

SUPPLEMENTARY INFORMATION

The Emo Site (Oac), Gulf Province, Papua New Guinea: Resolving Long-Standing Questions of Antiquity and Implications for the History of the Ancestral *Hiri* Maritime Trade

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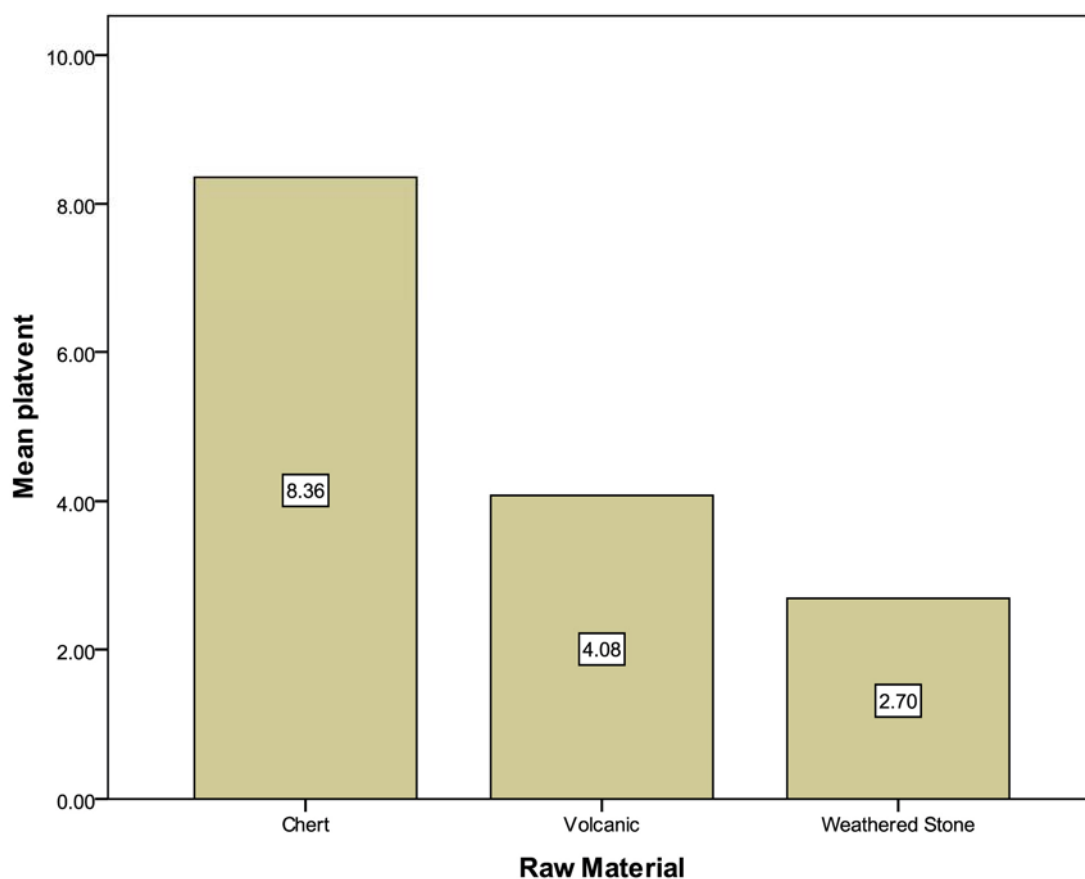


Figure S1 Size of platform relative to ventral area for Emo artefacts, by raw material type (ventral area/platform area).

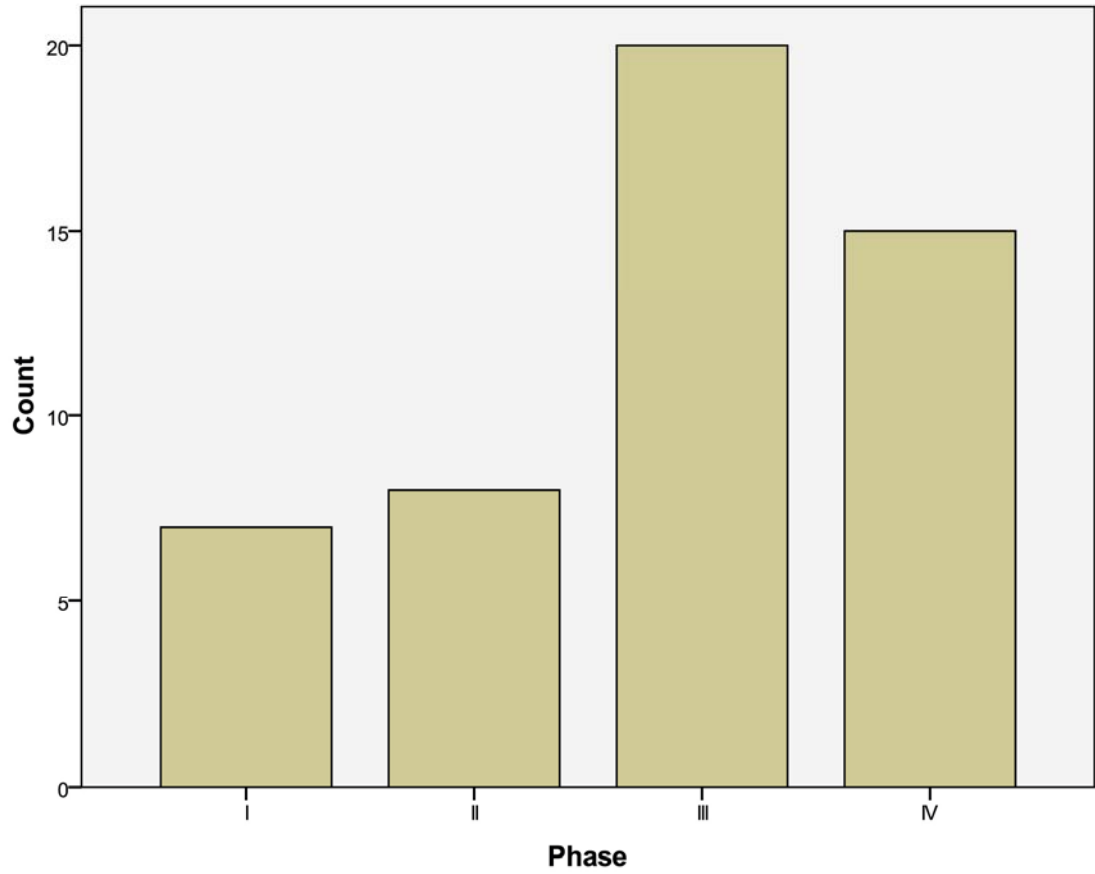


Figure S2 Number of artefacts in each phase at Emo.

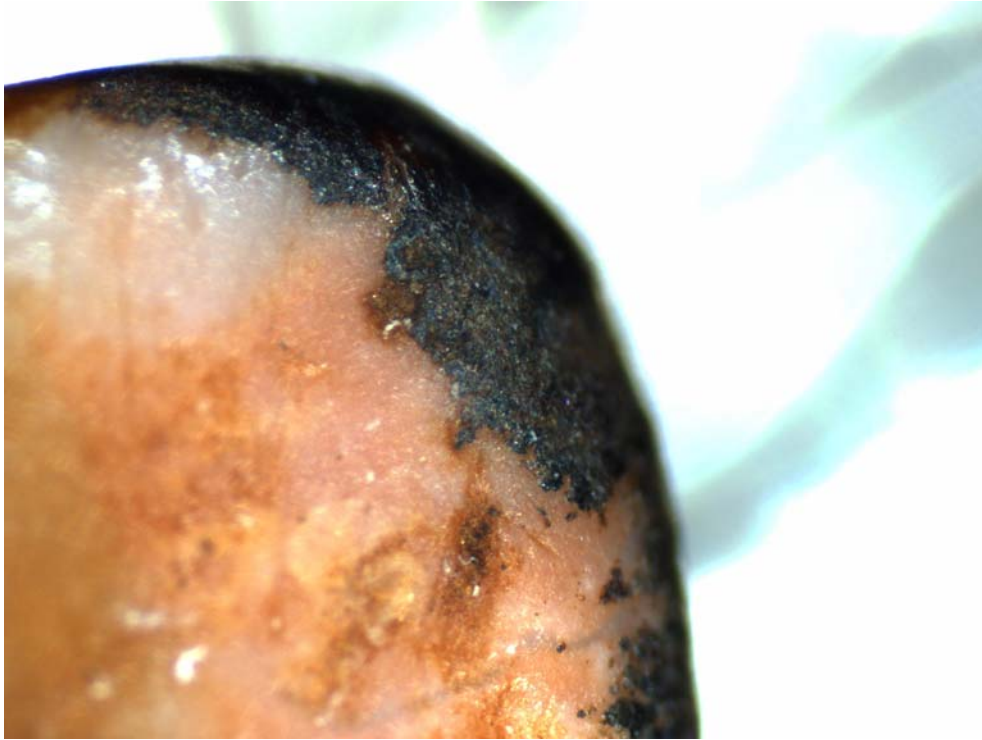


Figure S3 Heavy rounding and fungus on Artefact #23 edge (50X-dark field illumination).

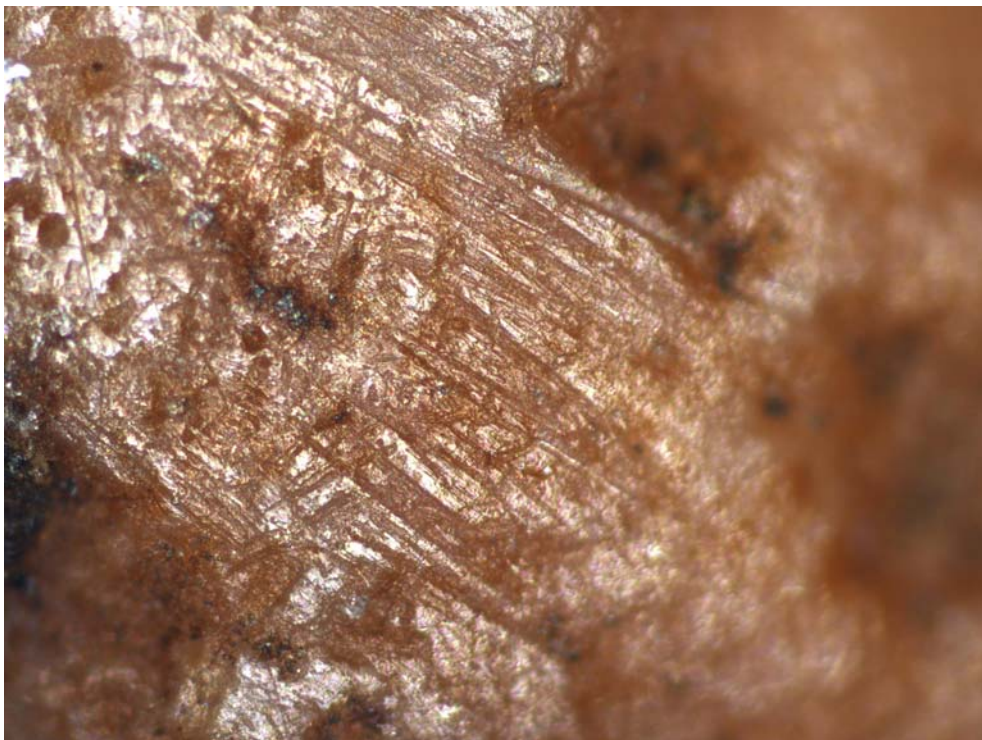


Figure S4 Striations perpendicular to use edge on Artefact #23 (100X-bright field illumination).



Figure S5 Bone artefacts. A: Square A, eroded from deposits in front of Square A; B: Square A XU26; C: Square B XU5; D: Square B XU15; E: possible artefact, Square A XU31C.

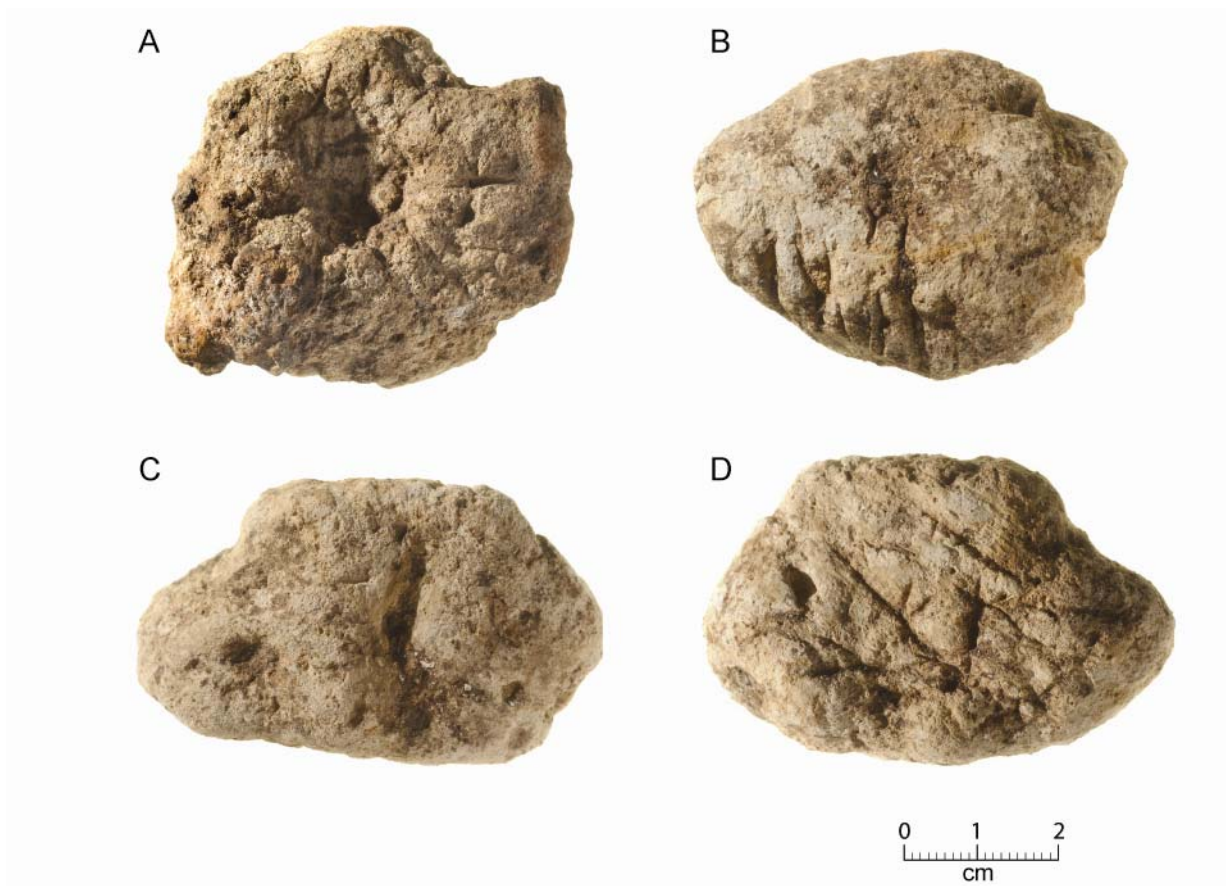


Figure S6 Excavated marked stones from Emo Phase 4. A: Square B XU7A; B: Square B XU8; C: Square B XU27; C: Square B XU27.

Table S1 Details of each Excavation Unit, Square A. SUs in bold contribute the majority of the XU deposit.

XU	SU	¹⁴ C Age (years BP)	Mean Depth at Top (cm)	Mean Depth at Centre (cm)	Mean Depth at Base (cm)	Mean Thickness (cm)	Area (m ²)	Weight (kg)	Volume (m ³)	% of Sediments > 2.84mm (g)
1	1A		0.0	0.8	1.5	1.5	0.25	6.1	0.0038	32.6
2	1A		1.5	2.2	2.9	1.4	0.25	4.4	0.0035	34.0
3	1A		2.9	4.2	5.5	2.6	0.25	9.1	0.0065	43.3
4	1A		5.5	7.4	9.3	3.8	0.25	11.6	0.0095	46.4
5	1A		9.3	10.2	11.0	1.7	0.25	5.9	0.0043	43.9
6	1A/1F/2B/2C	671 ± 30	11.0	13.1	15.1	4.1	0.25	11.4	0.0103	48.1
7	1A/1B/1E/1F/2A/2B/2C		15.1	16.5	17.9	2.8	0.25	7.1	0.0070	44.2
8	1B/1D/1E/1F/2A/2B/2C		17.9	19.3	20.6	2.7	0.25	5.9	0.0068	41.9
9	1B/1D/1E/1F/2A/2B/2C		20.6	21.5	22.4	1.8	0.25	5.1	0.0045	46.9
10	1B/1D/1E/1F/2A/2B/2C	662 ± 30	22.4	23.8	25.2	2.8	0.25	7.4	0.0070	40.6
11	1B/1D/1E/1F/2A/2B/2C		25.2	26.2	27.2	2.0	0.25	5.9	0.0050	51.8
12	1B/1D/1E/1F/2A/2B/2C		27.2	28.9	30.6	3.4	0.25	5.6	0.0085	52.2
13	1E/1F/2A/2B/2C/2E		30.6	31.5	32.4	1.8	0.25	4.9	0.0045	55.0
14	1E/1F/2A/2B/2C/2E/3		32.4	33.8	35.2	2.8	0.25	5.7	0.0070	52.5
15A	1E/1F/2A/2C/3		35.2	36.6	38.0	2.8	0.24	5.9	0.0067	56.9
15B	2E		35.2	36.2	37.1	1.9	0.01	0.3	0.0002	86.8
16A	1E/1F/2A/2C/3	1574 ± 33	38.0	40.0	41.9	3.9	0.23	6.9	0.0090	62.1
16B	2E		37.1	39.6	42.0	4.9	0.02	0.2	0.0010	63.3
17	1E/1F/2C/3		41.9	42.3	42.7	0.8	0.25	2.5	0.0020	64.7
18	1E/1F/2C/3/4A		42.7	44.1	45.4	2.7	0.25	7.0	0.0068	55.8
19	1E/1F/2C/3/4A		45.4	46.1	46.8	1.4	0.25	4.6	0.0035	52.6
20	1E/1F/2C/3/4A		46.8	48.3	49.7	2.9	0.25	7.0	0.0073	49.1
21A	1E/1F/2C/4A/5/6A		49.7	51.5	53.3	3.6	0.22	6.6	0.0079	57.1
21B	4A		49.7	51.6	53.4	3.7	0.03	3.7	0.0011	31.4
22A	4A/5/6A		53.3	54.5	55.7	2.4	0.19	5.2	0.0046	57.8
22B	4A/5/6A		53.4	54.7	55.9	2.5	0.06	1.7	0.0015	57.9
23	4A/5/6A/7/8		55.7	56.0	56.2	0.5	0.25	1.4	0.0013	57.9
24	1G/4A/5/6A/7/8		56.2	57.8	59.4	3.2	0.25	8.4	0.0080	58.2
25	1G/5/6A/7/8		59.4	60.7	62.0	2.6	0.25	4.3	0.0065	61.4
26	1G/5/6A/7/8		62.0	63.2	64.3	2.3	0.25	7.8	0.0058	60.2
27A	7/8/9		64.3	65.7	67.1	2.8	0.20	4.4	0.0056	62.3
27B	1G		64.3	65.4	66.5	2.2	0.05	0.9	0.0011	44.8
28A	7/8/9		67.1	69.0	68.8	1.7	0.20	3.2	0.0034	49.7
28B	1G		66.5	67.7	68.9	2.4	0.05	0.6	0.0012	44.8
29	1G/7/8/9		68.8	70.0	71.1	2.3	0.25	6.4	0.0058	45.4
30A	8/9/10		71.1	72.3	73.5	2.4	0.20	3.8	0.0048	58.0
30B	1G		71.1	72.3	73.5	2.4	0.01	0.6	0.0002	12.6
30C	1G/9/10		71.1	72.3	73.5	2.4	0.04	1.5	0.0010	45.5
31A	8/9/10	1647 ± 30	73.5	74.3	75.1	1.6	0.20	3.8	0.0032	44.6
31B	1G		73.5	74.9	76.3	2.8	0.01	0.5	0.0003	8.3
31C	1G/9/10		73.5	74.6	75.6	2.1	0.04	2.8	0.0008	51.8
32A	9/10/11		75.1	76.7	78.3	3.2	0.23	4.5	0.0074	34.1
32B	1G		75.8	77.4	78.9	3.1	0.02	2.9	0.0006	17.9
33A	11/12		78.3	80.2	82.0	3.7	0.18	4.7	0.0067	23.5
33B	1G/11/12		78.9	80.5	82.1	3.2	0.07	1.5	0.0022	32.5
34	11/12		82.0	82.3	82.5	0.5	0.13	2.5	0.0006	7.2
35	11/12		82.5	83.4	84.3	1.8	0.13	3.8	0.0023	2.3
36	12		84.3	84.9	85.4	1.1	0.13	1.4	0.0014	2.0
Total						2.4		219.4	0.2095	

Table S2 Details of each Excavation Unit, Square B. SUs in bold contribute the majority of the XU deposit.

XU	SU	¹⁴ C Age (years BP)	Mean Depth at Top (cm)	Mean Depth at Centre (cm)	Mean Depth at Base (cm)	Mean Thickness (cm)	Area (m ²)	Weight (kg)	Volume (m ³)	% of Sediments > 2.84mm (g)
1	1A		0.0	0.9	1.8	1.8	0.25	6.0	0.0045	26.6
2	1A		1.8	2.4	3.0	1.2	0.25	4.8	0.0030	23.1
3	1A	706 ± 33	3.0	4.1	5.2	2.2	0.25	5.8	0.0055	40.2
4	1A		5.2	6.9	8.5	3.3	0.25	8.8	0.0083	47.3
5	1A		8.5	9.8	11.1	2.6	0.25	9.0	0.0065	47.0
6	1A		11.1	13.5	15.8	4.7	0.25	16.4	0.0118	51.6
7A	1A/2A		15.8	17.3	18.7	2.9	0.20	6.1	0.0058	48.7
7B	1A		15.8	16.0	16.1	0.3	0.05	3.7	0.0002	40.1
8	1A/2A		18.2	19.4	20.6	2.4	0.25	6.5	0.0060	39.7
9	1A/2A		20.6	21.5	22.4	1.8	0.25	4.8	0.0045	37.7
10A	2A		22.4	23.8	25.2	2.8	0.24	7.9	0.0067	36.1
10B	1A		22.4	23.6	24.8	2.4	0.01	0.3	0.0002	10.6
11	1A/2A/2D		25.2	26.2	27.2	2.0	0.25	4.0	0.0050	36.2
12	2A/2D		27.2	29.0	30.8	3.6	0.25	8.0	0.0090	40.1
13	2A/2D		30.8	31.1	31.4	0.6	0.25	1.2	0.0015	42.2
14	2A/2D		31.4	31.8	32.2	0.8	0.25	4.0	0.0020	50.2
15	2A/2D		32.2	34.2	36.1	3.9	0.25	5.4	0.0098	47.3
16A	2A/2D		36.1	36.9	37.6	1.5	0.24	4.7	0.0036	46.7
16B	2E		36.1	36.9	37.6	1.5	0.01	0.6	0.0002	49.1
17A	2A/2D/3		37.6	40.1	42.5	4.9	0.24	5.3	0.0118	52.3
17B	2E		37.6	40.1	42.5	4.9	0.01	0.5	0.0005	55.4
18	2A/3		42.5	42.9	43.3	0.8	0.25	2.5	0.0020	59.6
19	2A/3/4A		43.3	44.1	44.8	1.5	0.25	2.7	0.0038	62.0
20	3/4A		44.8	46.0	47.1	2.3	0.25	5.8	0.0058	50.7
21	3/4A/5/6A	1564 ± 33	47.1	48.7	50.2	3.1	0.25	7.0	0.0078	44.2
22A	4A/5/6A		50.2	51.8	53.3	3.1	0.21	5.8	0.0065	34.3
22B	4A		50.2	51.8	53.3	3.1	0.04	2.0	0.0012	50.0
23A	4A/4B/5/6A		53.3	55.0	56.7	3.4	0.16	6.3	0.0054	36.5
23B	4A/4B		53.3	54.6	55.8	2.5	0.09	3.4	0.0023	47.8
24	4B/5/6A/7		56.2	58.0	59.8	3.6	0.25	8.6	0.0090	57.4
25	4B/6A/7/8		59.8	61.7	63.6	3.8	0.25	?	0.0095	?
26	4B/7/8/9	1644 ± 43	63.6	64.3	65.0	1.4	0.25	4.9	0.0035	56.0
27	4B/7/8/9		65.0	65.9	66.7	1.7	0.25	4.0	0.0043	46.8
28	4B/8/9/10	1646 ± 43	66.7	67.9	69.1	2.4	0.25	6.6	0.0060	43.8
29	4B/9/10		69.1	70.1	71.0	1.9	0.25	4.8	0.0048	37.8
30	4B/9/10/11		71.0	72.3	73.6	2.6	0.25	6.1	0.0065	50.1
31	4B/9/10/11		73.6	74.5	75.4	1.8	0.25	5.8	0.0045	56.1
32	9/10/11		75.4	76.7	77.9	2.5	0.25	4.1	0.0063	60.8
33	11		77.9	79.1	80.3	2.4	0.25	4.5	0.0060	38.0
34	11	1864 ± 33	80.3	80.7	81.1	0.8	0.25	5.1	0.0020	17.0
35	12		81.1	82.4	83.6	2.5	0.25	6.5	0.0063	5.5
36	12	1860 ± 30	83.6	84.3	84.9	1.3	0.25	5.5	0.0033	2.8
Total						2.4		215.8	0.2126	

Table S3 Description of SUs and sub-SUs from the Emo excavations.

SU	Square A XUs	Square B XUs	Description
1A	1-7	1-6, 7A, 7B, 8, 9, 10B, 11	SU1A consists of humid, blackish earthy soil containing numerous rocks with a notable paucity of shells. In contrast, SU1C, SU1D, SU1E and SU1F are rich in light-coloured and friable <i>Batissa violacea</i> valves, and contain numerous interstitial spaces indicative of biological organism activity. SU1E and SU1F appear to be postholes contemporaneous with the base of SU1A rather than strictly dating to the period of SU1A's sediment accumulation.
1B	7-12		
1C	Not present in the excavated squares		
1D	8-12		
1E	7-14, 15A, 16A, 17-20, 21A		
1F	6-14, 15A, 16A, 17-20, 21A		
1G	24-26, 27B, 28B, 29, 30B, 30C, 31B, 31C, 32B, 33B		
2A	7-14, 15A, 16A	7A, 8-9, 10A, 11-15, 16A, 17A, 18-19	SU2A is a shell-rich layer (predominantly small <i>Batissa violacea</i> valves and gastropods) containing fine blackish sediments. This SU is regular and largely <i>in situ</i> in those areas represented in the sections, but towards its southern end it has been disturbed by postholes and other post-depositional (probably animal) intrusions (SU1B, 1E, SU1F, SU2B, SU2C). SU2B and SU2C appear to be disturbance pits of unknown origin, while SU2D is a dark ashy lens. The interface of SU2 with underlying SU3 represents a major stratigraphic break (i.e. a change in sedimentation regimes). In other words, SU2 represents a sedimentary phase different to that of the underlying SUs and different also to that of overlying SU1.
2B	6-14		
2C	6-14, 15A, 16A, 17-20, 21A		
2D		11-15, 16A, 17A	
2E	13-14, 15B, 16B	16B, 17B	
3	14, 15A, 16A, 17-20	17A, 18-21	This SU is 5-15cm thick, a visible on the three exposed sections (west, south, east) and contains a predominance of large <i>Batissa violacea</i> valves. Orange-tan in colour with brownish-black interstitial soil. The interface with the overlying and underlying SUs is marked, except in those areas where intrusive postholes (SU1E, SU1F, SU2C) are apparent.
4A	18-20, 21A, 21B, 22A, 22B, 23-24	19-21, 22A, 22B, 23A, 23B,	Homogeneous in colour and texture, this SU is of variable thickness, ranging from c.3-12cm thick. Shells are regularly coated with grayish-tan clay. This SU is evident in the western, southern and eastern ends, except in those areas where this layer has been disturbed by intrusive features from above (generally postholes, e.g. SU1E, 1F, 2C). <i>Batissa violacea</i> valves are generally 3-6cm in maximum length. The interface with overlying SU3 is marked.
4B		23A, 23B, 24-31	Localised pit dug from the base of SU4A.
5	21A, 22A, 22B, 23-26	21, 22A, 23A, 24	In the western section, SU5 is undulated and irregularly 1-3cm thick. It appears to be a local variation of SU4A that disappears towards the northern end of the western section. It consists of a rich shell matrix, predominantly <i>Batissa violacea</i> and <i>Melanooides</i> sp., mixed with grayish-tan clay.
6A	21A, 22A, 22B, 23-26	21, 22A, 23A, 24-25	This SU overlies SU7 and is composed largely of compacted and crushed <i>Melanooides</i> and <i>Neritina</i> spp. mixed with more clayey and more humid sediments. This SU is 1-4cm thick. Its interface with surrounding SUs is difficult to follow and indistinct towards the south.
6B	Not present in the excavated squares		
7	23-26, 27A, 28A, 29	24-27	<i>Melanooides</i> sp.-rich layer, generally yellowish in colour, tilting slightly towards the south where its thickness varies from 5 to 10cm. This SU contains blackish lenses of sediment in its northern end; one of these lenses is 30cm long and 3cm thick. The interface with SU8 below is fairly marked, and with the overlying SU6A containing large <i>Batissa violacea</i> shells is more difficult to follow and undulated. On its southern side, this SU is post-depositionally disturbed by postholes and thus difficult to distinguish with overlying SU4A and SU3, which are also rich in small shells in this area

SU	Square A XUs	Square B XUs	Description
8	23-26, 27A, 28A, 29, 30A, 31A	25-28	Subhorizontal layer, 3-4cm thick, of a distinctive orange-tan colour. This layer consists of a predominantly <i>Batissa violaea</i> and <i>Melanooides</i> sp. Assemblage, with little sediment between the shells. Interface with the overlying SU is fairly marked. This SU is difficult to distinguish from SU9 and SU10 towards the southern and especially eastern walls, where post-depositional disturbance is evident in the form of a land-crab or bandicoot hole (in the east) and a posthole (in the south).
9	27A, 28A, 29, 30A, 30C, 31A, 31C, 32A	26-32	Subhorizontal layer, 3-7cm thick and whose contents are indistinguishable from those of SU10. It is distinguished by the presence of a blackish clay and a dark-tan stain on the shell surfaces. Along the eastern side of the exposed profile, this layer is disturbed by post-depositional, anthropogenic processes. The interface with the overlying SU is fairly marked, and evident in SU9's thinness and almost exclusive shell content.
10	30A, 30C, 31A, 31C, 32A	28-32	Subhorizontal layer, 3-5cm thick. Interface with overlying and underlying SUs is marked, notably due to its distinctive, shell-rich contents. This SU consists largely of <i>Batissa violacea</i> shells, including noticeably medium-sized and large specimens, with poor, brown-coloured clayey soil, noticeably more organic than in surrounding SU. In Square B <i>in situ</i> lenticular clayey lenses were noted amongst the shells.
11	32A, 33A, 33B, 34-35	30-34	Beige-coloured clay layer, 1-3cm thick, containing predominantly crushed <i>Batissa violacea</i> shell. Present across the excavated deposits. Interface with overlying SU is marked.
12	33A, 33B, 34-36	35-36	Thick, beige-coloured clay layer. Homogeneous in colour and texture across the excavated squares, with rare small pieces of weathered bedrock. Present across the entire sectioned profile. Estimated 20 to 30cm thick.

Table S4 Sediment analyses, Square B (except for XU32A which is from Square A). *pH soil/water suspension ratio of 1:5. **% lost on ignition. ***PSA-Backman Culter LS 100 (HCl- and H₂O₂-treated samples); medium sand = 212–600 microns, fine sand = 212–63 microns, silt = 63–2 microns, clay = <2 microns; na = not analysed.

XU	pH*	% OM** (550 °C)	% Carbonates** (1000 °C)	Particle Size Distribution (%)***			
				Medium Sand	Fine Sand	Silt	Clay
1	7.18	22.48	29.33	0.60	30.10	63.78	5.52
2	7.21	22.16	26.80	0.10	27.40	66.45	6.05
3	7.32	20.38	26.71	0.30	23.30	70.28	6.12
4	7.40	19.79	24.25	2.60	29.90	62.60	4.90
5	7.46	18.09	27.18	0.00	29.30	65.30	5.40
6	7.58	14.21	29.13	6.30	34.70	54.25	4.75
7A	7.68	12.44	30.24	0.80	31.40	62.22	5.58
7B	7.60	18.58	23.47	3.20	41.80	50.91	4.09
8	7.61	10.96	32.79	0.00	25.90	66.15	7.95
9	7.63	13.71	30.26	0.10	30.90	62.65	6.35
10A	7.68	9.12	31.58	0.00	25.40	66.70	7.90
10B	7.50	17.33	23.77	0.50	38.60	56.00	4.90
11	7.80	8.22	36.07	1.10	30.60	61.50	6.80
12	7.70	5.71	38.87	0.00	19.30	72.30	8.40
13	7.73	8.39	34.50	0.00	5.10	83.30	11.60
14	7.75	8.94	34.09	0.00	15.10	75.10	9.80
15	7.76	7.83	35.81	0.00	6.90	80.00	13.10
16A	7.78	6.50	36.50	0.00	2.20	84.50	13.30
16B	7.90	6.95	36.90	6.20	11.80	73.20	8.80
17A	7.82	7.81	34.19	0.00	3.70	82.90	13.40
17B	7.73	6.66	36.16	0.00	5.00	81.20	13.80
18	7.75	4.92	38.85	0.00	5.70	82.20	12.10
19	7.82	6.69	35.81	0.00	2.60	87.20	10.20
20	7.82	6.06	36.06	0.00	0.00	85.50	14.50
21	7.91	6.12	32.92	0.00	0.40	86.70	12.90
22A	7.96	3.87	37.98	1.60	7.30	81.80	9.30
22B	7.96	4.25	37.01	4.50	4.10	79.60	11.80
23A	7.91	7.02	25.86	0.00	6.90	80.90	12.20
23B	8.05	3.36	39.47	0.00	0.00	88.10	11.90
24	8.03	na	na	0.00	0.00	87.30	12.70
26	7.80	4.89	34.94	0.00	0.00	87.70	12.30
29	7.85	7.30	18.41	0.00	5.80	86.20	8.00
31	7.88	na	na	0.00	0.00	84.00	16.00
32A	7.99	8.10	13.23	0.00	0.20	87.30	12.50
33	7.95	8.80	14.60	0.00	9.40	80.40	10.20
34	8.00	10.02	12.29	0.00	1.20	88.00	10.80
35	7.95	9.09	10.27	0.00	2.30	86.60	11.10
36	7.71	9.34	10.37	0.00	6.80	83.30	10.00

Table S5 Excavated finds, Emo Square A.

XU	Non-Land Snail Shell	Shell Burnt (by weight)	Bone	Egg Shell		Crab		Coconut Fragments		Fish Otoliths		Human Teeth Fragments	Rocks > 1cm	Charcoal	Undecorated Ceramic Sherds		Decorated Ceramic Sherds	
	(g)	(%)	(g)	(#)	(g)	(#)	(g)	(#)	(g)	(#)	(g)	(#)	(g)	(g)	(#)	(g)	(#)	(g)
1	217.3	0.0	7.37					1	0.80	4	0.81		1636.9	0.94	14	18.34		
2	353.3	0.2	4.29										1048.6	0.51	32	41.34	1	3.87
3	766.5	0.3	12.61							2	0.93		3065.8	1.35	25	49.34	1	2.57
4	977.5	0.2	20.71	1	0.04					4	0.44		4264.9	1.01	27	28.88		
5	732.6	0.2	6.64	38	0.61								1782.0	1.23	10	10.97	1	0.45
6	1610.5	0.3	17.02	7	0.10					4	0.76		3780.2	1.88	14	18.83		
7	1327.5	0.4	5.37	73	1.31					2	0.22		1710.0	0.50	15	9.96		
8	1675.9	0.3	3.42							1	0.20		709.6	1.03	13	5.82	1	1.89
9	1634.4	0.3	7.37	2	0.41					2	0.50		666.1	0.56	19	10.08		
10	2644.0	0.5	8.55	3	0.17					5	1.21		291.2	0.25	10	4.60		
11	2864.3	0.3	6.85							3	0.76		73.5	0.47	13	3.53		
12	2797.3	0.4	8.44	9	1.05					4	0.68		76.1	0.31	3	0.44		
13	2643.7	0.4	5.64							1	1.03		14.9	0.04	3	1.54		
14	2938.3	0.4	8.23							3	1.30		12.1	0.28	11	3.13		
15A	3217.7	0.6	10.36	2	0.07					3	1.87		21.1	0.01	30	39.11	7	5.48
15B	259.6	0.1	0.13							1	0.11			0.02				
16A	4236.6	0.4	8.55			1	0.04			2	0.54		4.5	0.32	22	5.90	9	2.47
16B	124.4	0.7	0.53							1	0.12			0.01	2	0.33	2	0.07
17	1598.6	0.3	1.27	1	0.03								4.2	0.06	3	0.98		
18	3858.3	0.4	4.99	1	0.19					1	0.60	4	1.3	0.17	13	6.37	2	0.88
19	2394.3	0.4	12.8	1	0.01								7.7	0.06	5	0.89	2	1.57
20	3286.0	0.5	12.89	1	0.01					2	0.37	1	104.8	0.12	20	7.60		
21A	3744.5	0.2	9.82	1	0.18					2	1.57			0.03	6	4.85		
21B	1150.7	0.4	1.89										4.3		10	2.36		
22A	2994.1	0.1	0.97							1	0.76		1.6	0.13	3	5.58		
22B	977.3	0.2	3.32												5	1.96		
23	808.7	0.1	0.44												2	0.53		
24	4836.2	0.3	3.58										42.1	0.21	5	5.00		
25	2624.0	0.2	2.42	2	0.13					1	0.49	1	5.9	0.08	9	2.65		
26	4659.8	0.2	8.48										21.3	0.07	5	2.28		

XU	Non-Land Snail Shell	Shell Burnt (by weight)	Bone	Egg Shell		Crab		Coconut Fragments		Fish Otoliths		Human Teeth Fragments	Rocks > 1cm	Charcoal	Undecorated Ceramic Sherds		Decorated Ceramic Sherds	
	(g)	(%)	(g)	(#)	(g)	(#)	(g)	(#)	(g)	(#)	(g)	(#)	(g)	(g)	(#)	(g)	(#)	(g)
27A	2669.0	2.6	2.81										61.8	0.10	1	2.86		
27B	402.4	7.5	0.02															
28A	1552.9	28.5	3.22										31.7	0.32				
28B	267.9	17.3	0.02											0.02				
29	2886.8	36.7	12.49							1	0.65			0.17	3	0.55		
30A	2176.2	27.1	18.74							2	1.31		6.5	0.08	1	0.06		
30B	74.1	3.8												0.01	2	0.22		
30C	676.6	10.6	1.48										2.8	0.01				
31A	1681.5	13.0	21.37							4	1.47			0.05				
31B	40.3	4.2	0.33											0.07				
31C	1443.1	4.1	3.04							1	0.15			0.26	2	0.54		
32A	1510.9	7.5	6.98							1	0.42			0.04				
32B	504.2	2.8	1.56	1	0.13								10.9					
33A	1091.4	3.3	1.65										0.3		2	0.23		
33B	480.8	1.5	0.49							1	0.08		5.8	0.49	1	0.06		
34	143.6	3.3	0.75										16.4					
35	17.0	58.9	0.05										25.5	0.06				
36	0.7	21.4											9.0					
Total	81,573.3	3.7	279.95	143	4.44	1	0.04	1	0.80	59	19.35	6	14,854.9	13.33	361	297.71	26	19.25

Table S5 Excavated finds, Emo Square A (cont.).

XU	Flaked Stone Artefacts		Cut Bone Artefact		Shell Beads		Set of small bones in closed <i>B. violacea</i> in closed <i>B. violacea</i>	Glass		Plastic		Metal	
	(#)	(g)	(#)	(g)	(#)	(g)	(#)	(#)	(g)	(#)	(g)	(#)	(g)
1								1	0.44	4	2.73	2	2.98
2	1	0.66								1	0.01		
3	1	0.20	1	0.14									
4	2	0.67											
5	1	0.07											
6	1	1.96											
7	2	0.37											
8													
9													
10													
11													
12	1	0.09			2	0.05							
13													
14	3	0.22			1	0.03							
15A													
15B													
16A													
16B													
17													
18	3	0.95			1	0.09							
19	2	0.93											
20	1	11.00			1	0.08							
21A	1	0.31											
21B													
22A													
22B													
23													
24													
25													

XU	Flaked Stone Artefacts		Cut Bone Artefact		Shell Beads		Set of small bones in closed <i>B. violacea</i> in closed <i>B. violacea</i>	Glass		Plastic		Metal	
	(#)	(g)	(#)	(g)	(#)	(g)	(#)	(#)	(g)	(#)	(g)	(#)	(g)
26													
27A													
27B													
28A	1	0.20											
28B													
29													
30A													
30B													
30C	4	0.87											
31A													
31B													
31C	1	0.31											
32A							1						
32B													
33A													
33B													
34													
35	1	0.42											
36													
Total	26	19.23	1	0.14	5	0.25	1	1	0.44	5	2.74	2	2.98

Table S6 Excavated finds, Emo Square B.

XU	Non-Land Snail Shell	Shell Burnt (by weight)	Bone	Egg Shell		Fish Otoliths		Human Teeth Fragments		Rocks > 1cm	Charcoal	Undecorated Ceramic Sherds		Decorated Ceramic Sherds	
	(g)	(%)	(g)	(#)	(g)	(#)	(g)	(#)	(g)	(g)	(g)	(#)	(g)	(#)	(g)
1	360.0	0.0	12.88			4	0.95			970.7	0.76	21	51.32	5	7.24
2	389.3	0.1	10.11							615.0	1.38	21	15.60		
3	320.8	0.4	5.32					1	0.24	1899.6	2.71	7	35.12	1	4.12
4	465.3	0.4	11.10							3612.4	2.00	17	11.73		
5	679.4	0.3	13.73	1	0.03	2	0.78			3252.0	2.75	20	46.84	1	0.49
6	1231.4	0.4	12.00			1	0.16			6599.0	4.07	44	35.40	2	2.11
7A	855.6	0.2	5.33							1945.2	0.72	7	8.66		
7B	287.4	0.1	7.35			1	0.26			1126.9	0.52	12	27.99		
8	807.7	0.4	2.54	4	0.13	1	0.17			1655.4	1.51	4	6.35		
9	1033.6	0.4	4.43							728.9	1.00	15	9.75	4	2.56
10A	2116.6	0.6	8.09			5	0.74			669.1	1.62	6	5.82		
10B	21.9	3.7	0.21							7.8	0.03	1	0.25		
11	1239.6	0.6	5.18			4	1.06			171.0	0.77	3	2.42	1	3.69
12	3170.0	0.4	13.30	3	0.19	5	0.90			0.0	0.81	11	1.71	1	0.24
13	494.1	0.3	2.79			1	0.09			0.0	0.28	3	1.18		
14	1867.5	0.4	5.14	2	0.05	2	0.23			114.3	0.43	4	0.48	1	5.16
15	2474.4	0.4	20.75			3	0.85			23.3	0.21	9	4.04	5	4.40
16A	2146.9	0.7	5.69	4	0.12	2	0.24			0.0	0.31	5	2.42	1	0.99
16B	269.2	0.3	1.35							10.0	0.02	2	0.12	1	0.42
17A	2727.0	0.4	6.19							19.5	0.16	4	0.64		
17B	269.5	0.6	0.74							0.0	0.07	1	0.90		
18	1478.6	0.3	4.04			1	0.15			0.0	0.10	2	0.15		
19	1543.3	1.9	7.34							117.1	0.03				
20	2874.6	0.4	6.35							38.9	0.11	10	5.34		
21	2968.5	0.6	15.01	1	0.15	4	1.09	1	1.27	95.7	0.18	10	3.91		
22A	1969.2	0.7	6.50			4	2.25			0.0	0.03	6	0.44	1	0.23
22B	992.8	0.7	2.13							0.0	0.01	3	1.60		
23A	2278.1	0.5	12.41			2	0.48			0.0	0.24	19	5.07		
23B	1601.8	0.3	2.50			2	0.48			12.3	0.25	3	0.16	1	0.31
24	4862.2	0.1	1.52	2	0.27					67.6	0.28	2	0.31		
25	3182.6	0.1	12.59			1	0.21			39.3	0.20				

XU	Non-Land Snail Shell	Shell Burnt (by weight)	Bone	Egg Shell		Fish Otoliths		Human Teeth Fragments		Rocks > 1cm	Charcoal	Undecorated Ceramic Sherds		Decorated Ceramic Sherds	
	(g)	(%)	(g)	(#)	(g)	(#)	(g)	(#)	(g)	(g)	(g)	(#)	(g)	(#)	(g)
26	2730.7	0.6	4.37							5.7	0.53				
27	1703.4	5.6	3.78							157.0	1.13				
28	2856.9	7.6	10.84							10.3	0.39	5	4.88	1	0.11
29	1733.2	5.3	11.35							65.1	0.06	2	0.30		
30	3037.7	0.0	9.73							0.0	0.60	1	0.70		
31	3223.2	0.6	8.11							18.5	0.06				
32	2485.5	0.4								5.6	0.01				
33	1649.6	0.0	0.45							38.1	0.03				
34	418.0	0.3	0.24							345.3	0.32	6	2.57		
35	66.2	7.4	0.07							107.3	0.48	5	3.71		
36	0.6	49.2	0.03							52.5	0.04				
Total	66,883.5	1.0	273.58	17	0.94	45	11.09	2	1.51	24,596.0	27.21	291	297.88	26	32.07

Table S6 Excavated finds, Emo Square B (cont.).

XU	Flaked Stone Artefacts		Cupuled Anvil Stone		Deeply Cut Rocks > 1cm		Cupuled anvil Stone with Deep Cuts > 1cm		Shell Beads		<i>B. violacea</i> valve in closed <i>B. violacea</i>		Glass		Metal	
	(#)	(g)	(#)	(g)	(#)	(g)	(#)	(g)	(#)	(g)	Inner <i>B. violacea</i> (g)	Outer <i>B. violacea</i> (g)	(#)	(g)	(#)	(g)
1					23.4	1							2	0.42	6	8.54
2	1	0.42											1	0.04	4	0.20
3	4	18.39														
4																
5	1	0.19	1	95.2												
6	5	196.04	3	246.1												
7A	2	6.21	1	86.8												
7B																
8	1	0.18					1	30.5								
9																
10A																
10B																
11																
12																
13	1	0.12														
14																
15	1	0.08														
16A	1	0.09							1	0.03						
16B																
17A									1	0.02						
17B											0.74	19.54				
18	1	0.04														
19																
20																
21																
22A																
22B																
23A																
23B																
24	1	0.09														
25	1	0.77														
26																

XU	Flaked Stone Artefacts		Cupuled Anvil Stone		Deeply Cut Rocks > 1cm		Cupuled anvil Stone with Deep Cuts > 1cm		Shell Beads		<i>B. violacea</i> valve in closed <i>B. violacea</i>		Glass		Metal	
	(#)	(g)	(#)	(g)	(#)	(g)	(#)	(g)	(#)	(g)	Inner <i>B. violacea</i> (g)	Outer <i>B. violacea</i> (g)	(#)	(g)	(#)	(g)
27																
28																
29	1	0.29														
30																
31																
32																
33	1	1.17														
34	3	0.27														
35	2	0.23														
36																
Total	27	224.58	5	428.0	23.4	1	1	30.5	2	0.05	0.74	19.54	3	0.46	10	8.74

Table S7 Details of stone artefacts from Emo.

ID	Sq.	XU	Phase	Type	Raw Material	Fragment	Weight (g)	Length (mm)	Width (mm)	Thickness	Platform Area	Cortex %	Heat Affected	Edge Damage	Elongation
21	B	2	IV	Flake	Volcanic		0.4	10.44	9.98	2.96	34.35	0			1.05
46	A	2	IV	Flake	Chert	Marginal	0.6	13.12			0	100			
9	B	3	IV	Flake	Volcanic		17.9	34.56	31.52	15.69	464.74	90			1.10
23	B	3	IV	Flake	Chert	Marginal	0.2	10.70			0	0		Yes	
24	B	3	IV	Flake	Chert	Right	0.2	10.29		6.14	0	0	Yes	Yes	
45	A	3	IV	Flake	Chert	Marginal	0.2	7.22			0	0		Yes	
49	A	4	IV	Flake	Weathered Stone		0.5	13.76	10.21	4.13	0	0			1.35
50	A	4	IV	Flake	Volcanic		0.1	5.67	6.95	2.24	0	0			0.82
22	B	5	IV	Heat Fragment	Chert	Heat Fragment	0.1	7.49			0	0	Yes		
2	B	6	IV	Ground Fragment	Volcanic		184.9	77.82	67.01	41.62	0	40			1.16
30	B	6	IV	Flaked Piece	Chert		0.2	7.52			0	0			
31	B	6	IV	Flake	Volcanic		1.8	12.83	27.25	3.78	79.04	0			0.47
32	B	6	IV	Flake	Volcanic	Medial	0.1	8.96	7.43	1.72	0	0			1.21
33	B	6	IV	Flake	Weathered Stone		8.9	35.31	22.33	9.81	0	60			1.58
38	A	6	IV	Retouched Flake	Chert	Marginal	1.9	19.62			0	0		Yes	
43	A	7	III	Flake	Volcanic		0.3	8.99		2.30	0				
44	A	7	III	Flake	Chert	Marginal	0.1	8.24			0	0			
10	B	7A	III	Ret Flaked Piece/ Core	Chert		5.0	25.31	17.83	12.10	0	0			1.42
27	B	7A	III	Flaked Piece	Chert		1.1	15.02			0	0			
11	B	8	III	Flake	Chert	Marginal	0.1	8.99			0	0			
39	A	12	III	Flaked Piece	Volcanic		0.1	13.29			0				
16	B	13	III	Flake	Chert	Distal	0.1	7.47	8.90	1.57	0	0			0.84
6	A	14	III	Flake	Chert		0.1	7.28	3.32	1.44	2.40	0			2.19
7	A	14	III	Flake	Chert		0.1	5.49	7.80	2.51	1.98	0			0.70
28	A	14	III	Flaked Piece	Chert		0.1	6.77			0	0			
17	B	15	III	Flaked Piece	Chert		0.1	8.34			0	0			
19	B	16A	III	Flake	Chert		0.1	5.09	2.79	3.33	4.86	0		Yes	1.82

ID	Sq.	XU	Phase	Type	Raw Material	Fragment	Weight	Length	Width	Thickness	Platform Area	Cortex	Heat Affected	Edge Damage	Elongation
							(g)	(mm)	(mm)			%			
18	B	18	III	Retouched Flake	Chert	Marginal	0.1	4.74			0	0	Yes		
40	A	18	III	Flaked Piece	Chert	Heat Fragment	0.6	16.87			0	30	Yes		
41	A	18	III	Flake	Weathered Stone	Distal	0.2	9.95		3.09	0	0			
42	A	18	III	Flaked Piece	Chert		0.1	6.20			0		Yes		
51	A	19	III	Flaked Piece	Chert	Heat Fragment	0.9	14.47			0		Yes		
52	A	19	III	Flaked Piece	Chert	Heat Fragment	0.1	6.93			0	0	Yes		
1	A	20	III	Flake	Chert		11.0	32.40	23.56	13.14	43.12	50			1.38
47	A	21A	III	Flake	Weathered Stone		0.3	7.72	8.68	3.36	24.81	0			0.89
29	B	24	II	Flake	Chert	Marginal	0.1	6.41			0	0			
20	B	25	II	Flaked Piece	Chert		0.7	13.31			0	0		Yes	
48	A	28A	II	Flake	Volcanic	Marginal	0.2	10.91			0	0			
15	B	29	II	Flake	Quartz		0.3	6.46	6.42	2.52	0	100			1.01
34	A	30C	II	Flake	Volcanic		0.5	9.51	11.88	2.96	0	0			0.80
35	A	30C	II	Flake	Volcanic		0.3	9.01	8.48	2.93	0	0			1.06
36	A	30C	II	Flake	Volcanic		0.1	5.15	7.28	1.54	5.76	0			0.71
37	A	30C	II	Flaked Piece	Volcanic		0.1	7.41			0				
3	B	33	I	Flake	Chert	Proximal	1.1	8.23	15.75	4.53	96.10	0			0.52
4	B	34	I	Flake	Chert	Distal	0.1	8.28	6.41	1.35	0	0			1.29
5	B	34	I	Flake?	Chert		0.1	6.50	6.31	1.69	12.16	0			1.03
14	B	34	I	Flake	Chert		0.1	5.08	5.88	1.35	19.50	0			0.86
8	A	35	I	Flake	Chert	Medial	0.5	6.48	11.47	4.95	0	0			0.56
25	B	35	I	Flaked Piece	Quartz		0.2	6.55			0	0			
26	B	35	I	Flaked Piece	Quartz		0.1	6.64			0	0			

Table S8 Details of use-wear and residue analyses, Emo stone artefacts, Squares A and B. See Table S7 for details of Artefact ID #.

ID	Used?			Function	Description
	Yes	No	Possibly		
1	x			Scraping wet bone	<i>Wet bone working.</i> The left proximal margin of this piece exhibits some edge fracture and is the origin point for large deposits of a characteristic translucent, 'greasy' proteinaceous residue associated with working wet bone. As well as this, multiple bone pieces were identified as associated with this edge. The clear correlation between these bone working residues and an edge displaying early stage use-wear indicates that this tool had a short use-life.
2	x			Grinding plant, ochre and bone	<i>Grinding plant, ochre and bone.</i> Slides were taken from this piece to investigate function. This piece has been ground, with use concentrated on one of the margins indicating that it was likely a top-stone or the upper piece of two when in use. Residues present on slides taken from the use area include plant tissue, ochre and bone pieces, indicating that this tool was used on a range of materials.
3			x	Unknown	
4	x			Working resinous wood	<i>Working resinous wood.</i> Both lateral margins of this tool have been utilised, the left margin for slightly longer. The presence of edge damage with some rounding, combined with resin aligned at approximately 45° from the edge, indicate work on resinous wood.
5		x		-	
6	x			Unknown	
7		x		-	
8		x		-	
9			x	Unknown	
10		x		-	
11	x			Bone working	
18	x			Working resinous wood	<i>Working resinous wood.</i> This marginal fragment of a retouched flake has a high degree of edge rounding on the retouched used edge as well as edge damage. Resin is scattered on the surface of the tool, as well as found in clear alignment with the working edge, indicating that the tool was used to work resinous wood.
19			x	Unknown	
20	x			Scraping plant	<i>Plant working.</i> The tip of this flaked piece exhibits polish and edge rounding. Edge damage present on the same section includes feather and step termination scars. Plant tissue is associated with the same area, indicating that this piece was used to work plant material.
21	x			Unknown	<i>'Shaped'.</i> Present on this piece are a range of residues including resin, plant tissue, charcoal and ochre. While any or all of these may indicate the worked material, none can be conclusively tied to function due to their location on the piece and lack of correlating use-wear. The artefact has, however, been clearly shaped by grinding.
23	x			Skin working	<i>Skin working.</i> This flake fragment exhibits clear evidence for use as part of a skin-working tool. The high degree of edge rounding (Figure 18) and polish, combined with heavy striations perpendicular to the use edge (Figure 19), indicate that the tool was used to scrape skin. Experimental skin working consistently reveals the same characteristic yellow residue as found on this tool. The use-wear resulting from skin working is very specific and clearly evidenced here.
24			x	Resin related	
28	x			Unknown	

ID	Used?			Function	Description
	Yes	No	Possibly		
29	x			Cutting plant	<i>Cutting plant.</i> This marginal piece of a flake retains traces of the larger tool used. The used edge has edge damage with bending initiated micro-flake removals and slight rounding producing a semi-serrated edge characteristic of use in a cutting or sawing action. A translucent sap associates the used edge with plant working.
30		x		-	
38	x			Scraping plant	<i>Scraping resinous wood.</i> The retouched edge of this artefact is rounded and damaged, with resin pushed back into the flake scar margins. Desiccated plant tissue is also found in association with the worked edge, indicating that this was part of a tool used to scrape resinous wood.
44	x			Bone and plant working	<i>Bone and plant working.</i> This marginal piece shows evidence of having been part of a multifunction tool. Evidence of both bone and plant working are visible. Micro-scars are apparent along the edge, which also exhibits a fairly high degree of rounding with some possible crushing. A bone piece as well as trace amounts of vivianite associated with the edge indicate bone working. Plant processing may be indicated through the presence of a gum residue also associated with the used edge, although this could not be conclusively determined.
45			x	Unknown	
46	x			Plant working	<i>Soft plant working.</i> The distal edge of this marginal piece has been used to work soft plant material. The use-wear evidence for this is some edge damage, comprised of very small micro-scar removals, coupled with slight rounding. Residues present on the tool include cellulose, resin and desiccated plant tissue. Combined, these offer strong evidence for working soft plant.
53		x		-	

Table S9 Details of the Emo excavated decorated pottery sherds.

XU	Red-Slipped Sherds		Red Painted Sherds		Red-Slipped or Painted Sherds		Red-Slipped and Painted Sherds		Incised Sherds		Incised or Impressed Sherds		Red-Slipped and Incised Sherds		Red-Slipped or Painted and Incised or Impressed Sherds	
	(#)	(g)	(#)	(g)	(#)	(g)	(#)	(g)	(#)	(g)	(#)	(g)	(#)	(g)	(#)	(g)
Square A																
2									1	3.88						
3									1	2.58						
5					1	0.45										
8			1	1.89												
15A					7	5.48										
16A					9	2.47										
16B					2	0.07										
18					2	0.88										
19	2	1.57														
Square B																
1	2	2.91			1	1.55					2	2.78				
3											1	4.12				
5					1	0.49										
6	2	2.11														
9	1	0.48			2	0.73							1	1.35		
11															1	3.69
12	1	0.24														
14							1	5.16								
15	1	1.46			4	2.94										
16A					1	0.99										
16B	1	0.42														
22A	1	0.23														
23B	1	0.31														
28					1	0.11										
Total	12	9.73	1	1.89	31	16.17	1	5.16	2	6.46	3	6.90	1	1.35	1	3.69

Table S10 Excavated shells, Emo Square A.

XU	Unidentified Shell Fragments	<i>Batissa violacea</i>			<i>Neritina</i> sp. A		<i>Neritina</i> sp. B		<i>Nerita</i> sp.		<i>Pythia scarabaeus</i>		<i>Melanoides</i> sp.		<i>Cypraea annulus</i>	
	(g)	(MNI)	(g)	Paired (MNI)	(MNI)	(g)	(MNI)	(g)	(MNI)	(g)	(MNI)	(g)	(MNI)	(g)	(MNI)	(g)
1	17.7	39	183.0				2	1.2			2	0.0	39	15.3		
2	31.9	89	294.0				6	2.4					102	25.0		
3	67.0	173	591.8				38	16.9				0.1	343	90.7		
4	104.4	239	677.2				79	37.9			5	0.5	627	157.6		
5	65.4	147	455.5				134	47.7			6	1.5	648	162.5		
6	92.8	252	937.8				236	93.9			21	10.0	1816	476.0		
7	44.3	136	519.0				276	108.0			56	22.4	2267	633.8		
8	101.1	137	568.1				251	149.3			67	21.6	2789	835.8		
9	53.9	111	524.0	2			251	147.3	1	0.08	159	45.4	2701	863.7		
10	72.0	180	771.8				371	183.8			511	89.9	4656	1526.6		
11	93.6	158	820.4	1			303	178.9			475	80.8	4128	1690.5		
12	99.7	150	738.3				266	160.6			553	90.0	4132	1708.6		
13	82.3	168	1040.2				170	89.1			406	65.5	3545	1366.2	1	0.4
14	165.0	222	1089.2				179	111.6			454	62.8	4031	1509.6		
15A	143.7	383	1629.5	2			202	133.1			565	113.8	3015	1197.5		
15B	2.8	24	137.7				16	7.5			20	4.0	240	107.6		
16A	237.9	609	2689.6	8			164	102.4			434	104.5	2629	1102.2		
16B	3.4	16	55.0				13	9.8			18	4.5	143	51.8		
17	83.8	253	1179.3	1			54	30.8			104	28.8	660	275.9		
18	289.7	590	2661.0		1	0.08	134	93.3			426	87.1	1427	647.1		
19	126.7	386	1619.1	5			127	74.6			316	68.8	1149	505.1		
20	146.2	572	2433.2	7			128	77.4			480	86.5	1199	541.8	1	0.9
21A	234.8	618	2558.4	1			152	88.8			345	90.9	1814	771.6		
21B	68.1	196	778.9	1			38	20.6			138	27.1	639	256.1		
22A	216.5	460	1621.2				196	117.2			169	59.4	2409	979.8		
22B	100.9	160	475.0	1			63	37.7			89	15.5	840	347.1	2	1.1
23	48.3	118	397.5				64	37.6			32	21.0	773	304.4		
24	290.6	641	2209.0				346	228.1			396	168.1	4947	1940.4		
25	178.8	295	992.2	2			261	178.6			259	121.6	2818	1152.8		
26	176.4	852	2959.4	1	1	0.05	373	255.7			389	206.6	2547	1061.6		
27A	161.1	509	1803.7				301	150.9			233	117.6	1168	435.7		

XU	Unidentified Shell Fragments	<i>Batissa violacea</i>			<i>Neritina</i> sp. A		<i>Neritina</i> sp. B		<i>Nerita</i> sp.		<i>Pythia scarabaeus</i>		<i>Melanoides</i> sp.		<i>Cypraea annulus</i>	
	(g)	(MNI)	(g)	Paired (MNI)	(MNI)	(g)	(MNI)	(g)	(MNI)	(g)	(MNI)	(g)	(MNI)	(g)	(MNI)	(g)
27B	29.4	94	275.5				54	27.6			38	20.2	123	49.6		
28A	133.9	321	1004.8	3			223	92.7			126	39.8	693	281.8		
28B	16.7	60	180.8				31	15.6			25	8.7	110	46.1		
29	135.0	517	1987.5	3			340	162.7			170	68.6	1289	532.9		
30A	112.6	261	1674.2	1			181	70.4			85	37.8	721	281.3		
30B	7.9	20	36.3				10	6.9			3	1.8	54	21.2		
30C	42.4	140	464.2				65	34.4			50	23.3	262	112.3		
31A	71.0	245	1392.4	2			122	37.5			101	39.8	376	140.9		
31B	4.4	12	22.3				3	1.0			4	0.9	40	11.7		
31C	56.6	233	1089.1				88	47.6			98	40.0	471	199.8		
32A	95.6	302	1196.7	5			80	27.6			255	34.0	350	157.0		
32B	27.5	102	310.3	1			39	22.5			43	14.7	311	129.3		
33A	119.3	277	820.2				29	13.9			73	9.7	260	128.4		
33B	45.6	108	284.6				49	24.9			12	8.4	277	117.3		
34	28.7	41	103.3				1	0.3			7	1.2	24	10.1		
35	2.2	5	14.2				1	0.1			1	0.3	2	0.3		
36	0.0		0.6									0.0				
Total	4529.5	11,621	46,266.9	47	2	0.13	6,510	3,558.0	1	0.08	8219	2165.7	65,604	24,960.4	4	2.4

Table S10 Excavated shells, Emo Square A (cont.).

XU	<i>Tridacna</i> sp.		Camaenidae sp. A		Camaenidae sp. B		Assimineidae		<i>Lamprocystis</i> sp.		Pupinidae		<i>Subulina octona</i>	
	(NISP)	(g)	(MNI)	(g)	(MNI)	(g)	(MNI)	(g)	(MNI)	(g)	(MNI)	(g)	(MNI)	(g)
1													1	0.03
2														
3														
4														
5					1	0.11								
6														
7														
8							1	0.02						
9							1	0.06						
10							1	0.04						
11			1	0.38			2	0.13						
12							6	0.31						
13							1	0.04						
14							1	0.06						
15A							1	0.01						
15B														
16A														
16B														
17							2	0.14						
18	1	80.00					3	0.14						
19														
20			1	0.03			2	0.10						
21A														
21B							1	0.07						
22A							1	0.01						
22B							1	0.04						
23														
24							3	0.15						
25														
26														
27A							3	0.14	1	0.01				
27B							1	0.04						

XU	<i>Tridacna</i> sp.		Camaenidae sp. A		Camaenidae sp. B		Assimineidae		<i>Lamprocystis</i> sp.		Pupinidae		<i>Subulina octona</i>	
	(NISP)	(g)	(MNI)	(g)	(MNI)	(g)	(MNI)	(g)	(MNI)	(g)	(MNI)	(g)	(MNI)	(g)
28A							1	0.12						
28B														
29							1	0.03						
30A			1	0.34										
30B														
30C														
31A											1	0.05		
31B														
31C														
32A											2	0.03		
32B														
33A														
33B														
34														
35														
36														
Total	1	80.00	3	0.75	1	0.11	33	1.65	1	0.01	3	0.08	1	0.03

Table S11 Excavated shells, Emo Square B.

XU	Unidentified Shell Fragments	<i>Batissa violacea</i>			<i>Neritina</i> sp. B		<i>Pythia scarabaeus</i>		<i>Melanooides</i> sp.		<i>Cypraea annulus</i>	
	(g)	(MNI)	(g)	Paired (MNI)	(MNI)	(g)	(MNI)	(g)	(MNI)	(g)	(MNI)	(g)
1	43.7	107	284.7		4	2.4	1	0.0	81	29.2		
2	41.9	121	306.2		9	3.6		0.1	141	37.5		
3	33.5	76	251.1		15	5.1			103	28.7		
4	50.4	126	348.5		33	11.8	3	0.2	199	54.4		
5	58.5	153	513.4		60	17.1		0.4	183	90.0		
6	132.1	244	740.1		197	72.5	10	3.6	924	283.0		
7A	53.0	93	411.3		258	99.2	9	7.0	996	285.1		
7B	146.1	24	76.0		35	14.3		0.4	285	50.6		
8	37.1	89	335.8		231	89.9	32	14.0	1248	331.0		
9	80.6	103	376.1		260	114.6	49	13.1	1828	449.2		
10A	160.4	204	728.1		460	219.4	77	31.3	3323	977.4		
10B	0.4	1	3.7		9	5.7	1	0.7	61	11.4		
11	41.9	119	488.7		277	118.6	111	26.1	1846	564.3		
12	99.6	274	1201.0		536	251.9	233	63.8	4017	1553.7		
13	14.2	39	136.4		102	45.1	44	13.0	885	285.5		
14	46.1	174	992.2		220	101.3	121	36.6	1753	691.3		
15	80.5	219	1049.6		260	135.0	189	44.4	3399	1164.9		
16A	76.4	251	893.5		196	83.0	200	45.2	2740	1048.7		
16B	7.3	40	147.0		16	8.6	20	5.6	240	100.6		
17A	168.1	330	1401.5		162	83.7	202	41.2	2708	1032.3	1	0.1
17B	7.2	36	150.3	1	19	9.6	20	5.5	315	96.9		
18	83.8	209	871.6		71	40.0	75	25.2	1251	458.0		
19	60.1	207	960.8		60	35.9	90	27.3	1168	459.2		
20	269.6	447	1797.2		106	63.9	198	43.2	1931	700.7		
21	221.7	510	1830.1		105	63.8	211	36.6	2042	816.3		
22A	259.0	464	1353.2		37	23.7	83	17.3	703	315.9		
22B	74.5	160	615.0		36	19.8	129	20.7	634	262.7		
23A	210.9	475	1251.2		68	40.0	122	23.7	2105	752.4		
23B	175.0	232	728.5		81	45.4	125	26.4	1699	626.5		
24	708.2	729	1776.5		424	252.6	246	99.9	5848	2014.3		
25	444.2	447	1370.0		299	194.1	243	85.4	2554	1089.0		

XU	Unidentified Shell Fragments	<i>Batissa violacea</i>			<i>Neritina</i> sp. B		<i>Pythia scarabaeus</i>		<i>Melanoides</i> sp.		<i>Cypraea annulus</i>	
	(g)	(MNI)	(g)	Paired (MNI)	(MNI)	(g)	(MNI)	(g)	(MNI)	(g)	(MNI)	(g)
26	181.0	609	2080.2		118	70.0	120	55.7	1029	343.9		
27	206.8	224	1171.5		122	59.4	115	35.6	774	230.1		
28	557.9	433	1924.7		147	70.3	213	31.5	972	272.6		
29	183.6	296	1407.3		63	32.4	222	25.6	281	84.4		
30	398.0	517	2301.9	6	102	50.9	294	63.2	586	223.8		
31	500.2	547	2228.6		100	58.3	358	76.8	708	359.4		
32	238.6	507	1780.6		97	50.6	291	42.1	688	373.7		
33	245.9	336	1125.0		28	32.3	180	14.9	465	231.6		
34	105.4	92	245.6		5	4.8	39	8.4	122	53.7		
35	14.0	13	39.8		1	0.7	16	1.1	23	10.6		
36	0.6					0.0						
Total	6518.0	10,277	37,694.3	7	5429	2701.2	4692	1112.8	52,858	18,844.2	1	0.1

Table S11 Excavated shells, Emo Square B (cont.).

XU	<i>Tridacna</i> sp.		<i>Telescopium telescopium</i>		Camaenidae sp. A		Assimineidae		Pupinidae		Cyclophoridae	
	(NISP)	(g)	(MNI)	(g)	(MNI)	(g)	(MNI)	(g)	(MNI)	(g)	(MNI)	(g)
1												
2												
3			1	2.33								
4												
5												
6												
7A												
7B												
8					1	2.31						
9												
10A												
10B												
11												
12												
13									1	0.03		
14												
15												
16A												
16B												
17A												
17B												
18								1	0.04			
19												
20											1	0.03
21												
22A												
22B												
23A								1	0.13			
23B												
24	3	10.65					1	0.05				
25												
26												

XU	<i>Tridacna</i> sp.		<i>Telescopium telescopium</i>		Camaenidae sp. A		Assimineidae		Pupinidae		Cyclophoridae	
	(NISP)	(g)	(MNI)	(g)	(MNI)	(g)	(MNI)	(g)	(MNI)	(g)	(MNI)	(g)
27												
28												
29												
30												
31												
32									1	0.02		
33												
34												
35												
36												
Total	3	10.65	1	2.33	1	2.31	3	0.22	2	0.05	1	0.03

Table S12 Excavated faunal remains (general categories), Emo Square A.

XU	Phase	Mammal (g)	Snake (g)	Turtle (g)	Fish (g)	Unidentified (g)	Other (g)	Type of other
1	4	6.42	0.06		0.89			
2	4				2.23	2.06		
3	4	2.50	0.43	0.35	4.18	5.15		
4	4	1.50	0.25		4.05	14.91		
5	4	3.82	0.28		2.54			
6	4	6.27	0.80		7.38	2.57		
7	3,4	0.48	0.34		3.54	1.01		
8	3,4	0.75	0.06		2.61			
9	3,4	0.44	0.15		3.49	3.29		
10	3,4	0.63			6.76	0.74		
11	3,4	0.95			5.77	0.13		
12	3,4	1.22	0.94		6.28			
13	3,4	0.05			5.32	0.27		
14	3,4	0.29	0.15		6.87	0.92		
15A	3,4	0.62	0.07		9.50	0.17		
15B	3				0.13			
16A	3,4	3.12			5.43			
16B	3				0.20	0.33		
17	3,4				1.27			
18	4	0.86	2.16		1.97			
19	3,4	0.43	4.91		6.50	0.96		
20	3	2.40	3.01		7.09	0.25	0.14	Frog bone
21A	3	1.12	0.38		7.43	0.89		
21B	3	0.03	0.93		0.68	0.25		
22A	2,3				0.58	0.39		
22B	2				1.07	2.25		
23	2		0.19		0.25			
24	2		1.09		2.01	0.48		
25	2,4	1.50			0.92			
26	2,4	0.82			3.75	0.21	3.7	Worked mammal bone (2.0g), bird (1.7g)
27A	2	1.08			1.73			
27B	4				0.02			
28A	2	0.50			2.47	0.25		

XU	Phase	Mammal (g)	Snake (g)	Turtle (g)	Fish (g)	Unidentified (g)	Other (g)	Type of other
28B	4				0.02			
29	2	0.83	1.85		9.02	0.79		
30A	2	9.34	1.29		3.26	4.85		
30C	2,4		0.23		1.12	0.13		
31A	2	16.30	0.25		4.82			
31B	4		0.16		0.17			
31C	2,4				2.97		0.07	Polished mammal bone
32A	2	0.25	0.34		5.81	0.58		
32B	4		0.23		1.26	0.07		
33A	1				1.65			
33B	4				0.49			
34	1				0.75			
35	1				0.05			
36	1							
Total		64.52	20.55	0.35	146.3	43.9	4.33	

Table S13 Excavated faunal remains (specific categories), Emo Square A, by NISP.

XU	Pig	Dog	Ech kalubu	Ech sp.	<i>Thylogale</i>	Phal sp	<i>Spilocuscus</i>	<i>Uromys</i>	<i>Hydromys</i>	<i>Melomys</i>	Medium Murid	<i>Rattus</i>	Small Murid	Pteropodid	Boid	Colubroid	Snake	Gekkonid	Lizard Indet	Varanid	Bird	Non-Ariid Otolith	Ariid Otolith	Ariid Headplates	Plotosidae	Scaridae	Platycephalidae?	
1	2					1				1			1		1											1		
2																										1	2	
3	2		1				1								2												1	
4	1					1	1								3		1						1				1	
5	1												1		1													
6	2														3										*	1	1	
7	1									1					3	1									*			
8	1		1			1				1					1								1					
9						1		1						1		1									*			
10				1		2							1												*	1	1	
11									1				2												*		2	1
12			1												1								1		*		2	
13						1																			*		1	
14		1									1				1										*		3	
15A								1							1			1							*		1	
15B																												
16A		1								1			3												*			
16B																												
17																											1	
18												1			3	3									*			
19						1							1		6	5	13										2	
20	1					1									10	6												
21A			1												2										*			
21B		1													2													
22A																												
22B																												
23															2													
24															3												1	

XU	Pig	Dog	Ech kalubu	Ech sp.	Thylogale	Phal sp	Spilocuscus	Uromys	Hydromys	Melomys	Medium Murid	Rattus	Small Murid	Pteropodid	Boid	Colubroid	Snake	Gekkonid	Lizard Indet	Varanid	Bird	Non-Ariid Otolith	Ariid Otolith	Ariid Headplates	Plotosidae	Scaridae	Platycephalidae?
25	1																									1	
26				4											1						1			*			
27A																											
27B																											
28A				1																				*			
28B																											
29															7					1	1			*			
30A	1			1											4									*			
30C															4									*			
31A	1					2									1							1		*			
31B																											
31C																			1					*			
32A															2		1							*			
32B															1												
33A																										1	
33B																											
34																								*			
35																											
36																											
Total	14	3	4	7		11	2	2	1	4	1	1	9	1	65	16	15	1	1	1	1	5			3	22	1

Table S13 Excavated faunal remains (specific categories), Emo Square A, by NISP (cont.).

XU	Lutjanidae	Lethrinidae	Serranidae	Balistidae	Serranidae?	Cassowary Eggshell	Megapode Eggshell	Crab
1								
2	1							
3								
4							*	
5							*	
6		1					*	
7							*	
8								
9						*		
10						*	*	
11	1							
12						*		
13								
14								
15A						*	*	
15B								
16A								*
16B								
17						*	*	
18						*		
19							*	
20							*	
21A						*		
21B								
22A								
22B								
23						*		
24								

XU	Lutjanidae	Lethrinidae	Serranidae	Balistidae	Serranidae?	Cassowary Eggshell	Megapode Eggshell	Crab
25						*		
26								
27A								
27B								
28A								
28B								
29								
30A								
30C								
31A								
31B								
31C								
32A								
32B						*		
33A								
33B								
34								
35								
36								
Total	2	1						

Table S14 Excavated faunal remains (general categories), Emo Square B, by weight (g).

XU	Phase	Mammal (g)	Snake (g)	Turtle (g)	Fish (g)	Unidentified (g)	Other (g)	Type of Other
1	4	2.91		2.03	7.57	0.37		
2	4	0.46	0.38	0.81	7.45	1.01		
3	4	2.44	0.23		2.18	0.47		
4	4				7.92	3.18		
5	4	0.20	0.12	0.36	5.53	7.52	0.42	Drilled mammal tooth
6	4	1.14	0.36	0.44	9.69	0.37		
7A	4	0.15	0.09		4.19	0.90		
7B	4	2.30	0.13		3.04	1.88		
8	4	0.09	0.03		2.42			
9	3	1.36			2.99	0.08		
10A	3	2.51			5.58			
10B	4				0.21			
11	3	1.90	0.02		3.25		0.01	Frog bone
12	3	1.22	0.61		11.47			
13	3	1.48	0.04		1.27			
14	3	1.48			3.66			
15	3	10.71	0.23		9.81			Drilled dog tooth
16A	3	0.91	0.21		4.57			
16B	3	0.70	0.12		0.53			
17A	3	0.27	0.08	1.47	4.37			
17B	3	0.23		0.16	0.35			
18	3	2.65			1.39			
19	3	3.79			3.55			
20	3	1.88	0.28		4.19			
21	3	4.62	0.35		10.04			
22A	3	1.29	0.13		5.08			
22B	3	0.15			1.98			
23A	2,3	9.07	0.03		3.31			
23B	2	0.22	0.10		2.18			
24	2				1.01	0.51		
25	2	8.59			4.00			
26	2	0.30	1.32	0.37	2.38			
27	2	0.66	0.27		2.85			

XU	Phase	Mammal (g)	Snake (g)	Turtle (g)	Fish (g)	Unidentified (g)	Other (g)	Type of Other
28	2	1.46		0.19	8.07	1.12		
29	2	3.16			8.19			
30	2	1.06	0.4	2.41	5.86			
31	2	1.21			6.9			
32	1,2							
33	1				0.45			
34	1				0.24			
35	1				0.07			
36	1				0.03			
Total		72.57	5.53	8.24	170.19	17.41	0.01	

Table S15 Excavated faunal remains (specific categories), Emo Square B, by NISP.

XU	Pig	Dog	Ech kalubu	Ech sp.	<i>Thylgale</i>	Phal sp	<i>Spiloguscus</i>	<i>Uromys</i>	<i>Hydromys</i>	<i>Melomys</i>	<i>Rattus</i>	Small Murid	Pteropodid	Boid	Colubroid	Snake	Varanid	Bird	Non-Ariid Otolith	Ariid Otolith	Ariid Headplates	Scaridae	Platycephalidae?
1	2		1									1								4	*		
2	1		1	1										1							*	1	
3	1					2								2								1	
4																					*		1
5	1								1					1							2		
6		1				1						1					1	1		1	*		
7A				1										1								1	1
7B	1													1						1			
8				1										1									
9	1																						
10A	1				1		1	1												5			
10B																							
11	1													1						4			1
12	1		1											3						5	*	2	
13													1			1				1			
14	1																1			2			
15	3	1								1			1	2						3		2	
16A						1								2						2	*	1	
16B																1							
17A														1								3	
17B																							
18	1	1																		1			
19								1													*	1	
20		1		1				1						2									1
21	1					1	1			1		1								4			
22A	1					1								1						4			
22B		1												1									
23A			1				1	1				2								2	*		

XU	Pig	Dog	Ech kalubu	Ech sp.	<i>Thylagale</i>	Phal sp	<i>Spilocuscus</i>	<i>Uromys</i>	<i>Hydromys</i>	<i>Melomys</i>	<i>Rattus</i>	Small Murid	Pteropodid	Boid	Colubroid	Snake	Varanid	Bird	Non-Ariid Otolith	Ariid Otolith	Ariid Headplates	Scaridae	Platycephalidae?
23B														2						2			
24																							
25	1																			1	*		
26				1				1						5	5						*		
27			1											1								1	
28				1																		1	
29				1																			
30				2										1									
31				1																	*		
32																							
33																							
34																							
35																							
36																					*		
Total	18	5	5	10	1	6	5	3	1	2		5	2	29	5	2	2	1		44		14	4

Table S15 Excavated faunal remains (specific categories), Emo Square B, by NISP (cont.).

XU	Lutjanidae	Lethrinidae	Serranidae	Balistidae	Serranidae?	Cassowary Eggshell	Megapode Eggshell
1							
2							
3							
4		1					
5							*
6			1				
7A							
7B							
8							*
9							
10A							
10B							
11							
12						*	
13							
14						*	*
15							
16A						*	*
16B							
17A							
17B							
18		1					
19							
20							
21		1				*	
22A				1			
22B							
23A							

XU	Lutjanidae	Lethrinidae	Serranidae	Balistidae	Serranidae?	Cassowary Eggshell	Megapode Eggshell
23B							
24						*	
25							
26							
27							
28					1		
29			1				
30							
31							
32							
33							
34							
35							
36							
Total		3	2	1	1		