



ACT Heritage Council

BACKGROUND INFORMATION

Molonglo Valley Grinding Grooves

(Block 3 Section 1, Denman Prospect)

At its meeting of 4 June 2015 the ACT Heritage Council decided that the Molonglo Valley Grinding Grooves were eligible for registration.

The information contained in this report was considered by the ACT Heritage Council in assessing the nomination for the Molonglo Valley Grinding Grooves against the heritage significance criteria outlined in s10 of the *Heritage Act 2004*.

HISTORY

Aboriginal people have occupied the ACT region for tens of thousands of years. Occupation layers at Birragai Rockshelter have been dated to 21,000 years ago (Flood, 2004). Due to its enduring nature, the most common evidence of Aboriginal occupation is usually stone that has been modified by flaking. Evidence of stone flaking is ubiquitous throughout Australia and is mostly represented by open artefact scatters. However, perhaps the most recognisable stone artefacts created by Aboriginal people were ground stone artefacts such as hatchets and grindstones.

Ground-edge stone hatchets have been found in the Northern parts of Australia dating to over 25,000 years ago. Ground-edge stone hatchets were traded great distances in the southern regions of Australia and are physical evidence of those complex trade networks (McBryde 1978, 1979, 1984, 1986, McBryde and Watchman 1976, 1989, Hiscock 2008). In the ACT region this has been linked to feasts of bogong moths and pathways used by local and east-coast Aboriginal groups that pass through the area (Flood 1996; Kabaila, 2005). Trade with people from outside the region is suggested by the presence of ground-edge stone hatchets made from rock that is not of local origin. Conversely, stone hatchet quarries have been found in the local area showing stone was also sources locally, and quite probably traded out (McBryde and Watchman 1989, Comber 1988, Williams 2006)

It has been observed that the proliferation of ground-edge stone axes and grinding technology in the region has a relationship to the use of backed artefacts, in that they have been used for many thousands of years, but it was only ~2,000 years ago that they became more numerous in the archaeological record as backed artefacts become less numerous. If this is related to a risk reduction strategy as Hiscock (1994 and 2008) proposes, then it represents people willing to invest more time in preparing tools for a guaranteed (or at least lower risk) return later on. He goes on to say that:

“declines in artefact discard over the last two millennia coincided with an increased emphasis on the manufacture and use of ground-edge axes. Axes can be repaired and used for extended periods, and using them reduced the numbers of other tools that need to be made. These are examples of many technological changes that affected the quantity of artefacts discarded in archaeological sites.” (Hiscock 2008: p.239)

Edge ground stone artefacts were made by sharpening the working edge of a hatchet by rubbing or grinding it against another stone with abrasive properties. Repeated use of such a stone created a groove - a grinding groove. These sites are comparatively rare, and as a consequence when they are found they tend to be assigned high significance. The Molonglo Valley Grinding Grooves are in an area first surveyed by Bulbeck and Boot (1990) who found 62 archaeological Aboriginal sites. The grinding grooves were first recorded by Biosis Pty Ltd (Biosis) during surveys for the Molonglo Future Urban Development Stage 2 in 2010. Biosis (2010a and 2010b) recorded 38 sites: 20 isolated

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artefacts, 17 low-density artefact scatters and a single grinding groove site: MV18, Molonglo Valley Grinding Grooves. Their analysis found that most of the sites were of moderate significance, but that the Molonglo Valley Grinding Grooves were archaeologically moderately significant, and highly culturally significant.

Several archaeological surveys have been conducted in the area and surrounds (as reported in Australian Archaeological Survey Consultants, 2006; and Biosis, 2010a and 2011) by Bulbeck and Boot (1990), Navin Officer (1991), Saunders (1995), Grinbergs (2005), Australian Archaeological Survey Consultants (2006) and Cultural Heritage Management Australia (2008). Saunders identified artefacts occurring on all but the steepest landforms within the Molonglo River corridor, and all of the studies supported a general model of reduced artefact density with distance from water sources and steeper sloping ground. These surveys reflect a general model of archaeological site identification that shows a preference for proximity to resources and flat dry ground. This general model is quite robust and has been the basis for the study of much hunter-gatherer archaeology throughout Australia (Hiscock, 2008); however, it does not necessarily apply for grinding sites as these are heavily environmentally determined. That is, the bedrock that grinding grooves are commonly found on are immovable objects, so past peoples would seek them out to conduct their activities there rather than a procurement site where they would collect material and process it elsewhere.

The most important environmental variable in the location of grinding grooves is the surface geology. The rock has to be of a suitable type for grinding, such as sandstone. Proximity to water is another factor that is important, but several grinding groove sites in the ACT are located hundreds of metres from water. This suggests that the people using the resource had a method of transporting water to the sites, such as bark or wood, or they were only utilised during flood or rain.

Grinding grooves are where Aboriginal people shaped and sharpened stone axes by grinding them against an outcrop of stone. This grinding action left shallow, oval-shaped grooves indented into the surface of the outcrop. The grooves are often in clusters of two or more and range from 50 to nearly 80 mm in width. They can be over 200 mm in length and 100 mm deep. The best medium for this was sandstone, which is rare in the ACT so other types of stone were also used, including granite (ACT Heritage Council 2005).

Regardless of the ability of these sites to provide archaeological knowledge, they are an evocative monument to past Aboriginal people. The site's existence demonstrates past knowledge of the land and uptake of technological processes. They provide a link between the current generation of Aboriginal people and their ancestors, which unequivocally demonstrates that their ancestors sat in a place and spent time creating tools crucial to their survival. Mulvaney and Kaminga sum up the heritage significance of grinding sites by saying that "These sites do not usually convey much new information to archaeologists, but they are an important heritage for Aboriginal people" (Mulvaney and Kaminga 1999:34).

In the ACT, there are 13 known groove sites. These are:

- Percival Hill Grinding Grooves, Nicholls.
- Gibraltar Falls Grinding Grooves, Paddys River.
- 'CD 2' (single groove in Namadgi National Park), Tennent.
- Naas River 1, Booth.
- Naas River 3, Booth.
- Middle Creek Grinding Grooves 1, Rendezvous Creek.
- Middle Creek Grinding Grooves 3, Rendezvous Creek.
- Honeysuckle Creek Grinding Grooves, Tennent.
- Rendezvous Creek Grinding Grooves, Rendezvous Creek.
- Black Flats Grinding Grooves, Paddys River.
- Greens Picnic Area Grinding Grooves, Paddys River.
- Tuggeranong Grinding Grooves, Theodore.
- 'Umbagog,' Latham Grinding Grooves.

Of these 13 sites, three (Percival Hill, Tuggeranong, and Latham) are situated in a lowland context similar to the Molonglo Valley Grinding Grooves. The Tuggeranong Grinding Grooves are a more extensive, better preserved example of grinding groove sites than the Molonglo Grinding Grooves and are more important as an example of this kind of site, allowing for more accurate interpretation.

DESCRIPTION

The site consists of a series of grooves in a sandstone outcrop located on a gentle slope of a minor spur.

Biosis (2010) recorded the following attributes of the grooves:

Groove 1 – 24cm length, 6.3cm width and 1.6cm depth – orientated north-south

Groove 2 – 13.3cm length, 4 cm width and <1cm depth – orientated west-east

Groove 3 – 17.6cm length, 3.3cm width and <1cm depth – orientated west-east

Groove 4 – 17.0cm length, 3.2cm width and <1cm depth – orientated west-east

The grooves are located on the northeastern portion of a ~2m² low outcrop of sandstone. . The outcrop has a patch of spalling or pitting which has been attributed to vehicles, but could also originate from frost and fire (Pillans, 2013; Stepwise 2012). The outcrop is the exposed portion of bedrock that extends for at least 10m underground. Northeast and adjacent to the outcrop with the grooves is a similar sandstone outcrop measuring ~180cm x ~90cm, which has no signs of alteration or use. Pillans (2013) notes that the sandstone is coloured a dull yellow orange (10YR7/3) and that there are greyish red (10R4/3) to dull reddish brown (2.5YR5/3) patches which, as well as some of the surrounding loose pieces of rock, suggest weathering from fire. He describes the sandstone bedrock of the area as a:

“...medium-grained quartz-rich sandstone of Upper Silurian age, exposed as scattered low rocky outcrops. The bedrock is mapped as a tuff or tuffaceous sandstone member of the Laidlaw Volcanics on the Canberra 1:100,000 Geological map sheet (Abell 1991). Deep mechanical ripping of the bedrock is evident at about a 4 m spacing, broadly following the contours in a general east-west direction. Soils are generally shallow (<1 m) gravelly hill soils, typical of the Wanniasa Soil-Landscape Association (Sleeman & Walker 1979) that is common in rolling terrain throughout the Canberra region.” (p.4)

The sandstone outcrop lies nearby in the landscape to a boggy drainage system and ~150m from the nearest creek.

The site has been fenced off with galvanised wire, posts and gate.

Physical condition and integrity

The grinding grooves have been subject to natural erosion so that there is no evidence of polishing that often results from grinding stone. However, the grooves are substantial and the weathering only minor so that they are in relatively good condition. The minor erosion has slightly diminished the scientific integrity of any microscopic evidence, but the macroscopic evidence of the shape, number and extent of the grooves is excellent and preserves the integrity of the site’s heritage significance.

There is some spalling of the rock surface adjacent to the grinding grooves which has been variably attributed to vehicles, frost and fire/heat. While the damage detracts from the aesthetic appeal of the site it does not directly affect the grinding grooves as long as measures are taken to prevent any further damage.

SITE PLAN

**RESTRICTED INFORMATION
DECLARED BY THE ACT HERITAGE COUNCIL
UNDER SECTION 54 (1) OF THE HERITAGE ACT 2004**

IMAGES

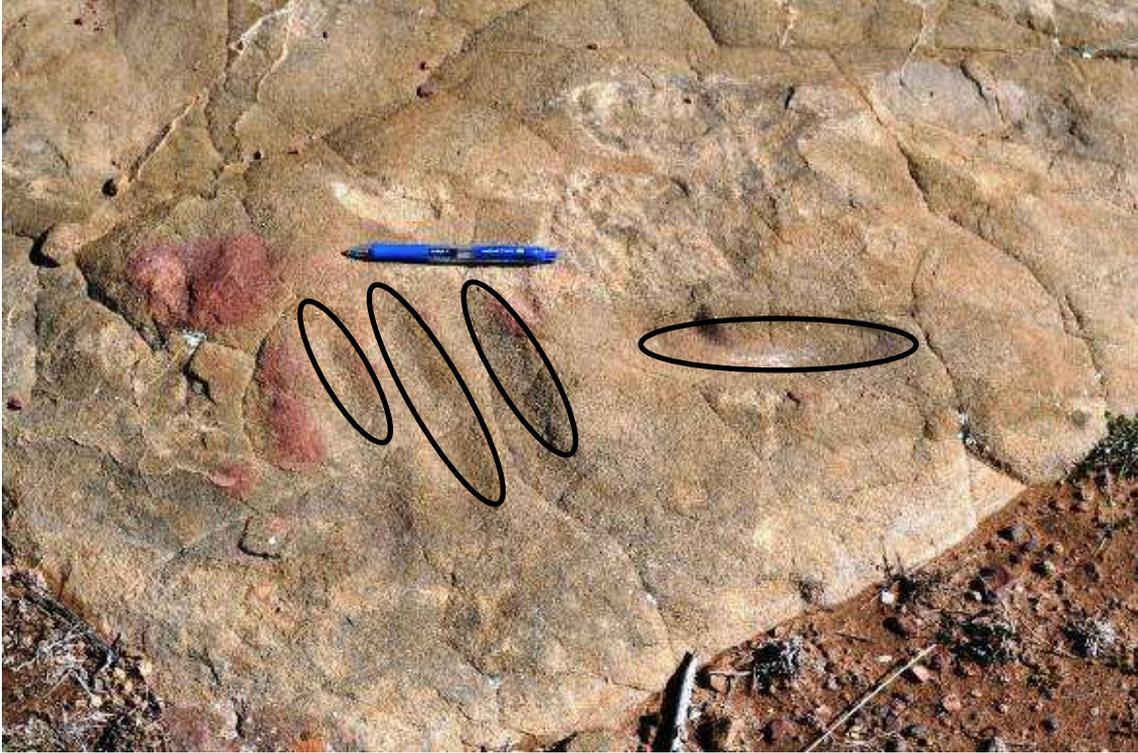


Image 1 Grinding Grooves close up (ACT Heritage 2013)

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