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Excavation at the West Lewis Rockshelter MLP-WL027

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A test excavation (50 cm x 40 cm) was undertaken in a small rockshelter found in the interior valley west of the historic settlement (Figure 10.1). This rockshelter has two vertical rock art panels on its exterior vertical face and it is now recorded as Site MLP-WL027 (see Chapter 9).

There is a small engraving site complex in the valley running southwards on the opposite side of the main east-west valley which has semi-permanent rock holes (see Chapter 9, Figure 9.32). The shelter's internal space measures 290 cm x 310 cm x 210 cm (high) and its dripline is low (140 cm high), and the orientation of the shelter is south-east (Figure 10.2). A large Kurrajong tree grows at the front of the shelter, blocking a clear view of its entrance.

This test excavation was undertaken on the request of MAC CEO Peter Jeffries. MAC was seeking a suitable location for reburial of human skeletal remains as part of their repatriation process. They wanted to ensure there was no cultural material within the rockshelter before utilising this location for the reburial. As artefacts were found here, MAC has chosen an alternative location for their repatriation program.

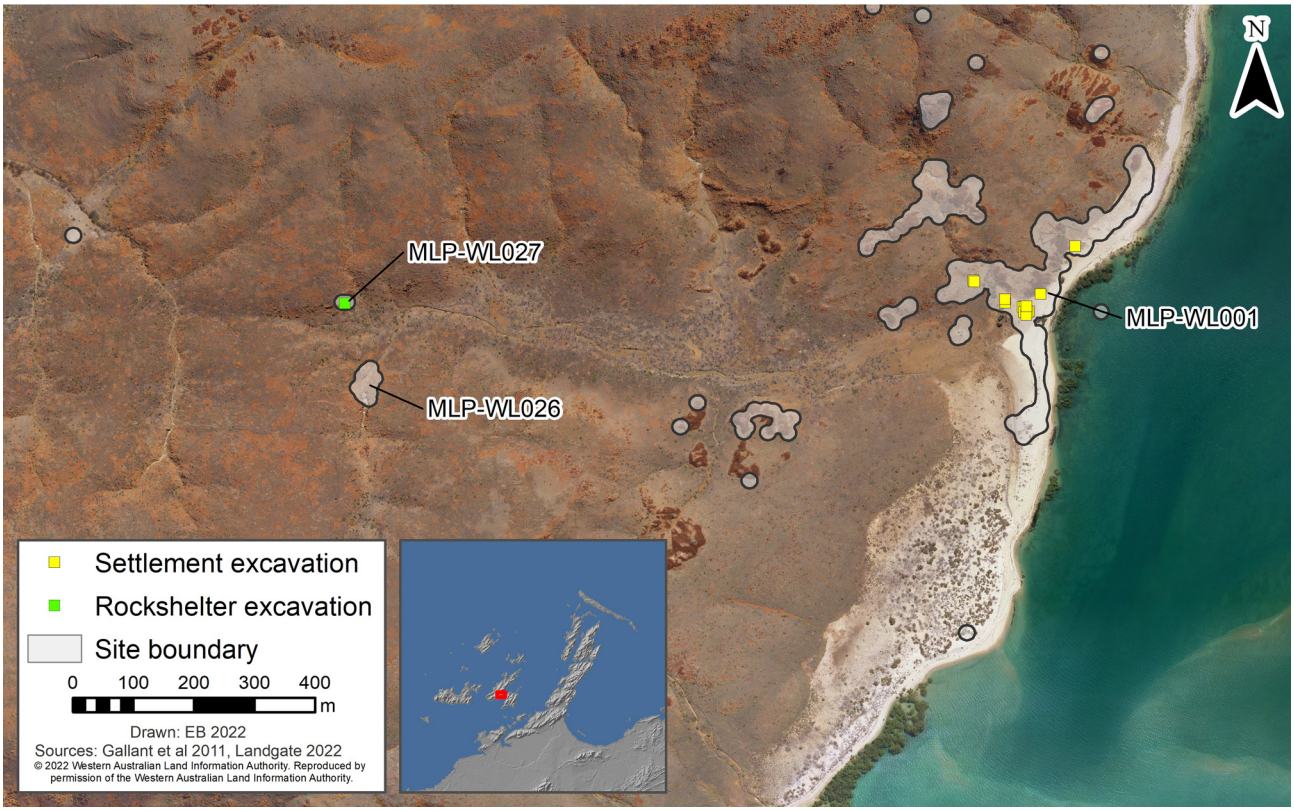

Figure 10.1. Location of the West Lewis Rockshelter (MLP-WL027) west of the pastoral station, and north of the minor gully with rock art site MLP-WL026.

Square 275250

There is very limited floor area in the shelter because of fallen rocks. The 50 cm x 40 cm square was positioned in the only available space at the rear of the shelter, adjacent to the sloping back wall (see Figure 10.3). The area between the rocky intrusions is flat, and the cave is frequently used by rock wallabies, as evidenced by their scats covering the floor (Figure 10.4).

Figure 10.2. Landscape around rockshelter MLP-WL027 with a view from the valley as well as view from the dripline towards site MLP-WL026. Detail of the two engraved panels (bottom).

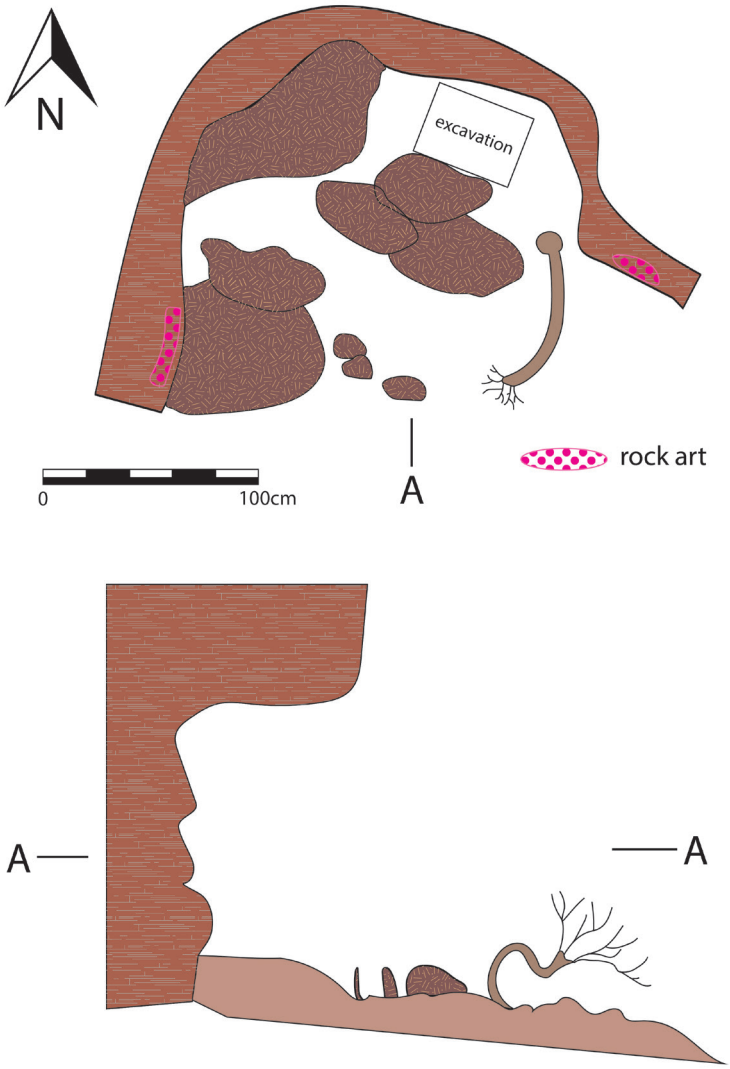

Figure 10.3. West Lewis Rockshelter site plan and cross-section.

Soils, stratigraphy and dating

Excavation in this 0.5 m x 0.4 m square proceeded in eight XUs dug in 2–4 cm depths (Figure 10.4). Three stratigraphic units were encountered (Figure 10.5):

SU1 – a thin veneer of loose, fine reddish brown (7.5YR 3/3) silty deposit, with a high proportion of macropod scats comprising the Ao layer;

SU2 – red brown (7.5YR 3/3) compacted friable deposit, with ant nest / bioturbation areas present in pockets (not visible in all sections);

SU3 – very rocky, fine, clayey dark reddish brown sediment (7.5YR 2.5) with mixed-sized interlocking rocks.

Figure 10.4. Square 275250: showing (top) surface and base of XU1; base of XU6 (bottom, left); and (right) at end of excavation in XU8. View towards MLP-026 can be seen from within the shelter (top right)

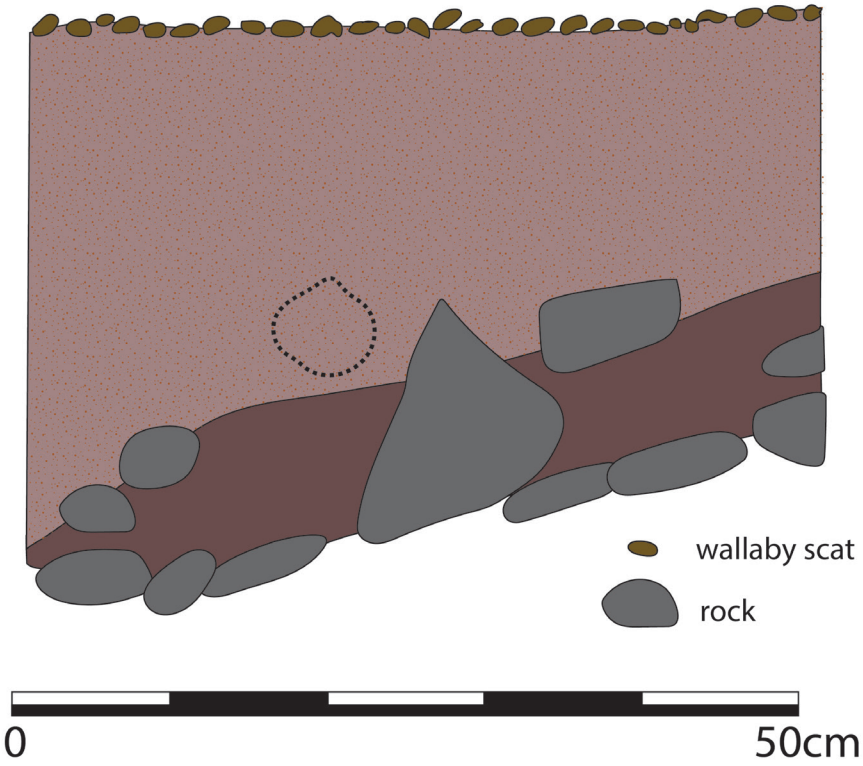

Figure 10.5. Square 275250: north baulk stratigraphic section.

Some faunal material was encountered here, most of which appears to be animals that had died in place. Land snails were recorded in all XUs. Some loose surface charcoal was noted in XU1, but was insufficient for this to be submitted for an age determination. The only materials that we considered might provide us with an age sequence was the land snail. We submitted two of these (from XU2 and XU5) to Waikato. These returned indistinguishable from modern dates, which we consider has no bearing on the age of the deposit.

Land snail WLA-275E250N XU02-08 – Wk47913 250 ± 20 BP (96.9% $F^{14}C\%$)

Land snail WLA-275E250N XU05-04 – Wk47914 229 ± 19 BP (97.2% $F^{14}C\%$)

Cultural assemblage

Stone artefacts comprise the only cultural material recorded in the subsurface deposit. The stone assemblage was characterised within two analytical units (AUs) which were defined based on broad stratigraphic divisions (Table 10.1; and see above). Age ranges for these analytical units are unknown.

UNIT	DEPTH BELOW SURFACE (CM)	STRATIGRAPHIC UNIT	ANALYTICAL UNIT	DEPOSIT EXCAVATED	FLAKED ARTEFACTS	TOTAL WEIGHT
XU01	4	SU1	AU1	7.5	56.3	63.8
XU02	8	SU2	AU1	7.0	74.6	81.6
XU03	11	SU2	AU1	8.9	73.7	82.6
XU04	15	SU2	AU1	6.9	215.5	222.4
XU05	19	SU2	AU1	7.4	232.1	239.5
XU06	24	SU3	AU2	9.2	119.2	128.4
XU07	28	SU3	AU2	8.5	177.6	186.1
XU08	35	SU3	AU2	10.5	402.8	413.3

Table 10.1. Square 275250: excavation weights for deposit (kg) and stone artefacts (g).

Stone artefacts

The lithic assemblage from Square 275250 comprises 117 flaked stone artefacts. Of these, 38 are <1 cm in maximum dimension (Table 10.2). Artefact density in this shallow, oddly sized (0.5 m x 0.4 m x 0.35 m) square is 1,671 artefacts/m^3.

Assemblage composition

Three representative stone artefacts were analysed using pXRF to determine raw material classifications at MLP-WL027 (see Chapter 2). Artefacts were not able to be confidently matched to source geology or pXRF data from other analysed materials across the archipelago (Fairweather 2019; and see Figure 10.6). Pending future geological work on the Lewis Islands bedrock, the lithic material found throughout the MLP-WL027 deposit (97.4%; see Table 10.2, Figure 10.5 and Figure 10.6) is described here as 'fine-grained volcanic'. This material is presumed to be local andesitic basalt deriving from West Lewis Island (see Chapter 9, Figure 9.2).

A minor lithology discarded within the rockshelter is quartz. This was found in both units (Figure 10.8). The quartz assemblage comprises a broken flake and two small pieces of debris. It is assumed that this material also has a local derivation.

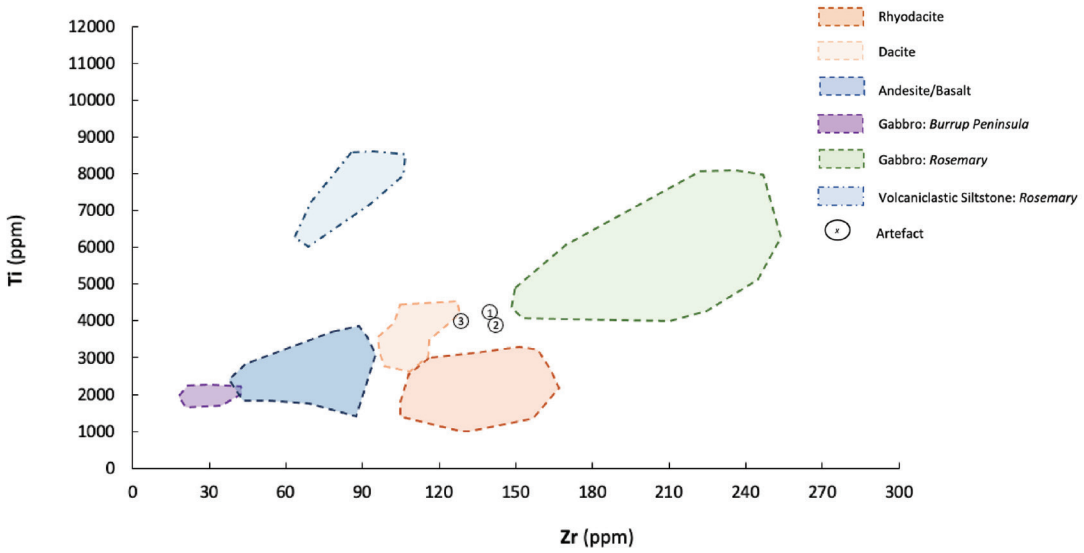

Figure 10.6. Square 275250 showing the three sampled artefacts from West Lewis Rockshelter overlaid on the mapping of the different raw materials from the Dampier Archipelago.

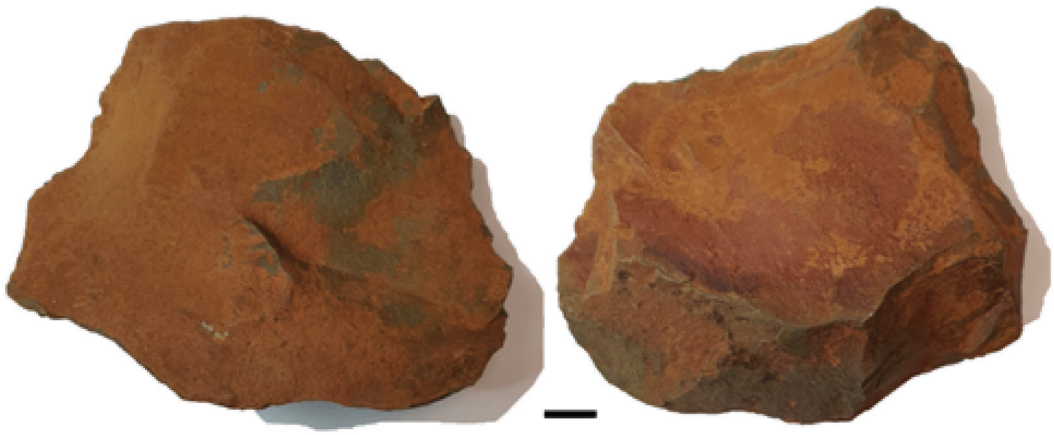

Figure 10.7. Square 275250 artefact 275250-XU07-LA082: fine-grained volcanic material, showing adhering fine-grained sediment. Scale is 10 mm.

MATERIAL/AU	FINE-GRAINED VOLCANIC	%F	QUARTZ	%F	TOTAL	%F
1	81	97.6	2	2.4	83	70.9
2	33	97.1	1	2.9	34	29.1
Total	*114*	*97.4*	*3*	*2.6*	*117*	*100.0*

Table 10.2. Square 275250: stone artefact assemblage showing lithic material frequency by analytical unit.

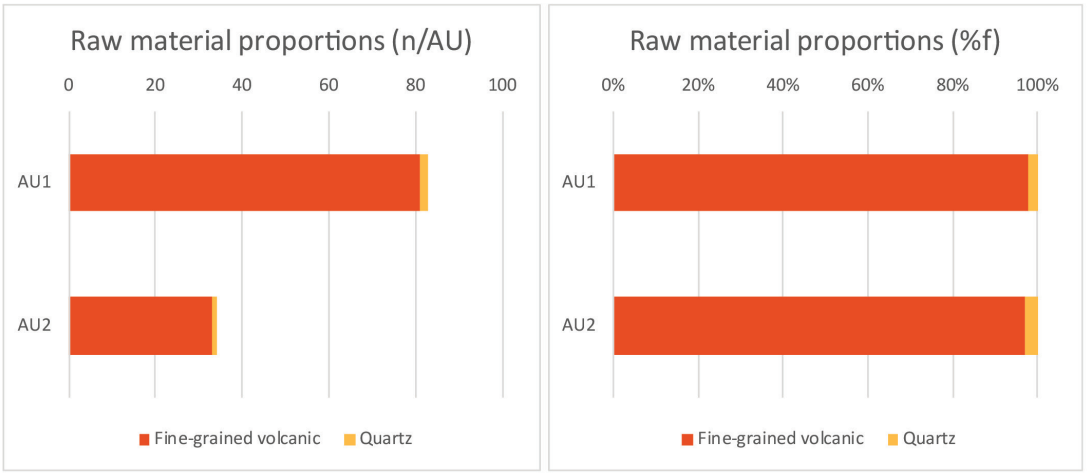

Figure 10.8. Square 275250: =raw materials proportions in the two analytical units.

Although more artefacts were discarded during the more recent occupation phase (AU1, n = 83, 70.9%; Figure 10.8), artefact densities per cubic metre (Figure 10.9) are similar in both analytical units. The much rockier substrate in AU2 means less sediment accumulation amongst the blocks and hence similar discard rates. As age ranges for these analytical units are unknown, it is difficult to relate artefact discard and sediment deposition to occupation intensity and any particular time.

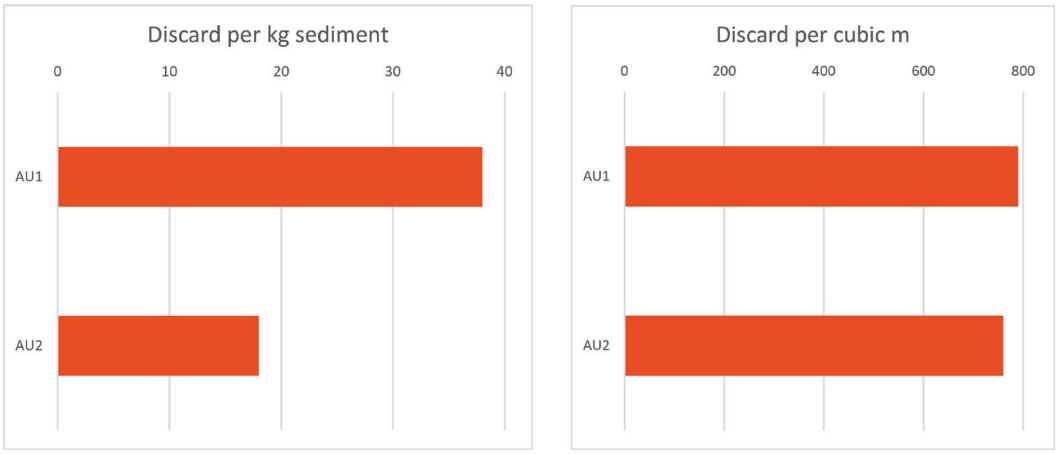

Figure 10.9. Square 275250: artefact densities in each analytical unit.

Most artefacts (63%) discarded at the rockshelter are complete flakes (Table 10.3). A smaller proportion of flakes are broken (30.4%). Most broken flakes in AU1 (n = 13, 61.7%) are broken longitudinally. High frequencies of longitudinally broken flakes are associated with breakage during manufacture resulting from a strong force exerted by hard hammer stones during the knapping process (Clarkson and David 1995: 33; Crabtree 1972; Hiscock 1985). Cores and retouched artefacts were discarded at the site throughout its occupations (AU2: 1 x core, 3 x retouched artefact; AU1: 1 x core, 1 x retouched artefact).

ARTEFACT TYPE / MATERIAL	BROKEN FLAKE		COMPLETE FLAKE		CORE / CORE FRAGMENT		TOOL		TOTAL		NAS TO MNA RATIO
	N	%	N	%	N	%	N	%	N	%	
Fine-grained volcanic	23	29.5	49	62.8	2	2.6	4	5.1	*78*	*98.7*	1.2
Quartz	1	100.0	–	–	–	–	–	–	*1*	*1.3*	2.0
Total	*24*	*30.4*	*49*	*62.0*	*2*	*2.5*	*4*	*5.1*	*79*	*100*	–

Table 10.3. Square 275250: stone assemblage composition by frequency and proportion. Artefacts <10 mm excluded.

Assemblage reduction

Fine-grained volcanic flakes exhibit low SDI values (Table 10.4), indicating that most flakes were removed from nodules during relatively early stages of reduction. Further, only four flakes have dorsal scars that are oriented in directions other than from the platform; and only two flakes have previous flake scars on their platform surfaces. This also suggests non-intensive core reduction. The presence of four flakes with completely cortical dorsal surfaces indicates that they were removed at the earliest stage of core reduction. Reduction of fine-grained volcanic nodules was even less intensive during initial site visits (AU2; Table 10.4).

AU	n	μ	SD
1	41	0.83	0.42
2	6	0.65	0.48

Table 10.4. Square 275250: Scar Density Index (SDI) for complete fine-grained volcanic flakes (not including flakes <10 mm).

Flake size varies widely, particularly within the earlier assemblage (AU2; Table 10.5). The discard of several large flakes during this time (including a 126.6 g flake) has substantially increased average flake size values. Flakes are typically square in shape (Table 10.6).

AU	WEIGHT (G)			SURFACE AREA (MM^2)	
	N	μ	SD	μ	SD
1	41	5.2	9.6	587.0	651.2
2	6	31.4	48.3	1,779.6	1,811.8
Total	*47*	*8.5*	*20.1*	*736.1*	*937.0*

Table 10.5. Square 275250: weight and surface area for complete fine-grained volcanic flakes (excluding flakes <10 mm).

AU	N	μ	SD
1	41	1.1	0.5
2	6	1.2	0.3
Total	*47*	*1.1*	*0.5*

Table 10.6. Square 275250: elongation ratio for complete fine-grained volcanic flakes (excluding flakes <10 mm).

The core discarded at the MLP-WL027 rockshelter during the earlier phase (AU2) was intensively reduced (SDI: 3.42). It measures 67.6 mm x 53.5 mm x 24.0 mm and has two flaked platforms, from which 14 flakes were removed. In contrast, a similar sized core (66.0 mm x 60.0 mm x 31.5 mm) discarded during a later site visit (AU1) was non-intensively reduced (SDI: 0.96). Although it was also rotated (two platforms), only four flakes were removed from the nodule before it was discarded. These findings, which suggest more intensive reduction during AU2, reveal a different reduction pattern to that found by analysing the flakes (see above).

Tool selection and use

Amongst this small rockshelter assemblage are four artefacts with retouch. All exhibit scalar retouch along one or more edges but none have been intensively retouched. These four retouched flakes are noticeably larger in weight (m 103.9 ± 58.8) and surface area (m 3352 ± 360.5) than non-retouched flakes discarded at the site. Larger and unbroken fine-grained volcanic flakes were clearly preferred for subsequent tool use.

Usewear and residue analysis

Macroscopic inspection identified four artefacts with easily visible edge damage (10). These were subject to more detailed usewear and residue analysis. One of these artefacts (275250-XU06-LA076) also exhibits scalar retouch along one edge. Three other flakes with scalar retouch were also inspected microscopically to examine their proposed function as tools.

No residues were detected and no microscopic usewear is present on any of the seven examined artefacts. It is possible that this result is due to the screening methods not detecting residues; however, this seems unlikely given this same method has been used throughout this project region (see Blunt 2019). This result could indicate that the four retouched flakes were shaped (via retouch) but then not used further as tools, or that these tools were previously used then resharpened (removing evidence of previous use from their edges) and then discarded before they were used further. This inconclusive result demonstrates the need for microscopic analyses to be undertaken on all possible tools to assess macroscopic edge damage and retouched edges, and their possible uses.

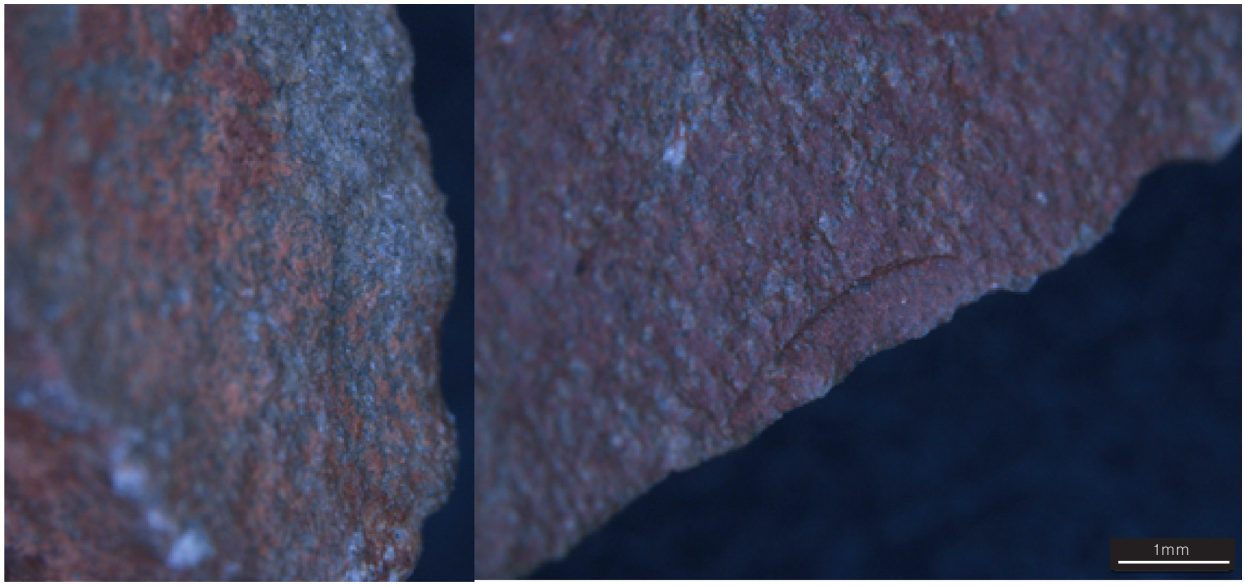

Figure 10.10. Artefact 275250-XU06-LA076 showing detail of negative flake scarring along edges with absence of concentrated scars, polish and striations.

Discussion

The age of the MLP-WL027 rockshelter assemblage is unknown. Two distinctive stratigraphic units which both include stone artefacts indicate either an occupation sequence representing multiple site visits or an occupation deposit of considerable age which has undergone paedogenesis. Many artefacts appear altered by the adhering clayey sediment, suggesting that they have been encased in this deposit for a long period of time. Conversely, episodes of water movement through the shelter may have resulted in sediment adhering to artefact surfaces over time, although there was no evidence of recent water disturbance or general dampness within the rockshelter during the fieldwork. Most artefacts were discarded within the upper stratigraphic/analytical unit (AU1), although the lower layers are rockier. While there are some morphological differences in flake and core reduction intensity between the two units, the small assemblage size makes it difficult to build meaningful interpretations.

The discard of local lithologies only at the rockshelter indicates that this place was most likely used as a brief stop for task-specific activities (Veth 1982). This is one

of the only known rockshelters on West Lewis Island (and indeed, more broadly, across the Dampier Archipelago). This place offered rare shelter and protection from extreme weather conditions (rain and/or intense heat), located close to semi-permanent water in the adjacent valley. This shelter is unusual in that it has engraved track motifs on its vertical exterior wall: the two pairs of engraved tracks with five digits have been interpreted as echidna tracks, while the other three tracks are three-toed bird tracks. It is assumed that this site was visited primarily for the shelter it provides in proximity to the large waterholes present in the rock art site complex across the low valley.

The MLP-WL027 rockshelter on West Lewis Island was visited by people only very occasionally in the past. Despite the low artefact discard rates, this assemblage provides some insights into the activities undertaken at the rockshelter. Locally available nodules of fine-grained volcanic material were exploited to manufacture large flakes for non-intensive tool use. Non-intensive reduction of this fine-grained material reflects its abundant availability across West Lewis Island. The absence of microscopic usewear on the four discarded retouched flakes could indicate their disposal prior to their use as tools or that resharpening occurred along previous used edges (removing prior traces of usewear). The assemblage demonstrates that some (limited) quartz reduction and/or tool maintenance also took place here. Quartz artefacts (this material is found in seams in the local basalts) may have been transported away from the rockshelter after these activities.

This assemblage is potentially of a significant age, pre-dating the Holocene. There is no shellfish associated with the lithic assemblage, in contrast to shell being observed in many locations along the interior valley and around the island's coastline.

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