materials remain tenuous (see introduction for further details). In many ways the lithic artefact assemblage is suggestive of expedient manufacture (involving low-effort reduction strategies and no formal, flaked artefact types, e.g., points) by occasional visitors, a pattern observed for many other rock-shelter sites in western Arnhem Land (e.g., Andrefsky, 1994; Hiscock, 1996). This is arguably particularly likely for considerable quantities of silcrete artefacts (many of which had not reached the end their usable life or experienced retouch) in Pleistocene and early Holocene layers.

Mayarnjarn rock art and material culture (e.g., glass and metal) suggests European arrival in this region had significant repercussions for the Aboriginal community. Concurrently, as might be expected for a place of such evident contemporary significance, archaeology and ethnography identify considerable cultural continuity. Commemoration of contact and trade, identified through two simple boat paintings and a single trade bead, appear secondary to practical considerations associated with camping. The latter is marked by ongoing importation of sharp blades (silcrete and quartz and then glass and quartz), with bipolar reduction common throughout the assemblage (including glass artefacts). There is also little to differentiate artefact/charcoal quantities between Pleistocene and surface assemblages. Site use would be expected to change radically over millennia; influenced by social, environmental and climatic shifts and yet there is very little evidence for this in the archaeological record. Indeed, ethnographies identifying use of this place as a peripheral and infrequently used camp, provide an eminently believable scenario when viewed alongside archaeological data.

As outlined at the beginning of this paper, the authors are interested in interrogating ways in which archaeology practice interweaves with northwest Arnhem Land cosmologies and past human-human and human-object entanglements (e.g., Clark & Torrence, 2000; Hodder, 2011). These experiences are not expected to directly replicate the social dynamics that have formed the archaeological deposit, nor do the authors assume linear evolving histories as First Australian communities became increasingly entangled with outsiders. The latter is clearly not the case, with one author (PT) observing substantially different cross-cultural encounters and cultural protocols during "Picturing Change" (2008–2011) and "History Places" (2016–2018) Projects as the Lamilami family responded to new situations and influences. Substantial change in cultural protocols does not mean that continuity, built around memories of past cross-cultural entanglements, does not exist (e.g., Der & Fernandini, 2016). Moreover, observations in the present provide alternative ways of thinking about culture contact and doing so in a way that prioritises Indigenous community agency. The Mayarnjarn Project was no exception. Sitting in Darwin airport in 2017 having been told on arrival that fieldwork would need to be rescheduled due to "sorry business", one of us (D.W.) mused on potential parallels with previous visitors. It seemed unlikely that surprises such as this one, not to mention complex, on country negotiations such as those outlined above were not experienced by visitors during previous centuries. Should this be the case, several interesting follow-up questions are raised not least the flexibility or otherwise of visiting crews and, based on lessons provided by Patrick Lamilami, the extent to which interactions influenced materiality and imagery within Wellington Range sites.

Beyond recognition of cultural interactions as a process rather than event, a strength of entanglement theory is recognition of the multi-faceted nature of human-human, human-object relationships (e.g., Der & Fernandini, 2016; Hodder, 2011; Thomas, 1991). Demonstrably the case in the Wellington Range it became clear that people and object-ancestor relationships were equally prominent. Moreover, based on perspectives prominent amongst contemporary Traditional Owners, artefacts may echo attempts to mediate between outsiders and ancestors during dangerous periods of contact (see section on 'archaeologists at Mayarnjarn'). This observation is reminiscent of a recent interrogation of an apparent dichotomy between large numbers of European as opposed to Southeast Asian themed rock art motifs in the Wellington Range (May et al., 2021). According to May et al. (2021): p. 127), this "may in fact provide circumstantial evidence for a very different type of interaction between some northern Australian and Southeast Asian communities", with Europeans posing a far greater threat to north-west Arnhem land communities (May et al., 2021: p. 127, 139). This pattern, albeit reputedly dissimilar to the situation on the Gove Peninsula (Howard Morphy pers. comm. 2022), likely also relates to objects (including lithic artefacts, trade beads and archaeological equipment). We may imagine similar highly charged events in which artefacts and ancestors moved between active and latent states; pasts and presents blurred and new people, ideas and technologies were emplaced on Country.

ACKNOWLEDGEMENTS

This project could not have taken place without the assistance of Ronald Lamilami, senior Traditional Owner for the Namunidjbuk estate and his family. We thank Patrick Lamilami, Leonard Lamilami, Isaac Lamilami, Sikoya Lamilami and Jimmy Kris for bringing us to the site in 2016 and 2018. Thanks to the Australian Research Council for funding the overarching project (History Places: Wellington Range rock art in a global context,

DP160101832), coordinated by Professor Paul S.C. Taçon. We further thank Phil Davill for creating Figure 1 and acknowledge the Northern Territory Government and Northern Land Council for approving our permits.

Open access publishing facilitated by Australian National University, as part of the Wiley - Australian National University agreement via the Council of Australian University Librarians.

REFERENCES

Andrefsky, W. (1994). Raw material availability and the organization of technology, *American Antiquity*, 59, 21–34.

Bolton, S. (2005). Purple haze: Evidence for a later date for solarized amethyst glass, *Australian Archaeology*, 60, 51–52.

Chaloupka, G. (1977). Aspects of the chronology and schematisation of two prehistoric sites on the Arnhem Land plateau, In P. J. Ucko (Ed.), *Form in indigenous art: Schematisation in the art of aboriginal australia and prehistoric Europe* (pp. 243–259). Australian Institute of Aboriginal Studies.

Chaloupka, G. (1993). *Journey in time: The world's longest continuing art tradition: The 50,000 year story of the Australian Aboriginal rock art of Arnhem Land*. Reed.

Chippindale, C., & Taçon, P. S. C. (1998). The many ways of dating Arnhem Land rock-art. In C. Chippindale & P. S. C. Taçon (Eds.), *The archaeology of rock-art* (pp. 90–111). Cambridge University Press.

Clarke, A. (1994). *The winds of change: An archaeology of contact in the Groote Eylandt Archipelago, Northern Australia* [Unpublished PhD Thesis]. The Australian National University.

Der, L., & Fernandini, F. (Eds.) (2016). *Archaeology of entanglement*. Routledge.

Hiscock, P. (1996). Mobility and technology in the Kakadu coastal wetlands, *Bulletin of the Indo-Pacific Prehistory Association*, 15, 151–157.

Maloney, T. R., & Hiscock, P. (2021). Lithic utility and risk: Examining mid to late Holocene stone points from Australia with a utility model. *Journal of Archaeological Science*, 134, 105467.

Hodder, I. (2011). Human-thing entanglement: Towards an integrated archaeological perspective. *Journal of the Royal Anthropological Institute*, 17(1), 154–177.

Macknight, C. C. (1969). *The Macassans: A study of the early trepang industry along the Northern Territory coast* [Unpublished PhD Thesis]. The Australian National University.

Macknight, C. C. (1976). *The Voyage to Marege: Macassan Trepangers in Northern Australia*. Melbourne University Press.

May, S. K., Taçon, P. S. C., Wesley, D., & Travers, M. (2010). Painting history: Indigenous observations and depictions of the other in NW Arnhem land, *Australian Archaeology*, 71, 57–65.

May, S. K., Tacon, P. S., Paterson, A., & Travers, M. (2013). The world from Malarrak: Depictions of South-east Asian and European subjects in rock art from the Wellington Range, Australia. *Australian Aboriginal Studies*, 2013(1), 45–56.

May, S. K., Wesley, D., Goldhahn, J., Lamilami, R., & Taçon, P. S. (2021). The missing Macassans: Indigenous sovereignty, rock art and the archaeology of absence. *Australian Archaeology*, 87(2), 127–143.

Mitchell, S. (1994). *Foreign contact and Indigenous economies on the Cobourg Peninsula, north-western Arnhem Land* [Unpublished PhD Thesis]. Northern Territory University.

Needham, R. S. (1984). *Alligator Rivers, Northern Territory. 1:250,000 geological series explanatory notes. Department of National Resources, Bureau of Mineral Resources, Geology and Geophysics*. Australian Government Publishing Service.

Reimer, P.J., Bard, E., Bayliss, A., Beck, J.W., Blackwell, P.G.,Bronk Ramsey, C., Buck, C.E., Cheng, H., Edwards, R.L., Friedrich, M., Grootes, P.M., Guilderson, T.P., Haflidason, H., Hajdas, I., Hatte, C., Heaton, T.J., Hoffmann, D.L., Hogg, A.G., Hughen, K.A., Kaiser, K.F., Kromer, B., Manning, S.W., Niu, M., Reimer, R.W., Richards, D.A., Scott, E.M., Southon, J.R., Staff, R.A., Turney, C.S.M., van der Plicht, J., 2013. IntCal13 and Marine13radiocarbon age calibration curves 0-50,000 years cal BP. *Radiocarbon* 55(4): 1869–1887.

Shulmeister, J., & Lees, B. G. (1995). Pollen evidence from Tropical Australia for the onset of an ENSO-dominated climate at c. 4000 BP. *The Holocene*, 5, (1), 10–18.

Silliman, S. W. (2016). Disentangling the archaeology of colonialism and indigeneity. In L. Der & F. Fernandini (Eds.), *Archaeology of entanglement* (pp. 31–48). Routledge.

Stuiver, M., P.J. Reimer and R.W Reimer. 2017. CALIB 7.1 [WWW program] at http://calib.org, accessed 2019-12-3.

Sweet, I. P., Brake, A. T., & Carson, L. (1999). The Kombolgie subgroup: A new look at an old 'formation'. *AGSO (Australian Geological Survey Organisation) Research Newsletter*, 30, 26–28.

Taçon, P. S. C., May, S. K., Fallon, S. J., Travers, M., Wesley, D., & Lamilami, R. (2010). A minimum age for early depictions of Southeast Asian *praus* in the rock art of Arnhem Land, Northern Territory, *Australian Archaeology*, 71, 1–10.

Taçon, P. S. C., May, S. K., Lamilami, R., McKeague, F., Johnston, I., Jalandoni, A., Wesley, D., Sanz, I. D., Brady, L. M., Wright, D., & Goldhahn, J. (2020). Maliwawa Figures – a previously undescribed Arnhem Land rock art style. *Australian Archaeology*, 86(3), 208–225.

Taçon, P. S., Wesley, D., & May, S. K. (2021). R. Lamilami, 1957–2021: Negotiating two worlds for cultural heritage. *Australian Archaeology*, 87(2), 220–225.

Thomas, N. (1991). *Entangled objects: Exchange, material culture, and colonialism in the Pacific*. Harvard University Press.

Torrence, R., & Clarke, A. (2000). *The archaeology of difference: Negotiating cross-cultural engagements in Oceania*. Routledge.

Wesley, D., & Litster, M. (2015). "Small, individually nondescript and easily overlooked": The significance of contact beads from rock-shelters in the Wellington Range, northwestern Arnhem Land, *Australian Archaeology*, 80, 1–16.

Wesley, D., & Viney, J. (2022). Painting war: The end of contact rock art in Arnhem Land. *Archaeological Perspectives on Conflict and Warfare in Australia and the Pacific*, 54, 251–266.

Wesley, D., Litster, M., & O'Connor, S. (2018). The archaeology of Maliwawa: 25,000 years of occupation in the Wellington Range, Arnhem Land, *Australian Archaeology*, 84(2), 108–128.

SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.

Supporting Information