

Koey Ngurtai: the emergence of a ritual domain in Western Torres Strait

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Abstract

Koey Ngurtai is a small, uninhabited island located midway between the residential islands of Badu and Mabuyag in western Torres Strait. In 2003 and 2004, 100% surveys of the islet revealed 166 cultural sites. Fifty archaeological excavations were undertaken, revealing a rich history of islet use culminating with the emergence of Koey Ngurtai as a ritual centre after 550–700 cal BP, and a proliferation of ritual structures focused on dugong hunting magic after 350–550 cal BP. Shortly after the arrival of colonial powers in Torres Strait in the 1870s, including pearl shelling and missionary activity, Koey Ngurtai's ritual status was again transformed. This paper reports on these archaeological investigations and historicises Koey Ngurtai as a ritual land-and-seascape.

In 1898 Cambridge University anthropologist A.C. Haddon led the world's first large-scale anthropological research expedition. His target destination was Torres Strait, a narrow sea passage between the then largely-unknown continental island of New Guinea to the north and Australia to the south (Haddon, 1901–1935; Figure 1). This 150 km-wide strait contains over 100 islands, 18 of which are today inhabited; the largest, Muralag, is 20 x 18 km. Surrounding the islands are extensive coral reefs from which in the late 19th century much of the Islanders' food resources came. However, as Haddon and subsequent anthropologists amply documented, the sea was not, and is not, just a dietary realm, representing as much a spiritual domain by which Torres Strait Islanders understood how their world operates (*cf.* David and McNiven, 2005a; McNiven, 2003). From the sea came the enigmatic life-forces that in everyday life Islanders experienced and through ritual performances, taboos and incantations tried to control and comfortably live with. Islanders inhabit landscapes and seascapes that were, and are, also spiritscapes, places that contain *doghai* spirit-beings who toy with people, usually men; waterspouts upon which *markai* spirits travel the seas; dugong spiritual nous

that allows sensual affinity and communication between dugongs, people and the sea routes along which they travel; sorcerers who attain and practice knowledge of the spiritual forces that control the winds, rains and tides as well as the vermin and the fecundity of species, people included.

In living in a world also inhabited by numinous forces, people engage the spirits and life forces, their beneficial impacts on the material world requiring maintenance and nourishment, processes that enable life to proceed normally, one day into the next. In Torres Strait, during the late 19th century such engagements with the spirits, and with the workings of the world, were operationalised through formal ritual performances. It is the Islander faithfulness to these ritual observances that Haddon and his anthropological team began to document in some detail during the last years of the 19th century. In the Western Islands (see Figure 1), the most prevalent of the sacred ritual locations included the *kod* sites where males were initiated and the *aadhi* sacred objects and stories often associated with the *awgadh* (totems) were commemorated. Here the most sacred death dances were performed (e.g. Haddon, 1935: 354–55), sacred traditions

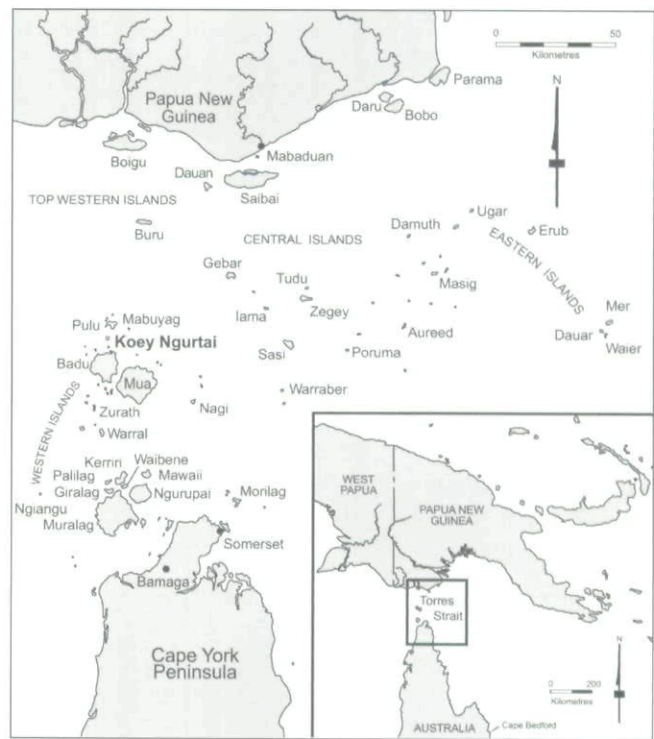


Figure 1. Torres Strait.

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were invoked, and ancestor skulls were consulted for purposes of divination. In the Central and Eastern Islands, magic rites were performed at *zogo* sites to effectuate tangible outcomes such as enhanced garden growth or the quelling or promotion of mosquito infestations. Here special objects such as stones of power, *bu* (*Syrinx aruanus*) or clam shells, or *madub* wooden carvings were consulted or strategically positioned across the landscape (e.g. in gardens) to ritually generate intended outcomes (e.g. Haddon, 1935: 357–58). Such practices were often performed in secluded places, but in each case they articulated cosmological understandings that underpinned the existence of everyday domestic space and the way of the world. An archaeology of ritual practice thus implies historicising not only religious action, but also how people constructed notions of how the world operates. Through archaeology, this paper aims to investigate the history of the cosmological and ritual realm on one island of Western Torres Strait, Koe Ngurtai.

Koe Ngurtai

Koe Ngurtai is a small island located exactly midway between, and 5 km from, the residential islands of Mabuyag to the north and Badu to the south (Figures 1, 2). Although numerous other islets lie between Koe Ngurtai and Badu, no such ‘stepping stone’ islets occur between it and Mabuyag.

Koe Ngurtai is a maximum 435 m (E–W) long by 395 m (N–S) wide. It consists of four granite crests and slopes – low hills on the islet’s edges – joined at their base by a Holocene sand ridge presently up to 3.5 m above the high tide mark (Figure 3). Apart from a relatively thin surface deposit (typically <5–30 cm thick, depending on where it is on the islet), geomorphological investigations indicate an absence of stratified cultural materials below the sand sheet’s upper levels. The sand ridge marks ‘periods of higher sea level as they [sic] consist of marine sediments of skeletal material of foraminifera and other organic calcareous detritus. The high ridge ... [probably] developed during the recent regression that followed a sea level rise during the Holocene to slightly higher than at present’ (Macnish, 2004: section 4.4). Before that, Koe Ngurtai consisted of three separate granite peaks (two of the hills were joined) each separated by a narrow channel of water. ‘It appears that as sea level fell’ writes Macnish (2004: section 4.5), ‘organic detritus from nearby reefs was deposited and trapped by the saddle between the four highs. This ultimately accumulated to a level where, with further sea level decline, a higher dune/beach ridge formed and the



Figure 2. Koe Ngurtai from the south.



Figure 3. The central sand ridge of Koe Ngurtai, with fringing hills and Badu in background.

uniform and almost rectilinear lower slopes were established’.

The islet contains three major vegetation communities (Olsen, 2004): a diverse vine forest/thicket on the granite hills and slopes; grassland on the central sandy flats; and strand vegetation along the coastal margins. Edible plants are found in each of these three communities, the most notable being the numerous *wongai* (*Manilkara kauki*) trees on the islet’s coastal fringe. Olsen (2004) suggests that before the arrival of people at Koe Ngurtai during the late Holocene (see below), the central sandy flats were probably covered with vine forest or vine thicket. There is support for this in regenerating vine forest/thicket species across the grasslands. There is also evidence of fire causing grassland invasion into the foothills on both the eastern and western sides of the islet.

Koe Ngurtai has no permanent surface fresh water, although a small spring on the western side holds water for much of the year. Macnish (2004: section 4.3) notes that ‘there is no evidence in the soil profile of the presence of a near-surface fresh watertable of either seasonal or permanent duration’, or that there ever was a seasonally-perched fresh watertable. However, he does not eliminate the possibility that there may be a ‘deeper source of groundwater beyond the depth of investigation’ (2 m below surface) (Macnish, 2004: section 4.7). These details have implication for people intending to access Koe Ngurtai for any extended period of time.

Today Koe Ngurtai is surrounded by six marine ecosystems: open sea, reefs, sub-littoral sand flats, granite boulders, sandy beaches and inter-tidal zone, and coastal sand dunes, each of which possesses rich food resources including turtle and dugong (Hawksbill and Flatback Turtles nest on the island year-round; Green Turtles mainly from October to April) (see David and McNiven, 2005b; Thorogood *et al.*, 2004 for details).

Thirty-seven species of birds, eight reptiles and one frog – but no mammals – are known from the islet (Ingram and Caneris, 2004: appendix 2). There is no evidence of animals

introduced by people, such as rats or cane toads. This implies a likely low frequency of access to the islet by people on large watercraft, a means by which rodents in particular are known to colonise islands across the Pacific (e.g. Spriggs, 1997: 55, 135). We suggest that this absence of rodents at Koey Ngurtai (but common presence on nearby settled islands and some unoccupied islets) indicates that the large Torres Strait ocean-going canoes documented ethnographically during the late 19th century are unlikely to have frequently moored on the islet in the past.

None of Koey Ngurtai's terrestrial fauna are recorded food items in Torres Strait. However, the migratory Torres Strait Pigeon (*Ducula bicolor*) is a known important source of food during the months of August to October and January to April when it appears in large flocks across the Strait. The landscape at Koey Ngurtai is clearly less rich in potential food resources than its surrounding open and inter-tidal seascapes.

Just 50 m off the northern beach, in the lower inter-tidal and upper sub-littoral zones, are a most unusual set of large granite boulders permanently exposed above the high tide mark. These smooth-surfaced, rounded boulders are located north of the centre of the main northern beach at Koey Ngurtai. Two are remarkably naturally shaped like dugongs (Figure 4). The largest and northernmost takes the form of

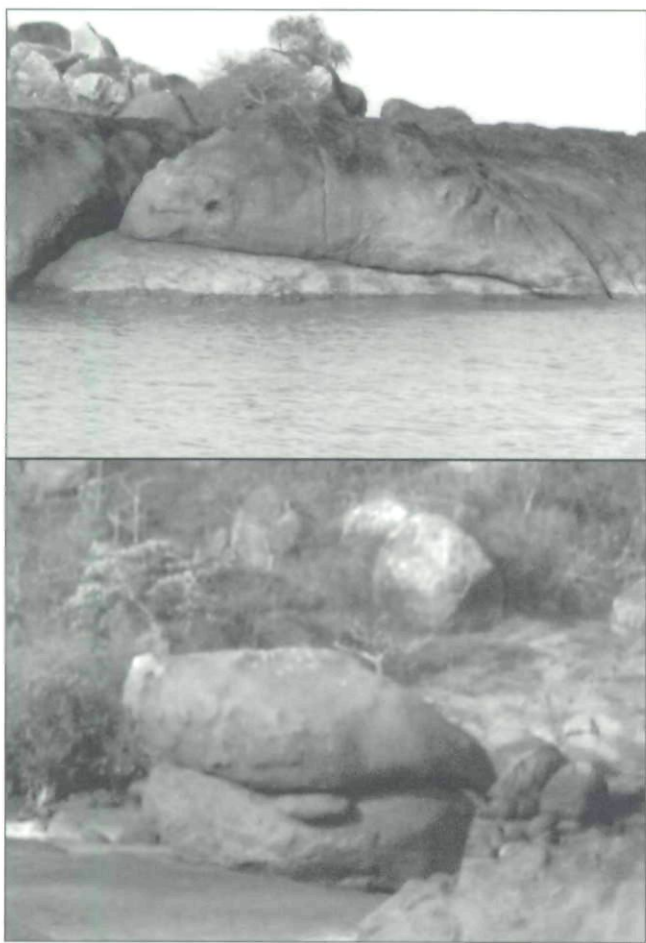


Figure 4. Dugong-shaped boulders just offshore, northern inter-tidal zone of Koey Ngurtai.

an adult dugong with its tail in the water. Its surface markings recall dugong skin markings. Eyes and snout are well demarcated. A few metres away is a second boulder that looks much like a curled baby dugong. These naturalistic shapes, we argue below, have had significant impacts on the cultural activities that took place on Koey Ngurtai in the past. We will return to their role in the islet's cultural history below, following an examination of the cultural sites revealed during the archaeological surveys and excavations.

Archaeological research on Koey Ngurtai

In July 2003, BD and IM were asked by the Mura Badulgal Corporation Committee to undertake a cultural heritage impact assessment of Koey Ngurtai for a proposed Commonwealth government Radar Tower development (McNiven *et al.*, 2003). These initial surveys of the central part of the islet where developments were planned revealed a total of 16 archaeological sites, but low ground visibility due to lush grass cover resulted in recommendations of a follow-up dry-season survey after burning off the grass. These follow-up surveys were undertaken at various times between November 2003 and May 2004, when the entire islet was re-surveyed to the high water mark following burning of the grass cover, when ground visibility increased to 100% across much of the islet. These new surveys revealed a further 45 sites from the same area covered in the earlier surveys, a three-fold increase in site recovery rates after burning of the grass. A total of 166 surface cultural sites were identified across the islet as a whole (Figure 5). As a result of these surveys, sub-surface sampling was recommended so as to determine which parts of the islet should be entirely closed-off from developments (David and McNiven, 2004, 2005b).

Thirteen major material expressions of cultural heritage were identified during the surveys; some sites contain more than one kind of material expression, and therefore each site may be represented in more than one of the following:

- 140 middens, dominated by shells, dugong and/or turtle bones;
- 6 clam shell sites;
- 18 *Syrinx aruanus* shell sites;
- 4 dugong bone arrangements;
- 6 fireplaces;
- 3 stone and coral arrangements;
- 1 pearl shell arrangement;
- 1 arrangement of clay pipe, broken glass and metal fragments;
- 3 quartz quarries;
- 2 rock holes;
- 3 wells;
- 2 earth mounds;
- 2 inter-tidal zone dugong-shaped rocks (recorded as one site).

The vast majority of Koey Ngurtai's 166 sites were located on the central sandy flats, within the grassland,

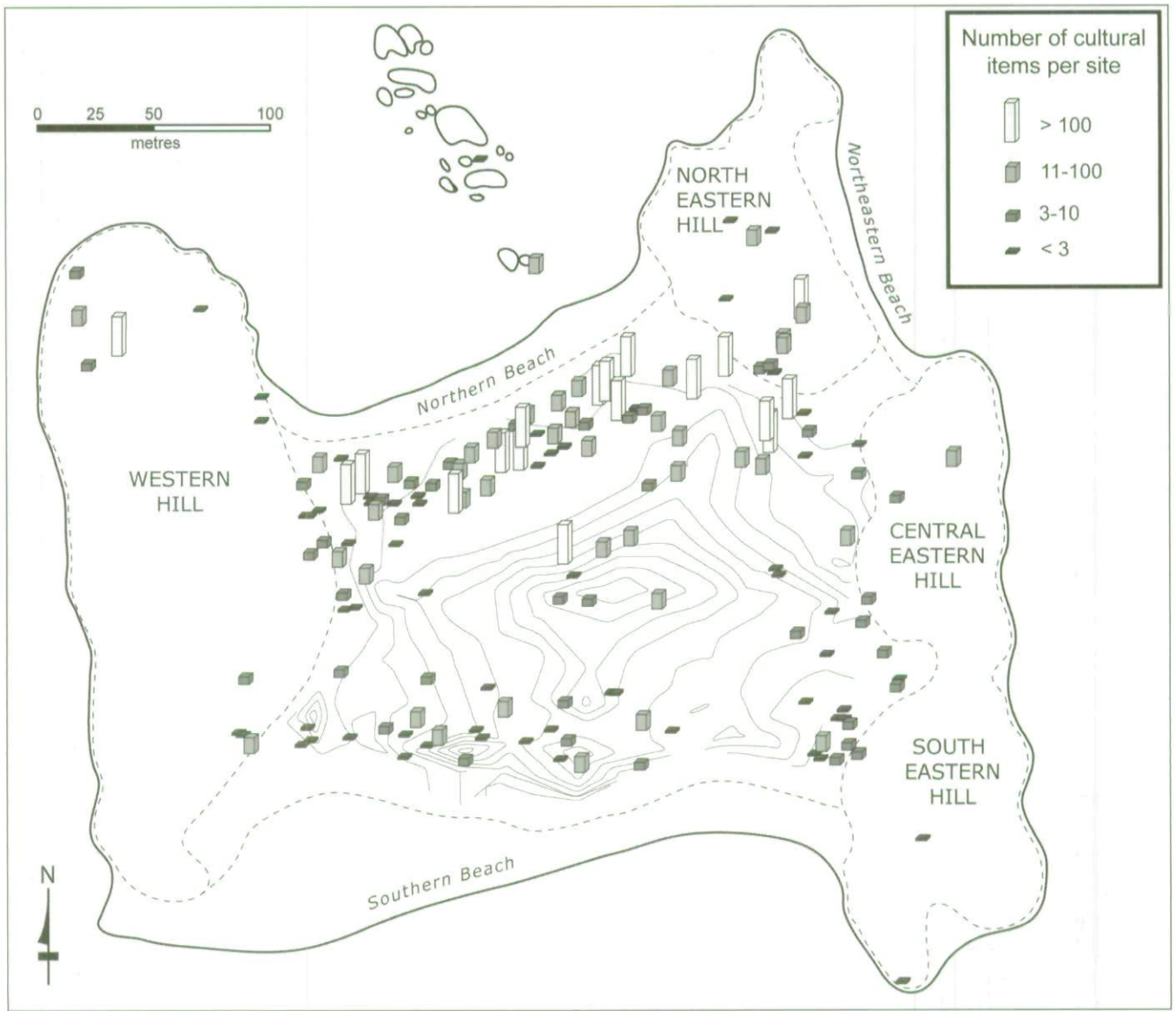


Figure 5. Number of cultural items per site, Koey Ngurtai.

although this is not in itself an accurate indication of the cultural significance of the islet's various landscape features or vegetation communities. Rather, Koey Ngurtai and its intertidal zone together constitute a varied but co-ordinated place of considerable cultural importance which, as we shall see below, in time became a centre of ritual performance. The cultural sites identified by the archaeological surveys revealed rich surface components of this ritual landscape.

It was also clear from these surveys that much of the islet's material cultural heritage remained buried and hidden below the present-day ground surface. While it thus became apparent from the spread of different kinds of ritual sites of types known from ethnography that the islet was itself a ritual realm, considerable subsurface sampling would be required to thoroughly understand this ritual history in relation to the islet's longer-term history of occupation and use. An extensive excavation program was thus devised to determine the temporal and spatial configuration of Koey Ngurtai's archaeological record, with the protection of the ritual domain foremost in mind.

Excavation methodology

In order to obtain a detailed understanding of this archaeological history and of the spatial patterning of subsurface sites, three complementary excavation strategies were adopted to obtain data on stratified deposits from a broad range of site types as well as to systematically sample across the island as a whole (Figure 6):

1. Thirty of the sites recorded during the cultural heritage surveys were partly excavated. These consist of three localised and spatially well-delimited parts of an arrangement of clay pipe, broken glass and metal fragments; 16 middens; four *Syrinx aruanus* shell sites; four dugong bone arrangements; one pearl shell arrangement; and two stone and coral arrangements;
2. Five squares were strategically excavated at locations of proposed development infrastructure (four proposed equipment storage compound footings; location of a radar tower mast);

3. An imaginary 50 x 50 m alpha-numeric grid was laid over the entire sandy flats of the islet, and 50 x 50 cm squares were excavated at 50 m intervals across this imaginary net. Sixteen excavations were undertaken in this way (one of these was made to correspond exactly with the excavation of site KN52, the location of which was planned to correspond with the NE corner of the imaginary 50 m grid).

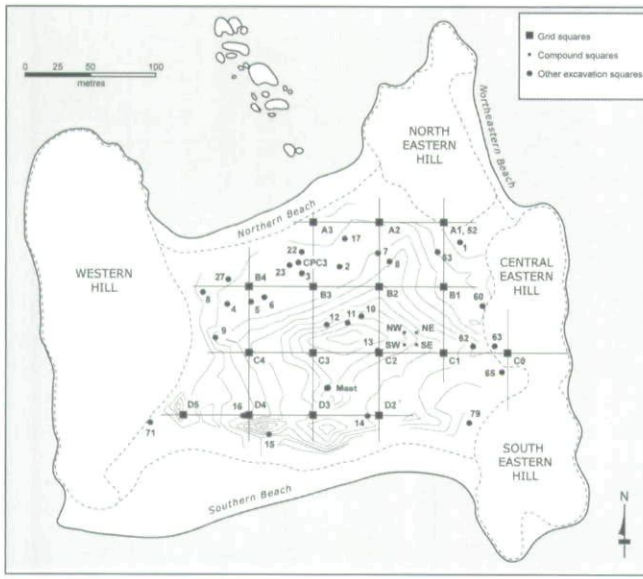


Figure 6. Location of archaeological excavations, Koey Ngurtai.

In total, exactly 50 squares were archaeologically excavated across the islet. Forty-seven of these excavations were 50 x 50 cm in size; two were 50 x 30 cm (the stone and coral arrangement sites, so as not to disturb too much of the stone/coral features); and one square strategically positioned at the location of the proposed radar mast was 1 x 1 m. All excavations except for earth mound site KN9 proceeded either to bedrock or to levels below the lowermost cultural materials. Excavations were undertaken typically in 2–4 cm thick arbitrary Excavation Units within Stratigraphic Units.

Results

In Table 1 we present the 26 radiocarbon determinations obtained from the excavations. We cannot present in this paper the 50 individual excavation reports; these will be detailed in a forthcoming monograph (David *et al.*, in preparation; see also David and McNiven, 2005b). Here we summarise Koey Ngurtai's overall archaeological trends for what they tell us about the history of ritual engagement on the islet. We do so by asking four major questions:

Beginnings: When did people first come to Koey Ngurtai and what were the environmental impacts?

Elaboration: When did Koey Ngurtai first begin to be used as a ritual islet?

Transformation: What were the impacts of Western colonialism on islet use?

Table 1. Radiocarbon dates and calibrated ages from Koey Ngurtai (shell calibrations using Calib 5.0.2; ΔR -32 \pm 20, Sean Ulm, personal communication 2007; charcoal samples using atmospheric Southern Hemisphere option).

Site	XU	Site type at surface	Type of ^{14}C date	Depth below ground (cm)	Radiocarbon laboratory #	Material dated	$\delta^{13}\text{C}$ ‰	% Modern	^{14}C (years BP)	Calibrated age BP (68.3% probability)	Calibrated age BP (95.4% probability)	Mid-point of highest 1 sigma probability range (cal BP)
KN27	3	midden	conventional	3.0-6.8	Wk-15750	<i>Nerita undata</i>	4.5 \pm 0.2	94.0 \pm 0.5	498 \pm 40	108-247 (1.000)	0-27 (0.053) 46-265 (0.947)	178
KN15	1	midden	conventional	0-1.3	Wk-14428	<i>Pinctada</i> sp.	1.7 \pm 0.2	93.5 \pm 0.4	538 \pm 36	145-168 (0.198) 174-263 (0.802)	72-294 (1.000)	219
KN71	3	midden	conventional	2.1-4.6	Wk-15754	<i>Chama limbula</i>	2.6 \pm 0.2	93.1 \pm 0.4	571 \pm 35	148-162 (0.094) 192-213 (0.121) 222-295 (0.785)	115-335 (0.993) 343-354 (0.007)	259
KN79	5	midden	conventional	9.4-14.1	Wk-15755	<i>Nerita undata</i>	4.1 \pm 0.2	93.0 \pm 0.4	586 \pm 37	149-161 (0.054) 197-208 (0.044) 225-312 (0.902)	131-378 (1.000)	269
KN65		stone and coral arrangement	conventional		Wk-14944	<i>Tridacna gigas</i>	2.3 \pm 0.2	92.9 \pm 0.4	589 \pm 34	150-158 (0.036) 227-316 (0.964)	136-373 (1.000)	272
KN17	1	Dugong bone arrangement	conventional	0-2.7	Wk-15545	Dugong bone	-7.4 \pm 0.2	92.5 \pm 0.4	623 \pm 31	259-334 (0.932) 343-353 (0.068)	238-417 (1.000)	297
KN1	6	<i>Syrinx aruanus</i> shell	conventional	15.6-19.5	Wk-14576	<i>Paphies striata</i>	1.8 \pm 0.2	92.6 \pm 1.1	615 \pm 95	148-162 (0.049) 192-213 (0.064) 222-418 (0.887)	0-7 (0.005) 58-474 (0.955)	320
KN22	6	Clay Pipe Circle	conventional	13.2-16.6	Wk-15749	Dugong bone	-9.3 \pm 0.2	92.1 \pm 0.5	665 \pm 43	292-396 (1.000)	262-447 (1.000)	344

Continued overleaf

Table 1 continued

Site	XU	Site type at surface	Type of ¹⁴ C date	Depth below ground (cm)	Radiocarbon laboratory #	Material dated	δ ¹³ C ‰	% Modern	¹⁴ C (years BP)	Calibrated age BP (68.3% probability)	Calibrated age BP (95.4% probability)	Mid-point of highest 1 sigma probability range (cal BP)
KN18		Dugong bone arrangement	conventional		Wk-14925	Dugong bone	-5.8±0.2	91.0±0.4	758±33	399-483 (1.000)	323-496 (1.000)	441
KN17	9	Dugong bone arrangement	conventional	28.7-34.8	Wk-14924	Dugong bone	-8.1±0.2	90.7±0.4	781±34	423-491 (1.000)	334-343 (0.012) 353-514 (0.988)	457
KN6	7	Dugong bone arrangement	conventional	11.4-13.5	Wk-15495	Dugong bone	-7.1±0.2	90.6±0.4	795±35	433-497 (1.000)	367-526 (1.000)	465
KN3	4	pearl shell arrangement	conventional	5.6-9.4	Wk-16431	<i>Chama limbula</i>	2.7±0.2	90.0±0.4	850±37	470-528 (1.000)	425-566 (0.993) 583-592 (0.007)	499
KN2	1	midden	conventional	0-3.7	Wk-14577	<i>Chama limbula</i>	2.7±0.2	89.8±0.4	863±37	477-536 (1.000)	445-599 (1.000)	507
KN4	2	midden	AMS	0.5-3.3	OZH038	<i>Paphies striata</i>	1.5	89.40±0.42	900±40	492-565 (0.956) 585-590 (0.044)	475-623 (1.000)	529
KN52	7	<i>Syrinx aruanus</i> shell	conventional	14.0-18.5	Wk-15751	<i>Nerita undata</i>	4.2±0.2	89.3±0.4	907±35	498-566 (0.934) 583-592 (0.066)	484-622 (1.000)	532
KN1	1	<i>Syrinx aruanus</i> shell	conventional	0-1.3	Wk-14575	<i>Syrinx aruanus</i>	4.0±0.2	88.8±0.4	953±37	536-614 (1.000)	508-642 (1.000)	575
KN52	14a	<i>Syrinx aruanus</i> shell	conventional	45.9-52.2	Wk-15752	<i>Nerita undata</i>	4.3±0.2	88.8±0.4	957±35	540-615 (1.000)	511-643 (1.000)	578
KN53	5	Dugong bone arrangement	AMS	6.6-9.0	Wk-15496	Dugong bone	-12.3±0.2	88.2±0.4	1011±37	565-585 (0.200) 590-651 (0.800)	533-676 (1.000)	621
KN2	4	midden	conventional	11.8-18.3	Wk-14403	<i>Paphies striata</i>	2.2±0.2	87.4±0.6	1079±56	622-724 (1.000)	549-778 (1.000)	673
Grid Square A2	11a	-	conventional	42.3-49.3	Wk-15009	charcoal	-26.8±0.2	88.8±0.4	951±40	765-820 (0.529) 831-841 (0.063) 864-904 (0.408)	739-913 (1.000)	793
KN5	5	<i>Syrinx aruanus</i> shell	conventional	22.1-32.0	Wk-14923	charcoal	-25.4±0.2	87.6±0.6	1059±51	818-834 (0.105) 838-865 (0.216) 904-964 (0.679)	795-989 (0.960) 994-1000 (0.006) 1031-1051 (0.034)	934
KN71	5	midden	AMS	8.5-13.2	OZH467	charcoal	-25.7	86.81±0.43	1140±40	957-1010 (0.673) 1027-1054 (0.327)	926-1068 (1.000)	984
KN9	30	earth mound + midden	AMS	67.8-69.5	Wk-15542	Dugong bone	-4.7±0.2	83.8±0.4	1422±39	945-1048 (1.000)	909-1116 (1.000)	997
KN13	5	midden	AMS	11.0-15.4	OZH066	charcoal	-23.6	85.29±0.40	1280±40	1077-1180 (0.843) 1209-1229 (0.157)	1059-1268 (1.000)	1129
KN60	2	midden	conventional	0.2-2.8	Wk-15753	<i>Melo amphora</i>	2.1±0.2	77.4±0.5	2060±51	1589-1742 (1.000)	1530-1810 (1.000)	1666
KN10	4	midden	AMS	7.4-11.6	OZH039	charcoal	-24.8	79.48±0.38	1850±40	1633-1650 (0.121) 1693-1744 (0.444) 1750-1813 (0.435)	1573-1581 (0.008) 1602-1826 (0.983) 1851-1860 (0.009)	1719

Beginnings

Across the islet, sediments can be divided into two distinctive stratigraphic units, a culturally sterile basal calcareous sand overlaid by an upper, dark sand usually containing numerous macro-charcoal fragments at its base and increasing quantities of stone artefacts, animal bones and cultural shell towards the surface. The interface between these two layers is typically 5–15 cm thick (David *et al.*, 2008). It is within this uppermost layer and its interface with the underlying sand that the first signs of people appear.

The first archaeological evidence of people on the islet is not so much from camp sites as from fires. We have obtained a total of 26 reliable radiocarbon ages relating to cultural activity at Koey Ngurtai (bone carbon and nitrogen

chemistry indicate that three other ‘modern’ radiocarbon determinations have been contaminated; those results are not presented here). Of these, four of the six oldest ages – those radiocarbon determinations older than 800 cal BP – relate to firing of the landscape rather than to camping activity. Such landscape firing began sometime between 1602–1826 cal BP (highest probability of 2 sigma range) and was subsequently repeated as evidenced by radiocarbon determinations from sites KN10, KN13, KN71 and KN5, representing the earliest evidence for human presence across the islet. The other two of these oldest ages come from a Baler shell from the small shell midden site KN60, located at the base of the islet’s northeastern hill, and a dugong bone from near the base of earth mound site KN9 near the

northern foot of the islet's western hill. The KN60 midden dates to sometime between 1530–1810 cal BP, while the KN9 midden begins 909–1116 cal BP. At those times, the islet's northern and northeastern beaches were some 30–50 m inland of their present locations (as indicated by the location on dry land of stratified sediments previously from the submarine environment, such as those containing significant amounts of coral detritus, foraminifera and coarse shelly sands); KN60 and KN9 were then beachside locations. The implication is that initially people came to Koey Ngurtai and camped for short periods of time on the hills' land-side pediments towards the northern end of the islet, while at the same time burning the woody vegetation of its central flats (see below). A buried hearth from Grid Square A2 is dated to 739–913 cal BP; at that time the Grid Square A2 hearth was constructed on the foreshore of Koey Ngurtai's northeastern beach, as indicated by the shelly sand, foraminifera, coral detritus and pumice-rich sediments surrounding the hearth. Together, the temporal and spatial spread of calibrated radiocarbon ages indicate that the earliest occupation on the islet took place near its northern and northeastern beaches as small and sporadic encampments (at KN60, KN9, Grid Square A2) between c.1530–1810 and 739–913 cal BP.

Subsequently the frequency and intensity (duration and/or size) of camping activity increased significantly after 549–778 cal BP across the length and breadth of the islet, including the first signs of shell and dugong/turtle bone food remains on the central sandy flats. Eleven dated sites are known to contain food refuse after this time: KN1, KN2, KN3, KN4, KN15, KN22, KN27, KN52, KN71, KN79 (see Table 2). These radiocarbon-dated sites are spread across the sandy flats, and indicate an opening up of the islet for camping activity after around 700 cal BP, continuing into

the 19th century (Figure 7). Undoubtedly the real number of camping sites dating to this period would be much higher were more radiocarbon determinations obtained across the islet, as indicated by peak densities of cultural materials in the uppermost Excavation Units of the dark cultural layer in the 50 excavations.

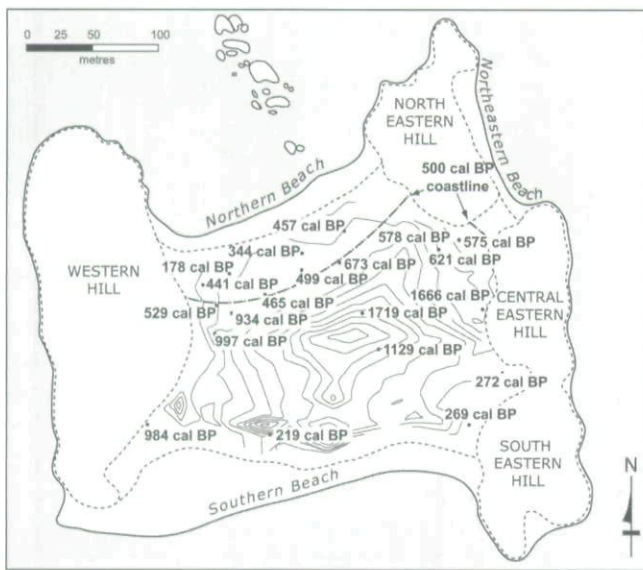


Figure 7. Map of Koey Ngurtai showing locations of earliest radiocarbon dates and estimated northern coastline at 500 cal BP (see Table 1 and text for details of radiocarbon determinations; coastline location based on stratified beach deposits and radiocarbon ages).

Excavation square	Shellfish	Dugong and/or turtle	Shark	Scale-fish and/or stingray	Crustacea	Echinoderm and/or Sepidae
KN1	x	x		x	x	x
KN2	x	x		x	x	x
KN3	x	x		x	x	
KN4	x	x		x	x	
KN5	x	x		x	x	x
KN6	x	x	x	x	x	
KN7	x	x	x	x	x	x
KN8	x	x		x	x	x
KN9	x	x	x	x	x	x
KN10	x	x		x	x	
KN11	x	x		x	x	
KN12	x	x		x	x	
KN13	x	x		x		
KN14	x			x		
KN15	x					
KN16	x			x	x	
KN17	x	x		x	x	
KN18	x	x		x	x	
KN22	x	x		x	x	x
KN23	x	x	x	x	x	
KN27	x	x		x	x	
KN52	x	x	x	x	x	x
KN53	x	x	x	x	x	x
KN60	x	x		x		
KN62	x	x		x	x	x
KN63	x	x		x	x	
KN65	x	x		x	x	x
KN71	x	x	x	x	x	x
KN79	x			x	x	
Mast	x	x		x	x	
Clay Pipe						
Circle Square 3	x	x	x	x	x	
Compound NE	x	x		x		
Compound NW		x		x		x
Compound SE	x	x		x		
Compound SW	x	x		x	x	
Grid Square A2	x	x	x	x	x	x
Grid Square A3	x	x		x	x	x
Grid Square B1	x	x		x	x	
Grid Square B2	x	x		x		
Grid Square B3	x	x		x	x	
Grid Square B4	x	x		x	x	
Grid Square C0	x	x		x	x	x
Grid Square C1	x	x		x	x	x
Grid Square C2	x	x		x		
Grid Square C3		x		x		
Grid Square C4	x	x		x	x	
Grid Square D2	x				x	
Grid Square D3						
Grid Square D4		x			x	
Grid Square D5	x			x	x	x

Table 2. Excavation squares containing marine food remains, by taxa (see David *et al.*, in preparation for quantifications).

The earliest archaeological evidence at Koei Ngurtai thus indicates burning of the woody vegetation on the central sandy flats and short-term camping on or immediately adjacent to the northern and northeastern beach-lines, which were then located 30–50 m inland of their present locations. This was followed by significant increases in camping activity after c.700 cal BP continuing into the late 19th century.

Virtually all the food remains at Koei Ngurtai came from the sea: shellfish, scale-fish, crustacea (crab and crayfish), dugong and turtle (Table 2). Almost all of the food resources evident from the excavations were obtainable from Koei Ngurtai's immediate surroundings, with the exception of the rare mangrove shells (*Terebralia sulcata*, *Polymesoda erosa*, and possibly *Anadara antiquata*) that were likely brought in from the nearby home islands of Badu or Mabuyag where mangroves are abundant. Dugongs can be caught locally a short distance offshore to the north at the reef Kuiku Pad, and more famously at Orman Reef north of Mabuyag. The only exception to this marine focus are the rare bird bones from KN9, KN17, KN23 and bird eggshell from KN9, and in particular at the ritual site of KN17. Only 19.0 g of bird bone have been found in the 50 excavations (16.9 g of these come from the ritual site KN17), indicating that bird hunting and consumption was not commonly undertaken on the islet. Given the ethnographic significance of Torres Strait pigeon (*Ducula bicolor*) in Western Torres Strait diets (e.g. Haddon, 1912: 138; McNiven and Hitchcock, 2004), and the presence of large flocks of this migratory species across the Strait during the months of August to October and January to April, the almost complete absence of archaeological bird bones on the islet suggests either an absence of people at those times of the year, or cultural constraints on bird hunting while on the islet. We can discount a taphonomic argument (preferential destruction of bird bones through poor preservation) as being responsible for the paucity of bird bones because of the

good state of preservation of the shell and bone (bird as well as other taxa) in all the excavations, and the alkaline nature of the sediments. Given a lack of ethnographically documented taboos on bird hunting or consumption, the paucity of bird bones may signal an absence of people on the islet during periods of high wind (August–October) and peak rainfall (December–April), corresponding well with the Torres Strait pigeon seasons.

Environmental manipulations

At Koei Ngurtai, despite an absence of evidence for permanent islet occupation, the coming of people was associated with new or increased regimes of environmental manipulation. Three lines of evidence indicate such manipulations, in particular on the islet's central sandy flats: the vertical distribution of macro-charcoal as evidence of past burning regimes and the transformation of vegetation communities; vertical trends in sediment particles attributed to alluvial slope-wash originating from the islet's fringing hills; and geomorphological evidence for horizontal expansion of the islet's terrestrial flats and northward migration of its fringing beaches. These manipulations prefigured Koei Ngurtai's transformation into a ritual islet, setting the scene for its emergence as a ritual islet in an engaged and dynamic land-and-seascape. On-going anthropogenic environmental modifications have been a feature of Torres Strait islands and seascapes for at least 4000 years (McNiven, 2008).

The archaeological excavations undertaken on the grasslands of the central sandy flats repeatedly revealed measurably higher frequencies of charcoal immediately below or contemporaneous with the earliest evidence of camping activity and decreasing towards the surface (e.g. KN1, KN5, KN6, KN22, KN23, KN52, KN13, KN65, KN71, Clay Pipe Circle Square 3, Compound SE, Compound SW, Grid Square B1, Grid Square A2). Four

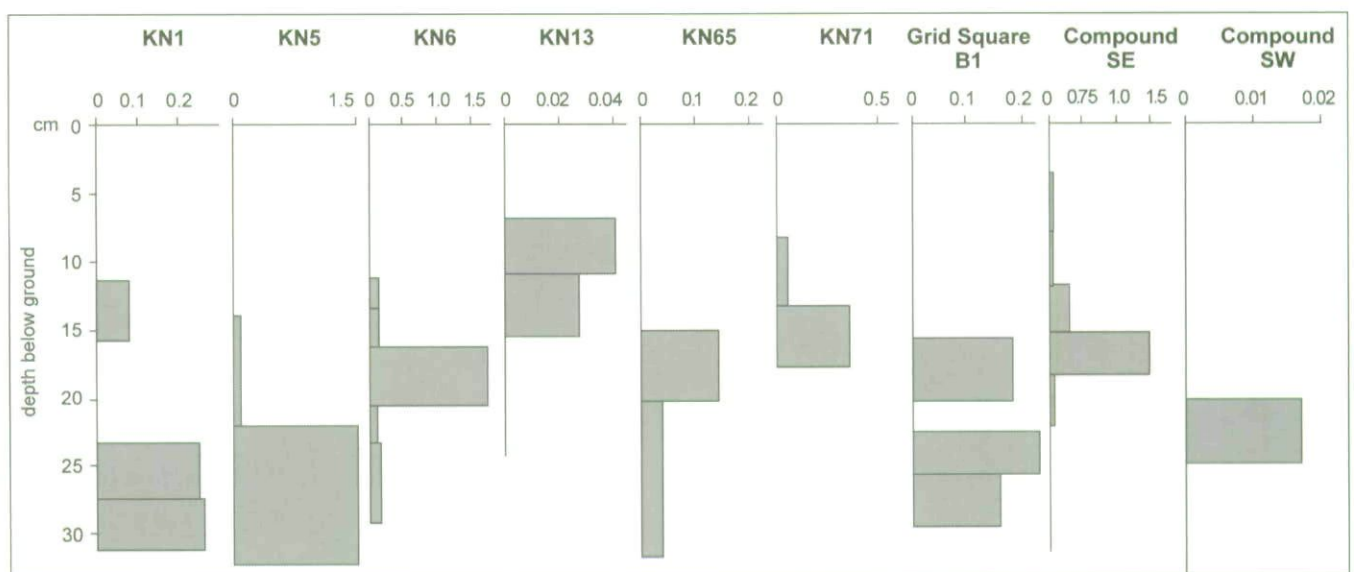


Figure 8. Vertical distribution of macro-charcoal in selected excavations at Koei Ngurtai, showing paucity of charcoal in upper levels. X-axis is in grams of charcoal/10 litres of excavated sediment.

radiocarbon dates have been obtained on charcoal preceding intensive midden activity across the central grassy flats, revealing calibrated radiocarbon ages of *c.*1800 to 800 cal BP and indicating that people were occasionally burning the vine forest/thickets for a period of some 1100 years before frequently using the central sandy flats for camping around 700 cal BP.

Scarcity of charcoal in the upper levels of the excavations at KN1, KN5, KN6, KN9, KN10, KN13, KN14, KN15, KN16, KN18, KN52, KN53, KN63, KN65, KN71, KN79, Mast Square, Compound NE, NW, SE and SW, and Grid Squares B1, B4, C1, C2, C3, D2 and D4 (see Figure 8) – levels associated with the upper, cultural layer – testifies to the opening up of the islet's vine forest/thicket and establishment of grasslands across the sandy flats sometime between *c.*250 (KN71) and 800–1000 cal BP (KN5, KN71); further radiocarbon determinations are required to better refine this chronology. This period corresponds to the period of intensive camping activity beginning around 700 cal BP (see above), including the onset of intensive ritual practices around 400–500 cal BP (see below). It indicates that during this period of intensive islet use landscape firing was frequent enough to maintain the grasslands.

Once its central core was converted to grassland free of vine thickets, the islet became regularly used for camping or ritual activity (see above). However, as the early radiocarbon ages and closely matching charcoal and stone artefact deposition curves from KN10 near the centre of the islet indicate, when containing vine forest/thickets Koey Ngurtai's central flats were probably nevertheless reasonably accessible from the onset, given that in a few locations low quantities of cultural materials are closely associated with the earliest charcoal. In time, this extended period of burning and landscape clearing reconfigured Koey Ngurtai's environmental assets as a setting for cultural activity and set the scene for its establishment as a specialised ritual domain.

When did Koey Ngurtai first begin to be used as a ritual islet?

Koey Ngurtai contains six different kinds of archaeologically identifiable ritual sites: *Syrinx aruanus* locations; clam shell sites; stone and coral arrangements; dugong bone arrangements; a pearl shell arrangement; the Clay Pipe Circle. As this rich ritual presence testifies, ceremonial events were an important activity in the past. But has this always been so?

First, as discussed above, when people first came to Koey Ngurtai from *c.*1800 to 800 cal BP, they tended not to move far from the shoreline; we have not found any evidence of intensive camping activity on the sandy flats, or on the hills, at that time. The ritual sites that we see today were simply not there during these earliest times. We interpret these various lines of evidence to mean that at first people did not hold such rituals on the islet.

However, around the time that the vine forest/thickets on

the sandy flats changed to open grassland and inland camping evidence increased, we also begin to find the first archaeological evidence for ritual activity. Eight ritual sites have been radiocarbon-dated:

- *Syrinx aruanus* location: KN52: less than 482–622 cal BP.
- clam shell associated with stone and coral arrangements: KN65: commences 126–373 cal BP
- dugong bone arrangements:
 - bone mounds: KN6, KN17, KN18: commences 323–526 cal BP.
 - arrangement of jaw bones: KN53: commences 533–676 cal BP.
- a pearl shell arrangement: KN3: *c.*70 cal BP.
- the Clay Pipe Circle: *c.*70 cal BP.

The earliest evidence of ritual activity comes in the form of KN53, an arrangement of dugong jaw bones (Figure 9), which begins at about the same time as the commencement of intensive camping activity sometime between *c.*550–700 cal BP. KN53 is one of the oldest known sites on the islet, after the beach-side sites of KN60, KN9, Grid Square A2 (see above) and the small camping site KN2 (the latter beginning 622–724 cal BP). KN2 and KN53 are the oldest known sites of the period of relatively intensive and repeated use of the islet, commencing *c.*550–700 cal BP. This means that from the moment that Koey Ngurtai first began to be used intensively, ritual activities were being performed. We take this to mean that after *c.*550–700 cal BP, people came to the islet for ritual purposes. During such rituals, people camped on the islet, probably for short periods at a time. The earliest known ritual site (KN53), and



Figure 9. Dugong bone arrangement site KN53, excavation in progress (after Excavation Unit 4, excavation square 50 x 50cm).

subsequently among the most visually impressive ritual installations (KN6, KN17, KN18), were the dugong bone arrangements along the northern shoreline. This, coupled with the presence of two naturally shaped dugong boulders immediately off the northern shore, suggests that Koey Ngurtai early-on emerged as a sacred land-and-seascape focused on dugongs, in line with McNiven and Feldman's (2003) contention that dugong bone mounds in Western Torres Strait concern hunting magic.

KN53, the earliest of the ritual sites, is a different kind of site to any other found on the islet. While it is a concentration of dugong bones, it is unlike KN6, KN17 and KN18, the other dugong bone ritual sites (Figure 10). These latter sites each consist of an outer ring of dugong ribs, with a concentration of dugong skull bones (especially ear ossicles) at their centres (see Skelly *et al.*, in preparation for a detailed presentation of the KN6, KN17 and KN18 bone assemblages). KN53 is not like these in that it consists of a large arrangement of dugong jaw bones. The KN6, KN17 and KN18 dugong bone mounds each began sometime between 323 and 526 cal BP, either shortly but perhaps as much as 300–350 years after the KN53 jaw bone arrangement. The implication is a shift in the structure, contents and, by implication, performative (ritual) conventions of dugong ritual sites sometime between *c.*350 and 700 cal BP. This change involved a move away from dugong jaw bones to a focus on ribs, rear skull bones, and in particular ear bones, the latter relating to the acute auditory senses of dugongs (cf. McNiven and Feldman, 2003).

After 323–526 cal BP ritual activity intensified, as indicated by the establishment of new ritual forms including KN6, KN17 and KN18 (dugong bone mounds), KN52 (*Syrinx aruanus* shell location, Figure 11), KN65 (stone and coral arrangement with clam shell, Figure 12) and, most recently, in the 1870s or 1880s AD a pearl shell arrangement (KN3) and arrangement of clay pipes, glass and metal fragments (the Clay Pipe Circle) focused on and materially linking KN3 with KN17 (Figures 13–14). Other ritual sites of similar forms also exist on the islet, but these have not yet been radiocarbon-dated.

There is thus clear and secure evidence that Koey Ngurtai had become a ritual centre involving dugong sites and ritual events from sometime between *c.*550–700 cal BP until the establishment of European bases in the Strait in the 1870s or 1880s. During this time, the rate of construction of ritual sites and islet use, and with this ritual engagement, intensified until the consolidation of commercial pearling and missionary activity across the region. The dating of the clay pipes, glass and metal fragments (Figure 14) indicate that Koey Ngurtai entirely ceased to be used as a formal ritual centre shortly after the arrival of missionaries on the nearby islands of Mabuyag, Badu and Mua in the 1870s and 1880s (see below).

It is difficult to know precisely the location of the villages from which visitors to Koey Ngurtai came. There is no evidence that there ever was a village on Koey Ngurtai itself; the archaeological evidence is too sparse before *c.*700 cal BP, and too specialised around ritual sites thereafter. We

know from independent archaeological evidence from the nearby larger islands of Mabuyag, Badu and Mua that residential bases were permanent or semi-permanent across the region (see David and Ash, 2008 for details of what villages looked like in Torres Strait during ethnographic times). Given Koey Ngurtai's location mid-way between Mabuyag and Badu, and that since the mid 1800s at least the people of Badu and Mabuyag recognised a common ancestry and shared the major *kod* ritual site on the islet of Pulu near Mabuyag (McNiven *et al.*, 2007 for details), we speculate that the peoples of Koey Ngurtai came from at least one, and probably both, of these two neighbouring islands. We may reasonably discount Mua as the principle users of the islet during the last 200 or 300 years at least because during ethnographic times the Badulgal and Goemulgal (from Badu and Mabuyag respectively) were largely at war with the Mualgal and Italgai of Mua. Conversely, oral traditions speak of long-held alliances between the Badulgal and Goemulgal, with shared totemic associations and ritual performances (e.g. Haddon, 1935; see McNiven *et al.*, in preparation), making it likely that the people of Koey Ngurtai came from these latter islands and shared a common ritual domain.

We also now know that major cultural transformations were taking place in Western Torres Strait during the last millennium, including Badu and Mabuyag (cf. David *et al.*, 2005; McNiven, 2006). Archaeological excavations indicate that people lived at Kotinab along the northeastern coast of Badu (10.3 km southeast of Koey Ngurtai) sometime between 1613 and 1902 cal BP, but seem to have reoccupied that location only sometime after 147 cal BP into the ethnographic period (calibrations are highest probabilities at 2 sigma) (David, unpublished data). Short-lived villages also occurred at Kurtumaiwak on the northeastern corner of Badu, 8.2 km southeast of Koey Ngurtai, sometime between 507 and 672 cal BP, and again sometime between approximately 300 and 500 cal BP (David and Weisler, 2006). In the northwestern corner of Badu was the bay-side village at Delal Bibi, where, 5.4 km away and closest to Koey Ngurtai, a small community existed by *c.*320–525 cal BP into the ethnographic period of the 1870s AD (Chester, 1871; David, unpublished data). These results suggest a proliferation of village locations on Badu during the last 600–700 years or so, with a second pulse of village establishment sometime during the last 500 to 300 years.

The only published accounts of villages on Mabuyag are at Goemu on the southeast side of the island and 9.1 km northeast of Koey Ngurtai, and Dabangai on the north side and 11.6 km north of the islet. Goemu village was established *c.*500 cal BP (Ghaleb, 1998; McNiven and Wright, 2008), while Dabangai was occupied from at least *c.*400 cal BP (McNiven and Bedingfield, 2008). The antiquity of these and other villages on Mabuyag is consistent with the situation on Badu and is the subject of ongoing research by Duncan Wright (in preparation).

The radiocarbon-dated villages on nearby Badu and Mabuyag at Kurtumaiwak, Delal Bibi, Kotinab, Dabangai and Goemu indicate village occupation on these residential

islands contemporaneously with ritual islet use of Koey Ngurtai, although the available radiocarbon determinations indicate contemporaneity at the time of commencement of Koey Ngurtai's ritual sites (550–700 cal BP) only at Kurturniaiwak and Goemu (forthcoming radiocarbon determinations should further elaborate this pattern). It is of

interest to note that at the same time that Goemu began to be used intensively, Koey Ngurtai also began to be used as a ritual islet, and subsequently (around 400 cal BP) Pulu emerged as the principal ritual centre for Mabuyag (as indicated by radiocarbon dates and oral traditions – McNiven *et al.*, 2007, 2008). Koey Ngurtai's precise chronological and functional relationship with Pulu and Goemu await further investigation.

The ritual structures of Koey Ngurtai include many site types and arrangements akin to those of Pulu where ethnographic details were recorded by Haddon in 1898 (Haddon, 1904, 1935). On Badu, Delal Bibi and Kurturniaiwak are closest to Koey Ngurtai. During the ethnographic period when these villages were occupied, the peoples of Badu and Mabuyag were allied in matters of kinship, ritual performance and warfare. That ritual conventions – including site types and spatial patternings – were comparable between Pulu and Koey Ngurtai is thus not surprising given the sharing of ritual performances between Badulgal and Goemulgal during ethnographic times at least, and the positioning of Koey Ngurtai midway between Badu and Mabuyag may indeed be more than coincidental, signalling mutual ritual participation and heightened ritual negotiations between the two island communities after 323–526 cal BP when Koey Ngurtai became a rich ritual landscape focused on dugong bone mounds. This latter period of intensive ritual activity is also precisely the time when Pulu itself became a ritual islet (*cf.* McNiven *et al.*,



Figure 10. Dugong bone arrangement site KN17, excavation in progress (grass cover surrounding site cut prior to commencement of excavation). The naturally-shaped dugong boulders amongst the boulders in inter-tidal zone in background.



Figure 12. Stone and coral arrangement site KN65, mapping in progress after completion of excavation (excavation square still open, against top-left hand side of linear stone and coral arrangement in mid-photo).

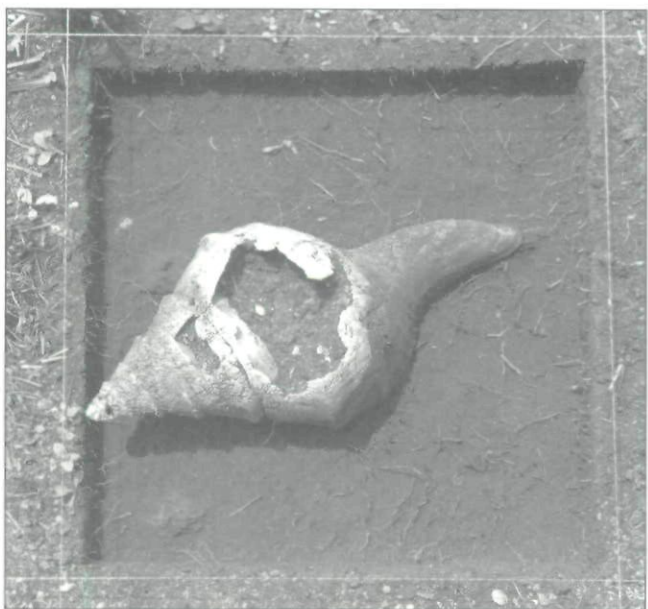


Figure 11. *Syrinx aruanus* site KN52, excavation in progress (after Excavation Unit 3; square is 50 x 50cm).



Figure 13. Pearl shell arrangement site KN3.

2008), indicating the development not simply of a single ritual place, but rather hinting at the possibility of a broader reconfiguration of the socio-religious and territorial system, including the establishment of and spatiality of access to specialised clan-based ritual centres in liminal spaces. We shall return to this point below.

What were the impacts of Western colonialism on Koe Ngurtai as a ritual landscape?

Along the northern end of Koe Ngurtai, 30 m from the beach and between dugong bone arrangements KN6 and KN17, lies a curious assortment of broken clay pipes, bottle

glass and metal fragments which we have called the 'Clay Pipe Circle' (Figure 14). These objects are all arranged within an area 86 m long by 22 m wide, and date to the 1870s or 1880s (see David *et al.*, in preparation for details). One of the clay pipe bowls is positioned inside dugong bone mound KN17 on the edge of the Clay Pipe Circle, surrounded by dugong bones (Figure 15). A few pieces of glass are also closely associated with this mound. No 19th century European objects were found elsewhere on the islet.

There is clear evidence in the form of the KN17 dugong bone mound – the most prominent ritual structure on the islet – that the area of the Clay Pipe Circle was used as a ritual space immediately prior to the 1870 and 1880s. At the time of its establishment, therefore, this part of Koe Ngurtai was already an active ritual domain – as indicated by the pre-existing dugong bone mounds – and the pairing of KN17 with the Clay Pipe Circle represents ongoing ritual engagements from pre-colonial times into the early colonial era. However, while the earlier ritual activities in this area revolved around the dugong mound sites KN6, KN17 and KN18, during the 1870s and/or 1880s, and in direct association with the Clay Pipe Circle, a new site type emerged: an arrangement of pearl shells yet unseen elsewhere in Torres Strait. This site's proximity to the Clay Pipe Circle and to KN17 suggests their functional and performative articulation. While we know from ethno-

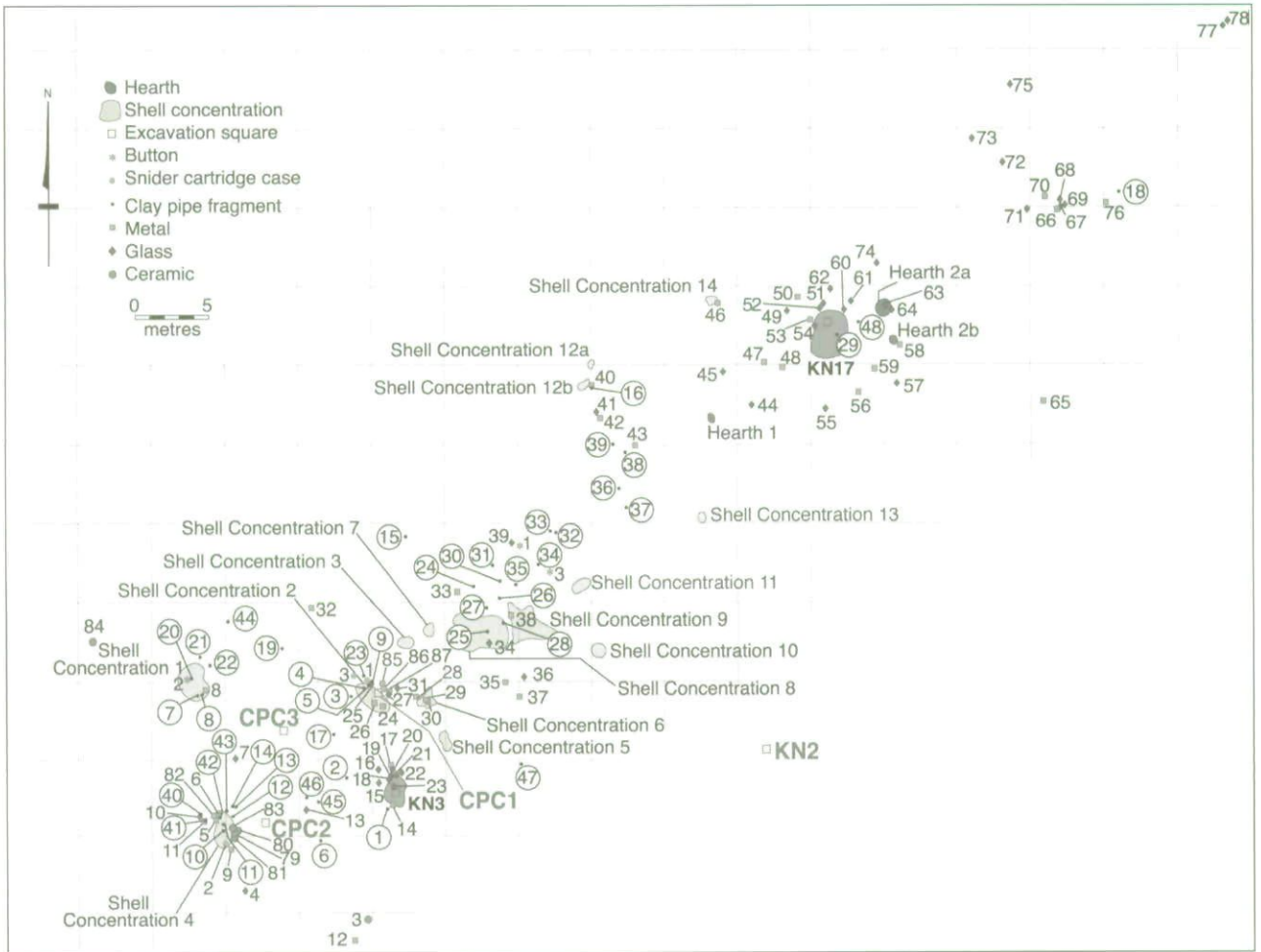


Figure 14. The Clay Pipe Circle, showing locations of KN3, KN17, excavation squares and cultural items.



Figure 15. Clay pipe bowl incorporated into the KN17 dugong bone mound.

graphic details and archaeological investigations that dugong bone mounds concerned dugong hunting magic within the broader context of the ritual orchestration of seascapes (McNiven and Feldman, 2003; see also Skelly, 2007), the juxtaposition of a pearl shell arrangement next to KN17 and their mutual association and material enchainment with the Clay Pipe Circle (including the clay pipe bowl in the uppermost levels of KN17) at this time suggests that the pearl shell arrangement functioned similarly to the KN17 dugong bone mound, albeit towards pearl shells rather than dugongs. That is, the clay pipe arrangement represents items left behind during the pearl shell 'increase magic' rituals, themselves an adaptation based upon the dugong ritual tradition. However, it is possible that the clay pipes and other European objects were themselves ritual objects; that is, a ritual performed with the intention of increasing access to the new and initially scarce European commodities. The archaeological evidence remains ambiguous on this latter point.

In 1869 commercial pearl shelling was initiated in Torres Strait with the discovery of rich pearl shell beds in eastern waters and subsequently throughout the Strait (Chester, 1870); pearl shelling stations were established at Panai in northeast Mabuyag by 1873, and on Badu in the 1880s (e.g. Ganter, 1994). Within two years after initial discovery, pearl shelling had become an active industry involving local Indigenous as well as South Sea pearl shellers across the Strait. The shell beds off Mabuyag and Badu were already being actively exploited by 1871, to be quickly exhausted soon after (Chester, 1871). Indeed, pearl shelling in the waters surrounding Koey Ngurtai preceded by a decade the establishment of sustained missionary activity on Badu in the 1880s. When the Thursday Island Police Magistrate Henry Chester (also a pearl shell trader) sailed past Delal

Bibi in northwest Badu in 1871, he reported that 'The narrow channel between Banks [Mua] and Mulgrave [Badu] has been fished with great success, and the small islands North and South of the latter have been scarcely less productive; but for some time past no new patches of pearl shell have been discovered' (Chester, 1871: no pages). That a ritual pearl shell site dating to those initial pearling years, and coincidentally also dating to the very beginnings of colonial administration in Torres Strait, should be found at Koey Ngurtai signals a rare ritual site of Indigenous response to changing socio-economic opportunities of the earliest sustained period of contact with Western socio-political forces and world market economies, and, we suggest by analogy and juxtapositioning with the KN17 dugong bone mound, employing pre-existing ritual forms to enhance access to pearl shells. However, pearl shelling across the Strait was soon followed by missionary influence in the 1870s at Mabuyag and 1880s at Badu, ensuring that Koey Ngurtai's status as a major ritual islet soon ceased.

Demise of the old rituals, new beginnings

The Clay Pipe Circle was constructed during this period of rapid change in Badulgal and Goemulgal history, at a time when the old ways still reigned but were about to change forever with the arrival of a new religious order. During the initial stages of extended European occupation of the tip of Cape York and Torres Strait – from 1864 when Somerset was established as a colonial outpost until the end of the 1870s (when the region was officially claimed as Queensland territory by colonial authorities) and early 1880s, Western attitudes towards the Strait remained cautious and fearful, as Islanders controlled the Strait and passing ships remained at the mercy of hostile groups, as made abundantly clear from colonial letters, ship's logs, missionary, police and other official reports, and government enquiries. By the early 1880s, however, we can perceive a major shift in Western attitudes towards Islanders and towards the Strait more generally. On 10th September 1882, for example, Captain Pennefather wrote to the Police Magistrate on Thursday Island during his sea voyage across Torres Strait: 'I cautioned the natives about future good behaviour' (Pennefather, 1882). Until then, talk had remained fearful and less paternalistic, and it was the European invaders who wrote of the greater need for themselves to be cautious. The colonial frontier was rapidly expanding, knowledge of the individual islands of Torres Strait was increasing, and trade and direct interactions between Torres Strait Islanders and Europeans was becoming more regular and intensive. Torres Strait Islanders themselves could by now generally access European goods, either through direct access on home islands from passing ships, pearl shelling stations, missionaries or government officials, or through direct or indirect trade via Thursday Island.

The 1870s and 1880s represent the first time that European objects became continuously available across

Torres Strait. Yet the central Western islands of Badu and Mabuyag were still well away from European shipping lanes – passing ships travelled initially via Somerset at the tip of Cape York Peninsula to the south, and after 1877 via Thursday Island. Western products were hard to come by across much of the Strait away from the eastern and southernmost islands until sustained European presence began to increase in the 1870s (see David and McNiven, 2005b; McNiven, 2001; Moore, 2000). Away from Thursday Island, the two most important forms that these sustained European occupations took were beche-de-mer and pearl shelling stations (often undertaken by the same commercial ventures), and Christian missions (whose activities began in Torres Strait in 1871). At Koey Ngurtai, the timing of the Clay Pipe Circle coincided precisely with the first sustained influx of European goods across the Strait, shortly after the establishment of a mission on Mabuyag in the early 1870s but preceding that of Badu in the 1880s. The Clay Pipe Circle of the 1870s/1880s signals a period of rapid change in Islander history, a key space of Indigenous response to Western intrusion and novel opportunities. The fact that there are no later European contact objects of historical significance on Koey Ngurtai indicates that, firstly, the earliest Western goods were quickly incorporated within pre-existing Islander ritual use of Koey Ngurtai; and, secondly, that soon afterwards, Koey Ngurtai ceased to function as a focus of ritual activity.

With the onset of missionary activity on Mabuyag in the 1870s and Badu in the 1880s, Koey Ngurtai soon ended its role as a ritual centre, and the sacred ceremonies ceased to be performed on this remote islet located some safe distance from the gaze of missionary stations on Badu and Mabuyag. As Ash and David (2008) have noted in relation to changing social practices with missionisation at the village of Totalai on the nearby island of Mua, these changes need to be understood in relation to a broad spectrum of articulating social transformations including both missionary activity and the onset of the pearl shelling industry. At Totalai the post-1870s era witnessed an increase in food remains associated with female foraging activities, and a major decrease in male-oriented activities (such as dugong hunting). Ash and David argue that after the 1870s into the 1900s the onset of the pearl shelling industry saw men spend significant periods of time away from their home villages on pearling luggers, and the establishment of missions on the islands resulted in significantly altered demographics, gendered economic strategies and spatial processes. Amongst these social transformations came an increasing centralisation of social and ritual activity, including a cessation of many of the sacred and more secret rituals previously performed, such as those associated with male initiation, headhunting, dugong hunting magic and death, as previously performed largely at the sacred *kod* sites. Furthermore, McNiven *et al.* (2007) argue that use of major *kod* sites such as on Pulu decreased as the territorial dimension of totemic clan social organisation became de-emphasised with colonial centralisation.

The KN17 dugong mound-pearl shell arrangement-Clay

Pipe Circle complex of the 1870s/1880s at Koey Ngurtai represents the final corporate ritual act on the islet. The juxtaposition of the KN3 pearl shell arrangement and Clay Pipe Circle with the already-functioning KN17 dugong bone mound indicates that sometime between 1872 and 1891 (as determined by the age of the clay pipe, glass and metal fragments), and most likely during the mid 1870s, a group of local Torres Strait Islanders already familiar with Koey Ngurtai's special ritual status applied what they already knew to be sacred hunting magic rituals to a newly established key resource, pearl shells – as had long previously been the realm of the dugong bone mounds – to make them easier to access. Here, we suggest, is a classic example of local Indigenous people adapting what were already tried and proven sacred rituals and religious beliefs to the new contexts created by colonialism (David *et al.* 1994; McNiven and Russell 2002). KN3 is the first ceremonial pearl shell site yet found in Torres Strait. We note in this regard that during the 19th century it was not pearls that people exploited from the pearl shells, but the shell itself for the manufacture of buttons and other items. And KN3 is not just a midden, for if pearlers ate the shellfish, why would they have left the shell behind in a neat arrangement, in line with the other ceremonial sites associated with hunting magic on the northern side of Koey Ngurtai (large *Pinctada* pearl shells are rare at Koey Ngurtai except for KN3). If Islanders had simply eaten the shellfish, we would expect the shells to have been taken for sale to the pearl shelling stations on Mabuyag or Badu given that we know that this site, and the shells themselves, are directly associated with European objects dated to sometime between 1872 and 1891 (see David *et al.*, in preparation).

Beckett (1987: 96) has discussed the deeply embedded religious views of Torres Strait Islanders, and in this context makes the comment that during the mid-Twentieth Century '... some still used magic in gardening and hunting. However, there was never any magic for pearling, though divers prayed before they went down, and wore phials of oil that had been blessed by a priest'. Such an apparent absence of pearl shelling rituals and pearl shelling ritual sites may not be all that surprising for the mid 1900s, yet it is not in line with the fact that Islanders did ritualise other but similar activities in the past. Ian McNiven has written of the ritualisation of land and seascapes in Torres Strait as a 'ritual orchestration' of life (e.g. McNiven and Feldman, 2003). McNiven's (2005) view is that ritual sites – such as the dugong bone mounds and now the pearl shell site at KN3 – can be appropriately construed as 'ritual engines' driving the world and the ability of Islanders to operate in this world. As ritual engines, the world periodically required cranking, and this was made possible through ritual activity. Until the discovery of the KN3 site, the absence of pearl shell ritual sites in the Strait was thus surprising given that pearl shelling has been so important across Torres Strait during the European contact period from the 1870s onwards. Yet our best chance of finding a pearl shell ritual site always promised to date to the very earliest period of pearl shelling, and to that period of time either prior to, or at the very onset

of, missionary activity, for it is then that missionary impacts had not yet set. It is well documented that, soon after the onset of missionary activity, many forms of Indigenous religious activity either ceased or were transformed across Torres Strait. KN3, and the KN17-KN3-Clay Pipe Circle ritual complex of European objects deposited by local Torres Strait Islanders during the 1870s and/or 1880s, is thus a unique site in Torres Strait that sheds new light on early Indigenous agency and response to the coming of colonial powers relating to world market forces and the Church, and the responses that these new relationships engendered.

Discussion

Koey Ngurtai may be a small island, but its richness of cultural expression belies its otherwise unassuming stature in the Western Torres Strait seascape. After more than a millennium of casual visitation and use, and clearing of its hinterland vine thickets through repeated landscape burning, the islet began to be used as a focus of ritual attention from 550–700 cal BP onwards. Sometime between 350 and 550 cal BP Koey Ngurtai witnessed a further transformation with the onset of intensive use and, with this, a proliferation of ritual installations dominated by dugong bone mounds positioned alongside the ‘naturally’ shaped dugong boulders of the islet’s northern inter-tidal flats. It is no coincidence, we suggest, that these zoomorphic boulders and dugong bone ritual sites are each situated in close proximity and clearly inter-visible on either side of Koey Ngurtai’s northern shoreline.

The development of Koey Ngurtai as a ritual islet shortly after 700 cal BP coincides nicely in timing with McNiven’s (2006: 10) observations for ‘broader scale cultural changes in settlement, demography, mobility, rituals, seascape construction, social alliances and exchange relationships and a major cultural transformation 600–800 years ago’ across Torres Strait. Similarly, the subsequent expansion and intensification of ritual activity at Koey Ngurtai sometime between 350 and 550 cal BP also supports David *et al.*’s (2005) and David and Mura Badulgal Committee’s (2006) contention that ritual engagements (with *Syrinx aruanus* shell arrangements on Badu and dugong bone mounds) began to significantly further transform across the Western Strait some 400 years ago.

Together, these major phases of activity at Koey Ngurtai, including the islet’s late development as a ritual centre, signal unfolding environmental and socio-cosmological engagements in this part of Torres Strait, beginning with initial casual beach-side access and sporadic hinterland forays involving landscape burning that eventually led to an opening up of the islet’s central sandy flats. Over a period of >1000 years following initial use, Koey Ngurtai continued to be sporadically accessed until around 550–700 cal BP when it began to be used as one of Badu and/or Mabuyag’s formalised ritual centres. The onset of ritual activity at Koey Ngurtai implies not only new ritual engagements, but also a socio-territorial (re)structuring of relationships between

residential islands and their ritual centres in liminal spaces (e.g. articulation of Badu and Mabuyag with Koey Ngurtai; see McNiven *et al.*, 2007 for comparable results with Pulu). It is of this dynamic and emerging socio-political (re)organisation that Koey Ngurtai’s cultural history speaks.

In his exploration of the settlement history of Remote Oceania, Anderson (2002) noted that isolated islands across the Pacific could not have been sustainably colonised without major anthropogenic modification, in particular in the form of agricultural activity and the various environmental impacts that this entailed. While the initial colonisation of islands itself required access to resources to ensure immediate survival in an unfamiliar land and seascape, longer term survival and the establishment of viable populations themselves necessitated the presence or establishment of sustained resource bases and capacity to feed growing populations and the development of socio-territorial strategies by which to organise social groups into effective and functioning social networks. In the significantly less remote islands of Torres Strait, the initial availability of land and sea resources by relatively small colonising populations was probably never in question, for the fringing reefs are rich in biomass and the majority of islands are inter-visible and do not require long-distance maritime technology for access (see also Testart, 1982; Binford, 2001 for general comments on coastal adaptations and demographic potentials). However, as is the case with the more remote islands of the Pacific, the establishment of permanent settlements on the islands of Torres Strait necessitated not only sustained daily access to food and water, but also an ability to socio-territorially as well as economically cater for growing populations. Of concern here are not so much strategies for satisfying resource demands in a rich marine setting, but rather strategies for coping with changing people-people relations amongst growing populations in a world where residential (terrestrial) space is severely constricted and historically already configured by small island polities (contrast with Crouch, 2008). In such geographic and demographic contexts, socio-political expansions of residential bases are limited in scope; one strategy adopted for coping with such demographic expansions was the re-networking of groups and places across the broader region. In this sense the transformation of Koey Ngurtai from a small stop-over island witnessing infrequent and mainly beach-fringing temporary camps, to its opening up through repeated landscape burning, and to its conversion into a specialised and restricted ritual centre has far-reaching implications for understanding social responses to demographic growth in Western Torres Strait history (for a different but relevant modelling of seascape colonisation and growth across Torres Strait, see Crouch, 2008).

On Badu and Mabuyag, we argue, Islanders reconfigured relations between specific locales – such as villages on home islands and sacred rituals at more distant, liminal spaces – by expanding key domestic activities beyond the limits of home islands. The emergence of Koey Ngurtai as a specialised ritual place represents the re-networking of

geographical and social space as a means to cater for the socio-politics of growing populations both within the home islands of Badu and Mabuyag and further afield (see McNiven, 2006 for evidence of widespread demographic growth across Torres Strait after 600–800 years ago).

The emergence of Koey Ngurtai as a ritual islet shortly after 700 cal BP, we suggest, relates to broader-scaled socio-demographic transformations that involved increasing populations, new site types and strategies of environmental engagement. In the face of growing populations, the rise of Koey Ngurtai as a specialised ritual domain in the Badu-Mabuyag province signals the emergence of new geographical configurations by which to strategise everyday habitation and environmental engagements across Western Torres Strait. On Koey Ngurtai, after c.700 cal BP, and increasingly after c.400–500 years ago, ritual forms newly aimed at accessing key resources (e.g. dugongs), and through the attainment of specialised and elite ritual knowledge (e.g. through clan-based initiation, totemic affiliations, sorcery training and practice; e.g. see Haddon, 1901–1935) set in train the enhancement of social status in the face of already-entrenched social relationships but increasingly contested socio-territorial structures.

With human populations continuing to grow and intra- and inter-island relationships continuing to unfold in the face of such growing populations, residential groups increasingly formalised their own land-and-sea-based territories by transforming pre-existing social relationships between themselves and with place, at Koey Ngurtai evident by inscribing place with ritual presence through the emergence of formalised totemic centres and rituals by which to maintain island polities. In this sense the social history of Torres Strait represents also a spatial history.

The emergence of new forms of ritual structures in delimited liminal spaces away from residential bases – such as is the case at Koey Ngurtai – signals the emergence of new forms of powerful religious (ritual) institutions with considerable sway as to the configuration of social and political relationships between corporate (e.g. clan) groups and their social and spatial relationships (see McNiven *et al.*, 2007 for discussion of the totemic nature of religious rituals in Western Torres Strait). The rise of Koey Ngurtai as a specialised ritual centre in the 14th century AD, much like its demise in the face of new and powerful missionary orders in the late 19th century AD, heralds the advent of powerful new and elite social institutions with the power to shape the spatiality of social and environmental engagements.

By networking Koey Ngurtai into a broader but increasingly formalised domestic realm, the Badulgal and Goemulgal conjured a means by which territorial expansion could be effected in the face of growing populations and increasing territorial competition. In contrast to the islands of Remote Oceania where agricultural intensification underscored the long-term survival and expansion of populations, in the small, continent-hugging islands of Western Torres Strait it is not just technological innovation or 'transported landscapes' (Kirch, 1982) that itself allowed

human survival and expansion, but also, and perhaps more importantly, the transformation of inter-personal relations operationalised through reconfigured spatial adaptations between residential islands and offshore locales of specialised activity articulating in a networked seascape. The emergence of Koey Ngurtai as a religious centre at some distance from village life, and accessed only by the institutional elites with the authority and knowledge to effectively conduct and participate in the sacred rituals necessary for daily life, represents a new articulation of networked place that catered for the security of established populations in the face of an increasingly growing and interacting inter-island polity.

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