

B4-5 Kings Cross sediment inspection report

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Objective

To visit B4 Fossil -5 Hogans cave - Kings Cross area within the Bungonia Conservation Area (BCA) with view inspecting known sediment deposit being damaged by recreational cavers.

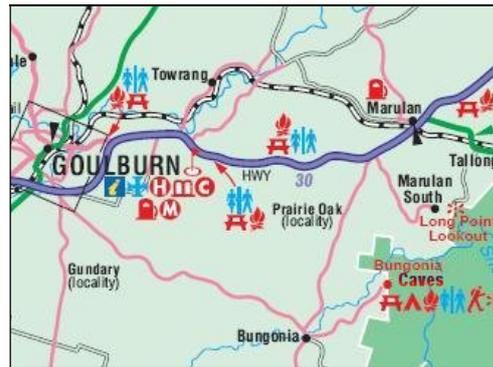
Aim

To discuss options of protecting the damaged sediment deposit and possibly survey the Kings Cross section.

Caves location

Bungonia Conservation Area-Caves are located approx 35 kms south east of Goulburn in the Southern Tablelands of NSW. Closest town is Bungonia.

B4 Fossil -5 Hogans cave is located within the BCA.



Map of Bungonia Region

Attendance

- Highland Caving Group: Joe Sydney, David Rothery and Lindsay Matheson
- Canberra Speleological Society: Dirk Stoffels

Brief

B4 Fossil -5 Hogans cave is part of a large cave system with three entrances. It is regarded as one of the better and most accessible sporting caves within the BCA. This system is mainly and highly used by recreational cavers, commercial operators, Defense Forces training and more.

The B4 Fossil -5 Hogans houses many interesting features one of which are sediment deposits. Research has been conducted into some of these deposits with interesting results so the questions are, *what can be done to preserve this deposit*, and, *is this deposit worth saving?*

Four cavers from two clubs visited the B4 Fossil -5 Hogans cave with view to answer these questions.

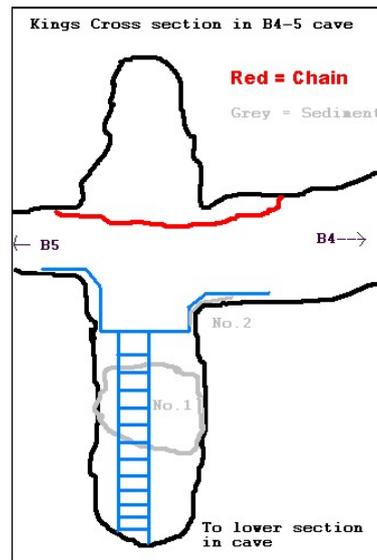
When entering from the B5 entrance a small void is eventually reached in an area known as Kings Cross. To continue onto the B4 entrance this void must be crossed. To cross this void the caver must climb down onto a sediment bank (No.1), walk across No.1 sediment bank, and then climb up the other side. In the climb up the other side damage is also done to 2nd sediment bank.

From observation, it was deemed that much damage has been caused over the many years of constant use.

Discussion surrounding the idea of ‘how to protect both sediments’ started with construction of a short ladder down both ends however it was pointed out that the No.1 sediment bank will still be eroded as this would be used to stand on when crossing. No.2 sediment bank may also not be protected as a foothold is required just after use of the ladder.

Option 1:

The main throughfare path from B5 to B4 will be across a horizontal platform stepped down in level from the approaching passages. This down step provides headroom to cross the platform with ease. The platform is not mounted to the walls of the passage due to limited good wall rock on the B5 side wall. The platform is supported with the U style rails whose ends are bolted into the floor of the B5-B4 side passages. There is a ladder mounted to the side of the platform to provide access to the lower section of the cave. The side opposite the down ladder side could have a rail with signage explaining why the structure is there and request people to use the ladder and not jump down onto the sediment bank No1 by going over that side (ie into the page in this diagram). The overhead hand rail chain is optional addition. (Note - this diagram does not show all head and shoulder obstructions actually in the cave.)



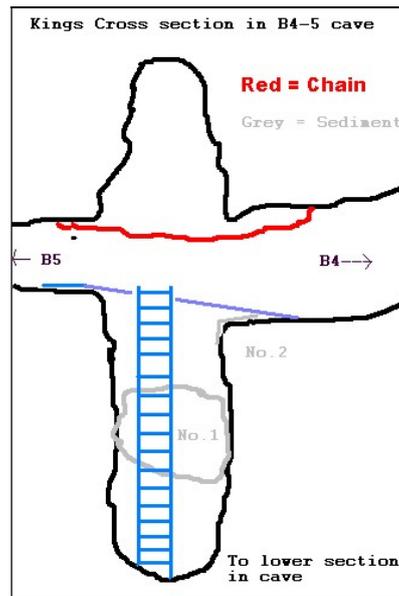
Option 1: Two short ladders/ramp with vertical ladder.

Option 2

A second idea of constructing a ramp directly across from B5 side to B4 side was mooted. This idea is somewhat better than the ladder option. To support this option a chain handrail would also be of benefit.

Discussing both ideas further another complexity was highlighted, that not everyone crossed the void directly to B4 entrance, some cavers chose to climb down onto the No.1 sediment bank and climbed further into the lower section.

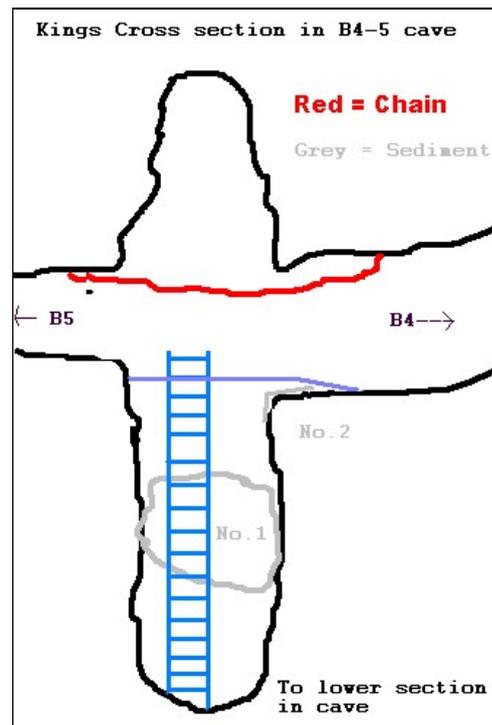
This meant that if a ramp or ladder was to be built that a 2nd vertical ladder needed to be attached so that cavers could climb to the lower section.



Option 2. Single ramp with vertical ladder.

Option 3

This is similar to Option 1 but is bolted directly to the B5 wall. It allows cavers to step down onto a ramp.



Option 3: Single ramp with vertical ladder.

All three options are feasible however there are now concerns over other key issues:

- What is the benefit to the cave in constructing a large metal ladder\ ramp system to cavers?
- Is a large ladder system really needed?
- Are both sediment banks worth saving as they are highly eroded considering that there are other better and well protected sediment banks in this cave?

Further discussion is required to answer these questions.

If it is seriously considered to construct a structure across Kings Cross, it might be an idea to take in some 50mm plastic pipe and a bunch of 45, 90 and Tee pipe joiners and make up a non-load bearing model of the option 1 design in the Kings Cross. The pipe would not be glued to the joiners inside the cave due to solvent fume affects on cave and people. The pipe to joiner junctions will be fixed with a couple of self taper screws thru the joiner and pipe. This will allow it to be partially disassembled for easy removal from the cave. Where possible the side rails will be kept as complete as possible to verify that the structure component manufactured on the surface will be able to be maneuvered into the cave. This plastic pipe mockup model shape would be used as the basis of the design and computer CAD load capacity analysis by the structural designers.



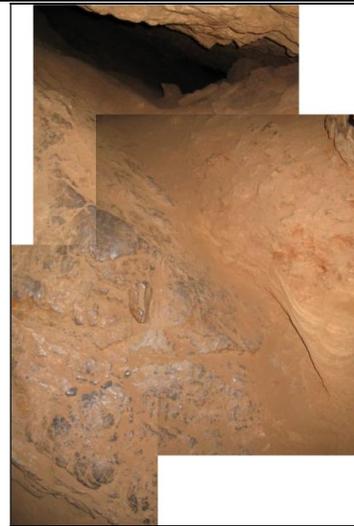
Dropping onto No.1 sediment bank coming from B5. Note: A cavers 1st action is to sit down and 'step' onto a ramp as in Option 1 & 3.



Standing on No.1 sediment bank looking up to B5 ledge. Note: The tape indicates the ideal location of 'step down ramp\bolts' for Option 1 & 3.



Tape following path of suggested option 1 & 3-looking to B5 ledge.



No.2 sediment bank showing erosion from foothold use.



No.2 sediment bank