SHORT REPORTS

ROCKSHELTER TAPHONOMY: A MONITOR PROGRAM IN DARLING MILLS CREEK, SYDNEY

Tessa Corkill
“Archaeics”, 72 Cairnes Road, Glenorie, NSW 2157, Australia

What are the impacts of periodic freshwater flooding on archaeological sites in rockshelters? If there are impacts that are likely to damage such sites, what mitigative measures can be taken to minimise the damage? These questions were the basis of a program designed in 1996 to monitor three such sites in Sydney’s Darling Mills Creek Valley.

The shelters are among a group of Aboriginal sites and potential sites identified during an archaeological investigation undertaken prior to construction of a dam designed to control the release of periodic floodwaters from the valley (Corkill 1992, 1993). Predicted inundation frequencies for each rockshelter depend on its elevation above the valley floor - two of those selected are predicted to flood once every 1-5 years on average; the third is above the height of the dam wall and will not be inundated. No Aboriginal archaeological material has been found in this shelter. It contains sediments identified as a potential archaeological deposit and was selected as a “control” due to its elevation. The longest duration of a flooding event was estimated to be less than 14 hours (Manidas Roberts 1994:13, Table 10.6.1). Geomorphic impact on archaeological deposits was predicted to be “negligible” (see Corkill 1996 for a report by geotechnical engineers Golder Assoc. Pty Ltd) and depositional rather than erosional. In addition, it was suggested that sediment deposition was likely to protect rather than destroy archaeological deposits (Golder Assoc. spokesperson, pers. com.). This seemed to me debatable - geomorphic conclusions are frequently based on data for larger scale areas than those covered by archaeological sites (e.g. hillsides rather than rockshelters) and small scale processes such as local eddies within shelters on steep ridgesides, during flood events, might have considerable erosional effect.

Apart from simple erosion/deposition of sediments, periodic inundation could have other effects. For example floodwaters and their suspended sediments might have different pH values to those present in the archaeological deposits they submerge, thus altering preservation rates of organic material.

Although experimental archaeological monitor programs have been carried out, they mainly seem to focus on open sites (e.g. the National Reservoir Inundation Study in the U.S.A. - see Lenihan et al 1981; but c.f. Sefton 1990).

Following the collection of baseline data in 1996, I proposed to make recordings annually and after each inundation episode, until 2001. Compared to archaeological time-scales, five years is a minuscule period but I felt that some useful information might be gained, even if no flooding occurred. After this the data would be evaluated and mitigative strategies recommended if necessary (although, as the sites had earlier been assessed to be of minimal archaeological significance (Corkill 1993:58), the primary objective of the program was to provide useful information for archaeologists studying similar sites).

Prior to collection of baseline data, two permanent benchmarks were established in each rockshelter. Measurements from these benchmarks form the basis for recordings made during each monitor session that also includes photography and observational notes.

With little to go on for guidance I designed six projects aiming to record changes in shelter variables through time:

**Artefact movement**
Twenty green glass flakes (heavily weathered pieces with no sharp edges, each one numbered using a diamond tip engraver) were placed on ground surface in each shelter. At the start of the program the position of each artefact was recorded in three dimensions, relative to benchmarks. During subsequent monitor session the location of those artefacts still visible on the surface is re-recorded.

**Rock movement/fracture**
Measurements within and adjacent to each overhang aimed to record changes in location and/or gross fracture patterns of boulders and *in situ* rocks.

**Soil pH**
Six readings have been taken in the same locations in each shelter during every session.

**Sediment movement**
Gross level erosion and/or deposition is recorded.

**Vegetation**
Gross level changes in species presence/absence and vegetation density are recorded.

**Graffiti**
There is no Aboriginal pigment or engraved art in the shelters, but (presumed) non-Aboriginal graffiti is present in all of them. (This might also be defined as art, but is here called graffiti for differentiation purposes). New graffiti and weathering of old are recorded.

In addition to these six projects, data pertaining to aspects such as local rainfall and inter-strata seepage effects are collected. To date (January 2001) neither of the two shelters potentially subject to inundation has been flooded.

The most obvious results so far are those for the *artefact movement* project. Since 1996 the number of artefacts visible on the surface has declined dramatically - in DMC 7 only one artefact was found during the 2000
recording session, in PAD 8 only four were found and in DMC 8, seven were found. Whether (or which of) the artefacts are now beneath the surface of the deposit, or have eroded downhill in front of the shelters, or are obscured by vegetation is not known. In one shelter (DMC 7) a section of deposit is situated behind large rocks. Ten artefacts were placed in this section, only one was visible in 2000. In this case it seems likely the others are now buried, probably by treadage and scuffage (it is close to a popular walking track). At the end of the project patterns of movement for each artefact will be drawn (excavation may be undertaken to find missing artefacts). A full evaluation of the project will be reported at a later date.

Acknowledgements

Until 2000 partial funding of the program was provided by the Upper Parramatta River Catchment Trust. This funding is now available only to record data after flooding events. Voluntary and other assistance has been contributed by a number of people who will be fully acknowledged later, including several archaeology students from the University of Sydney who were of immense help. The then Daruk (now Deerubbin) Local Aboriginal Land Council and the Darug Link (now Darug Tribal Aboriginal Corporation) were also involved in original investigations and planning.

References


STONE ARTEFACTS FROM THE BELTANA REGION, SOUTH AUSTRALIA

Bianca Di Fazio
Archer Archaeology, 20 Princess Street, Adelaide, SA 5000, Australia

Amy Roberts
Department of Archaeology, Flinders University, GPO Box 2100, Adelaide, SA 5001, Australia

This paper will present some aspects of a lithic analysis that was conducted at Beltana, South Australia, as part of a larger research project investigating Indigenous fringe occupation sites (Di Fazio 2000). The town of Beltana is located south of Leigh Creek in the Flinders Ranges (Fig. 1). This predominantly arid area is characterised by cliffs, boulder slopes and gorges (Fox 1991:16). Beltana was established in 1870, taking its name from the Adnyamathanha word for running water (Beverley Patterson 2000, pers. com.). Today Beltana is predominantly known as a ghost town, however, in its heyday it offered a number of services including a telegraph repeater station, a railway station, and a mining exchange. The Adnyamathanha people were in continuous occupation of the Beltana area from the pre- to post-invasion periods, however during the post-invasion period they were primarily confined to the fringe camps on the outskirts of the town.

Figure 1 Places mentioned in text (map adapted from Lampert and Hughes 1988)