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Ritualised marine midden formation in western Zenadh Kes (Torres Strait)

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Introduction

Marine subsistence specialisation is a central theme in the archaeology of Oceania. Shell middens provide the main material evidence for marine specialisation through food remains (e.g. bones and shells) and technology (e.g. fishhooks). For the most part, middens are considered domestic refuse deposits and the byproduct of people living their daily lives. In contrast, sites such as houses and ritual structures are considered part of the built domain and architecture of settlements. Over the past decade or so, the role of refuse deposits as secular byproducts of society has been challenged by the concepts of 'ritual rubbish' and 'ceremonial trash' (e.g. Hill 1995; Walker 1995; Needham and Spence 1997; Chapman 2000; Cameron 2002; see also Hodder 1982:161). This reconceptualisation recognises the biographical and symbolic dimensions of 'refuse' and the embeddedness of midden materials in ritual behaviour, place-marking strategies, construction of cultural landscapes and maintenance of social identity. In Australia, appreciation is slowly emerging of the agency and symbolic value of domestic 'refuse' given monumental expression as curated mounds to inscribe landscapes with new and ongoing social meanings (e.g. Morrison 2003; Bourke 2005; Hiscock and Faulkner 2006; see also Meehan 1982). In the 1980s, Barbara Ghaleb (1990) pioneered Australian archaeological investigations into the 'ceremonial' and 'symbolic' role of mounded midden deposits with her PhD research on the 'old village' site of Goemu on the island of Mabuyag, Zenadh Kes. Since Ghaleb's research, Mabuyag has been the focus of investigations into another type of ritual site constructed of food remains – dugong bone mounds (McNiven and Feldman 2003; McNiven and Bedingfield 2008). In light of new insights into dugong bone mounds and ritual treatment of subsistence remains, this paper re-examines conceptualisation and identification of mounded midden deposits at Goemu, based on excavations at the site by Harris and Ghaleb in 1985 and by us in 2005.

Middens and mounds

In Zenadh Kes, middens are layers of occupation deposit typically comprising marine shells, bones (dugong, turtle and fish), stone artefacts, charcoal and cooking stones, dating back to at least 4000 years ago (e.g. Barham and Harris 1985; Carter *et al.* 2004; David and Weisler 2006; McNiven 2006; Crouch *et al.* 2007; Ash and David In press). Ethnographic information on middens is scant, with Haddon (1912:131) making a passing comment that '[k]itchen-middens are not formed now, nor did I come across traces of ancient refuse heaps'. Dugong bone mounds are oval-shaped and range up to 13 m long and 1 m high. Excavations at Tudu and Pulu reveal that 50–65 percent of cultural material (by weight) in these elaborately made structures is dugong bone (increasing to 96–97 percent when likely dugong bone is included), of which nearly all is ribs and rear skull bones (McNiven and Feldman 2003). Estimates of the number of dugongs (MNI) represented in individual bone mounds range from c. 140 to c. 10,000–11,000 (David and Mura Badulgal Committee 2006; McNiven and Bedingfield 2008). Radiocarbon dates suggest these sites date to the past 400–500 years (McNiven and Feldman 2003; David and Mura Badulgal Committee 2006; McNiven and Bedingfield 2008). While bone mounds are described ethnographically simply as 'ceremonial' and 'shrines' (Haddon 1901:139; 1912:131), archaeological research associates these sites more specifically with hunting magic, social cohesion and collective identity (McNiven and Feldman 2003).

Published literature on Zenadh Kes ethnography and archaeology makes a morphological and functional distinction between secular midden deposits and ritual dugong bone mounds. Yet unpublished archaeological recordings of numerous constructed midden mounds at Goemu 'old village' site on Mabuyag in western Zenadh Kes blur this distinction and call into question the secularity of middens (Barham and Harris 1987; Ghaleb 1990; see also Vanderwal 1973:183). To characterise the extent of this blurred distinction, the following sections of the paper describe the form and content of the Goemu mounded middens and examine the extent to which they differ compositionally from: (1) underlying and adjacent non-mounded midden deposits; and (2) dugong bone mounds excavated on Pulu and Tudu.

Goemu village

Ethnographic context

Goemu is one of the major 'old village' sites of Mabuyag, a small island (8.3 km²) located in central-western Zenadh Kes (Figure 1). At the time of early European contact in the 1870s, the Goemulgal (people of Mabuyag) had a population of at least 300 (Mullins 1992). The island and adjacent seas are divided into four major clan/totemic districts and Goemu is the settlement focus of the southeast district of the kaigas (shovel-nosed shark), waru (turtle) and umai (dog) totemic clans (Haddon 1904:266; Davis and Prescott 1992; Eseli 1998). Whereas the settlements of Dabangai and Panai on the northeast coast are the centre of the dhangal (dugong) and kodal (crocodile) clans and dugong-hunting rituals, Goemu is the focus of turtle-hunting rituals (Haddon 1935:59). Apart from houses, structures at Goemu once included a skull-house (kuiku-iut), a ceremonial kod (special men's area) and the wiwai turtle-hunting shrine (Haddon 1904:3, 306, 333–36; 1935:59).

Archaeological mapping

Archaeological surveys of Mabuyag indicate that the largest and most extensive midden deposits are at Goemu. These deposits reveal that Goemu was a major settlement place on Mabuyag. A detailed map of Goemu was produced by David Harris and Barbara Ghaleb (Institute of

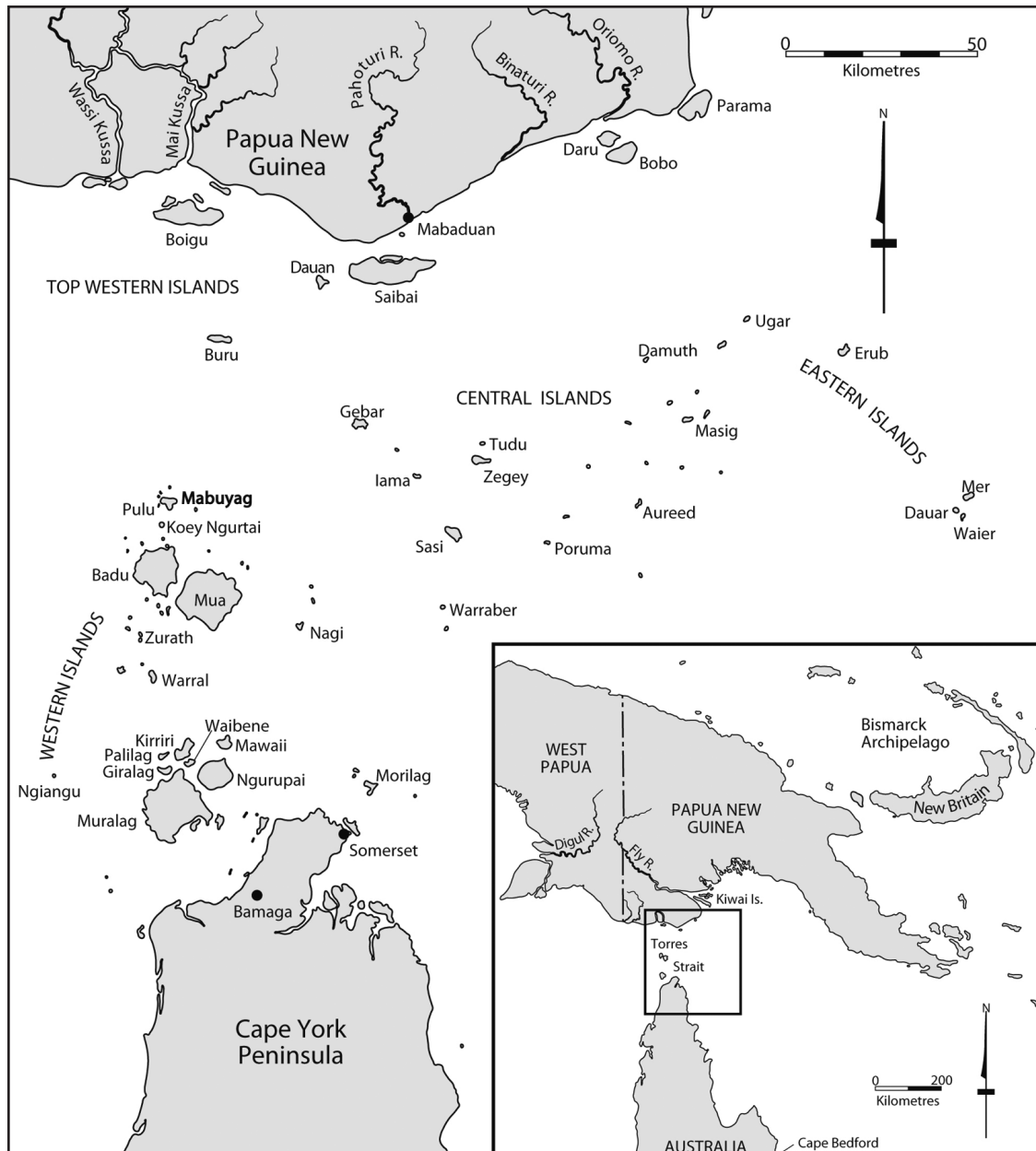


Figure 1. Map of Zenadh Kes.

Archaeology, University College London) and their team in 1985 (Barham and Harris 1987) (Figure 2). The village is located on the coast across a 320 m-long wedge-shaped flat area of prograded shelly-sand deposits, fronted by the high-water mark and backed mostly by rocky hills supporting open shrubland and woodland. The site has a maximum width of 140 m (in the south) and covers an area of c. 20,000 m² (2 ha) (Barham and Harris 1987:12). Vegetation across the village is dominated by anthropogenic grassland, with scattered coconut trees and a zone of shrubs adjacent to the high-water mark (Figure 3). Controlled burning by local community members of the thick grass cover in 1985 provided a rare opportunity to record and map the location of more than 100 surface features (e.g. mounded middens and stone arrangements). This map has added historical importance, as extensive levelling of the site by machinery in 2005 to accommodate construction of four tin sheds (domestic structures) has removed nearly 70 percent of these surface features.

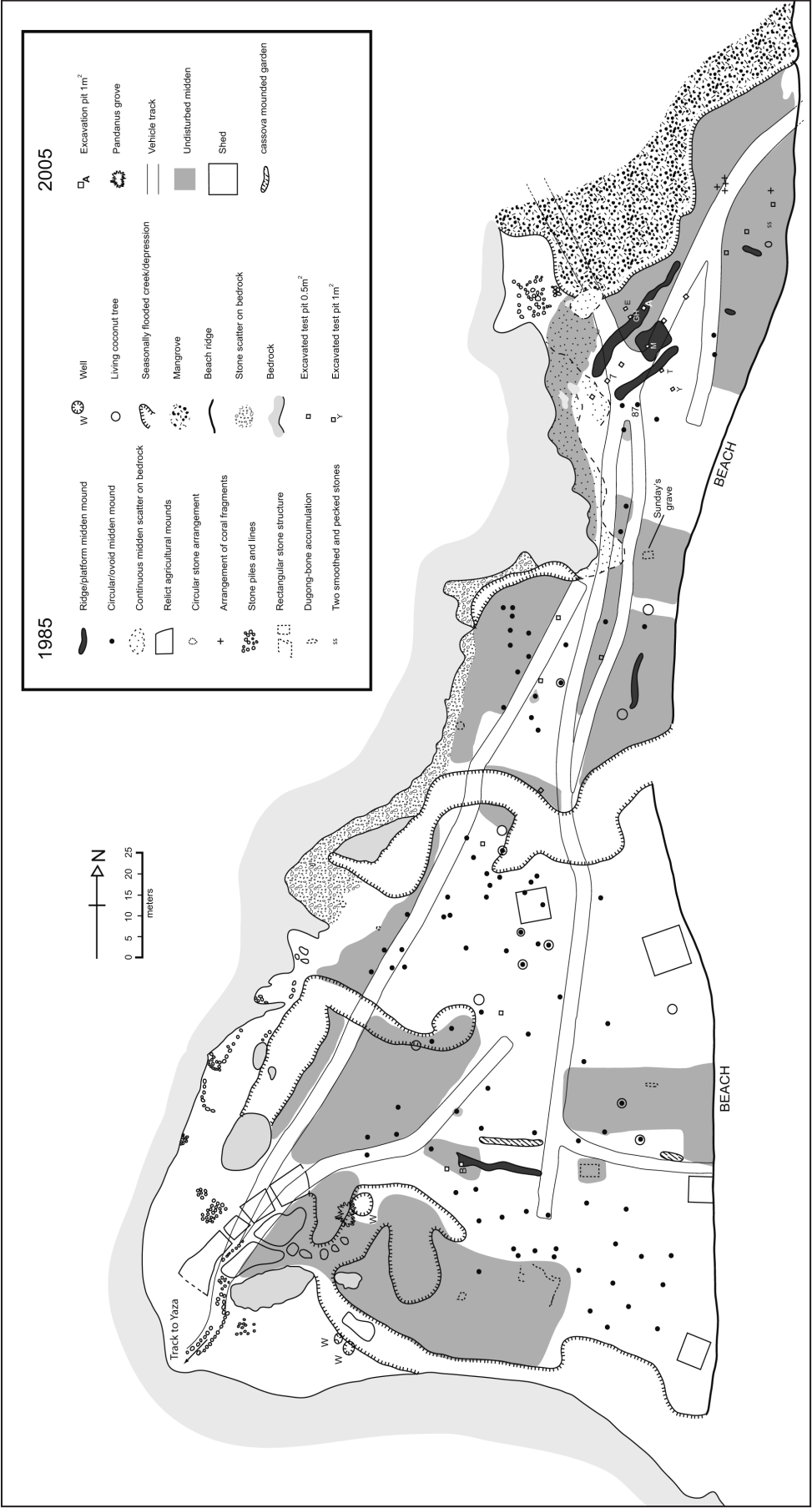


Figure 2. Map of Goemu 'old village' site, Mabuyag (after Barham and Harris 1987:Figure 4).

Three types of midden deposit which ‘superficially consist of bone (primarily dugong), angular chunks of stone, and shell’ were identified at Goemu (Ghaleb 1990:181–185, 212–213, 226, 267, 303; Harris *et al.* 1985:44, 48):

1. Level midden. ‘Discontinuous surface scatters’, forming ‘level’ midden deposits with considerable sub-surface components.
2. Circular midden mounds. Ninety-five ‘discrete circular or ovoid mounds averaging 1.0–1.5 m in diameter and 30 cm in height, sometimes bordered by large stones or *Syrinx* shells’ occur mostly across the southern half of the village (Figure 2). Circular mounds cover c. 180 m² or about 0.9 percent of the surface area of Goemu.
3. Ridge and platform midden mounds. Seven ‘large linear and rectangular accumulations’ occur mostly across the far northern part of the village (Figure 2). The northern complex consists of a midden ‘platform’ (8 x 5–7 m with a mean height of 15 cm), flanked by two ‘ridges’ – the west ridge measures 35 x 3 m (mean height 28 cm) and the east ridge measures 20 x 2 m (mean height 18 cm). Ridges and the platform cover c. 170 m² and 48 m² respectively, or about 1.1 percent of the surface area of Goemu.

Excavations

In 1985, Harris and colleagues excavated examples of the three types of midden at Goemu – level middens across the village, a circular midden mound (Mound 87), and the platform-ridge midden mound complex at the northern end of the village (Barham and Harris 1987; Ghaleb 1990). A key aim of these excavations was to test whether the mounded midden features differed compositionally from the level midden deposits. In 2005, we excavated the northern platform-ridge mounded midden complex (Square A) and a ridge mounded midden feature at the southern end of the village (Square B). Key aims of our excavations were to obtain more detailed stratigraphic and chronological information about the development of mounded midden features at the site. For the purposes of this paper, analysis focuses on Harris and Ghaleb’s circular Mound 87 and platform midden mound excavations and our northern-ridge midden mound excavation (Square A). Our analysis includes neither the 16 small ‘test pits’ excavated by Harris *et al.* across level midden deposits, nor our Square B excavation, as none has been analysed compositionally.



Figure 3. Goemu looking northeast, 1996 (photo by Ian McNiven).

Circular midden mound

Mound 87 is located immediately south of the platform-ridge complex at the northern end of Goemu (Figure 2). Half of the 23.5 cm-high mound was excavated by Harris *et al.* but only one quarter was analysed (see Barham and Harris 1987 and Ghaleb 1990 for details). It was excavated in seven units to the level of the surrounding ground surface, where excavation changed to ‘two small pits’, which continued through sediment with ‘dark matrix’ and ‘[f]ew midden remains’ for 25 cm, where ‘beach sand’ was encountered. The mound is dominated by dugong bones, ‘an abundance’ of ‘chunks’ of local rock, marine shells (19 species), and some turtle and fish bones, coral fragments, and a quartz flake. Units 4 and 6 contained ‘fragments of glass’, while Unit 7 ‘had very few remains’. These glass fragments are the only ‘stratified material remains of European origin’ excavated by Harris *et al.* at Goemu (Ghaleb 1990:234). Assuming the glass fragments are not stratigraphically intrusive, they indicate the mound ‘was made sometime after Torres Strait Islanders had access to glass’ (Ghaleb 1990:301). As Mabuyag Islanders had little contact with Europeans before the arrival of missionaries and pearl shellers in the 1870s, it is likely the glass in Mound 87 dates to after 1870. However, an earlier 19th century date for the glass should not be discounted, as bottle glass was a commodity of the 19th century ‘passing trade era’ (McNiven 2001). As such, Mound 87 most likely dates to the 19th century (Haddon makes no mention of settlement at Goemu in 1898).

In terms of total weight of dugong bone, a range of skeletal elements is represented – skull (42%), ribs (42%), vertebrae (13%) and limbs (3%) (Ghaleb 1990:251). An extrapolated MNI of eight dugongs was calculated for the entire mound (Ghaleb 1990:365). The relatively high quantity of dugong bones in Mound 87, combined with the high representation of dugong skull (including ear ossicles) and rib bones, is typical of ritual dugong bone mounds on Pulu and Tudu (Figure 4). Similarly, the low representation of stone artefacts and bones of turtle and fish are typical of dugong bone mounds. In contrast, the proportion of dugong limb bones and vertebrae in Mound 87 is higher than that recorded for the Pulu and Tudu bone mounds, while the high concentrations of rocks (cooking stones) and shells, and the low MNI of eight dugongs are also atypical of bone mounds.

Mound 87 is similar in form and content to the more than 90 circular midden mounds recorded across Goemu. Surface recordings indicate that these mounds contain marine shells, dugong bones and angular rocks (cooking stones), and half exhibit stone artefacts (Ghaleb 1990:187, 192). In terms of dugong bone elements, most midden mounds contain rib (n=93) and skull fragments (n=71), with few exhibiting vertebrae (n=22), humeri (n=13), phalanges (n=9) and scapula (n=6) (Ghaleb 1990:187). While the high representation of skull and rib

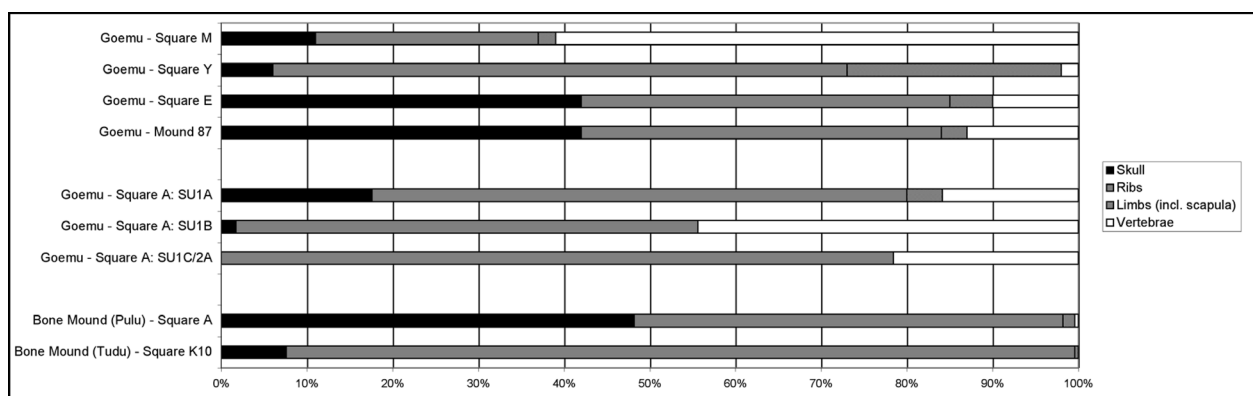


Figure 4. Relative proportion of dugong bone elements from Goemu and ritual bone mounds on Pulu and Tudu.

bones is consistent with ritual bone mounds, the representation of vertebrae and limbs is not. Furthermore, ear ossicles, which are a signature component of ritual bone mounds, were recorded in only 5 percent of the Goemu mounds (Ghaleb 1990:193; McNiven and Feldman 2003). The number and diversity of marine shells (more than 50 species in total) and the presence of cooking stones is also atypical of dugong bone mounds. The presence of glass on the surface of 25 percent of circular mounds (Barham and Harris 1987:13) indicates construction continued into the 19th century.

Platform midden mound

A series of five 1 x 1 m pits spaced along a 25 m transect was excavated by Harris *et al.* across the platform-ridge midden mound complex at the northern end of Goemu (see Barham and Harris 1987 and Ghaleb 1990, 1998 for details) (Figure 2). Two to four 50 x 50 cm quadrants in each square were excavated, but only single quadrants from Squares M, E and Y were analysed. Square M was located on the 'platform' mounded midden, with Squares E and Y located on 'level' (non-mounded) midden deposit to the side of the west and east 'ridges' respectively. Excavations used 5 cm spits and all excavated materials were sieved through 4 mm and 2 mm mesh. Excavations continued 'until sterile deposits were reached'. The depth of midden deposit in each of the three analysed squares varied, with sterile beach sands reached at depths of 50 cm (Square M), 40 cm (Square Y) and 25 cm (Square E). A date of 600 ± 70 years BP (c. 550 years ago) was obtained from a single charcoal fragment from Square M within midden deposit at 'a depth of 35 cm', which is below the 15 cm-deep base of the mounded midden feature (Table 1). From the same stratigraphic context, an anomalous date of 'modern' was obtained on 'small charcoal fragments' collected between 30 cm and 40 cm below the surface in Square M.

For the most part, Ghaleb analysed deposits in all three squares as single units. No attempt was made to analytically isolate the upper level of Square M, representing 'platform' mounded midden, to explore compositional differences from or similarities to underlying or adjacent 'level' midden deposits. However, the densest midden deposit encountered during excavation was from the upper 15 cm of Square M, corresponding to the mounded 'platform' feature. In contrast, Squares E and Y revealed 'moderate' and 'low' density ('level') midden deposits. The abundance of dense midden deposit in the platform mounded feature is indicated by Square M, containing the majority of shell (67% by MNI), turtle bone (>80% by weight), fish bone (82% by number) and dugong bone (>90% by weight) recovered from all three squares. All three squares have a similar range of remains, dominated by shells and bones of dugong, turtle and fish. The number of marine shellfish species in each square is similar – Square M (19 species), Square E (21 species) and Square Y (19 species), while at least 88 percent of fish in each square comes from the same three families (Labridae, Scaridae and Lethrinidae).

In terms of total weight of dugong bone, a broad range of skeletal elements is represented in Square M – skull (11%), ribs (26%), vertebrae (61%) and limbs (2%) (Ghaleb 1990:251,257) (Figure 4). The considerable presence of dugong vertebrae, as with the considerable representation of dugong limb/vertebrae in Squares E and Y, are all atypical of ritual bone mounds (Figure 4). Equally atypical are the low dugong MNIs: Square M=3; Square E=1; Square Y=1 (Ghaleb 1990:258), and the considerable presence of other midden materials (e.g. shells, turtle and fish bones and rocks) in all squares.

Ridge midden mound

In 2005, we excavated a 1 x 1 m pit (Square A) on the eastern edge of the 28 cm-high western ridge of the northern platform-ridge complex (Figures 2 and 5). The pit was excavated to a

Table 1. Goemu radiocarbon dates.

Laboratory Code	Square and Excavation Unit	Depth below surface (cm)	Sample and ¹⁴ C technique	Sample weight (g)	¹³ C‰	¹⁴ C Age (years BP)	Calibrated Age BP 2 sigma range	Years Ago (cal BP)
Beta-21385	M:?	35	Charcoal Conventional	1.8	?	600±70	498–658	550
Beta-21384	M:?	30–40	Charcoal Conventional	2.17	?	101.3±1.6% modern	—	—
Wk-21514	A:3	1.5–3.4	Charcoal AMS	0.01	-22.7±0.2	131±32	0–146* 222–263	50
Wk-21515	A:7	9.5–12.5	Charcoal AMS	0.01	-9.8±0.2	160±31	0–153* 173–177 208–277	100
Wk-21516	A:11	24.1–28.3	Charcoal AMS	0.06	-25.2±0.2	524±32	496–545	500
Wk-21517	A:15	37.5–41.1	Charcoal AMS	0.06	-26.8±0.2	893±32	683–801* 875–882 887–897	750
Wk-21518	A:18c	49.8–54.9	Charcoal AMS	0.02	-25.6±0.2	523±32	496–545	500
Wk-21519	A:23	81.6–90.1	Charcoal AMS	0.07	-25.1±0.2	6133±41	6792–7029* 7045–7069 7079–7085 7106–7156	6950
Wk-21520	A:25	98.3–104.7	Charcoal AMS	0.04	-27.8±0.2	878±32	681–794	750
Wk-21521	A:32	156.2–171.2	Charcoal AMS	0.02	-26.5±0.2	954±32	745–909	800

Dates calibrated into calendar years using the online calibration program Calib 5.0.2 (Stuiver and Reimer 1993; Stuiver *et al.* 2005) and the Southern Hemisphere calibration datasets (McCormac *et al.* 2004). Dates expressed as 'years ago' (cal BP – i.e. before AD 1950) represent approximates based upon the midpoint of the 1 sigma highest probability.

*=highest probability of calibrated ranges.

maximum depth of 202 cm, using 34 excavation units (XUs). Spit or excavation unit (XU) thickness averaged <4 cm in midden levels and all excavated materials were sieved through 2.1 mm mesh. Two major and seven minor stratigraphic units (SUs) were identified (Figure 6). The upper 25–30 cm (SU1a) was dark grey-brown loamy sediment with dense midden deposit and considerable amounts of bone (dugong, turtle and fish), fragments of rock (most likely cooking stones), marine shells, crustacean exoskeleton, stone artefacts, charcoal and ochre. A low number of small fragments of glass and rusty metal was recovered down to depths of 12 cm and 20 cm respectively. SU1a corresponds in thickness to the mean height of the mounded ridge feature. SU1b extends down to c. 35–40 cm below the surface and is slightly lighter-coloured loamy sediment with lower-density midden deposit. SU1c is a c. 10 cm thick zone of grey loamy sediment mixed with shelly sand from SU2 and few cultural materials. The change to SU2 is marked by a change to foraminifera-rich shelly beach sands with very few cultural remains. SU2a is light grey and is mixed with darker midden matrix from SU1 above. SU2b is coarse-grained shelly sand with few cultural materials and a zone of charcoal and pumice. An ash-rich zone in the upper sections of SU2b appears to be a cooking pit. SU2c is laminated shelly sands with little cultural material, except for an alignment of six stones running across the square between the south and north walls at a depth of c. 95–100 cm below the surface. The basal 30–35 cm of the pit is fine-grained shelly sands (SU2d) with no obvious cultural materials.



Figure 5. Excavation of Square A on ridge midden mound, Goemu 'old village', November 2005 (photo by Ian McNiven). From left to right: Alice Bedingfield, Duncan Wright, Beeboy Whop, and senior site custodian Cygnet Repu.

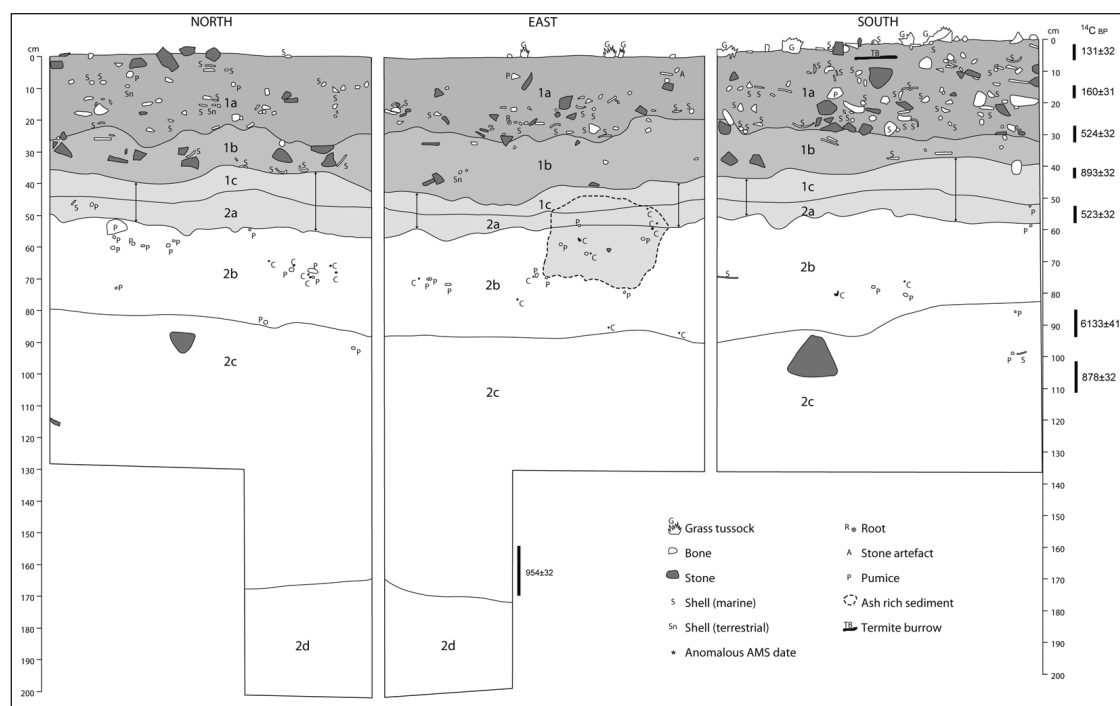


Figure 6. Stratigraphy and radiocarbon dates for Square A, Goemu.

Eight radiocarbon dates (AMS) were obtained on single charcoal fragments from Square A (Table 1). SU1a, taking in the mounded ridge feature and the main midden deposit, has three ^{14}C dates of 113 ± 32 BP (top), 160 ± 31 BP (middle) and 524 ± 32 BP (base), which all calibrate to within the past c. 500 years. The older date of c. 500 years ago matches well the date of c. 550 years ago obtained by Ghaleb for the base of the main midden deposit in Square M, located 5 m to the southeast. The date of c. 100 years ago at a depth of 9.5–12.5 cm marks the maximum depth of nearly all glass and metal items and is consistent with the start of European contact with Mabuyag Islanders in the 19th century. As such, the foundations for the mounded ridge feature most likely were formed about 500 years ago, with much of the upper half of the feature added after European contact.

Underlying dates of 893 ± 32 BP (c. 750 years ago) and 523 ± 32 BP (c. 500 years ago) for the base of SU1b and SU2a respectively are stratigraphically inverted, a result consistent with the interface (mixed) nature of sediments represented by these levels. Dates of 878 ± 32 BP (c. 750 years ago) and 954 ± 32 BP (c. 800 years ago) for the upper and lower sections of SU2c indicate that SU2, taking in more than 1 m of sediment, accumulated rapidly over less than a century. A date of 6133 ± 41 BP from the base of SU2b is anomalous and suggests the charcoal-pumice zone includes ancient charcoal from eroded sediments of unknown origin.

Cultural materials were grouped stratigraphically into the mounded ridge feature (SU1a), underlying cultural deposits (SUs 1b–2a) and shelly beach sands with few cultural materials (SU2b = Ghaleb's 'culturally sterile' layer) to investigate whether the mounded ridge feature is compositionally different from underlying cultural deposits. As seen with Ghaleb's platform excavation results, the range of cultural materials in Square A is similar for the mounded midden feature (SU1a) and underlying deposits (SUs 1b–2b) (Figure 7). Also similar is a major increase in the abundance and density of midden deposit with the formation of the mounded feature (SU1a), particularly with regards to shell, bone and ochre (Figure 7). In contrast, stone artefacts, rocks and charcoal increase only moderately with formation of the upper (mound) layer. Most of the dramatic increase in bone density in SU1a is accounted for by dugong after it enters the sequence in SU2a (Figure 8). These data indicate that compositional changes coincide with development of the mounded midden feature.

A comparison of dugong bone elements in different levels of Square A reveals the same broad representation found by Ghaleb in the platform excavations (Figure 4) – that is, a high proportion of ribs and vertebrae, with varying representations of skull and limb bones. As with Ghaleb's excavations, our excavations reveal dugong-bone assemblages that contain much higher representations of vertebrae and limb bones than ritual bone mounds on Pulu and Tudu. While dugong skull bones in the upper sections of the sequence forming the ridge mounded midden feature are consistent with ritual bone mounds, the continued presence of reasonable quantities of dugong vertebrae (and considerable quantities of other midden materials, such as shells, stone artefacts and rocks) is not. Furthermore, only 7 percent of cultural material in SU1a (by weight) is definite dugong bone, compared with 50–65 percent definite dugong bone in dugong bone mounds on Tudu and Pulu.

Discussion

Compositional analysis of the three types of mounded midden features at Goemu (circular, platform and ridge) reveal some similarities with ritual dugong bone mounds, viz. ribs and usually skull bones are the majority component (by weight) of dugong-bone assemblages. On the other hand, key features of the midden mounds that distinguish them from ritual bone mounds are the higher representation of dugong limb bones and vertebrae and considerable

quantities of other midden materials (e.g. shells, fish and turtle bones, stone artefacts, cooking stones and charcoal). In terms of diversity of materials, few compositional differences exist between mounded and non-mounded middens. For the most part, our results from Square A concur with Ghaleb's (1990:303) finding that faunal differences between these midden deposits differ mainly in terms of 'the relative abundance of the types of remains found'. Despite these differences, it was concluded tentatively by Ghaleb (1990:367) that 'there is little about the

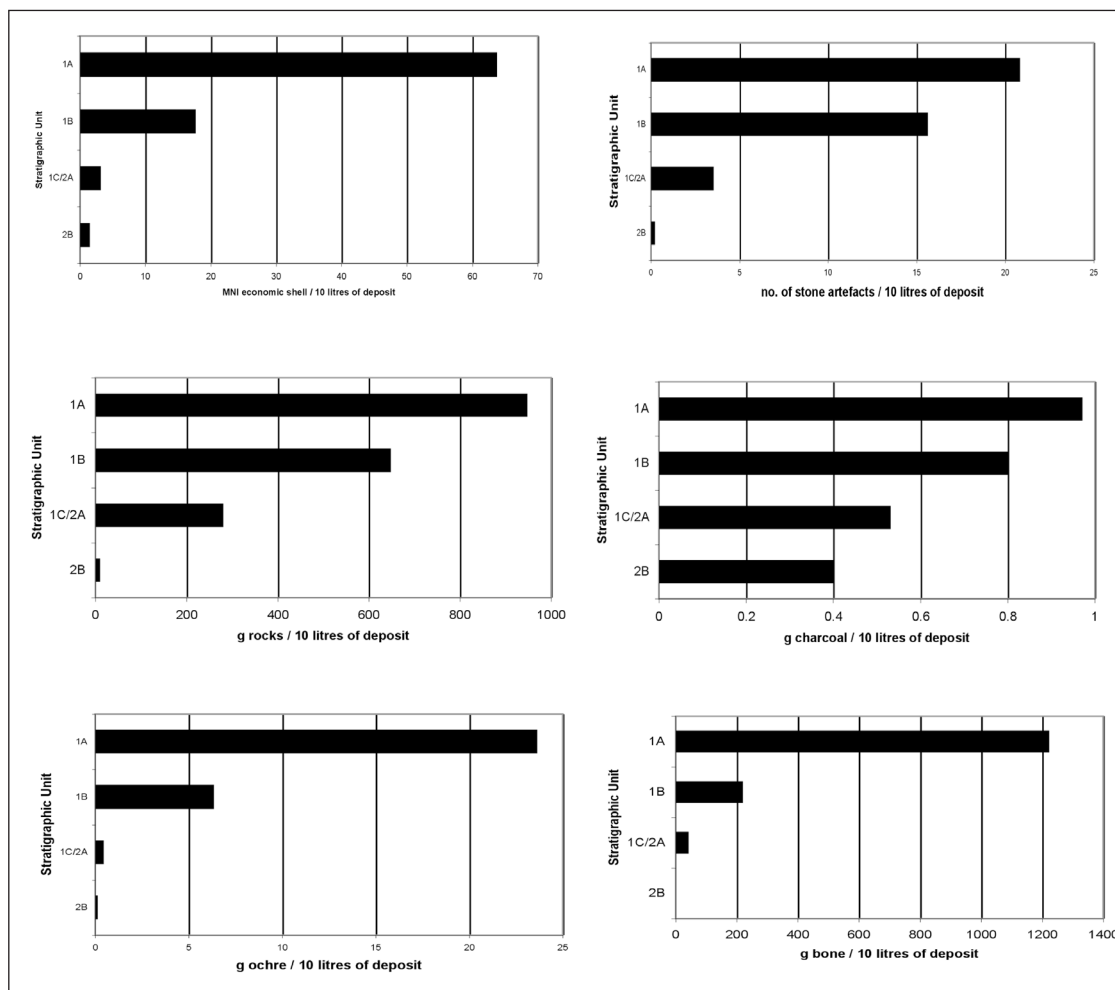


Figure 7. Vertical change in density for cultural materials in Square A, Goemu.

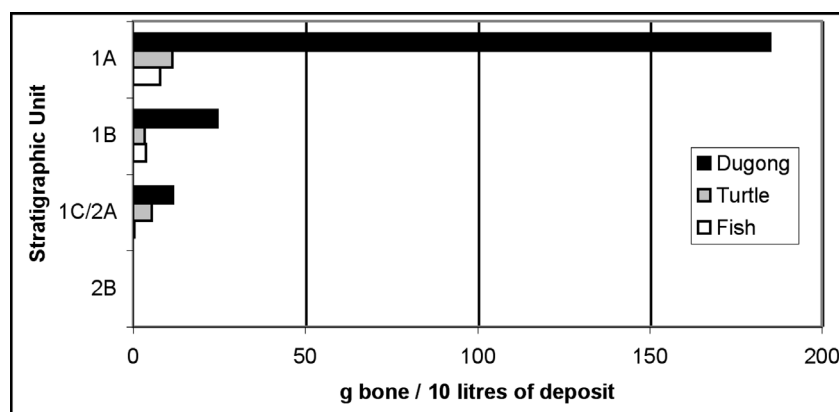


Figure 8. Vertical change in density of dugong, turtle and fish bone in Square A, Goemu.

composition of these discrete raised midden deposits to suggest anything other than their being piles of refuse from past Islander meals’.

Ghaleb (1990:367, 378) realised that the ‘abundance and surface morphology’ of mounded middens at Goemu was ‘out of the ordinary’ and beseeched further explanation. Drawing on 19th century ethnographic recordings of ceremonial mounding in the form of dugong bone mounds (Haddon 1904:4–5, 1912:131), burial earthen mounds (Haddon 1904:259–261), memorial stone cairns/earthen mounds (Haddon 1904:83, 185, 368) and turtle lookout stations with cairns of stones and turtle/dugong bones (Haddon 1912:160) from western Zenadh Kes, Ghaleb (1990:209) suggested: ‘it does not seem unreasonable to view (some of) the midden features of Gumu ... as representing loci of past ceremonial activity in addition to economic activities’. Furthermore, ‘it seems conceivable that many of the ... [95] discrete [midden] mounds may represent past ‘shrines’ which symbolised some sort of power or magic’ (Ghaleb 1990:379). Developments in archaeological understandings of the ritual dimensions of subsistence remains, and dugong bone mounds in particular, add weight to Ghaleb’s (1990) hypothesis on the ceremonial and symbolic dimensions of the mounded middens at Goemu. This hypothesis was also underpinned by Haddon’s demonstration of ‘how inter-related were the social organisation, ceremonial life, settlement patterns and subsistence’ of the Mabuyag Islanders (Ghaleb 1990:357). Ethnographically, Goemu exemplifies this ‘inter-relatedness’ as a key totemic/clan settlement that included ritual places such as a turtle-hunting ‘shrine’, a skull-house and a men’s kod site. Goemu village was a complex space where the boundary between domestic and ritual domains was negotiated, blurred and expressed materially through structured, formalised and patterned behaviours.

In many respects, Ghaleb’s approach to midden deposits at Goemu was an early attempt at coming to terms with socially structured deposits that in more recent years have been conceptualised in the broader archaeological literature as ‘ritual rubbish’ and ‘ceremonial trash’. In the context of Zenadh Kes, this paper demonstrates that the Goemu mounded middens have minor compositional similarities to ritual dugong bone mounds and major compositional similarities to non-mounded midden deposits. In this sense, the major material difference between midden mounds and dugong bone mounds is compositional, whereas the major material difference between midden mounds and non-mounded middens is morphological. These differences reveal two features that conceptually confined and defined mounded middens in the eyes of the Goemulgal: (1) composition ensured the sites remained within the broader conceptual category of midden and the myriad social behaviours they represent; (2) morphology ensured the sites could be distinguished as a separate and special class of midden, primarily through the process of mounding. In contrast, dugong bone mounds were compositionally constructed to fall outside the conceptual category of midden by a highly specialised assemblage of selected dugong bone elements.

Mounded middens at Goemu are the result of the ritualised tethered deposition of a wide range of typical domestic refuse that in some cases accumulated over hundreds of years. Thus it is likely the mounded midden features on public display at Goemu were conceptualised as works in progress, continually unfolding as material expressions of the shared routines of life (*habitus*) for occupants of the village. As such, it was not so much the final form of the midden mounds that was important, but the structured and formalised process of their construction. While mounded middens represent only 2 percent of the area of Goemu, the absolute area of coverage (400 m²) is substantial. The number and spread of the circular midden mounds across Goemu suggests strongly that they were fundamental to the social construction and organisation of space across the village, perhaps associated with individual households and families. The lower

number of large ridge middens suggests a more restricted and perhaps more collective social context for deposition. Whether the smaller circular and larger ridge/platform midden mounds represent family and clan feasting respectively is a matter for future investigation. Whatever the case, domestic refuse in certain contexts maintained an ongoing biographical trajectory that necessitated its special formalised storage and curation in particular locations to create the mounded midden features we see today. In these situations, domestic refuse never left the 'systemic context' of society (see Schiffer 1996). Building on Ghaleb (1990), we posit that midden mounding was a performative strategy that facilitated the management, containment and remembrance of the myriad symbolic values associated with the wide array of activities and social contexts represented by the items comprising these midden deposits.

Conclusion

Goemu reveals that midden sites in Zenadh Kes can be complex social structures. Far from simply representing refuse dominated by the discarded remains of meals, midden deposits were also a key part of the formal and enduring ritualised architecture of a village. Mounded midden features were constant visual reminders to the occupants of Goemu that their everyday social activities, such as the use of cooking stones and the consumption of dugong, turtle, fish and shellfish, had historical continuities with the everyday social lives of their ancestors. As a 'structuring structure' (Bourdieu 1977), the practice of midden mounding resulted in features that provided visual anchors to the past and social beacons for normative behaviour by framing, constraining and structuring future social acts and interactions. Unlike perishable food items, bones and shells allow the long-term storage of information on subsistence-based social activities (see Jones 1980:160). The dramatic increase in density of bones (especially dugong) and shells in the ridge midden mound (Square A) is consistent with an increased focus on ritualisation of subsistence remains. In this sense, the Goemu midden mounds had an intimate and complementary relationship with ritual dugong bone mounds located across other parts of the Mabuyag landscape. Both mounded structures were constructed of what were seen as decay-transcending food remains by successive generations of Goemulgal as an affirmation of shared cultural identity, past, present and future. That these structures emerged as ritualised material expressions of integrated social developments across Mabuyag is supported by both types of sites having similar chronologies within the past 400–500 years. A key aim of our ongoing research is to establish more solid foundations to better understand the nature of this integration and developmental history through continued analysis, excavation and characterisation of mounded and non-mounded middens at Goemu and other 'old village' sites across Mabuyag.

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