

CLIEFDEN CAVES, NEW SOUTH WALES, AUSTRALIA: UNDER REAL DAM THREAT

Garry K. Smith

President - Newcastle and Hunter Valley Speleological Society

Brief Overview

The Cliefden Caves are located on the Belubula River, New South Wales, between the towns of Carcoar and Canowindra. There are in excess of 60 caves and over 50 additional karst features at Cliefden and evidence suggests that they are hypogene caves (formed by rising ground water). A permanent thermal spring is situated immediately downstream of the limestone outcropping and may have played a part in this process. (Osborne, R.A.L., 2001 & 2009) The caves consist of extensive underground caverns and networks of passages up to three kilometres in length.

The Cliefden limestone was the first discovered in Australia, by surveyor George Evans on 24 May 1815. (Evans, G.W., 1815) Surveyor, John Oxley in 1817, set out from Bathurst on an expedition to solve 'The Mystery of the Western Rivers'. On the first leg of his exploration he travelled down the Belubula River and camped in the vicinity of Cliefden downstream from Limestone Creek. (Oxley, J., 1820)

The early European history of the area also includes the Rothery family (property owners of Cliefden since 1831) being held up by the notorious bushrangers Ben Hall's gang in 1863. (White C. 1903)

Geologists from around the world regard the Fossil Hill site as one of the most important Ordovician fossil sites in Australia. This extremely significant fossil site has been extensively studied by researchers and may still hold secrets of untold new discoveries. The book 'Australia's Fossil Heritage, A Catalogue of Important Australian Fossil Sites', (2012), states that "The Cliefden Caves - Belubula River Valley sites contain the best exposures of Late Ordovician island marine invertebrate fossil assemblages in Australia. The well documented faunas and biostratigraphy serve as the reference sections of the Late Ordovician in Australia and as a window to the Late Ordovician island arc biota. The sites include the type localities for over 100 species." (The Australian Heritage Council, 2012)

There have been more than a hundred scientific papers published relating to the Cliefden karst area, documenting the fossil sites, caves, rare speleothems, cave fauna etc. However there is still potential for lots of new discoveries in the area.

Several caves contain rare blue speleothems. Analysis of the speleothems indicates that the sky blue and aqua colours are due to the presence of copper, chrome and nickel, which has leached through the limestone and deposited in conjunction with the calcite. (Turner, K., 2002)

There are many reasons why these caves and fossil sites must be preserved. They include; natural and cultural



Just a small portion of the outstanding helictite display in Main Cave - Cliefden.

Photo: Garry K Smith

heritage, scientific value, cave fauna (including threatened bat species), fossils, geology, geomorphology and paleontology to name a few. The Belubula River also supports a population of platypus and native fish species including the threatened Murray Cod.

Much of the karst area, fossil sites and caves would be inundated if the proposed dam is constructed at the Needles Gap site on the Belubula River. Hence the flooding and ingress of silt into the caves would destroy their potential for future research, aesthetic value and the habitat of many fauna species.

At present there is no statutory protection of any form to protect the karst area, nor caves. The present landowners are well aware of the scientific value of the caves and fossil sites and restrict access to the caves and karst. Property owners would also lose out with loss of highly productive land and resumption of additional catchment land around the foreshore, thus, downscaling their enterprise and reducing their livelihood on properties passed down through several generations.

The Dam Threat

Between 1941 and 1946, six dam sites around the Needles Gap and Cranky Rock area on the Belubula River were investigated by Government geologists. They determined that the rock strata were unsuitable for construction of a large dam at several of the proposed sites including the Needles Gap site. (Kenny, E. J, 1941 & Harper, L. J, 1946) A dam was again proposed in the

1960s through 1970s but again abandoned. Thankfully the original proposals faded away after these unfavourable geological reports.

In July 2012, the proposition of a dam at The Needles was again raised at a Local Government Water Conference when an officer of State Water NSW, in his address to the conference, stated that State Water had identified three locations in NSW that were suitable for new water storages. One of which was on the Belubula River at the location called The Needles. The NSW Dept. of Infrastructure released a report on 3rd October 2012 titled "State infrastructure Strategy 2012-2032" which recommended a "New Carcoar dam in the Lachlan Catchment". Then in August 2013, Central Tablelands Water (CTW) called on the Federal and State politicians to back this new dam. The Federal member for Calare, John Cobb in a press release on 21st January 2014, announced the proposal for the construction of a 90,000ML dam at Needles Gap and called on State and Federal Governments to back the plan. Mr Cobb followed this up the same day, with an onsite meeting of local town Mayors, GMs of local water authorities and media at the Needles Gap site overlooking the Belubula River. On 17 June 2014 the NSW Minister for Natural Resources, Land and Water, Kevin Humphries announced that \$1 million had been allocated in the NSW 2014 budget for a scoping study into the Needles

Gap Dam. On 12th July 2014 Mr Humphries further announced that the NSW government would also add another \$3.5 million to facilitate a full feasibility study over the next 2 years.

The proposed dam at the Needles and several of the Cranky Rock sites would flood many of the Cliefden caves and partially submerge the fossil beds. By July 2014, growing opposition to the dam proposal amongst the Speleological community saw the formation of the 'Save Cliefden Caves' committee and a web site developed. The inaugural meeting held at Bankstown, was attended by 27 representatives from twelve NSW caving clubs and several likeminded societies.



Speleothems known as the 'Donkey Tails' – stalactites encrusted in spar crystals in Malongulli Cave Cliefden
Photo: Garry K Smith

The rock strata at the proposed Needles Gap site was originally found to be unsuitable for dam construction in the 1930s and 1940s, however technology and construction methods may have progressed since then. What was not viable in the past may now be achievable, so this threat is a VERY real threat for the destruction of such unique caves and fossil sites. It is believed that this dam proposal is directed more at providing a water supply for gold, copper and

other precious metal mining operations in the region – not for agriculture or human consumption.

Any support which ACKMA members can provide to oppose any dam which will flood the Cliefden Caves and karst area would be very worthwhile.

Read more about Cliefden Caves at <http://bookproduction.org/savecliefdencaves/facts.html>.

On the website there are also links to on-line petitions and suggested ways people can help save Cliefden Caves.

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