EXPLORING CEREMONY: THE ARCHAEOLOGY OF A MEN'S MEETING HOUSE ("KOD") ON MABUYAG, WESTERN TORRES STRAIT

Cambridge Archaeology Journal

Duncan Wright, Birgitta Stephenson, Paul Taçon, Rob Williams, Aaron Fogel, Shannon Sutton, Sean Ulm & the Goemulgal of Mabuyag

Abstract
The materiality of ritual performance is a growing focus for archaeologists (see Insoll 2011 for review). In Europe, collective ritual performance is expected to be highly structured and to leave behind a loud archaeological signature (Watts 2009: 62). In Australia and Papua New Guinea ritual is highly structured, however material signatures for performance are not always apparent with ritual frequently bound up in the surrounding natural and cultural landscape. One way of assessing long-term ritual in this context is by using archaeology to historicise ethno-historical and ethnographic accounts. Examples of this in the Torres Strait region, islands between Papua New Guinea and mainland Australia, suggest that ritual activities were materially inscribed at *kod* sites (ceremonial men's meeting places) through distribution of clan fireplaces, mounds of stone/ bone and shell (McNiven *et al.* 2009). This paper examines the structure of Torres Strait ritual for a site ethnographically reputed to be the ancestral *kod* of the Mabuyag Islanders. Intra-site partitioning of ritual performance is interpreted using ethnography, rock art and the divergent distribution of surface and sub-surface materials (including microscopic analysis of dugong bone and lithic material) across the site. Finally, it discusses the materiality of ritual at a boundary zone between mainland Australia and Papua New Guinea and the extent to which archaeology provides evidence for Islander negotiation through ceremony of external incursions.

Introduction

The materiality of ritual and religion has received substantial critical attention (e.g. Bell 1992; Insoll 2011; Kyriakidis 2007; Whitley and Hays-Gilpin 2008). Research has been viewed as oriented towards structure or practice (Insoll 2009, 2011). The former emphasises formalised and symbolic aspects of ritual, often using ethnographic or historical accounts as a baseline while the latter explores ways in which material remains/ distributions can inform archaeologists about ritual processes and participant experiences (Fogelin 2007). In the past decade archaeologists have increasingly moved away from static assessments of material (and the ritual behaviours they represent), towards interpretations that emphasise variation, dynamism and performance in ritual behaviour (Insoll 2009: 290). It is recognised that studies of ritual structure and practice are powerful when they "integrate all available sources of evidence, archaeology, anthropology, ethnography, and historical ethnography" (Insoll 2009: 294).

An anthropological approach to ritual is frequently applied in Australia and Papua New Guinea where Indigenous connection to place is well established (David 2011). Research identifies the highly structured nature of collective ritual, however contra the situation in Europe, these do not always leave behind permanent structures or a loud archaeological signatures (Berndt 1974). Rhys Jones (1977: 201), for example, described visiting a major (Kunapipi) ceremony ground three months after its climax to find only "wind, whirling red dust over midden debris and strips of paperbark rattling against bleached poles of collapsed hut structures". Jones noted that "[t]he investment had been made into the intellectual and not the material sphere of life." The ambiguity of ritual space has necessitated a re-evaluation of what constitutes "constructed

places" with the focus frequently shifting towards the ethno-archaeology of "cosmologies", "ontologies" and "sacred geographies" (David 2011: 483). For example, ethno-archaeological studies have "historicized" Aboriginal "Dreaming" cosmologies by targeting ethnographically-significant sites and rock art motifs (David 2002,; David and Wilson 1999; David *et al.* 1990; Flood and David 1994; Smith 2010; Taçon *et al.* 1996). As acknowledged by David (2011: 498) for this context, "future potentials far outweigh what has already been achieved".

Ethno-archaeology of ceremony in Torres Strait

The Torres Strait (Figure 1) is appropriate for recognising these potentials. Detailed ethnographic and historical accounts survive for *kod* sites which were "a central spot in the social, political and religious life of the men" linked with sacred meeting grounds (*horimu* and *kwadi*) in northern Torres Strait and Papua New Guinea (Haddon 1904: 3-5; see also David and Mura Badulgal 2006: 127). Mortuary, initiation, hunting magic and warfare/head hunting ceremonies are frequently associated with the *kod* with the history and purpose preserved for material installations such as dugong bone mounds, shell/ stone arrangements and rock art (e.g. Haddon 1904: 3, 1935: 56; Laade 1971: xxv; McNiven and Feldman 2003). Similar to earthen circles ('bora grounds') on mainland Australia, movement at these sites was constrained within space, guided by totemic-inscribed shrines of dugong bone, stone and shell; pathways and clan fireplaces (see McNiven *et al.* 2009 for specific examples). For example, ceremonies at the *kod* on Yam were conducted in "an open space surrounded by rocks and trees, a few stones and groups of large shells" (Haddon 1904: 373; see also 1935: 357). Maino and Jimmy Tutu (cited Haddon 1904: 373-4) described the open area as once being surrounded by a "low fence", decorated at intervals with "reddened *fusus* shells" (*Syrinx aruanus*). Inside the enclosure were two low huts which were themselves decorated with *Syrinx* shells and two ochre-painted wooden effigies, a hammer-head shark (*kursi*) and crocodile (*koedal*) festooned with string and tufts of bird of paradise plumes.

PLEASE PUT FIGURE 1 HERE

Despite high potential for historicising ritual few ethno-archaeology studies have targeted these sites. One of the most powerful ethno-archaeological studies to explore the materiality of ritual in Torres Strait occurred at the Pulu *kod.* Rich oral and written histories document clan affiliation and ritual use of installations (Haddon 1904: 3-5). Archaeological excavation suggested "generational use of the kod site paralleled materially by the concomitant phased construction of *Moegi Sibuy* [a dugong bone mound associated with the major totem]" (McNiven *et al.* 2009: 310). A dugong bone mound at this site was observed to be highly structured: "dugong ribs dominate [the] lower half of the mound while dugong skull fragments dominate the upper sections" (McNiven and Feldman 2003: 183). The lower ribs were observed to be "consistently arranged arching upwards and oriented perpendicular to the long axis of the mound" (McNiven and Feldman 2003: 183). This was interpreted as evidence for ceremonial activities, further suggested by multiple "dancing" and "totemic" rock art figures some of which included objects traditionally associated with ritual performance – e.g. drums and masks (Brady 2010).

The Pulu *kod* may link in with an increase in dugong bone mounds elsewhere in western Torres Strait during the past 400 years (e.g. Dhabangay on Mabuyag and Tudu; McNiven and Bedingfield 2008; McNiven and Feldman 2003; Figure 2). Dugong bone mounds (radiocarbon dated between 530 and 330 cal BP) were also excavated at Koey Ngurtai, a small islet to the north of Badu (David *et al*. 2009; Skelly *et al.* 2011). Oral histories were less prominent for these sites, however, the structured nature of all mounds (primarily ribs and skull fragments)

and similar chronologies suggests shared socio-political and ceremonial activities across Torres Strait during the late Holocene (David *et al*. 2005: 88; David *et al*. 2009; McNiven and Feldman 2003: 186; McNiven *et al*. 2009: 314).

The Goemulgal (community living on Mabuyag, along with other Torres Strait Islanders) are ethnographically recorded to have formed arrangements of bu (*Syrinx aruanus*) shells (Haddon 1935: 56). These shells were used to identify totemic divisions; to mark graves of culture heroes and for other ritual purposes (Haddon 1935: 56; 360). They are particularly common on Badu, including alignments (e.g., Badu 21, 24) and isolated clusters (e.g., Badu 31) (David *et al*. 2005: 78-80). In keeping with ethnography, some shells have trumpet holes (David and Mura Badulgal 2006: 135; David *et al*. 2005: 81). Shell arrangements have been radiocarbon dated to within the past 400-500 years and were apparently not used at the time of Haddon's arrival (David and Mura Badulgal 2006; David *et al*. 2005, 2009; McNiven *et al*. 2009). The formalised nature of bone mounds and shell arrangements and the apparently synchronous nature of their development in western Torres Strait have been used to argue for an alteration in socio-political and ceremonial relations during this period (David *et al*. 2005: 88; David *et al*. 2009; McNiven *et al*. 2009: 314). Increased ritual behaviour may have occurred to regulate increasingly stratified Islander societies or to mitigate against headhunting raids by Kiwai/Tugeri raiders from southern Papua New Guinea or increased conflicts with European explorers (David and Mura Badulgal 2006). Following previous research into ritual activity in Torres Strait we now explore the material signature for ritual performance at a site reputed to be the ancestral *kod* of the Goemulgal.

THE WAGEDOEGAM KOD

It has been shown that Torres Strait *kod* sites provide useful information about the structure of past ritual activities. With this in mind we now turn to recent archaeological research at Wagedoegam, located on the northwest side of Mabuyag in western Torres Strait. Wagedoegam is reported to have been an influential village, the focus of activities relating to the *Koey awgadhaw kasi* moiety (people of the great totem) of which *koedal* (or crocodile) was the main totem (Haddon 1904: 163-4, 172). It is also reputed to have been the ancestral village for the Goemulgal (Haddon 1904: 163-4, Figure 12, 172, 236-7).

PLEASE PUT FIGURE 2 HERE

Haddon (1935: 58) was informed that a *kod* and principal skull house for the *Koey awgadhaw kasi* existed at Wagedoegam. This site was used to make decisions about warfare and headhunting (Haddon 1935: 56). A story describes Uga (a girl from Wagedoegam) and her husband (a *markai* or spirit figure from Kibu, an island to the north) coming to this *kod* for ceremony (Haddon 1904: 84-5). The couple, and accompanying *markai* were reputedly attacked and killed by Mabuyag men, transforming into porpoises and garfish to swim north. As the ancestral *kod* for the Goemulgal and locus of activity relating to the great totem, this site provided an opportunity to re-examine intra-site partitioning of ritual in Torres Strait.

Past archaeological surveys of the Wagedoegam region provided inconclusive evidence of former occupation (Barham and Harris 1987: 28; Ghaleb 1990: 163). The only evidence reported in academic forums were relict mound-and-ditch fields in the northeast quarter of the valley and in the same area "a large grove of tall bamboo growing around a water hole" (Ghaleb 1990: 158). Ghaleb (1990: 158) suggests this type of bamboo (*Bambusa arundinacea*) belongs to a Southeast Asian species which arrived prior to the mid-19th century. In 2006, the Goemulgal gave permission for two of us (DW, SS) to accompany Traditional Custodians on

a survey of the area north of Dhadakul. This revealed an inconspicuous site complex reputed to be the village *kod* (Edmund Bani & Cygnet Repu pers. comm. Sept 2006). This was located in a natural amphitheatre surrounded by steep, rocky scree fields and included rock art, a large dugong bone mound and multiple stone arrangements (Wright 2015: 23-25). The mound was observed to be significantly eroded, stretching 11 m (N-S) and 7 m (E-W), leaving only 10cm of bone on granite bedrock.

A small (40cm^2) test excavation was conducted in the corner of the bone mound. Excavation revealed large quantities of dugong bone (primarily skull and rib fragments), a few pieces of ochre, charcoal and quartz but failed to resolve site antiquity as no bone collagen survived and a radiocarbon age from charcoal (128±105BP, 1962-1982 cal AD at 2 sigma) was expected to be intrusive (Wright 2015: 24).

No further research was completed at the *kod* in 2006, however, two excavations were conducted on the Wagedoegam foreshore (Wright 2015). Square A (1m^2) was discontinued due to disturbance of sub-surface deposits. Square B (70cm^2), contained large marine vertebrate bone and lithics, the majority of which clustered in layers radiocarbon dated to 1057-464 cal BP. This was older than midden materials excavated at other ethnographically-known villages on Mabuyag, supporting ancestral histories for Wagedoegam. Ten fragments of non–diagnostic glass (2 flaked) and small quantities of fish bone and quartz artefacts were recovered from the upper four XUs (five in the top two XUs), suggesting occasional use of Wagedoegam after European contact.

In September/October 2013, further surveys were completed of the Wagedoegam *kod* (divided into four main areas of interest, AOI 1-4 based on geography and feature variation; see Figures 3 and 4). Detailed rock art recording was also completed with rock art photographs examined using the D-Stretch program in order to more clearly delineate faint rock paintings. D-Stretch alters colours to enhance fragmentary pigment and art and can help distinguish pictographs similar in colour to the rock surface.

PLEASE PUT FIGURE 3 & 4 HERE

Three excavations were completed within the site complex to assess visible, cultural features: the bone mound – Sq A; stone lined terracing – Sq C; and rectangular stone arrangements – Sq D). A fourth excavation, Square B, was placed in an open area in front of the dugong bone mound. With the exception of a large fragment of bu (S2 in Table 2) this was not associated with surface features or cultural materials but was interpreted by Traditional Owners as the location of ritual activities. In each case, arbitrary excavation units and stratigraphic change was used as a guide, with deposits dry sieved through a 2.4 mm mesh. Excavations continued to culturally sterile deposits/bedrock to ensure that human activities prior to establishment of the *kod* were recorded. Samples were obtained for radiocarbon dating during excavation and from shell arrangements (primarily *Syrinx* sp.) to develop a chronology for the Wagedoegam *kod*. The following section describes survey and excavation results.

EXCAVATED SITES

The dugong bone mound (AOI 1)

A dugong bone mound was located on raised bedrock. This was surrounded on its south and southwest margins by multiple, intersecting circular arrangements of gravel. The latter were slightly concave and may have surrounded trees (a phenomenon observed at Mui on the eastern

side of Mabuyag). The bone mound's surface consisted of heavily eroded, powdery dugong bone, with skulls and ribs well represented. No oral histories were provided for this feature although Maitui Whap claimed to have been shown this site by his uncle when he was a child (approximately 30 years ago).

A 1 x 1m excavation (Square A) was positioned in the centre of the dugong bone mound to locate deep, intact deposits and to resolve the mound's antiquity. Excavation units (XUs) averaged 1.5cm in depth. Excavation encountered bedrock at a maximum depth of 15cm below surface (cmbs) suggesting that the entire mound was extensively disturbed with bone tracing the contours of bedrock. There was no change in stratigraphy with deposit consisting of pinkish grey (Munsell = 7.5 YR 6/1) fragmented dugong bone. At the base of the excavation a 2cm layer with significant root activity was isolated from the rest of the deposit.

Three samples of bone and burnt seed were submitted to Waikato for AMS radiocarbon dating (Table 1). Charcoal was prepared in a bath of hot 10% HCl and then further treated with hot 5% NaOH before being filtered, rinsed and dried. Two of these could not be dated as the material did not survive pre-treatment, most likely a result of chemical weathering associated with ground-water infiltration (F. Petchey, pers. comm., February 2014). A single fragment of burnt seed returned a date: 104.0 ±0.3 BP.

Lab Code	Square, XU	Sample	δ^{13}	C14 Age	Calibrated Age (68.2%)	Calibrated Age (95.4%)
WK20615	A, 4	Burnt seed	-	128±0.5	1962.41-1962.51 (11.7%) 1979.58-1980.85 (85.8% 1982.18-1982.21 (25%)	1962.37-1962.55 (10.8%) 1979.38-1982.23 (89.2%)
WK37951	C, 13	Charcoal	-	2086±20	2106-2083 (19.5%) 2065-2036 (27.6%) 2027-2004 (21%)	2119-1997 (95.4%)
WK37954	C, 12	Hardwood	-	2128±20	2148-2103 (48.3%) 2085-2063 (19.9%)	2291-2276 (2.7%) 2154-2040 (91%) 2020-2010 (1.7%)
ANU3730	C, 11	Acacia?	-	1480±30	1395-1335 (68.2%)	1412 - 1305 (95.4%)
WK37955	S1	*Syrinx*	-4±0.2	581±22	315-250 (68.2%)	401-225 (93.2%) 210-195 (1.2%) 161-149 (1%)
WK37956	S2	*Syrinx*	-2.6±0.3	505±22	256-175 (55.4%) 165-146 (12.8%)	281-92 (95.4%)
WK37957	S3	*Anadara*	-1.6±0.2	521±24	270-175 (57.8%) 165-146 (10.4%)	294-110 (95.4%)

Table 1: Radiocarbon ages from features associated with the Wagedoegam kod. Calibrated using OxCal 4.2 (Bronk Ramsey 2009) and the Marine13 calibration dataset (Reimer *et al.* 2013), with a ΔR of−57±24 (Ulm 2010). Modern dates were calibrated using OxCal 4.2 and the Southern Hemisphere Zone 3 calibration dataset (Hua *et al.* 2013). #=Date may extend out of range (i.e. post-AD 1950).

Square A was dominated by dugong bone (98% of total). An extrapolated MNI of 6 was obtained from complete and front periotic elements, while an estimated 14 individuals were obtained when only the rear periotic elements were counted.

The assemblage was represented by a limited variety of bone elements (Table 2). Unlike other dugong mound excavations from western Torres Strait, no skull (besides the periotic complex), mandible, sternum or pelvic bones were recorded. A high proportion of diagnostic fragments were ear bones (74% by number, NISP = 48), represented by combinations of periodic (25),

tympanicum (10), malleus (9) and incus (3) elements. Skelly *et al.* (2011: 42) assert "that based on the tympano-periotic complex, any stapes recovered from an archaeological context would suggest the presence of soft connecting tissue" during original deposition. In addition, 12 ribs (18.5% by number), one scapula, one fore limb and two vertebrae were identified, with the latter represented by the basal arch of the spinous process. There was no evidence that bones had been burnt with the exception of a single blackened rib fragment (2g). In addition, there were small quantities of fish bone (0.32g) between XUs 4-6 and a single fragment of burnt turtle bone in XU 4. Four quartz flakes and a single quartz core were excavated in XU 2 along with a single piece of pumice. A fragment of unworked ochre was excavated from XU 5.

XU Unit	Rib	Ear bone	Forelimb	Vertebrae	Scapula	Unidentified	Total (per XU)
XU 1	3	4			1	9	17
XU 2	6	12				2	20
XU 3	1	6					7
XU 4 1/1				1		3	4
XU 4 2/2		12					12
XU 4 SUB		2				2	4
XU 5	1	4	1	1			7
XU 5SUB		4				6	10
XU 6B	1	4	1			8	14
Total per element group	12	48	2	2	1	30	

Table 2: Distribution of dugong bone (by type) from Square A

A general reduction was noted in absolute element numbers and weight of dugong bone with depth. This agrees with Wright (2015) who observed that the bulk of the dugong bone clustered in the top XUs. Ear bones were recovered from every stratigraphic unit, concentrations observed in XU 2 and XU 4. Ribs clustered in the upper three excavation units, however, there may have been a second cluster (represented by unidentified dugong bone) in XU 5b and XU 6b. Taphonomic processes are likely to have influenced preservation of dugong bone and mound structure.

The "dancing ground" (AOI 1)

Immediately in front of the dugong bone mound was a flat area of soil attributed to be the main area for dancing and ceremony (Douglas Bani, pers. comm., September 2013). It was also believed to be the location of a wooden and Pandanus leaf shelter, a central part of ceremonies at this *kod*.

No physical features were observed on this platform, however, stone arrangements were located on bedrock in the immediate vicinity of this site. Stone arrangements included two linear formations of large boulders to the north (adjacent to the bone mound) and curvilinear and rectilinear arrangements of red granite in the southwestern area. A triangular, raised slab of bedrock surrounded by eight flaked chunks of granite, was described to have been used during initiation. This represented Mabuyag and surrounding islands and was used to illustrate clan boundaries (Douglas Bani, pers. comm., October 2013).

In addition, dugong bone, *Syrinx* sp. (S2) and *Anadara antiquita* (S3) shell was observed spilling over the granite lip into the mangroves. A *Syrinx* sp. shell was radiocarbon dated to

281-92 cal BP (at 95.4% sigma), while an *Anadara* shell had an age of 294-110 cal BP (95.4%). The only evidence for activity in the recent period was provided by a late 19th – early 20th century spirit bottle found in the mangroves.

A 50cm x 50cm test pit (Square B) tested the proposition that the *kod* dancing ground/building was located on a flat area in front of the bone mound. Excavation reached a depth of 80cmbs, with no sub-surface features observed. A shift was noted below 35cm from dark (10YR = 2/2), sandy soil to a lighter (10YR = 4/2), silty sediment with a layer of large rocks clustering between 60cm and the base of the excavation. Cultural materials were restricted to crystal quartz flakes (41), cores (three) and debitage (53), 97% of which were recorded in the upper 33 cm of deposit (top six XUs). The upper three excavation units contained small quantities (2.4g) of unidentified dugong bone (NISP = 15). There was no evidence for human activity below XU 6, nor could radiocarbon dates be obtained from this unit.

The "garden area" (AOI 2)

AOI 2 is located near the mangrove fringe to the north of the bone mound. It is the only area of significant sediment accumulation in the vicinity of the *Kod*, supporting a grove of Pandanus palms. Three walls of stacked rock rubble run parallel to the coast and one another, two of which culminate at the edge of a seasonally flowing creek. The rock wall closest to the mangroves is formed out of small rocks (mainly <10cm diameter), while rocks frequently exceeding 30cm in diameter form the second and third walls. Walls measure 40 – 80cm above current ground surface on the north side and <10cm on the south side due to sediment build up.

Square C (50cmx50cm) was excavated to ascertain the depth (and age) of terracing. The excavation, situated immediately adjacent to the retaining wall, reached a depth of 90cm. The base of the wall was located at a depth of between 50 and 55 cm across the pit (XU 12), coincident with a change from dark (10YR = 2/2), organic-rich soil to a lighter (10YR = 4/2), silty loam. Sparse quantities of cultural materials were excavated. This included 51 quartz flakes, two burnt fragments of unidentified dugong bone, two fragments of unmodified ochre and one fragment of charcoal. These were restricted within the top 55 cm (11 XUs) with no cultural materials recovered below the base of the wall. Two radiocarbon dates were obtained from the base of the wall. These provided near identical ages, ranging between 1997-2291 cal. BP (Table 1). A third age (1305 - 1412 cal. BP) was provided by the ANU radiocarbon dating laboratory 7-13 cm above the original determinations.

Stone and shell arrangements (AOI 2 and AOI 4)

Stone arrangements were also observed on bedrock platforms overlooking reefs and islands (Purarai, Redfruit, Aipus) to the west (AOI 4, Square D). At low tide, the stone foundations of a large fish trap can also be viewed off the southeast coast of Aipus. Located to the north of the main *kod* complex this area contains two stone arrangements (a stone circle and rectangle; Figure 5). These utilise small stones in sharp contrast to the large walls of boulders reported above.

PLEASE PUT FIGURE 5 HERE

To the northeast, an additional eight rectangular platforms were observed in a small area of silty soil in a shallow basin within the bedrock. Low stone walls are formed using small (5cm²) to medium (40cm²) sized rocks. While size varies, there is considerably more consistency than features observed in AOI 3. A small 30cmx30cm test pit was dug into one of these platforms

to test whether or not these were used as settlement platforms or gardening areas. No cultural material or radiocarbon dated charcoal were obtained from this excavation.

A bu shell (S1 in Figure 3) was also observed to the north of the main site complex in an area that "would have been a good look out point" over the channel into Wagedoegam (Douglas Bani, pers. comm., October 2013). This was situated on a flat area of bedrock. The spire of this gastropod had been removed consistent with its use as a trumpet (e.g. Haddon 1904). With permission from the Mabuyag community a small sample of shell was obtained, returning an AMS date of 401-225 cal BP.

UNEXCAVATED SITES

The rock art boulders (AOI 1)

Rock art is located on two regionally and geologically distinct boulders that protrude out of the ground about two-thirds of the way up a scree slope in AOI 1 (Figure 6). The boulders are about 5 m high. Rock paintings (14 separate designs) appear on a series of five vertical panels. Most of the paintings are in four panels (A-D) on the northern boulder (Boulder 1). The north face of Boulder 1 contains Panels A-C and measures 3.2 m wide. The east face of Boulder 1 (with Panel D) is 1.7 m wide. The southern boulder (Boulder 2) has one painting on a panel (E) which is 1.1 m wide tapering to 0.55 m at the base. No artefacts were observed immediately below the panels. All designs are painted using orange-light red ochre that differs from the natural light pink-dark red colour of the rock surface. It is possible that the natural colouration was a factor in choosing where to paint but the unusual nature of the geology also was likely important.

PLEASE PUT FIGURE 6 & 7 HERE

Panel A (36 cm w x 68 cm h; lowest art is 93 cm above ground) contains vertical and curving lines, observed to accentuate a natural rock feature. There was also an outline 'cross'/'star' design (22 cm w x 25 cm h), with rounded as opposed to sharp edges. Panel B (74 cm w x 70 cm h; lowest art is 102 cm above ground) consists of a vertical, stacked diamond design in outline with rayed lines spreading from its top (10 cm w x 47 cm h). In addition, there is a rectangular design with 4-5 letter-like shapes inside (38 cm w x 16 cm h) and a vertical, meandering line (13 cm w x 36 cm h). Panel C (68 cm w x 167 cm h; lowest art is 38 cm above ground) contains two full frontal human male figures depicted in X-ray form with ribs and internal organs visible (41 cm w x 105 cm h and 35 cm w x 151 cm h) (Figure 7). Additionally, there is a solid red bird (21 cm w x 20 cm h) and a parallel, horizontal line design (46 cm w x 13 cm h). Panel D (112 cm w x 81 cm h; lowest art is 89 cm above ground) includes 6 vertically stacked patches of pigment or curved lines (20 cm w x 33 cm h). There is also a vertical, stacked diamond and oval design (35 cm w x 81 cm h) and a vertical oval, *dhoeri* (headdress)-like design with short lines on either side (39 cm w x 55 cm h). Panel E (13 cm w x 28 cm h; lowest art is 63 cm above ground) contains the profile of 1 human figure (17 cm w x 28 cm h).

Stone structures/ walls (AOI 3)

A boulder-covered scree slope (approximately 30º at top and 60º at bottom) is located to the north and west of the dugong bone mound. Boulders measure up to 2m² in diameter and the western edge is vegetated with trees and shrubs that continue to grow until a transition zone (granite bedrock) is reached in the island's interior.

PLEASE PUT FIGURE 8 HERE

Multiple stone walls (maximum height 1.1m) and cairns (maximum height 2m) were recorded (Figure 8). This included circular, curvilinear and rectilinear stone arrangements (maximum height 80 cm), some of which had breaks reminiscent of access points. Linear walls of stone were observed to run horizontally, against the flow of rock/sediment fall. Linear features (some with T-shaped "buttresses") have captured sediment, providing flattened areas on an otherwise steep slope. For example, a flat area had formed above a long retaining wall of stones that spanned the steepest area of the slope. Cygnet Repu (pers. comm., September 2015) described a formalised pathway for new initiates into this site from the northeast. It has not been possible to confirm whether he is referring to this feature, however, its appearance (linear walls of stone and the compacted nature of sediment) is suggestive. Rock fall had obscured the area downslope from these stone structures, however similar compaction of sediment was noted running diagonally down from the top of the tree lined slope to this "pathway".

Further stone walls were observed at the base of the scree slope and within the forested area to the south and east (see wooded area in Figure 3). For reasons already presented, the latter area was not mapped in detail and so the extent of this site complex remains uncertain. No similar arrangements were recorded on the flattened area at the top of this slope (AOI 4), suggesting that these were formed to capture sediment and protect the *kod* from falling rocks.

POST EXCAVATION MICROSCOPIC STUDIES

Archaeological research at Torres Strait kod sites has suggested ritual processes were structured through the strategic location and contents of constituent features (e.g. bone mounds; McNiven and Feldman 2003: 189). With this in mind it was decided to conduct microscopic analysis on dugong bone and stone artefacts excavated across the Wagedoegam site.

A representative sample of quartz artefacts from the three excavated sites were examined with a digital Dino-Lite Edge AM4815ZT microscope (20-220 x magnifications). The examined sample included all artefacts from Square A, and a cross-section of artefacts from Squares B and C (76/120 and 85/145 respectively). At least 33% of the total collected from each excavation unit was sampled with untested sample consisting of minute debitage, unlikely to provide direct information about lithic use. To reduce bias, the analyst had no prior knowledge of the excavation areas. An adjustable polariser was used to reduce or eliminate reflections and enhance the contrast on artefact surfaces and further highlighting adhering residues. In addition, a number of lithic artefacts (N=8) were examined at magnifications of 100x to 500x using an Olympus BX60, employing vertical incident light and bright field (bf) and dark field (df) illumination. Considerations of the residue type, density, combinations and and proximity to use-wear were used to assess the likelihood of a residue being use-related. An overview of microscopic assessment of quartz artefacts from the three excavated sites and dugong bone from the bone mound is provided in this section.

The bone mound (AOI 1)

Distinctive use-wear and associated residues were observed across a yellow crystal quartz artefact from XU 2 (Table 3; Figure 9). Noted use-wear included perpendicular and parallel striations, well -defined edge rounding and numerous bending and step fractures. Polish and residues (including collagen fibre and granular bone collagen in high densities) were observed. These residues were closely associated with the noted use-wear (Figure 9). Residues were absent across other areas of the tool surface. As collagenous residues were absent across tools within the same XU and the remaining quartz artefacts associated with the bone mound, it is

unlikely that the observed collagen related to the position of the tool within the mound. The types of residues, their density and close association with use-wear suggests that the collagen noted derived from cultural activities rather than post taphonomic influences. The combination of described use-wear and noted residue are typical of secondary stage bone working activities (e.g. cleaning of periosteum and tertiary stage working of dry bone in particular engraving and/ or drilling).

XU	Total artefacts (#)	Artefacts sampled	Artefacts with residues	Residue type
1	-	-	-	-
2	2	2	1	Bone collagen and collagen fibres
3	-	-	-	
4	1	1	-	
5	1	1	-	
6	1	1	-	
7	-	-	-	

Table 3: Artefact analysis (Square A).

PLEASE PUT FIGURE 9 HERE

Microscopic analysis of dugong bone was also completed (<5x magnification under a LED magnifying desktop lamp, then 45x stereomicroscope with transmitted illumination LED). This was to assess the extent to which bone had been modified by humans and/ or other animals. Classification depended on groove morphology, direction and patterning as reported in previous research (e.g. Blumenschine *et al.* 2007). The difficulty of correctly identifying human induced bone modification meant that the analysist (RW) used a process of elimination to isolate "immanent properties" (features that cannot be explained through natural processes) before identification was accepted (see D'Errico and Villa 1997). The weathered appearance of bone meant that it was only possible to identify four clear examples of direct human modification. These specimens had U-shaped, V-shaped and/ or linear striations with V-shaped, straight edges indicative of incision using a sharp artefact. The presence of a patina over grooves suggested these incisions were not made in the recent period.

A number of other specimens display ambiguous markings that may relate to butchering. These include a rib bone fragment with a hole located mid-way along the lateral shaft. Physical weathering made it impossible to assess presence of concentric striations within the cavity (as would be expected should this have been created using a lithic drill), however, its appearance suggests human modification. This bone also displays shatter marks along its distal end consistent with human modification.

The "dancing ground" (AO1 1)

Residues were confined to artefacts from XU 3 and XU 1. Although typical ochre working use-wear was absent, red and yellow ochres were found across the surfaces of six quartz flakes from XU 3 (Table 4; Figure 10). The ochre residues were dense, lodged within fractures associated with the artefact's surface. It was observed that in some instances the two distinctive red and yellow ochres overlapped suggesting multiple events in which ochre slip has been applied to artefacts. While natural ochres cannot be ruled out, the uniformity of slip and presence of multiple layers of ochre suggests deliberate application to these artefacts.

XU	Total artefacts (#)	Artefacts sampled	Artefacts with residues	Residue type
1	23	14	1	Plant fibre
2	7	2	-	
3	12	12	5	Ochre- red and yellow
4	21	21	-	
5	6	6	-	
6	6	6	-	
7	28	10	-	
8	6	4	-	
9	1	1	-	

Table 4: Artefact analysis (Square B).

PLEASE PUT FIGURE 10 HERE

The "garden area" (A01 2)

Considerable use-wear (edge scarring and moderate edge-rounding) was observed on artefacts between XU 2 and 6. Large quantities of plant fibres and resin had survived along the working edge of 20% of these artefacts (n = eight) (Table 5). The density, combination and location of residues was consistent with human artefact use.

XU	Total artefacts (#)	Artefacts sampled	Artefacts with residues	Residue type
1	-			
2	6	6	2	Plant fibres and cellulose
3	3	3	2	Plant fibres and possible resin
4	7	7	2	Plant fibres
5	3	3	-	
6	22	22	2	Plant fibre
7	24	10	1	Plant fibre/soil
8	25	8	1	Plant fibre/soil
9	22	8	-	
10	21	8	-	
11	5	3	-	
12	3	3	-	
13	2	2	-	
14	-	-	-	
15	1	1	-	
16	1	1	-	

Table 5: Quartz artefact analysis (Square C).

Small quantities of plant fibres were also noted across the lateral margins of an artefact from XU 7 and XU 8. The presence of similar fibres in soils adhering to the artefacts' surfaces suggests that residues may relate to post depositional taphonomic influences rather than cultural use.

DISCUSSION

Radiocarbon dates from installations associated with the Wagedoegam *Kod* (primarily bu shells) support the hypothesis of activity at this site after 400 years ago. Radiocarbon dates from in situ fragments of charcoal/seed obtained from the dugong bone mound (in 2006 and 2013) were both "modern". This suggests either very recent mound construction (after 1956 AD) or a minimum of two major disturbance events (1956-1957AD and 1979-1982AD). While it is conceivable that this feature was constructed recently there are a number of reasons why this is expected not to be the case. Firstly, the corrosion of dugong bone was observed to be far more extensive than might be expected for bones deposited within the past 50 years. According to Maitui Whap (pers. comm., November 2006) this mound appeared to be "very old" when he visited it during the 1980s. Secondly, it is hard to reconcile this age with the absence of European histories or materials. Equally, the paucity of Goemulgaw oral histories for this site (in direct contrast to dugong bone mounds at the Pulu *Kod*) suggests that it was not used during the recent period. Thirdly, Square B, directly downslope from the bone mound, included dugong bone in the top three XUs while quartz lithics continued for another three XUs. While it was impractical to date these horizons this suggests that erosion of dugong bone occurred over a previously occupied layer. Finally, the large number of dugong ear and rib bones in the Wagedoegam bone mound closely corresponds with the older mounds recorded on Pulu, Tudu and Mabuyag.

A <400-300 year antiquity for the bone mound would fit with the *Syrinx* and *Anadara* shells dated from various locations within the region of the Kod. These all date to within the past 405 years, but may be much more recent (minimum of 195 years ago). While we are unable to directly date the rock art, given the subject matter, the exposure to the elements and the extent of fading, it is probable that this was also conducted sometime in the past few hundred years. There is no evidence for superimposition. However, changes in subject matter across the site and colour variation between designs suggests that paintings were not all made at one time.

There is evidence for an earlier phase of site use. Two samples of charcoal (separated by 5-7 cm of sediment) were obtained immediately above the base of a stone retaining wall in AOI2. The radiocarbon ages of these samples span 2291-1997 cal. BP (at 2 sigma). A further sample, 15cm above the base of this wall returned an age of 1305-1412 cal. BP (at 2 sigma). There was no evidence for significant disturbance, with upward movement of old deposits considered unlikely due to clear stratigraphic and cultural material boundaries at the base of the wall and the correct sequence of radiocarbon ages. The implication is that the Wagedoegam *kod* appears to have been placed in an existing cultural landscape of older stone structures/field systems. How extensive these earlier structures were remains uncertain, with the age of AOI 3 complexes unresolved.

The archaeology of Torres Strait ritual performance

While the antiquity of the Wagedoegam *kod* was not confirmed, important information survives about site chronology. Ritual activity coincides with decreased settlement at Wagedoegam village (i.e. 500-400 years ago; Wright 2011, 2015). This site succession from village to totemic ritual centre was demonstrated for Pulu (and potentially also Koey Ngurtay; McNiven *et al.* 2009: 311) suggesting a widespread phenomenon in western Torres Strait. Once established there is evidence for temporal continuity with repeated use of Syrinx shells and dugong bone mound. Continuity is further evident through sub-surface distribution of crystal quartz artefacts. These were prominent in late Holocene deposits from the Wagedoegam *kod* supporting continuity of practice. These lithics differ substantially from the predominately

milky quartz and igneous artefacts excavated from Mabuyag "villages" suggesting deliberate differentiation in activities between these site types (see Wright 2015). Insight into complex and dynamic site histories (possibly involving individual performances) may also survive through rock art depictions of headdress wearing figures, also what appears to be a single event (XU 3) in Square B involving ochred, crystal quartz lithics.

Elsewhere it has been demonstrated that material signatures survive at *kod* sites and that these can provide information about highly structured, totemically inscribed site activity (see McNiven *et al.* 2009). The Wagedoegam *kod* adds to this narrative, situated within a visually spectacular natural landscape – a raised amphitheatre surrounded by hills, with the central area dominated by two large granite boulders. Performance can be imagined, structured within a network of stone arrangements, stone-lined pathways/structures, *Syrinx aruanus* shells and a large dugong bone mound which are themselves ethnographically associated with ritual activities.

Microscopic analysis of lithics and dugong bone has further increased resolution. Quartz artefacts in the bone mound revealed use-wear and collagenous residues suggestive of bone working activities. This is supported by secondary modification of dugong bone identified during microscopic analysis of dugong bone. The highly eroded nature of dugong bone means that the extent to which this occurred has not been established.

Distinctive red and yellow ochre was observed across a 41% of artefacts from XU 3, Square B. Although use-wear was minimal, for reasons covered earlier, the presence of ochre is considered consistent with human use rather than environmental factors. Dr Seligmann was informed on Mabuyag that "the patterns of the deeper scars [in ritual cicatures] were traced in red ochre, then, when possible, ligatures mere applied above and below the marking, and the pattern was cut with a sharp fragment of quartz or shell" (Haddon 1912: 13). The presence of distinctive headdress wearing figures in rock art (potentially undergoing initiation) and ethnographic accounts that describe initiation/ dancing and instruction using stone arrangements provides further insight the ceremonial underpinnings of this site. The absence of ochred artefacts from other XUs is intriguing, suggesting this activity had a short time-span in this location.

Finally, plant fibres associated with use-wear in Square C (between XU 2 and XU 6), suggests the area was used for plant processing. Radiocarbon samples are yet to be dated from upper deposits and so the age of these artefacts is yet to be established, however, the prominence of crystal quartz stone artefacts mirrors the two other excavations, suggesting contemporaneous use. Combined, archaeological results suggest localised activity zones within an area of less than 100 m² and dated to within the same 400 year period.

Rock art and Papuan connections

As the only substantial rock art site on Mabuyag (despite similar geologies elsewhere on the island) it is evident that this site was important to Islanders. This is also presented through figures that appear to be dancing or involved in ceremony. The large full frontal male human figures (Figure 7) are elaborate, associated with a large headdress and figurative (star) designs and (totemic) animals. Ethnographic records suggest that the *dhoeri* was worn for ceremonies (including initiation) and for dances.

Rock art styles/images at Wagedoegam support late Holocene connections between Torres Strait Islander and Papuan communities (direction uncertain). The male human figures differ

substantially from most other painted anthropomorphs found in the Torres Strait to date (see Brady 2010). The closest comparison is Kabadul Kula on Dauan Island (near Papua New Guinea) where the aforementioned *dogai* figure is painted in X-ray form (Figure 11), while another figure has similar upward-pointing, Papuan style hair (Brady 2010: 352, 361; McNiven *et al.* 2004). A 4-pointed star shape that is part of the Kabadul Kula *dogai* figure is reminiscent of a similar 4-point star recorded in association with the Wagedoegam anthropomorphic figure. Similar designs have also been observed on 19th and early 20th century artefacts from both Torres Strait and the Papuan Gulf (McNiven *et al.* 2004: 238). This includes a "4-point star, known as *titui* in the local language, found on a wooden comb from Mabuiag" (McNiven *et al.* 2004: 234; see also Haddon 1912).

PLEASE PUT FIGURE 11 HERE

The legs, genitalia, mask-like face and internal body designs are also reminiscent of human figures on masks, shields and other items of material culture from Kiwai Island and the Papuan Gulf (e.g. Baren *et al*. 2003; Welsch *et al*. 2006). Furthermore, the smaller figure closely resembles an 1890 Motu (Port Moresby area) dancer with similar face and body paint designs and short spikey headdress (illustrated in Baden-Powell 1892: 205) and a carved human female figure from the eastern side of the Papuan Gulf in the Australian Museum collection (cat. no. A15834). Brady (2010: 163, 255-56) suggested similar comparisons between rock art from the Pulu *kod* and material culture objects from New Guinea.

Comparisons can also be drawn to rock art from other Torres Strait Islands. The profile figure recorded at Wagedoegam resembles dancing figures drawn by "Sunday of Mabuiag" in 1898 at Panay, Mabuyag and recorded by Haddon on the Cambridge Anthropological Expedition to the Torres Strait (e.g. see McNiven *et al*. 2004: 239). It is also similar to rock paintings on Pulu Island interpreted as *mŭri* spirits and drawings of anthropomorphs by Gizu of Mabuyag collected by Haddon (1904: 256, 360). In one of Gizu's drawings the figures represent dancers while in the other they are *mŭri* shown climbing a water spout (see Brady 2010: Figures 10 and 12). An outline cross at Wagedoegam is very similar in shape and size to a tin and abrus seed 17 cm wide "pendant" collected by Haddon on Mer in 1898 (see Moore 1984: 79 and Plate 48, item 411, Z.9789). It also resembles a 22.5 cm gabba-gabba stone club head collected by Haddon on Yam Island in 1898 (see Moore 1984: 57 and Plate 20, item 173, Z.9646). The star-shaped stone-headed club "may have been used in ceremonies, particularly the Malo/Bomai cult in the eastern islands, or in dances" (Lawrence 1994: 369). A series of 4-5 letter-like shapes inside curvilinear shapes is reminiscent of rock art designs on Pulu, interpreted as shoulder scarification (Brady 2015: Figure 16). The solid red bird differs from bird designs elsewhere in Torres Strait Island sites, most of which are in portrayed in profile (e.g. see one from Pulu Island in Brady 2007: 107).

Haddon (1904, 1935: 37) suggested that both *kod* and *dhoeri* were "imported from new Guinea", with headdresses worn by Torres Strait Islander warriors during warfare, ceremonies and dances. More recently David *et al.* (2004) argued that *kod* sites may have emerged 400-500 years ago as a response to headhunting raids by Kiwai/Tugeri from southern Papua New Guinea. The Wagedoegam site adds to a growing body of information (cf rock art at the Pulu *kod*) which suggests an expansion in exchange/interactions between Papua New Guinea and Torres Strait within the past 400 years. It is plausible that Wagedoegam and Pulu reflect the increasing mobility of Torres Strait communities (Wright 2015: 67). The depiction of Papuan style figures and *dhoeri* headdresses (the latter now appropriated by Islanders as a marker of Islander identity – cf the Torres Strait flag) may represent the pictorial depiction of these socio-

cultural interactions. The contested nature of negotiations survive in the story of Uga and Tabepa's visit (with *markai* from the north) to the Wagedoegam *kod*.

Conclusion

This study joins a growing body of knowledge which identifies the materiality of ritual and religion in the archaeological record (see Insoll 2011). It has been demonstrated that despite the material ephemerality of many ritual sites in Australia and Papua New Guinea the ceremonies themselves were highly structured. Evidence for collective ritual performance survives in sub-surface distributions of material culture, in this case identified through microscopic analysis of dugong bone and lithic use-wear and residues. When coupled with ethnographic histories and an analysis of the rock art imagery the Wagedoegam study demonstrates the accessibility of past collective ritual. As a region, the Torres Strait lies at the interface between mainland Australia and Papua New Guinea. Archaeologically, Torres Strait ritual sites thus provide tantalising clues into the negotiation of borders and cross-cultural discourse between culturally distinct indigenous human communities, in this case at a time when European interest began in this part of the world.

Acknowledgements

This project was supported under a Griffith University/James Cook University Collaborative Grant to DW and SU. We acknowledge the Goemulgal, traditional owners of Mabuyag as partners in this research. SU is the recipient of an Australian Research Council Future Fellowship (FT120100656).

References

Barham, A.J. and Harris, D.R. (1987). Final Report to the Research and Exploration Committee of the National Geographic Society on Part IIb of the Torres Strait Research Project, July-October 1985. London: Institute of Archaeology, University of London.

Baden-Powell, F.S. (1892). *In savage isles and settled lands. Malaysia, Australasia and Polynesia, 1888-1891*. London: R. Bentley and Son.

Baren, H., Craig, B. and Field, D. (2003). *Shields of Melanesia*. Honolulu: University of Hawaii Press.

Berndt, R.M. (1974). *Australian Aboriginal Religion*. Four Fascicles, Institute of Religious Iconography. State University of Groningen. Leidon: Brill

Blumenschine, R., Prassack, K., Kreger, C., and M. Pante. (2007). Carnivore tooth-marks, microbial bioerosion, and the invalidation of Domínguez-Rodrigo and Barba's (2006) test of Oldowan hominin scavenging behavior. *Journal of Human Evolution* 53(4): 420-26.

Brady. L.M. (2007). A different look: comparative rock-art recording from the Torres Strait using computer enhancement techniques. *Australian Aboriginal Studies* 2007(1): 98-115.

Brady, L.M. (2015). Rock-Art from the Mabuyag Islands, Zenadh Kes (Torres Strait). In McNiven, I.J. and Hitchcock, G. (Eds, pp. 420-26.) *Goemulgal: natural and cultural histories of the Mabuyag Islands, Zenadh Kes (Torres Strait)*. Brisbane: Queensland Museum.

Brady, L.M. (2010). *Pictures, Patterns & Objects: Rock-Art of the Torres Strait Islands, Northeastern Australia*. Melbourne: Australian Scholarly Publishing Pty Ltd.

Bronk Ramsay, C. (2009). Bayesian analysis of radiocarbon dates. *Radiocarbon* 51(1): 337–36

David, B. (2002). *Landscapes, Rock art and the Dreaming: An archaeology of preunderstanding*. London: Leicester University Press.

David, B. (2011). Historicizing cosmologies in Australia and Papua New Guinea. In Insoll, T. (Ed, p. 482-504).

The Archaeology of Ritual and Religion. Oxford: Oxford University Press

David, B. and M. Wilson (1999). Re-reading the landscape: Place and identity in NE Australia during the Holocene. *Cambridge Archaeological Journal* 9: 163-88.

David, B., McNiven, I.J., Flood, J., and Frost, R. (1990). Yiwarlarlay 1: Archaeological excavations at the Lightning Brothers site, Delamere station, Northern Territory. *Archaeology in Oceania* 25: 79-84.

David, B., Crouch, J. & Zoppi, U. (2005). Historicizing the spiritual: Bu shell arrangements on the Island of Badu, Torres Strait. *Cambridge Archaeological Journal*, 15(1): 71-91.

David, B. & Mura Badulgal Committee. (2006). What happened in Torres Strait 400 years ago? Ritual transformations in an island seascape. *Journal of Island and Coastal Archaeology* 1: 123-143.

David, B., McNiven, I.J., Crouch, J., Mura Badulgal Corporation Committee., Skelly, R., Barker, B. et al. (2009). Koey Ngurtai: the emergence of a ritual domain in western Torres Strait. *Archaeology in Oceania* 44(1): 1-17.

d'Errico, F. and P. Villa. (1997). Holes and grooves. The contribution of microscopy and taphonomy to the problem of art origins. *Journal of Human Evolution* 33: 1-31.

Eseli, P., Shnukal, A. and Mitchell, R. (1998). *Eseli's Notebook.* Aboriginal and Torres Strait Islander Studies Unit Research Report Series (Vol. 3). Brisbane: University of Queensland Press.

Flood, J. and B. David. (1994). Traditional systems of encoding meaning in Wardaman rock art, Northern Territory, Australia. *The Artefact* 17: 6-22.

Ghaleb, B. (1990). An Ethnoarchaeological Study of Mabuiag Island, Torres Strait, Northern Australia. Unpublished PhD thesis, University College London.

Haddon, A.C. (1904). *Reports of the Cambridge anthropological expedition to Torres Straits: Sociology, magic and religion of the Western Islanders* (Vol. 5). Cambridge: Cambridge University Press.

Haddon, A.C. (1912). *Reports of the Cambridge anthropological expedition to Torres Straits: Arts and Crafts* (Vol. 4). Cambridge: Cambridge University Press.

Haddon, A.C. (1935). *Reports of the Cambridge anthropological expedition to Torres Straits: General ethnography* (Vol. 1). Cambridge: Cambridge University Press.

Hua, Q., M. Barbetti and A.Z. Rakowski. (2013). Atmospheric radiocarbon for the period 1950-2010. *Radiocarbon* 55(4), 2059-2072.

Insoll, T. (2009). Materializing Performance and Ritual: Decoding the Archaeology of Movement in Tallensi Shrines in Northern Ghana. *Material Religion* 5(3): 288–310.

Insoll, T. (2011). Introduction: Ritual and Religion in Archaeological Perspective. In Insoll, T (Ed, pp. 1-8). *The Archaeology of Ritual and Religion*. Oxford: Oxford University Press.

Jones, R. (1977). The Tasmanian paradox. In R. Wright (Ed, pp. 191-204), *Stone Tools as Cultural Markers – Change, Evolution, Complexity*. Canberra: Australian Institute of Aboriginal Studies Press.

Kyriakidis, E. (2007). *The archaeology of ritual*. Los Angeles: Cotsen Institute of Archaeology, University of California.

Laade, W. (Ed.). (1971). *Oral traditions and written documents on the history and ethnography of northern Torres Strait Islands, Saibai-Dauan-Boigu.* Vol. 1. Adi – myths, legends, fairy tales. Steiner: Weisbaden.

Lawrence, D. (1994). *Customary exchange across the Torres Strait* (Vol. 34, pp. 241-446): Brisbane: Memoirs of the Queensland Museum.

McNiven, I.J. and Bedingfield, A. (2008). Past and present marine mammal hunting rates and abundances: dugong (*dugong dugon*) evidence from Dabangai Bone Mound, Torres Strait. *Journal of Archaeological Science* 35: 505-515.

McNiven, I.J. & Feldman, R. (2003). Ritually Orchestrated Seascapes: Hunting Magic and Dugong Bone Mounds in Torres Strait, NE Australia. *Cambridge Archaeological Journal*, 13(2), 169-194.

McNiven, D., David, B., Brady, L. and J. Brayer. (2004). Kabadul Kula: a rock-art site on Dauan Island, Torres Strait. *Memoirs of the Queensland Museum Cultural Heritage Series* 3(1): 227-255.

McNiven, I.J., David, B., Goemulgaw kod, and Fitzpatrick, J. (2009). The Great kod of Pulu: Mutual historical emergence of ceremonial sites and social groups, Torres Strait, Northeast Australia. *Cambridge Archaeological Journal* 19(3): 92-108.

Moore, D.R. (1984). *The Torres Strait Collections of A.C. Haddon.* London: British Museum Publications Ltd.

Reimer, P., Baillie, M., Bard, E., Bayliss, A., Beck, J., Blackwell, P., Bronk Ramsey, C., Buck, C., Burr, G., Edwards, R., Friedrich, M., Grootes, P., Guilderson, T., Hajdas, I., Heaton, T., Hogg, A., Hughen, K., Kaiser, K., Kromer, B., McCormac, F., Manning, S., Reimer, R., Richards, D., Southon, J., Talamo, S., Turney, C., van der Plicht, J., and Weyhenmeyer, C. (2009). IntCal09 and Marine09 radiocarbon age calibration curves, 0–50,000 years cal BP. *Radiocarbon* 51(4): 1111–50.

Ross, A., Ulm, S. and Tobane, B. (2013). Gummingurru: a community archaeology knowledge journey. *Australian Archaeology* 76: 62-69.

Smith, M. (2010). *The Archaeology of Australia's Deserts*. Cambridge: Cambridge University Press.

Skelly, R., David, B., McNiven, I. and B. Barker. (2011). The Ritual Dugong Bone Mounds of Koey Ngurtai, Torres Strait, Australia: Investigating their construction. *International Journal of Osteoarchaeology* 21: 32-54.

Taçon, P., Wilson, M. and C. Chippindale. (1996). Birth of the Rainbow Serpent in Arnhem Land rock art and oral history. *Archaeology in Oceania* 31: 103-24.

Ulm, S. (2010). Marine Carbon Reservoir Variability in Torres Strait Stage II: Progress Report for AINGRA08063. Retrieved 16 November 2015 from http://www.ainse.edu.au/__data/assets/pdf_file/0009/47349/r_08063.pdf

Welsch, R.L., Webb, V.L and S. Haraha. (2006). *Coaxing the spirits to dance: art and society in the Papuan Gulf of New Guinea*. Hanover: Hood Museum of Art, Dartmouth College.

Wright, D. (2011). The archaeology of community emergence and development on Mabuyag (Mabuiag) in the central western Torres Strait, northeast Australia. *Australian Archaeology* 73: 49–57.

Wright, D. (2015). *Community Emergence and Development on Mabuyag, Western Torres Strait*. British Archaeological Reports International Series S2754. Oxford: Archaeopress.

Watts, I. (2009). Red ochre, body painting, and language: interpreting the Blombos ochre. In R. Botha and C. Knight (Eds, pp. 62-92) *The Cradle of Language: Studies in the Evolution of Language*. Oxford: Oxford University Press.

Whitley, D. and K. Hays-Gilpin (Eds.). (2008). *Belief in the Past: Theoretical Approaches to the Archaeology of Religion*. California: Left Coast Press

CAPTIONS

Figure 1: Map of Torres Strait.

Figure 2: Mabuyag with ethnographically known village marked (Courtesy of Schlenker Mapping, with aerial photograph collation by Matt Coller). Not to scale.

Figure 3: 2013 EDM survey of the Wagedoegam *Kod*. While survey is considered complete for this area extensive rock fall (marked "scree slope") is likely to have damaged many sites

that previously existed. Survey in the area marked ("forest") is unlikely to be complete due to density of vegetation. This area may require burning before survey can be completed.

Figure 4: Looking southwest at stone walls (AOI 3) with bone mound (AOI 1) in the background. Photo AF

Figure 5: Isolated circular stone arrangement in AOI 4 (photo AF)

Figure 6: The Wagedoegam rock art site as viewed from the northeast.

Figure 7: Two male figures painted in X-Ray style

Figure 8: View of AOI 3 (south facing) with curvilinear stone arrangements, also a 'pathway' running across the scree slope (next to two trees), supported by a linear wall of rocks. Photo DW

Figure 9: Residues and use-wear noted across artefact from XU 2: A Granular collagen adhering to the working margin 100x, B collagen fibre 500x, C parallel striations 100x, D well developed edge rounding 140x

Figure 10: Red and yellow ochre associated with artefact from Square B, XU 3 (170x)

Figure 11: Papuan style figure called "Dogai" at Kabul Kula (Brady 2010: 102).

Figures

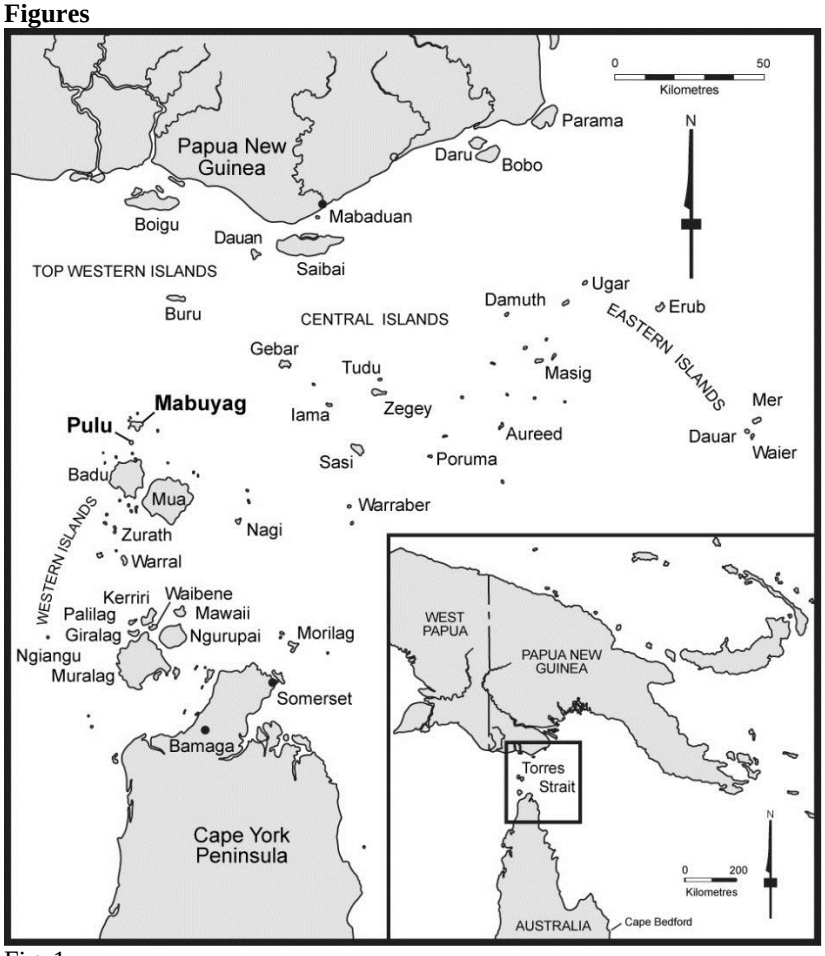

Fig. 1

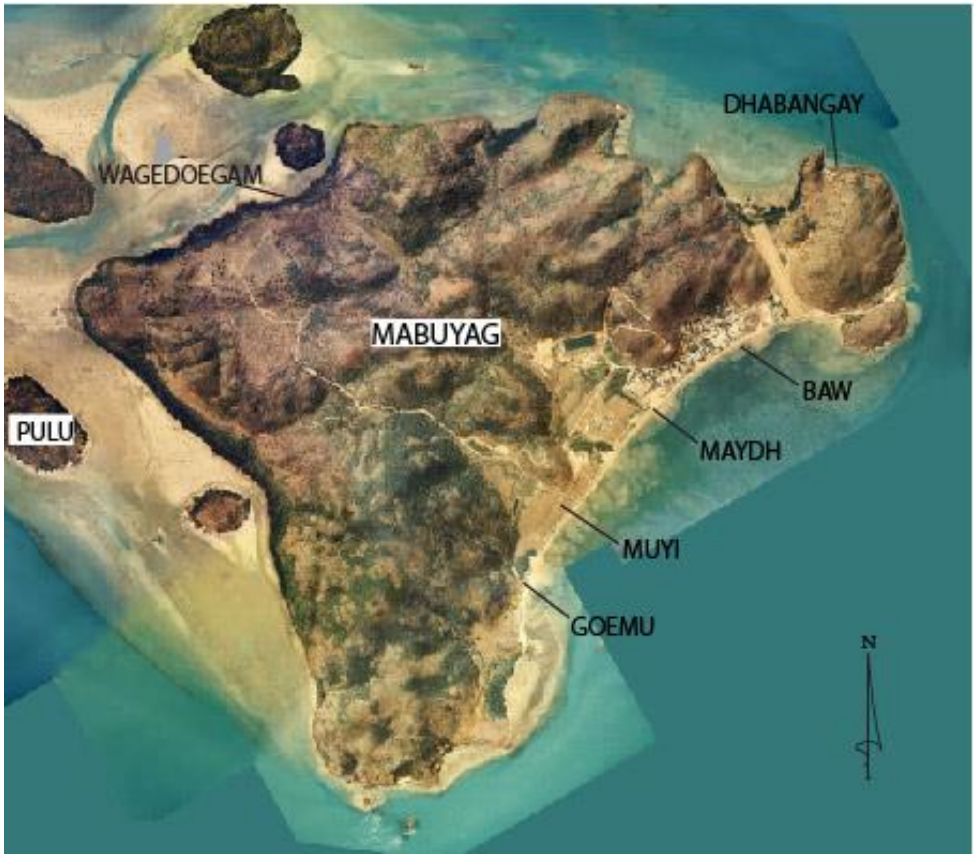

Fig. 2

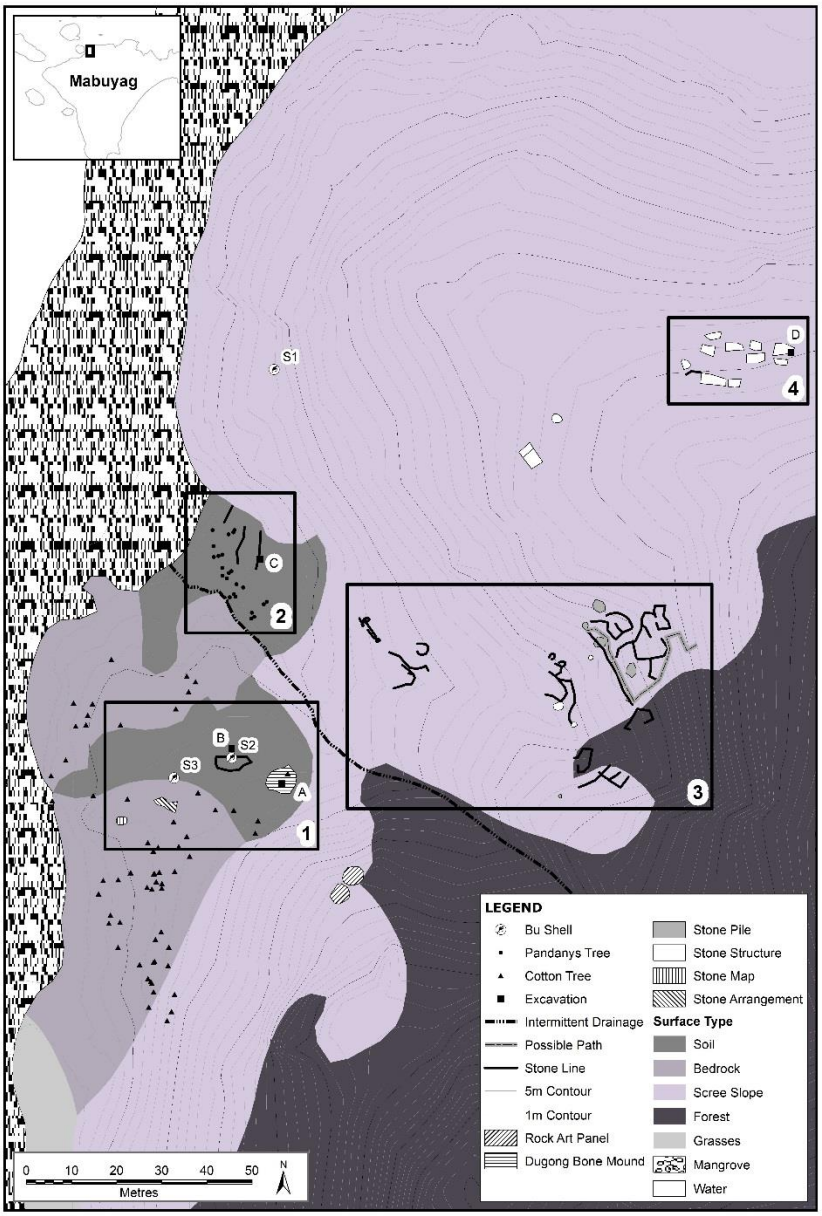
Mabuyag
S1
D
4
C
2
B
S2
S3
A
1
3
LEGEND
Bu Shell
Pandanys Tree
Cotton Tree
Excavation
Intermittent Drainage
Possible Path
Stone Line
5m Contour
1m Contour
Rock Art Panel
Dugong Bone Mound
Stone Pile
Stone Structure
Stone Map
Stone Arrangement
Surface Type
Soil
Bedrock
Scree Slope
Forest
Grasses
Mangrove
Water
0 10 20 30 40 50
Metres
N

Fig. 3

Fig. 4

Fig. 5

Fig. 6

Fig. 7

Fig. 8

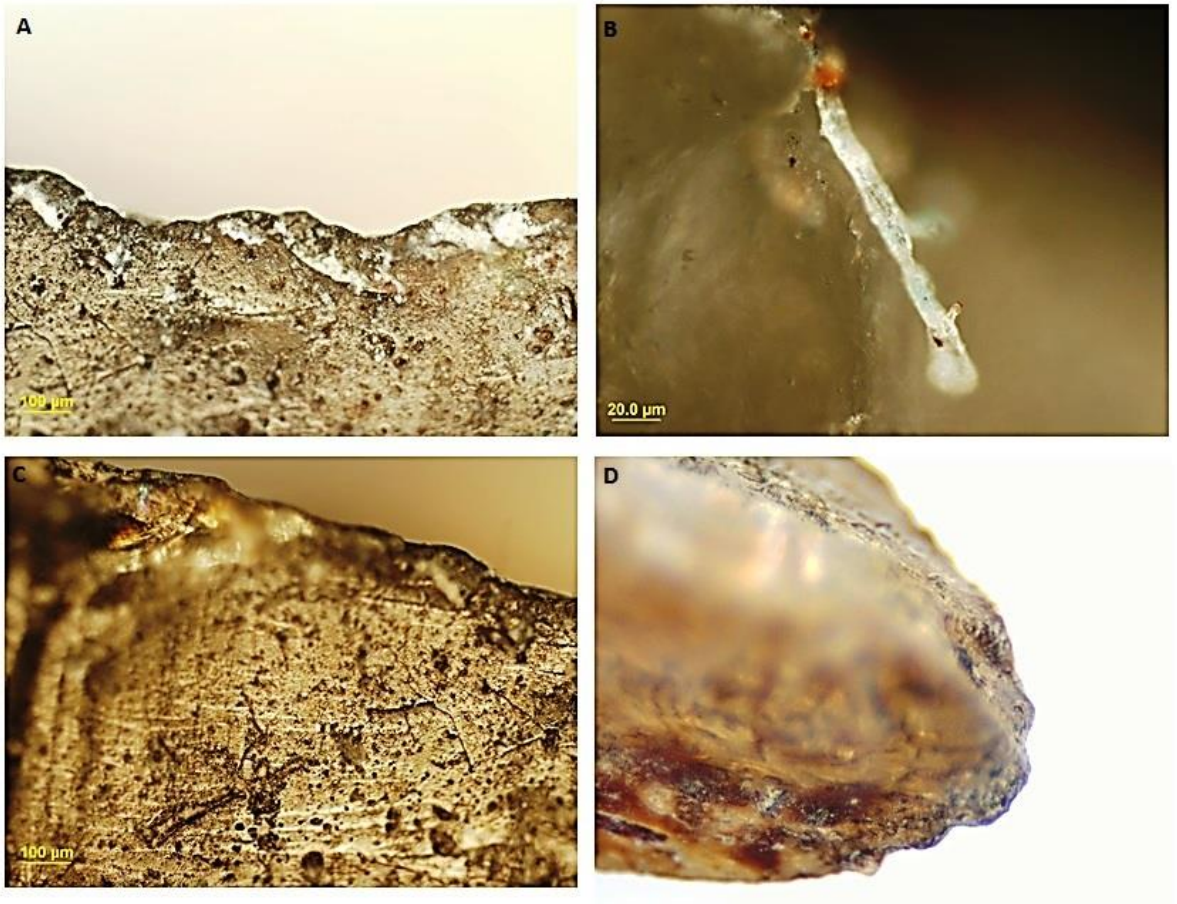

Fig. 9

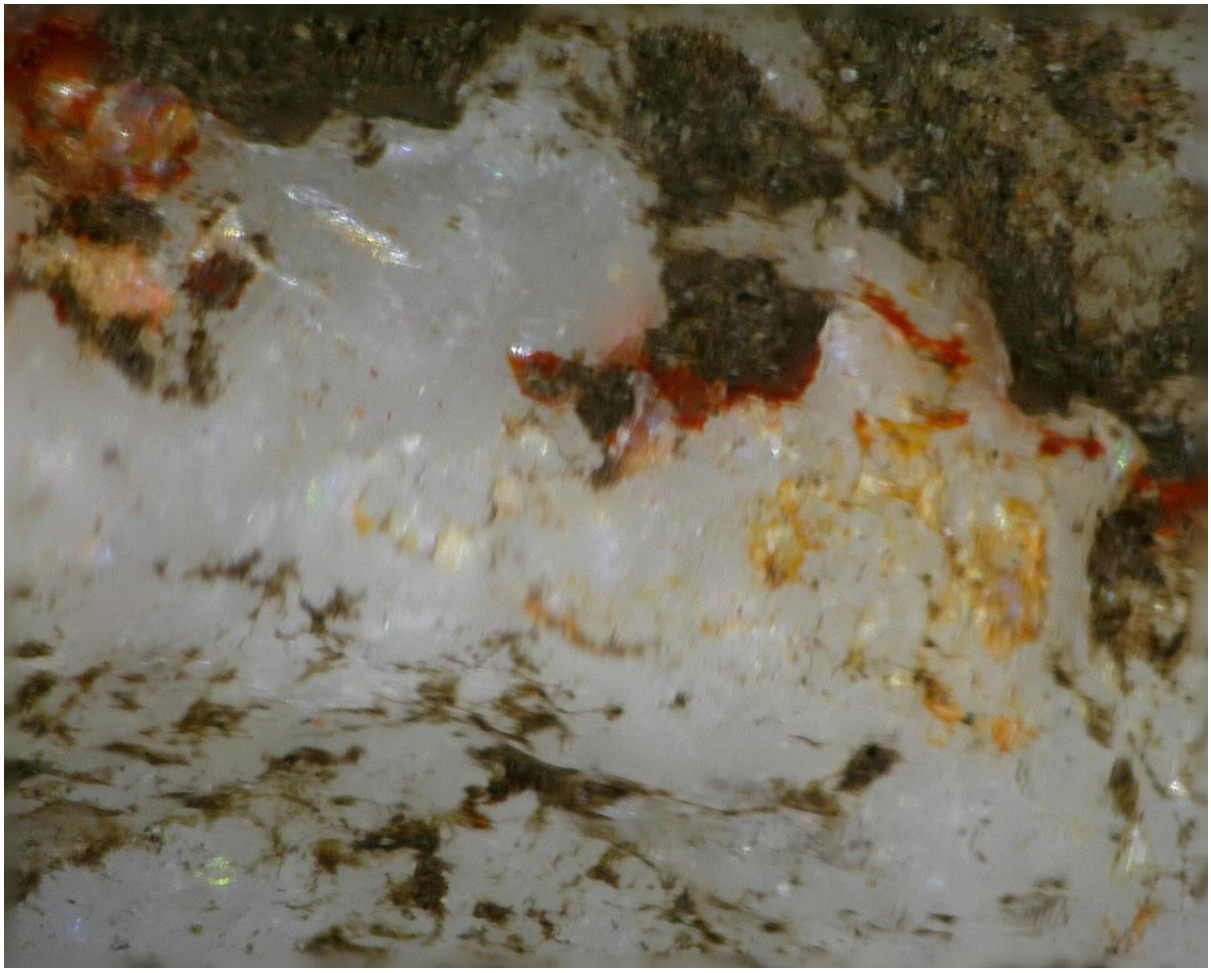

Fig 10.

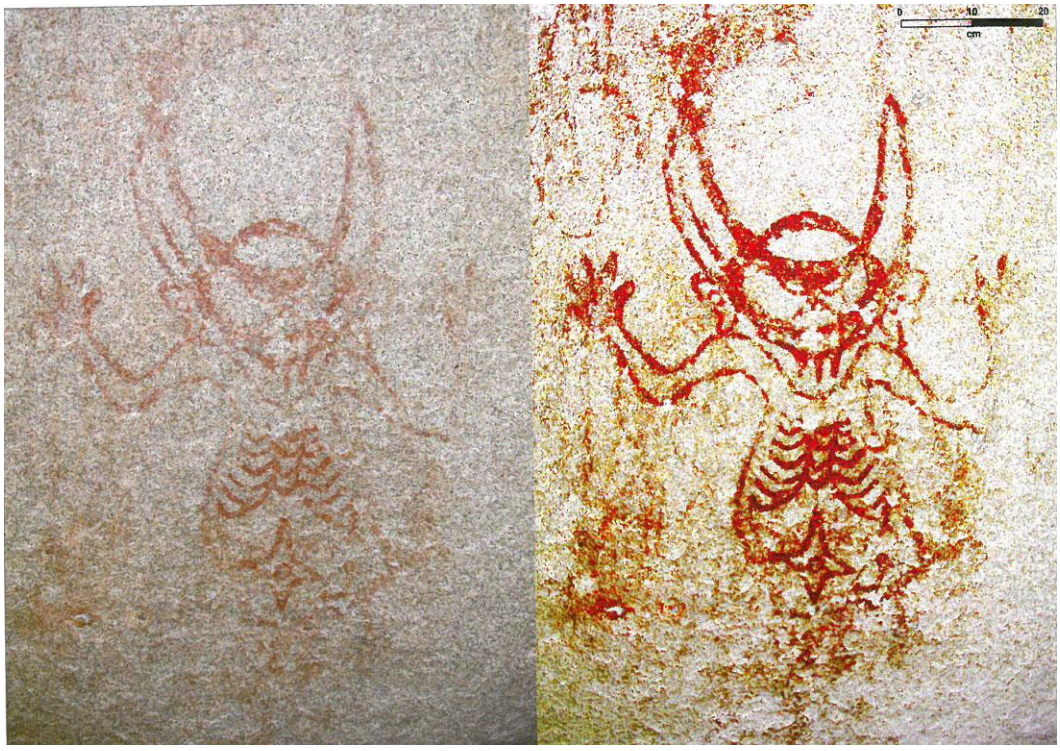

Fig. 11