

Elk River Cave Update

Results from the second diving project in the Murrindal Potholes Eastern Master Cave

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BACKGROUND

The Murrindal Potholes Reserve, on the hills north of the small town of Buchan, is Victoria's premier cave area. It has always been a fun place — hardly any great caves, but enough quantity of smallish vertical caves to keep us quite busy.

Annoyingly, the deepest of the caves all bottom out at around 60 m depth and none leads to significant active water.

That suddenly changed in early 2006 when the Victorian Limestone Caving Team opened M179, the one pothole that did not stop but led into 140 m of sweetly flowing underground river [VLCT 2007, Van Dyk 2007].

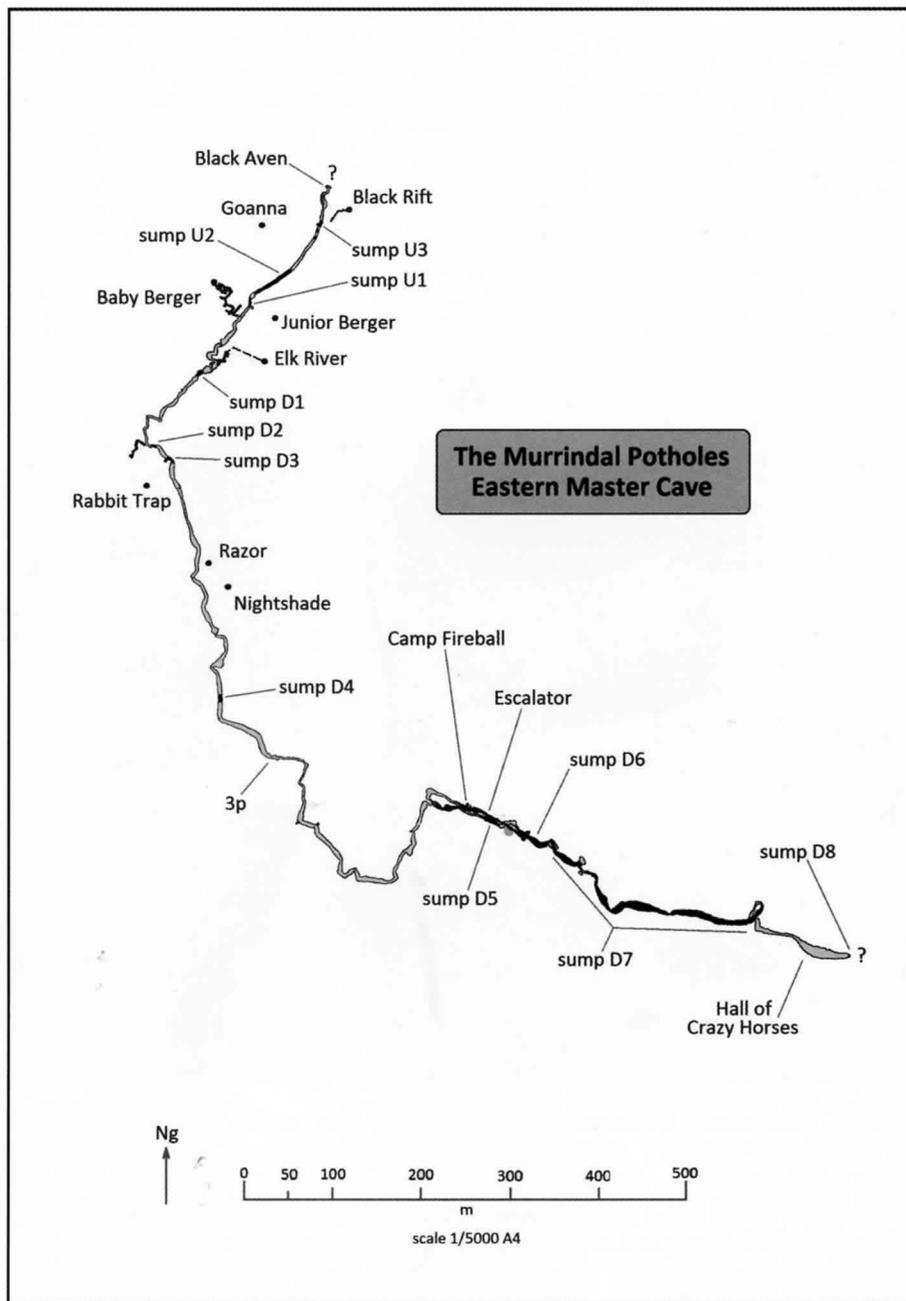
After the initial explorations, the resulting cave didn't attract any visitors, other than me, for some time [Freeman 2008]. I was keen to get past both the upstream sump and the downstream sump, or find someone who could.

Agnes Milowka had recently appeared in the VSA club, and just at the right time she introduced me to her fellow sump diver, James Arundale. Jim and I had much in common — both of us grew up caving in the Yorkshire Dales, UK; and we were both ex-members of the same UK caving club, University of Leeds Speleological Association.

Naturally, I took Jim, and soon afterwards Agnes, to look at those sumps!

The story of how Jim and Ag passed those sumps and subsequent ones, to discover much of the Murrindal Potholes Eastern Master Cave, was recounted in *Caves Australia* 180 [Freeman & Arundale 2009]. Those explorations, now known as the Elk River Cave Diving Project, ended in 2010, with both Jim and Ag having penetrated over 40 m into Downstream Sump 6 (D6) but not reaching further air-space.

Note: Sumps in the Master Cave are notated as D1, D2, etc, going downstream away from the Original Streamway, and U1, U2, etc, going upstream away from the Original Streamway.



THE MASTER CAVE EXTENSION PROJECT

In 2011 Agnes' tragic death in Tank Cave and Jim's departure from Australia left Sump D6 waiting for attention. Shortly after this time VSA fortuitously had a new

influx of cave diving talent, and they soon sensed that Elk River was the place to be. Planning for a project to pick up the gauntlet began early in 2012. Many tactical discussions were held between the divers; and Liz Rogers, who has since acted as



LIZ ROGERS

Team shot above the rift passage before sump D5, where the cave cuts down through the rock and drops rapidly. This was taken after spending the night camping at sump D5. Left to right, Dave Bardi, Sandy Varin, Steve Fordyce and Liz Rogers.



LIZ ROGERS

Andreas swims into clear water in sump D6. Mud-coated ceilings and walls mean clear water quick deteriorates into brown soup.



Steve Fordyce climbs a waterfall on the water home from sump D5. While water levels are normally very low, winter rainfall increased flow levels.



LIZ ROGERS

Andreas swims through sump 7 under the second airbell which was at the time the further known airspace in the cave system.



LIZ ROGERS

Tim Muscat ducks under the remnants of a rimstone pool in the streamway



LIZ ROGERS

Andreas wanders through the flat decorated passage between sumps D4 and D5 before the cave drops down a waterfall and develops back into a vertical rift formation



LIZ ROGERS

Stefan Eberhard emerges from the roof sniff before sump D1



LIZ ROGERS

Sandy Varin drags a caving bag full of tanks through sump D2, raising a cloud of silt.

director of the new project, opened up a productive communication channel with Parks Victoria. I had kept Dale Calnin, the chief ranger, closely informed of events in the first project, and we knew that it would be essential this time, too. Fortunately, Dale understands the historic significance of these explorations, and we thank him for his continuing support.

The first visit by the new team occurred exactly a year later, on 26 January 2013. The divers were Liz Rogers, David Bardi and Sandy Varin, supported by Ken Murrey, David Rueda, Rowan Bulpit and me. Sump D4 was reached, photos were taken by Liz, and a missing piece of the survey was completed. The divers became instantly acquainted with the nature of the cave: its tight and difficult dry approach to the stream passage through Baby Berger Cave, the taxing squeeze through Sump D1, and the beautiful stretches of airspace streamway. This trip also set our standard pattern of a quick pitch-rigging descent by the dry team on Friday, a long-duration penetration attempt by the dive team on Saturday, and a gear retrieval and de-rig descent (by the dry team or by both teams) on Sunday.

Enthusiasm being high, we returned one week later. The dive team was again David and Sandy, but plus Ken Murrey and minus Liz; and the support team was again David, Rowan and myself. This time Sump

D4 was passed, D5 was reached, and air tanks for future trips were deposited. Trip duration for the divers was 14 hours: this, and even longer durations, would become regular. On this first journey down the Long Streamway (Elk 5, between Sumps D4 and D5) route-finding was also a delaying factor.

EARLY PROGRESS

Since we had done two successive weekends, we now optimistically planned weekly visits. The cave was therefore left rigged, but in fact it was two weeks before we were at Buchan again. This diving push by Liz, David, Sandy and Ken, joined now by Steve Fordyce, was spectacularly successful: Liz plunged into D6, went to the end of Jim's line in clear water, and swam straight out of the far end into Elk 7. That airspace was named Liz's Room. Ag and Jim, in their cloud of silt four years previously, had been only ten metres short of passing this sump!

Additionally on this trip, all the other divers reached the start of D6. Elk 6 airspace (The Labyrinth) was surveyed, and its branches explored. The dry team had expanded too, gaining Topaz Aral, Tom Porritt and Alen Milos.

It was mid-April before we again had our ladders and ropes strung through Baby Berger. Steve and Ken went as quickly as possible to Liz's Room, and Steve swam off

into Sump D7. Before turning for home he had laid more than 80 metres of line. Meanwhile Liz, accompanied by diver Andreas Klocker, explored up the Long Streamway's dry branch named 'The Escalator'. Fifteen hours were spent in the cave, and a very tired team emerged, as usual, into a dark starry night on the Potholes Reserve. The same team, assisted only by me, hauled 11 packs out from Uncles Aven the next day.

The next few trips, in May, June and July of 2013, made no progress downstream. This was due partly to a flood in the cave, partly to technical problems, and partly because a tank-drop-only trip was made. However, other important work was done, including safety improvements, establishment of emergency dumps, re-surveying the whole original streamway and M14 access route, and surveying all of the known upstream cave. Also, new divers had been on the team, as well as new supporters (Cath Hemley, Ian Barnard, Tim Muscat, Seamus Breathnach).

The flood was interesting, but unfortunately it occurred just as the regular team was supplemented by visitors Ken Smith, Stefan Eberhard and John Dalla-Zuanna. There had been prolonged heavy rain before the descent, but we didn't reckon on the effect in the cave being so dramatic. In fact, Baby Berger was in a very wet condition and Elk River was flowing strongly. The

Upper Roof Sniff had effectively sumped; I looked into it optimistically, but was sternly told by Liz not to be so silly as she prepared to lay dive line through it. All the divers dived through it, and through the Lower Sniff, and some went through D1 and as far as D2. Caution, of course, prevailed and a return was soon made, with the level clearly rising further. By the time of Sunday's pack retrieval and de-rig, with rain still falling, the cave was almost unrecognisable and quite spectacular; there was a little waterfall at each drop in Baby Berger, and a rather noisy one on the 40 m pitch.

In October, Steve once again laid line in D7, gaining another 150 m of underwater cave. He was accompanied by Liz, who surveyed all the way back to the line tie-off in Elk 7 airspace. Also of note this time, Tim Muscat graduated onto the dive team and Michelle Doolan and Jason Goldstein joined me in dry support.

LIZ ROGERS



Andreas Klocker negotiates a narrow rift between sumps D4 and D5

PROGRESS SLOWS, BUT PRACTICES IMPROVE

From November 2013 to November 2014 progress has been only a few metres at the downstream frontier. This has been due to many factors. The November 2013 descent trialled underground camping, with a 29 hour duration (it was not helpful enough to repeat, so far). Some side-lead exploration was performed. Resupply-only trips were made. Water tracing was performed, proving the resurgence to be at M26 Sub-Aqua Cave, and karst geologists John Webb and Brian Finlayson were guests on the team. Many photos, still and movie, were taken. M14 rigging was improved, and our pack hauling practices were refined. Jason Mallinson temporarily joined the dive team for one descent, and new dry cavers (Nina Birss, Bradley Dohnt and Oliver Tomlin) participated as porters.

FINALLY — A BREAKTHROUGH

On the long weekend in March 2015 a three-person dive team (Liz, Steve and Ken) and a five-person dry-support team assembled for a major downstream push. Day one's work was to position lots of equipment in the streamway (along with exploring farther upstream). On the next day, a sixteen hour effort by the divers was rewarded by shaking off the jinx and finally passing Sump D7.

Steve, loaded with four large side-mount tanks and all the other usual appendages, laid an extra 110 metres of line to complete the 366 metre sump. He emerged into a small tunnel that soon led down a waterfall and into a large Hall, eight metres wide and twenty metres high. His exultation was not dimmed when he came, after 155m, to the

next sump. It's just the way it goes

D8 now beckons.

THE UPSTREAM DIRECTION

Jim Arundale had passed through one short sump going upstream, and partially penetrated U2, even before D1 had been passed. Agnes had also explored against the flow, passing the 50 m long U2 and reaching the outflow of U3. During the Master Cave Extension Project, this direction in the streamway has understandably been given lower priority, but it was not forgotten. Steve Fordyce picked up this challenge on the weekend of the flood by surveying all the way from Uncles Aven to the end of Agnes' line. Ken Murrey was also interested, and in October 2013 he swam through, and surveyed, Sump U3, emerging into an airspace now known as Ken's Room. Having overstayed his expected return time, he had to turn around while still walking up open cave passage.

Another seventeen months passed before the peace beyond Sump U3 was again disturbed. Ken and Steve went through to continue exploration, and found themselves, after only a few more metres of passage, at the bottom of a large aven with falling water.

Where this may lead is a mystery, since there are no surface features nearby. Ascending the aven will not be easy, and it must wait, but we're sure there is more to find up there.

THE FUTURE

The team, frustrated by the long period of only minor progress but now re-energised, recognises that the cave is becoming

more difficult. The problem is that the exploration front is at the far end of a supply chain that is long and getting longer with the logistics therefore becoming progressively more challenging.

As examples of this, I can mention that there have been durations of more than eighteen hours for the divers, and one trip took in and brought out eighteen packs. To set against that problem, the core participants are now well-practised, the route down to the water and through the Master Cave to the longer sumps has become quite familiar, pack handling through Baby Berger's Balcony Tube has become streamlined, and the use of some new diving technology is on our horizon.

The last line tie-off, over 250 m into the seventh sump, is staring into large open passageway, and so all are confident that new cave length is there to find.

It is also worth noting that the altitude difference between Sump D7 and the resurgence inspires confidence that more airspace cave exists in the 600 m gap, so some of that route might be walking, not swimming. Stay tuned.

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