



ACT Heritage Council

BACKGROUND INFORMATION

Birrigai Rock Shelter

(part Block 10 Paddys River)

At its meeting of 4 June 2015 the ACT Heritage Council decided that Birrigai Rock Shelter was eligible for registration.

The information contained in this report was considered by the ACT Heritage Council in assessing the nomination for Birrigai Rock Shelter against the heritage significance criteria outlined in s10 of the *Heritage Act 2004*.

HISTORY

Aboriginal occupation of the Australian continent commenced at the end of the Pleistocene epoch, and it is generally accepted that Birrigai Rock Shelter was first occupied during the Late Pleistocene (see Dowling 2001; Mulvaney and Kamminga 1999:179; Brown 2010: 114). The last major cycle of the Pleistocene took place around 16,000 BP and is known as the Late Glacial Maximum (LGM), a time when glaciers were thickest and sea levels their lowest. The landscape of the Australian Alps and its environs during the Pleistocene was very different to today; the climatic conditions were colder than present and the precipitation of rainfall lower (Coventry 1976). Periglacial features have been identified for this period in the southern ranges of the ACT. Features primarily consist of granitic rocks, and the ridges and summits demonstrate evidence of periglacial activity, such as permafrost weathering and erosion, and snow movement processes (Rosengren and Peterson 1989:196).

The flora and fauna of the south-eastern region was also distinctive during the Pleistocene. Plant microfossil evidence from cores taken from Lake George indicates that the vegetation of the area was dominated by Casuarina, a fire sensitive plant, and rainforest taxa until the last two glacial intervals (Singh and Geissler 1985). During the last glacial period, the Casuarina plant and rainforest taxa declined and dry, low and open forests consisting of Eucalyptus became more prevalent. Evidence from the Australian Alps demonstrates that the montane area was occupied by such animals including the Tasmanian Tiger (*Thylacinus sp.*) and Tasmanian Devil (*Sarcophilus harrisii*) (see for example, Ossa et al. 1995), while megafauna, such as the now extinct large kangaroos (*Macropus titan*), were present on the Canberra Plains (MacPhail and Hope 2002).

At present, there are three rock shelters recorded with archaeological contexts, including cultural material such as stone implements, that have produced radiocarbon dates from the Pleistocene. These are New Guinea II, located in the Snowy River National Park, Victoria (Ossa et al 1995), Clogg's Cave in the small valley of Buchan, also in Victoria (Flood 1980) and Birrigai, located on the boundary of the Birrigai and Tidbinbilla Nature Reserves in the ACT (Flood et al. 1987). Rock art is present at New Guinea II and Clogg's cave (Flood 1980: 254; Ossa et al. 1995).

Aboriginal people of the ACT and surrounds were known to journey to the Australian Alps to consume Bogong moths. The Bogong moth (*Agrostis infusa*) is a night flying insect that migrates to high mountains, including Tidbinbilla, Brindabella and Bimberri, aestivating on the granite tors in the summer months (CSIRO 2011; Flood 1980: 235). With regard to the antiquity of the Aboriginal tradition of Bogong moth exploitation, Flood excavated the 'Bogong Shelters' site complex (1980: 245-246) and observed the following:

This was the highest complex of sites excavated, lying at 1433m [altitude] and south of the Tidbinbilla Valley. It consisted of a cave containing debris from aestivating moths, and two rock-shelters. In the larger of these, Shelter 2, one backed blade was found, a number of stone manuports, and, at the base of the deposit, a river pebble which was also foreign to the locality and therefore must have been deliberately brought to the site. On the basis of its association with a moth habitat, and ethnohistorical evidence of the use of a 'smooth

BACKGROUND INFORMATION – Birrigai Rock Shelter

stone' to grind up moths into a paste, this pestle has been termed a moth pestle. In shape and size it bears a marked resemblance to modern pestles.

Charcoal associated with this moth pestle gave an age of 1000 ± 60BP (ANU 1050), which is important presumptive evidence that the exploitation of the Bogong moth has antiquity of at least one millennium.

The Birrigai Rock Shelter

The Birrigai Rock Shelter is highly valued by the Aboriginal community of the ACT and surrounding region, for reasons of strong and special cultural and social associations. Because of its long-term association with Aboriginal people the shelter retains social significance for the present day Aboriginal community. Oral tradition recites that Tidbinbilla, meaning 'where boys become men', was the area where ceremonies were performed, including male initiation (Brown 2010:121). During male initiation, neophytes would receive instruction on various mountains. Also, Gibraltar Rocks was an entry point; on the summit the elders would ignite a fire, and this would guide people into the valley. The grasslands area to the north, bordered by the confluence of the rivers, is believed to have been a meeting place.

The Birrigai Rock Shelter has been excavated twice; these investigations took place in 1983 and in 1986. In 1983, the Canberra Archaeological Society excavated a small test pit, 1m x 1m, inside the shelter and also two other test pits above and below it (Flood et al. 1987: 10-11). While a small scatter of artefacts, including three quartz flakes and three chert flakes, was recorded close to the shelter, no material was recovered from the test pits. Two radiocarbon dates were obtained in 1984 from charcoal samples (Flood et al. 1987: 16)

In 1986, the site was excavated for a period of 10 days. Quadrants were laid out in the central area of the shelter and approximately one-third of the shelter's internal area (1.5m²) was excavated (Flood et al. 1987: 11-12). These were excavated down to non-cultural levels, identified by the absence of artefacts. The deepest deposit excavated was 104.8cm.

Two main stratigraphical 'units' were identified, labelled 'Upper' and 'Lower' (Flood 1987: 11-16); these produced cultural material. The Upper level comprised two main sedimentary layers (Layer I, II) around 17cm thick, both were grey to black in colour, featuring charcoal. Layer I was of coarse sand, while Layer II represented an erosion event, resulting from a 'reworking' of the upper levels of the Lower Unit. The charcoal recovered from this layer was deposited by water, washed down slope into the shelter from its exterior (Flood 1987: 13). Radiocarbon dates from Layer II indicated that shelter was used around 870 BP. The Lower Unit comprised three sedimentary layers: the first was a layer of weathered granite in light to grey sandy sediment (Layer IV); Layer V consisted of a 'well-defined' hearth, a depression lined with stones filled with charcoal, ash and small unburnt wood fragments and was around 10 to 20cm thick; and, the final layer (VI) was compacted sediments no more than 30cm thick, including granite, quartz, feldspar grains of various sizes and a small amount of charcoal. This layer too appeared to be a 'reworking' of the weathering granite that formed the shelter. The Pleistocene date of 21,000 ± 220 BP¹ was obtained from a charcoal sample from the top part of Layer VI, while Layer V, containing the hearth was dated to the Mid Holocene, around 15,000 to 10,000BP. The upper level of this Unit, Layer IV, was dated to 1000 to 2000 BP.

The artefact assemblage was small; consisting of 69 stone artefacts and a small amount of bone and shell (Flood et al. 1987: 17-20). Formal typological analysis of the lithics was carried out, describing characteristics including the artefact's material, size and form. The tools were of white and translucent quartz and black chert, thought to have been sourced locally. Brown chert was also found but its provenance is unknown. Most of the artefacts were small flakes or chips. Larger artefacts, more than 20mm in length, were retouched flakes or cores. Flood and her colleagues noted that in the earliest layers, dated to the Pleistocene, only quartz artefacts were found, while in upper layers, chert was the dominant stone used. Flood and her colleagues suggested that this difference represented a change in technology over time. Also, from around 15,000 BP there was a sharp increase in the quantity of artefacts suggesting that there was a more 'intensive occupation' from this period onwards.

Faunal remains were found in the Upper Unit and included remains of rabbit, wallaby, lizard, Brush-tailed possum, and an unidentified bird. In the Lower Unit, several fragments of a water mussel *Unionidae* that might have been sourced from Paddy's River were found. Two fragments of reddish brown ochre were also found, one just below the ground

¹ This information is based on the last published dates for Birrigai Rock Shelter, however pending research may produce new data resulting in different dates of occupation.

BACKGROUND INFORMATION – Birrigai Rock Shelter

surface and the other below a hearth dated to 16,000BP (Flood 1987: 16). Neither ochre fragment demonstrated 'clear signs of use'. Also associated with the hearth was a core fragment of quartz that had blood and skin along one edge. Flood (1996: 116) has suggested that the hearth was a 'ground oven' to prepare food.

There has been some debate about the veracity of the site's Pleistocene date. Bowdler and Veth have argued that the assemblage was too sparse and shallow to securely date the basal level to the Pleistocene (Flood 1995: 117). Notably, the lithic assemblage is understudied; further study, in particular, is required of the Pleistocene assemblage that comprises solely quartz artefacts, which can be difficult to identify and to study. In support of Flood and her colleagues, Professor Rhys Jones (1989: 758), who visited the site during the excavation, wrote that the deposit was 'securely dated' to 21,000 BP. Later, Flood (1995: 117) claimed that the small and shallow deposits were comparable to the Pleistocene contexts of Nurrabulligin, Cairns and Fern Cave, Cape York Peninsula. This comparison might not be effective counterargument; caves and rockshelters are 'constrained spaces', often presenting a diverse complex evidence of geomorphical and cultural processes and therefore, it is necessary that the depositional sequence of the site be elucidated and where there are similar sequences or 'histories', then the sites can be compared extensively (Barton and Clarke 1993).

It is apparent from the results of the Birrigai excavation that the site's depositional sequence is the product of a range of geomorphical processes. As Flood and her colleagues (1987) observed, a number of natural formational agents disturbed the deposits, especially those dating to the Holocene; for instance, water was a primary agent that caused the movement of soil and cultural material down slope from the exterior of the shelter. Cultural agents can include the reuse of the site leading to the superimposition and disturbance of earlier levels; for example, artefacts can be trampled on and their spatial patterning altered, especially when the layers are shallow (Barton and Clarke 1993). Presently, it is not clear to what degree geomorphical processes affected the integrity of the deposits.

DESCRIPTION

The Birrigai Rock Shelter is situated along the northern end of the south-eastern ranges, below the summit of Front Hill on its western side (see Image 1). The Shelter is amongst a group of large granite boulders and the shelter can be accessed from above via a fire trail. It has two entrances, one to the east and the other to the west. It is fenced on two sides.

Located at 730m, the Shelter provides clear viewsheds from its entrances; to the west the mountainous area of Jedbinbilla is visible, while to the east, it overlooks the undulating open woodland and grasslands that descend towards the confluence of the Tidbinbilla and Paddy Rivers (see Images 2 and 3). The Bullen Range is also observable. When viewed from the grasslands below, Front Hill is framed against the taller peaks of Mount Eliza and Gibraltar (1064m), situated to the south.

The site is affected by downwash and there is a drain of concrete pads above the site. The floor of the shelter is not level; it slopes west to east (Flood et al. 1987: 11).

Physical condition and integrity

In 2013 a site visit was undertaken by ACT Heritage to observe the condition of the rock shelter. The boulders are in stable and good condition, as are the local surrounds, with some regrowing vegetation being the only factor potentially compromising the integrity of the shelter. Evidence for prehistoric camping activities would require unearthing by archaeological excavation.

Three main factors that could potentially impact on the site are: the use of the site; erosion, stemming from people visiting the site and water flow causing soil movement; and, animal activity. There is evidence of wombat and rabbit activity observed around the shelter and evidence of erosion alongside of the drain. Some downwash through the shelter has occurred, causing some warping of the side and bottom sections of the fences.

Today the main visitor route to the site is called the Birrigai Time Trial, see:

<http://www.tidbinbilla.act.gov.au/experience/recreation/walking-trails>

It begins from the Tidbinbilla Visitor Centre and features interpretative signs, informing visitors of its significance to the indigenous groups (TAMS 2008).

BACKGROUND INFORMATION – Birrigai Rock Shelter

The artefacts recovered from the 1986 excavation are currently stored in Archaeology and Natural History Department, the School of Culture, History and Language, ANU College of Asia and the Pacific.

SITE PLAN

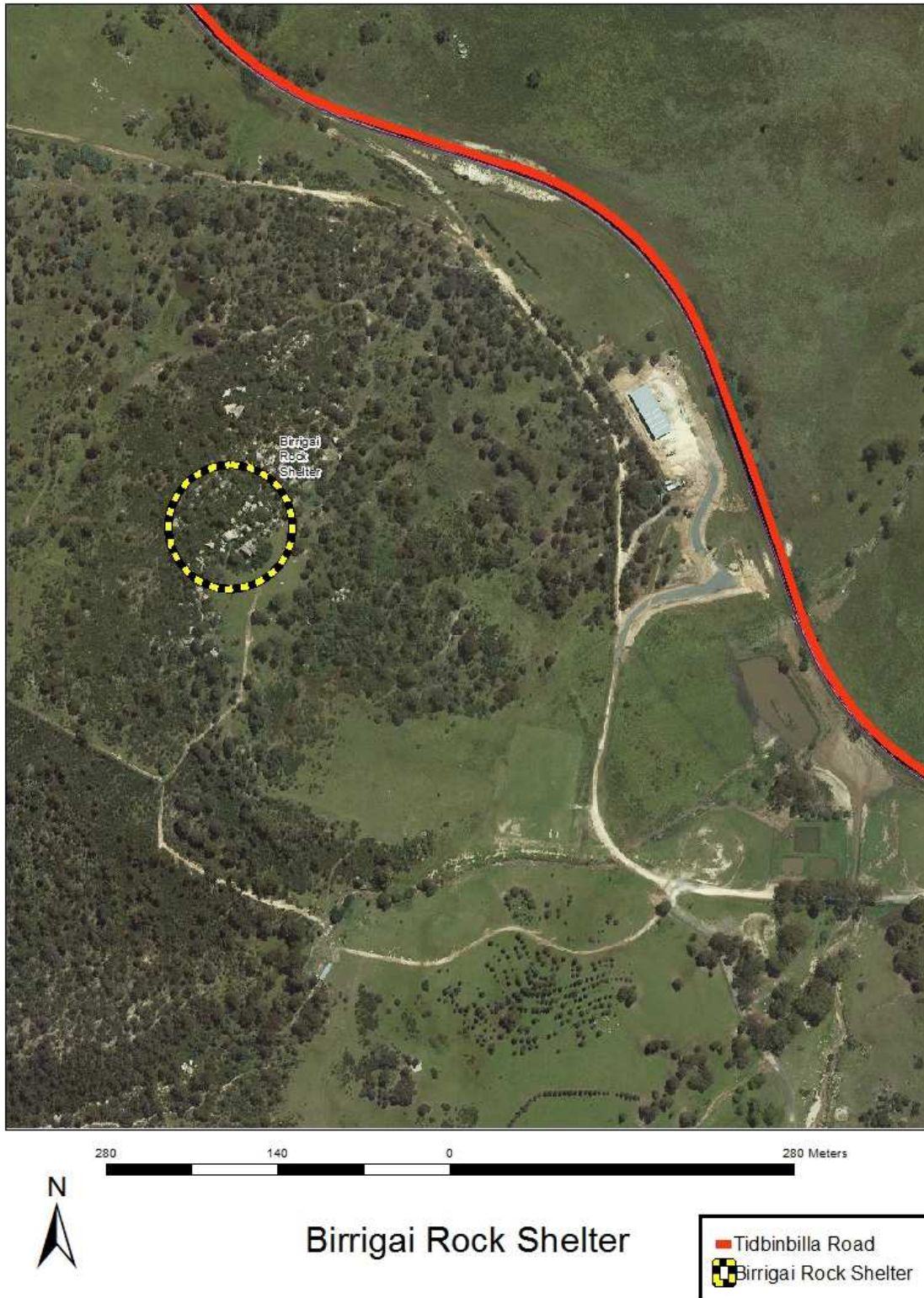
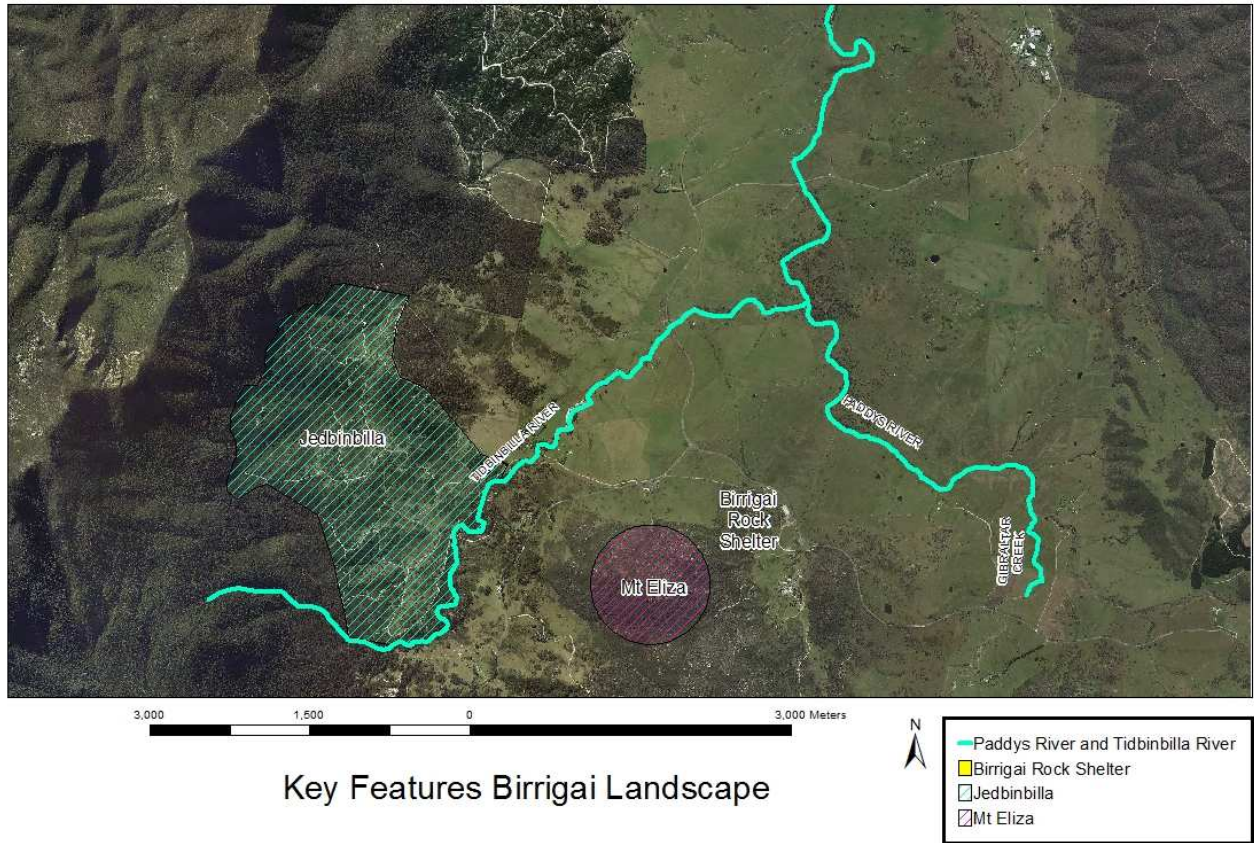


Image 1 Birrigai Rock Shelter

BACKGROUND INFORMATION – Birrigai Rock Shelter



Key Features Birrigai Landscape

Image 2 Key surrounding features Birrigai

BACKGROUND INFORMATION – Birrigai Rock Shelter



Image 3 Birrigai Surrounds

BACKGROUND INFORMATION – Birrigai Rock Shelter



Image 4 Birrigai Shelter (ACT Heritage 2013)

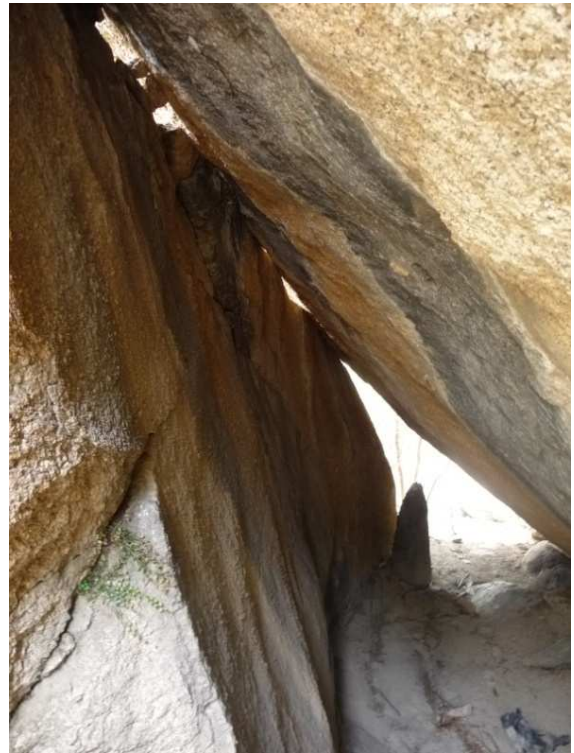


Image 5 Birrigai Shelter (ACT Heritage 2013)

REFERENCES

- Barton, M.C. and G.A Clark 1993. Cultural and Natural Formation Processes in Late Quaternary Cave and Rock Shelter Sites of Western Europe and the Near East, in P. Goldberg, D.T Nash and M.D. Petraglia (eds.) *Formation Processes in Archaeological Context*, Prehistory Press, p33-52.
- Brown. A. 2010. The Long Aboriginal History. In W.P. Rainbird, J.R. Widdowson, V.A. Brown (eds.) *The World of Tidbinbilla*, Southern ACT Catchment Group Inc and ACT Heritage Grants Program, p 112-114.
- Coventry, R. J. 1976. Abandoned Shorelines and the Late Quaternary history of Lake George, New South Wales, *Journal of the Geological Society of Australia*, 23(3): 249-273.
- CSIRO 2011. Bogong moths, <http://www.csiro.au/resources/ps1qn>, accessed 26/10/2012.
- Dowling, P. 2001. Birrigai Rock Shelter. A human history from 21,000 years ago, *Heritage in Trust*, Autumn, National Trust of Australia (ACT), Canberra, pp 15-16.
- Flood 1980. *The Moth Hunters: Aboriginal Prehistory of the Australian Alps*. Australian Institute of Aboriginal Studies, Canberra.
- Flood, J, B. David, J. Magee and B. English 1987. Birrigai: A Pleistocene site in the south-eastern highlands, *Archaeology in Oceania* 22: 9-26.
- Flood, J. 1995. *Archaeology of the Dreamtime*, Angus & Robertson, Sydney.
- Jones, R. 1989. East of Wallace's Line: Issues and Problems in the Colonisation of the Australian Continent, in P. Mellars and C. Stringer (eds.) *The Human Revolution. Behavioural and Biological Perspectives on the Origins of Modern Humans*, Edinburgh University Press, p 743- 782.
- Macphail, M.K. and Hope, G.S. 2002. *Kangaroos in an Ice Age Landscape: Fossil pollen evidence for conditions on the Canberra Plain 20, 000 years ago*. Report/discussion paper prepared 26 September 2002 for the ACT Heritage Office.
- Mulvaney, J. And J. Kamminga 1999. *The Prehistory of Australia*. NSW: Allen & Unwin.
- Ossa, P.B. Marshall, C Webb 1995. New Guinea II Cave: A Pleistocene site on the Snowy River, Victoria, *Archaeology in Oceania* 30 (1): 22-35.
- Rosengren, N.J. and J.A. Peterson. 1989. Heritage Values and the Geological and Geomorphological significance of the Australian Alpine Zone, R. Good (ed.) *The Scientific Significance of the Australian Alps*, The Australian Alps National Parks Liason Committee and Australian Academy of Science, p 187-204.
- Singh, G and E.A. Geissler 1985. Late Cainozoic history of vegetation, fire, lake levels and climate, at Lake George, New South Wales, Australia, *Philosophical Transactions of the Royal Society of London* 311: 379-447.
- TAMS 2008. *Rock shelters*, www.tams.act.gov.au