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Nature Conservation Saves for Tomorrow

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Proposed State Heritage Listing, Cliefden Caves Area – Limestone Group and Palaeontological Site

Submission in support

The Blue Mountains Conservation Society strongly supports the proposal to list the Cliefden Caves Area – Limestone Group and Palaeontological Site on the NSW State Heritage Register in acknowledgement of its heritage significance to the people of NSW.

1. Introduction

The Blue Mountains Conservation Society (BMCS and also 'The Society' herein) has a membership which fluctuates in the range 800-850. The membership is mainly drawn from the City of the Blue Mountains and the Greater Sydney region, but a scattering of members exists throughout the Central West of NSW and also interstate.

The Society is principally involved with the Greater Blue Mountains World Heritage Area (GBMWhA) in terms of protecting its many parks and reserves. It also campaigns for National Heritage Listing of parts of the western Blue Mountains and the Western Escarpment between Blackheath and the Capertee Valley with a view to having them assessed for addition to the GBMWhA. Other spheres of activity relate to 'local government' issues, opposing over-flights from the proposed Western Sydney Airport, bush care and regeneration, and protection of habitat and ecosystems. BMCS also runs a very active bushwalking group, publishes a monthly newsletter, and send out weekly e-blasts.

The Society's broader interests cover the adverse impacts from exploiting CSG and coal deposits and, through links with other environmental organizations, concerns about the health of the State's rivers and wetlands.

The author of this submission has some familiarity with the region's Cliefden caves, important fossil sites, and the archaeological worth of the Junction Reefs Chinese gold mining site, and Carcoar Village. This stems from having been a geotechnical consultant for the Carcoar Dam and taking geological undergraduate and research students to various parts of the area. The region is well known to the Society's current President and other members on the Management Committee.

2. Assessment requirements

A range of criteria is set down in relation to listing on the State Heritage Register. The Heritage Council of NSW needs to be satisfied that a proposal satisfies more than one of the criteria in order for it to be deemed to have State significance.

The proponent contends that the evidence presented in the proposal's *'Statement of Significance'* satisfactorily meets four of the nominated criteria. In doing so, it would seemingly comply with listing requirements and thereby merits being recognized as State significant.

3. The nominated criteria

3.1 Importance in NSW's cultural or natural history

Cliefden Caves has cultural and historical significance because, on being discovered by surveyor G.W. Evans in 1815, it constituted the first discovery of limestone in mainland Australia.

The cultural importance of limestone in the production of lime mortar and (in due course) Portland cement, to the construction of cottages and other buildings in regions experiencing cold winters and hot summers, is notable. Also of cultural (and economic) significance is the use of lime for agricultural purposes.

The existence of limestone has played a significant part in stratigraphic interpretation of the Lachlan Fold-belt and the tectonic evolution of south eastern Australia. Developing such an understanding has made an important (and now increasing) contribution to gold and other metalliferous mining in the region.

3.2 Potential to contributing to an understanding of NSW's cultural or natural history

The area provides evidence of a pre-European cultural history. Skeletal remains located in one of the caves have been dated at more than 6,000 years before present. More investigation is needed to expand understanding of the uses of the caves which, together with a number of carved trees in the area, could enhance appreciation of aboriginal migration within the region.

The folded and metamorphosed stratigraphy of the greater region, comprising limestone, volcanic rocks and deeper water marine sequences of chert and now-cleaved slate and siltstone, provides insight into the plate tectonic evolution of eastern Australia during the middle to late Palaeozoic. This is the basement on which the Permian coal basins were unconformably developed.

The potential for ongoing research in the region is enormous. As well as genetic studies of gold and copper mineralization, and refinement of structural and geotectonic models, there are opportunities for studying palaeontology, karst processes, geomorphology, pedology, hydrogeology, archaeology and the evolving demographics over the past 200 years.

3.3 Possesses uncommon, rare or endangered aspects of NSW's cultural or natural history

The area contains the best exposures of Late Ordovician assemblages, comprising island marine fauna (shelly fossils) and flora (algae), in Australia. The fossil-population's rich diversity includes several fossil species which are unique to this locality; of the 263 species described, 101 species are limited to this region. The known population of *Belubula spectacula*, about 20 individuals at most, is considered to have scientific importance equivalent to the discovery of the Wollemi Pine.

The Cliefden caves are a microbat hotspot with extremely high microbat activity levels and high species richness. The outcome of preliminary surveys demonstrates the inadequacy of desktop surveys as a standalone tool for species detection. The caves provide habitat for Eastern Bent-wing Bats (*Miniopterus schreibersii oceanensis*), listed as vulnerable in NSW.

Applying the geoheritage tool-kit to the Ordovician rocks in the vicinity of Cliefden Caves and Fossil Hill area shows that the relationships within the limestones, the contact between the limestones and underlying volcanic rocks, and the overall stratigraphy, paleogeography and, paleontology have national to international significance.

3.4 Presents the principal characteristics of a class of NSW's cultural or natural places and environments.

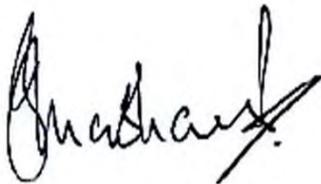
The Cliefden Caves karst system has over 60 recorded caves containing an extensive array of helictites, large dogtooth spar crystals, rare blue speleothems and 'boxwork' ceilings, in addition to the more commonly known speleothems. It is a classic example of a cave system which has the additional benefits emphasised in the preceding section (last paragraph).

'Rothery's Ruins' on Island Flat are linked to the historic Cliefden estate and have potential to yield further information on the functioning and significance of this historic estate.

4. Conclusion

The Cliefden Caves area was previously listed on the Register of the National Estate prior to this register being closed in 2007.

The Society strongly believes that the Cliefden Caves Area – Limestone Group and Palaeontological Site should be listed on the NSW State Heritage Register.



**Dr Brian Marshall,
For the Management Committee.**