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## JENOLAN CAVE DIVING EXPLORATION AND DISCOVERY - FEBRUARY 7-8, 2014

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BY DEBORAH JOHNSTON AND ROWENA LARKINS

### **SATURDAY February 7th - A MAMMOTH CAVE DIVE**

**Participants:** Rick Grundy, Adam Hooper, Greg Ryan, Timothy Byford, Steve Kennedy, John Wooden, Deborah Johnston, Rod Obrien

On the drive down the hill into Jenolan on Friday night, several of the cars heading to the hut were treated to the sight of a juvenile spotted quoll stuffing around by the side of the road more or less unphased by the attention it was getting.

On Saturday morning, the groups sprang into action with everyone more or less ready to go by 10am. There was a bit of thumb twiddling until we received the message that our extra participant for the day had been stuck behind a bad crash on the Bells Line of Road which was closed in both directions! He had decided he probably wouldn't miss much if he went back home for the weekend instead of waiting around a couple of hours and joining us later in the trip. He was wrong!

We loaded Rod's new Hilux ute with all the essential gear (packs and people to carry them), and head down the hill to Mammoth Flat where we unloaded our haul including four 7l tanks, two 5l tanks, one 3l tank, two wetsuits, four regulators, two crowbars, and a lump hammer! Luckily this trip can be done with no fins, weights or bcd which saves a small amount of weight, and we knocked down the kilos a bit further by sharing as much equipment as possible. Needless to say these trips cannot be done without club support and we were lucky to have this group helping us as we got down to the river in just 50 minutes without too much huffing and puffing as we had one bag per person. I even have photographic evidence of a lot of smiling en route which will be used to convince future participants that the gruelling reputation of all dive trips is unwarranted.

The water level at Lower River had dropped even further since our last visit a month earlier, with it now possibly at a historic low? I dived first and encountered a new obstacle only half a body length in as the initial squeeze had blocked up with gravel in the reduced water flow which normally blasts everything through at force. It was a tight fit pushing three tanks ahead of me and I wondered if Al Warild really did fit through here with one tank clipped to his side, or if he was just pulling my leg. Shortly after the entrance squeeze there is a tight, jagged rift where you stand upright (made possible by wearing just booties and no fins), and shuffle sideways awkwardly until reaching a slightly wider part where you can drop down below. I had entered the rift holding three tanks out to the side with one arm, which I soon realised was a mistake as they were getting caught down in the narrower parts and felt extremely heavy to lift up with just one arm on an awkward angle. More weebix required.

At the bottom of the rift I dropped off one tank which was a 71% nitrox mix for speeding up decompression upon exiting. I checked my air gauges and was not pleased to see how much air I had used traversing just 20-30m into the cave! It was time to think of boring things and slow the breathing down to conserve that much needed air, so I pondered my tax return amendment and the report I was going to write for work the following week. The appropriate injection of boring thoughts was achieved and I felt myself relaxing as I made my way down the main length of the dive passage which is a tight series of tight vertical pitches and awkward flatteners. We have contemplated calling this the 'stairs of Hades' because it's horrible enough to deserve a name, and hopefully that name suits how horrible it is. The passage is too small to wear tanks, and you cannot turn around at any point once past the initial rift so you must back into the passage feet first dragging your detached tanks along with you, and trying not to get caught up in the diveline that is trying to share the limited space as well. I had done my first dive in here two months previously and remember thinking that Rod Obrien calling it the most "horrible dive in Australia" was a bit rough, however I realised on this dive that it was excitement and anticipation that had tainted my memory and he was most likely right.

I reached the bottom of the final pitch which was the start of the long gravel slope which was our dig site for the day. I had bungied a crowbar to one tank and tucked Rod's trusty lump hammer in my wetsuit pocket. I used these trusty tools to pry away the initial coating of tough crust which was a fine black silt which seemed to have solidified over the top layer of fine cobblestones. It was difficult to crack but once the top layer was breached the underneath layers came away far easier. I rotated around in the small space in various configurations that would make any yoga teacher proud, before realising that the best approach would be to continue backing down the passage feet first and clearing a path through the loosened cobblestones by kicking and scooping with my legs (legs being far stronger than arms so speeding up the rate of progress dramatically). Once breaching the cobblestone layer I was not happy to see that underneath was a fine orange clay as this obliterated the visibility and is known for being a regulator wrecker. With the lack of vis there was no option but to zone out and keep digging, until one shuffle down the tube pushed my reg to the side, allowing the freezing cold water to spill into my mouth straight across a couple of fillings. Yeeouch!

I made my best efforts to make the dig big enough for Rod to fit down with his large chest and thicker wetsuit, which

was a bit slower, but I wasn't complaining as I found it far less confronting being able to look up instead of having my nose pressed into the rocks below by the roof above.

On any regular cave dive it is the unbreakable rule that you turn back as soon as you hit a third of your air supply. This factors on you using another third to get back out, leaving an additional third as spare for if things go wrong. This dive was different as you use so much extra air forcing yourself down the passage against the flow of water that is trying to push you back out, but then you are spat out with the flow on the way back out using barely any air at all. Because of this, we had predetermined a far lower air supply to be the turn-around point. This seemed all lovely and sensible when planning the dive over coffee a month earlier, but once I was down the tight hole huffing and puffing from the dig at -35m, I'll admit that watching the needle go so far past what I was used to was an uncomfortable experience. Eventually I hit my turnaround point of air supply and accrued decompression, and began happily exiting. It was at this point that I was disappointed to see that all my efforts had achieved only 2m of progress, which was less than a third of the total distance we needed to enlarge to be able to see what was around the next corner.

I came out a bit slower than normal in an attempt to clear my deco while still moving, as the thought of lying still with the water rushing past stealing the rest of my body heat was not great. On the way out I noticed a chunk of broken flowstone buried in the gravel, clear evidence of dry cave at some point further upstream. By the time I reached the end of the dive I only have one more short stop to do which I passed by digging out the gravel slope a bit more to make entry and exit easier for Rod who was coming in after me with four tanks instead of three. By the time I came out I was so cold and had made such a mess of the vis that I entertained those who were waiting by trying to come out the impossibly small hole which is straight ahead, instead of coming out the human sized alternative just to the left. Of course, Greg Ryan caught all of this on camera!

Rod jumped in next and made his way down to the end of the line, taking a 3L travel cylinder of extra air to maximise the length of his dive. Rod is bigger so fills more of the tube on the way in, which makes the force of the flow more of an obstacle to deal with. Luckily he is as strong as all the other divers put together and he got down to the dig in about 17 minutes where he continued the kick and scoop technique with his legs down the restriction. He made quick progress, dropping down the slope an extra 3 or so metres (to a depth of around 34m) until it was time to come back out, exiting after just under an hour pushing four tanks our ahead of him with one arm like some of subterranean superhero.

Steve Kennedy had kindly taken the group for a fun trip to Slug Lake and back, and then Oolite chamber to keep the guys warm and not bored while we did these two dives. Rick had exited earlier to get his gear ready for a dive later that afternoon. Luckily we were only taking five bags out of the cave with one of them not coming back in again. With seven people and five bags we were back at the car in 50 minutes, sweating in the 35+ degree weather outside. I was able to confirm that I had recovered full feeling in my previously frozen feet as I dropped the reserve gate padlock onto my toe.

## **SATURDAY IMPERIAL**

**Participants:** Felix Ossig-Bonanno, Anna Ossig-Bonanno, Rod Obrien, Greg Ryan, John Wooden, Adam Hooper, Rick Grundy

Our group was back at the hut at 4:30pm where we sat around for nearly two hours waiting for one of the divers who hadn't prepared his gear prior to the trip (very naughty). We got down to the show caves a bit too late to beat the tour group to the river, so we took a side trip down the Woolshed to show the group the river where we investigated a climb which links up two passages which was being considered for a future cave rescue exercise. Unfortunately, the climb involved getting wet to the thighs... and even more unfortunately I had to do it in my normal caving clothes.

After the tour group had exited, we made our way down to the tourist bridge. We were joined by a photographer that had been a cave guide and Jenolan on and off for the past 9 years, so we were treated to the cave lights throughout the cave instead of head torches, and all ooh'ed and ahh'ed accordingly. Rick, Greg and John all geared up at the waters edge where they modeled for some photos taken by the ex-guide before plunging into the 14 degree water and heading upstream.

They carefully swam through each sump so that even Greg who was third had great visibility the whole way through. In between the sumps is beautiful walk-through streamway passage which they all enjoyed. John took a scurion and small waterproof video camera to get some footage of the dive passage also.

Felix entertained the group by getting into the water in his undies to check a coin which ended up being 20c, when he experienced the slow burning sensation that 14 degrees gives your skin after a couple of minutes.

We killed the time by having a slow wander through the tourist cave passage in hearing distance of the river, with Rod waiting by the sump. They returned after 75 minutes with big smiles, and we all made a lightening quick exit to get back to the hut for showers, dinner, and beer! As we repacked the car in the grand arch we saw a wallaby hopping around the rocks which is always good to see. I was completed stuffed and fell asleep during the hut chit

chat while sitting upright on the couch holding half a beer precariously sloped to one side (also known as chucking a Maynard).

## SUNDAY SOUTHERN LIMESTONE

(Rowena Larkins)

**Participants:** Rob Jones, Rowena Larkins, Rick Grundy

June 2013. Rowena was progressing her surface search of the southern Jenolan Limestone area. She noted several small holes in the area between Cooke's cave (J291) and Warm cave (J298). The cave which was to become Enigma (J340) was one of these small holes of interest.

In the July 2013 Jenolan weeklong trip Rowena, accompanied by Mike Lake, performed a more thorough check of the small holes. Enigma was noted to have water in the base, but as this was following a significant rain event in late June, the water was assumed to be a pooling of rain water. Climate records showed about 40mm fell in the area within the previous week, with over 100mm rainfall for the whole of June.

The hole was checked for water over the following months, and the water in the floor failed to disperse. In the December SUSS Jenolan weeklong trip a couple of SUSS members attempted to empty the water from the bottom where it had steadfastly remained for at least 6 months. This was unsuccessful. Poking about in the hole indicated the depth was at least a couple of metres. (The water turned murky as soon as someone got near it, due to sediment dropping in.)

In Feb 2014, it was decided that we would get a diver with a small tank to stick his head under the water and poke about to see how deep the water was. It was assumed that the hole would be no more than a couple of metres deep, but confirmation of the size was needed to finalise the details for the Southern Jenolan Limestone book.

Feb 9 saw Rick Grundy, Rowena Larkins and Rob Jones headed up the valley for a quick look. We theorised on this puddle being a perched sump and that Rick, the diver, would pop up into new, dry passage a metre or two away.

At the hole, Rick geared up and stuck his head into the pool and his light vanished. A few seconds later his bubbles stopped surfacing. Rob and Rowena got a good feeling. After 5 mins Rob and Rowena knew there was something exiting. 10 mins later Rick re-emerged and announced that his dive depth meter showed he reached 11 m depth, and the cave was opening out. He was able to see some metres of chamber below him and had tied off at the top of a room 4m by 3m wide. Rick also reported seeing a passage heading up, which he didn't investigate due to siltation. As the water level in the cave is about 6m higher than the dry bed of Camp Creek, the cave has been named Enigma.



**Enigma floor.**  
**Photo Rick Grundy**

## SUNDAY MAMMOTH

(Deborah Johnston)

**Participants:** Brenda Carr, Adam Hopper, Steve Kennedy, John Wooden, Greg Ryan, Deborah Johnston, Rod O'Brien

In the morning we had a delayed start as there was the initial dragging oneself out of bed to achieve, and then tank refilling to be done (normally done the night before but delayed due to excess pffing). Rod had brought a large O<sub>2</sub> cylinder with him so refilled our four 7l tanks with nitrox again to allow us longer time at the deep dig which was our target for the day, with less decompression which is so cold with the water rushing past in that dive. It was another scorching hot day so we were glad to be getting underground and not doing any long walks or surface exploration with the other SUSS groups heading out that day.



**Rick gearing up for the Enigma dive.**  
**Photo Rob Jones**

Club geologist Ian Cooper reports that there are two likely explanations for this unexpected find "1) It is a vaclusian resurgence for a Southern Limestone system or just a side gully drainage. (My preferred option) or 2) An old flood swallet for Camp Ck hence could lead to significant system. Need to see if there are any scalloping and flow direction"

### **Postscript**

On a subsequent dive in May, Rick descended to the bottom of the dive. This was about 14m below the water surface, or about 17m below the tag point. This appears to be the base of the cave. The cave walls are covered in dog tooth spar.

The 40ft in Mammoth was prerigged from the day before, and with four bags between seven people we made another quick trip down to the river. Rod and I had planned two more long dives so our saviour, Steve, took the others for a trip to High Shawl room to pass the 2.5-3hrs until we got back. Greg stayed behind at the rivers edge to chill out (literally) and keep me company until Rod returned. Rod geared up to dive first this time and he head in using our full deco tank from the day before as a travel cylinder. Our concerns about the clay were warranted as one of the regulators decided to play up a bit during the dive, but not enough to mean he had to end it early. After some fast and furious feet first digging, Rod could feel that he was at the corner we so desperately wanted to look around. He came back up out of the squeeze, and turned around to re-enter it head first pushing one tank ahead of him (the stuff nightmares are made of). He was holding his helmet in his other hand with a gopro attached which he shoved around the corner to document what was coming up next.

We had theorised and hoped that the passage would start going up again at this point, but unfortunately what he saw was that around that corner the gravel slope is continuing down at the same gradient. He dug the squeeze open more until he reached 42m depth which was the maximum depth that we could safely dive on the nitrox mix we had picked. Rod saw that the slope continued another 8 or so metres to around -50m depth, which is a pain because it means we will need to return with at least one heavier and larger tank to replace the relatively friendly small ones we usually use.

Because we both had the same tanks fills and air limits it meant there was no point in me doing the second dive as all I would be able to do is go to that current furthest point then turn around and come back out. Although we were disappointed that we couldn't go any further on that trip, we exchanged high 5s that we had gotten further in 3 dives than we thought we'd get in 6 (thanks to Rod's superior digging and dive planning, and the help of the crew).

We weren't expecting the rest of the group for at least another 40 minutes, so we packed the gear into 7 bags, and then decided to start slowly moving it through the cave towards the entrance to keep Rod warm. Rod and Greg had had their weetbix for breakfast and powered along getting all seven bags all the way to Home Sweet Home (more than halfway out), by the time we met up with the others who were coming back to assist! If it wasn't for Greg and I making sure Rod didn't exercise too strenuously after his dive, he probably could have got them all the way to the entrance in that time! On the way out we found another funnel web near the entrance chamber which appeared to be dead, but suffered the wrath of my gumboot just to be very, very sure.

It was short work getting the gear the rest of the way out of the cave with the strong group helping us and we were back at the hut before 3pm to clean up and pack up. When we returned we heard about Rick's exciting discovery made on his dive trip to the Southern Limestone which made for an animated pub dinner on the way home as we all exchanged theories over what his find would turn out to be. All in all, another very productive weekend of discovery at Jenolan thanks to everyone that helps with the preparation and planning, and especially those who provide the manpower to pull the trips off.



*Enigma, Looking down to the bridge 11m below the surface.  
Photo Rick Grundy*