

PROTECTING DOGLEG CAVE – WEE JASPER

Dogleg is one of the most spectacular and biologically important caves at Wee Jasper. Cavers first entered it in 1957 at a time when the Canberra Speleological Society was investigating the Dip and Punchbowl Caves. It is undoubtedly the lowest humanly accessible level of the Punchbowl-Signature cave system and breaches the topographic divide that forms Punchbowl Hill with water from the creek to the west of the Punchbowl dolines sinking and emerging at the upper end of the Fitzpatrick Reserve on the Hume and Hovell Walking Trail. For details see Jennings (1964).

The Punchbowl-Signature-Dogleg cave system is largely “protected” under the Crown Lands Act in two “Reserves for the Preservation of Caves”. The Reserves probably do not cover the far end of the cave ... They certainly do not cover the contributing catchment to Dogleg Cave that includes both private and NSW State Forests’ lands. It is worth noting that one of the Reserves for the Preservation of Caves – surrounding the main Dogleg entrance was the second most recent such Reserve gazetted. This gazettal was as a result of agitation by a CSS member. We all know that reserving entrances does not protect caves or their environments – but it is at least some recognition ...

The current main entrance was at least partially dug out – as have all of the others except the spring entrance. There are at least six entrances to various parts of the cave although only three are thought to be connected to the main passage – to the Sand Trap, the Opera House and beyond. CSS and others have spent a great deal of effort in investigating various vertical holes in Punchbowl Hill looking for ways into the cave beyond the Third Sump without success.

Until the recent droughts, Dogleg was only open beyond the Second and (even of less duration) the Third Sump very infrequently. The hydrologic arrangements of the cave appear simple at first sight. The stream on the far side of Punchbowl Hill probably sinks into the gravels – thence into dogleg and emerges at the spring. A dye trace conducted by CSS many years ago did not confirm this hypothesis (Jennings 1964) but it is extremely difficult to reject given the orientation and morphology of Punchbowl, Signature and Dogleg Caves.

In the early years CSS spent a good deal of effort in attempting to siphon the water out of the Second and Third Sumps. To our shame some of the equipment the club used is still in the cave – as is the gear that others bought in. We propose to remove this junk.

The siphon that CSS used in attempting to drain the Third Sump passed the water down through a slot known as Andy’s Hole (Andy Andersen – not Andy Spate). That water vanished – it did not appear at the Dogleg spring that is very close to the contact with the impermeable Hatchery Creek Conglomerate (Jennings 1964). The water down Andy’s Hole presumably had another route into the Quaternary alluvium – and then into Wee Jasper Creek or the Goodradigbee River.

Jennings (1976, page 87) states that:

When the 7 metre inverted siphon at the Opera House in Dogleg comes into action, much of the forward, low meandering part of the cave can fill to the roof ...

Iain McCulloch (personal communication) states that the Sand Trap siphon can fill in a relatively short period (hours) following heavy rainfall. These two statements indicate that there are risks in entering the far portion of the cave in times when heavy rainfall might occur.

There have been at least five surveys of the cave beyond the Opera House. None appear to have been published and the relationship of Dogleg Cave to Signature and Punchbowl Caves does not appear to have been accurately determined – especially in an altitudinal sense. The best survey currently available to CSS was prepared by Hills Speleological Club (labelled “preliminary” and undated – around 1997?). It does not include the IDN Chamber (seen by Andy Spate on a map in the possession of Alan Pryke). Both these maps need the surface expression of the limestone shown for appropriate interpretation. The far ends of the cave are very, very close to the limestone boundary – but at what altitude? The far ends of the cave need to be confirmed by radio-direction finding or similar process, as there is some suspicion that there may be some errors in the mapping of the first part of the cave. CSS stands to be corrected if this statement is in error.

Parts of Dogleg Cave beyond the Opera House are extremely well decorated with calcite speleothems. The cave has more values above its undoubted geomorphological and hydrological values in the fact that it has a least seven aquatic troglobites – stygobionts. This is more than any other single cave hydrological system in NSW although Wombeyan has more taxa but distributed across a number of karst hydrological systems. Wombeyan, Wee Jasper and Wellington are the three most important sites in eastern Australia for stygobionts. Eberhard and Spate (1995a, 1995b) and Thurgate et al (2001a, 2001b) provide more details on Wee Jasper’s subterranean fauna.

These animals – some “living fossils” dating back to the Cretaceous or perhaps Permian geologic periods – have survived in a few pools between the entrance and the Sand Trap – probably because recruitment from further upstream in the more protected part of the cave happens between droughts. These animals are hopefully surviving in the inaccessible groundwater below the cave today.

Over the years the cave has suffered from high levels of visitor usage but the Sand Trap/Second and Third Sumps have provided an effective entry barrier that has done much to protect the inner parts of the cave from visitor impacts such as mud tracking and accidental or wilful damage to decoration. And maybe provide a source for the aquatic invertebrates to continue living further downstream in the cave.

However, the Sand Trap and subsequent sumps are not as effective a barrier as they once were because:

- Lower effective rainfall means the sumps are now open more often than not.
- More people are aware that there is cave beyond the Sand Trap.

Concerns about the reduced effectiveness of the Sand Trap barrier (and perhaps coupled with increased levels of visitation) have resulted in calls by clubs such as NUCC and HSC to propose gating the cave at various places between the Sand Trap and Sump Three.

Over the last 2 years these proposals have been raised informally with Andy Spate and with the NSWSC. However, the proposals have not progressed because the proponents have been unable (or unwilling?) to address a number of critical issues such as:

- Discussing the proposal with, and obtaining approval from, the management authority (NSW Lands Department);
- Addressing management and safety issues associated with the proposed gate sites;

- Addressing ongoing management and maintenance issues (for example, who would check and maintain a gate located well into the cave – likely to have OH&S and resourcing issues for the local ranger – and overly onerous on any single club); and
- Who should be granted access and under what conditions.

CSS fully supports measures that would enhance protection of Dogleg Cave, but as a small organisation, it does not have the ability to either take on sole responsibility for progressing the gating proposal that has been championed through NSWSC or to become the only club involved in any ongoing maintenance work requirements (should any gating plan be implemented).

If protection of Dogleg Cave is to be enhanced (and CSS firmly believes it should be), the speleo community needs to consider all options and discuss them with the area managers.

Options include:

- Do nothing – results in ongoing deterioration and damage to the cave, its speleothems and fauna;
- Introduce non-physical methods of protecting the cave – permits, codes etc. Prohibition of access to non-authorised groups beyond the Sand Trap. How would these be effectively policed?
- Installation of CCTV or similar surveillance and/or alarm systems;
- Track marking and similar methods beyond the Sand Trap. Is this feasible and policeable?
- Gating the main entrance and thus restricting access to the cave to only those who know of the two vertical entrances. Is this only a stopgap arrangement?
- Gating all entrances and introducing a permit system thus introducing all the complexities of administration and access conditions – who, how often, what for etc?

Options that have been discussed within CSS are:

- Do nothing;
- Installation of CCTV or similar surveillance and/or alarm systems;
- Gates at the various entrances to the cave; and
- A ‘semi-permanent’ barrier at the Sand Trap to bar all access for, say, 100 years.

A number of sites have been suggested for gates with the cave including:

- At the entrance to Lake Chamber before the Sand Trap;
- At or in the Sand Trap itself; and
- At various locations between the top of the Opera House wall and the Third sump..

CSS believes that these sites are impracticable because they cannot be easily and routinely checked for vandalism or natural damage.

In terms of a semi-permanent barrier, CSS believes a structure of a concrete and stainless steel pipe might allow sand and water movement, but preclude all human access until such time as the barrier was removed. It would require careful design and implementation.

The advantages of installing gates at each of the Dogleg entrances would:

- Permit approved groups to enter the cave;
- Enhance protection for the isopods that live along the outer parts of the streamway (none of the other proposals address this issue; and
- Be much easier for the sole local ranger to check and maintain.

On the downside:

- Multiple gates and possibly locks to maintain;
- Increased likelihood of vandalism for gates at entrances; and
- The issues of who would determine entry criteria and do the on-site checking?

Advantages of a semi-permanent barrier include:

- Halting further damage (either wilful or accidental) to the inner parts of the cave;
- Providing time for damaged areas to recover / regrow;
- Addressing the management, maintenance and OH&S concerns with lockable gates;
- Solving the problem of who gets in but who does not; and
- Enhancing ASF/NSWSC cave protection credentials.

On the downside:

- No access for any reason for a defined period, including for valid speleo or scientific projects (i.e. more restrictive than for other “closed” caves);
- Design and installation work could be complex, time consuming and expensive; and
- Might have deleterious environmental effects.

On Tuesday, 28 April 2008, CSS members met with Mr Ray Mooney and Mr Steve Howarth (NSW Lands Department – the Administrator and Ranger, respectively, of the Wee Jasper Reserves) to discuss better protection of Dogleg Cave. The outcomes of that meeting were:

- Mr Mooney agreed that Dogleg Cave needs better protection;
- He pointed out that the Department (and thus the Reserves Trust) has very little money available for capital works – and only one staff member;
- He felt that a Plan of Management for the Dip, Punchbowl-Signature-Dogleg caves (and the caves reserves) was required and that he would seek funding for the preparation of such a plan - in consultation with the caving community;
- He pointed out that the cave using community at Wee Jasper was a much larger parish than ASF-affiliated societies and that any future management proposals would need wider consultation. He did, however, concede that the expertise (and the Codes of Conduct, etc) of the ASF was the best available to the Lands Department in managing the Reserves and their caves;
- He agreed that he and the Lands Department would “smile” upon a formal proposal from ASF to implement protection works for Dogleg Cave;

- It was agreed that ASF through the Speleological Council should prepare and submit a proposal for “temporary” works to protect Dogleg Cave whilst still allowing access to Lake Chamber;
- That these works would be put in place whilst discussion and planning on how to protect and manage Dogleg Cave over a longer time frame;
- That signage and consultation with the wider caving community would be required;
- That better assessment of visitor numbers and their behaviour was needed.
- That efforts should be put into place to better licence and regulate commercial operators, school and community groups who use the caves reserves; and
- The Trust could assist with labour and limited monitoring of any protection works.

For discussion ...

Canberra Speleological Society Inc.
29 April 2008

References

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