

Exploring Ice Pick Lake, Jenolan

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THE APTLY named 'Mammoth Cave' sprawls across a significant chunk of the Jenolan limestone in the NSW Blue Mountains, boasting over 10 km of mapped passage, with exploration leads remaining.

The cave has an underwater level with various entrances spread far and wide across the cave. The use of chemical markers showed that they are all connected but the exact path and connection point of each is still unknown. This means that cave divers are required to explore these submerged passages.

One such dive in Mammoth Cave is called Ice Pick Lake, an impressive permanent subterranean lake that can be reached via around an hour of semi-sporty dry caving.

It earned this name in the 1960s when Sydney Speleological Society (SSS) cavers swam across the 8 m deep lake, and used ice picks to scale a slippery 6 m mud climb on the other side. Unfortunately that climb ended after a short distance with no prospects.

In Easter 1980, Ian Lewis travelled from Adelaide to Jenolan and completed the first cave dive in Ice Pick Lake, with a single backmounted cylinder (standard equipment for divers at the time) and described finding a small opening that lead to around 70 m of passage down to a depth of -17 m. The passage continued, but his air supply did not, so he was forced to turn back. Local cavers spent the next decade exploring other dives at Jenolan, but for one reason or another they did not return to Ice Pick Lake.

By 1993, management decided that having untrained cavers diving in caves didn't seem like such a great idea. The Sydney University Speleological Society (SUSS) obtained a grant and brought legendary British diver Rob Palmer to Australia to impart wisdom and certifications. This prompted some renewed interest in Jenolan diving exploration.

In 1996, local cave diving legend Mervyn

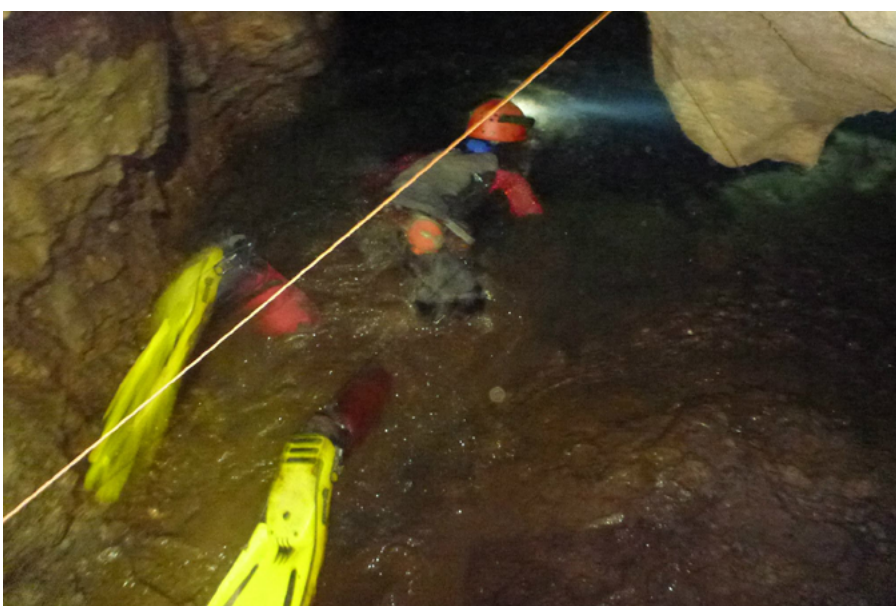


Mammoth Cave on the way to Ice Pick Lake

'Nipper' Maher attempted to find the reported passage heading off from the lake. He had no luck in the main pool (hindered by poor visibility), and instead dived the revolting tight upstream sump around 30 m distance and -3-5 m depth through fairly low, silty passage. Disappointed, it was de-

cided that Ian's tale of clear open passage and depth were wild exaggerations (*SUSS Bull* 36 (4): 23).

In 2003, cave diver Rod OBrien was being shown the various dives of Jenolan. When he saw Ice Pick he simply had to dive it and returned soon after with two small



Entering Ice Pick Lake

sidemounted steel cylinders. With clear visibility he was able to find the inconspicuous hole in the side wall of the lake that Ian Lewis had first discovered. It is not in an intuitive location in terms of direction, explaining why it had been easily missed on other dives.

Rod was able to match the distance Ian Lewis had achieved before running out of guideline. He returned on subsequent trips and extended the passage around 200 m, reaching an air chamber at the end with holes in the roof out of reach. Eleven years passed until SUSS divers assembled together in 2014 to resume the project.

Over the years we had all heard horror stories about how difficult it was to get equipment to and from the lake through the dry cave.

For our first trip, we took nothing but our lunch so we could explore all possible routes before selecting the most efficient 'path of least resistance'. This meant we were able to get to the water much faster and with noticeably less fatigue than attempts by other parties. This would be important as we would need to rely on the donated assistance of dry cavers to help transport equipment without their regretting every moment of their trip.

The trip to the lake with six bags of dive equipment for two divers meanders through sporty but fun dry cave with a series of climbs and squeezes along the way. It is challenging enough to keep seasoned cavers interested, but safe enough for fit and motivated beginners. This takes around an hour or two each way depending on the group.

Upon reaching the lake, there's a convenient large flat bank for gearing up. Once ready, the diver crawls carefully to the edge of the bank across a tarp, before gliding into the water (attempting to minimise the amount of mud following after you which can ruin the visibility).

These entrances are typically rated out of 10 by the dry caving team for style and grace. Scores achieved ranged from a glorious 9.5 (by Alex Boulton, who is described as 'a dream to watch' by swooning onlookers), to a -4 (diver's name hidden to preserve what's left of his reputation after that monstrosity).

Once entering the water, you follow the mud bank down a steep descent before going through a hole in the side wall just big enough for a person with two small sidemounted cylinders. This quickly opens up into a surprisingly large tall and thin rift passage with beautifully curved walls.

Initial dives were conducted to check and repair the old orange braided polypropylene diveline, which was found to be



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Caving to Ice Pick Lake

in mostly excellent condition. One diver learned the 'when in doubt, chuck it out' rule the hard way.

He had decided that one section of the thin orange lifeline didn't need replacing, only to have it snap in half as he passed it. It was a shocking sight for each of the two divers that trip, with one staring at the now floppy end of the string in his hand, and the other emerging in a rush back towards him from a billowing silt cloud.

The windy nature of the passage means that the guideline must be carefully followed to avoid unceremonious smacks in the face by protruding rocks, or awkward attempts to swim through spaces far too narrow for humans.

The majority of the dive involves following narrow keyhole sections along the rift that disappears into the darkness both above and below the diver.

Silt has accumulated in every scallop. Exhaled bubbles extend high up the rift

above you, unleashing this silt which tumbles down in clouds of yellow and orange. Swimming ahead of this falling silt gives you almost perfect visibility, but the return is often so murky that you cannot see your hand in front of your face.

Luckily, the dive is shallow enough that decompression obligations are not a concern. On each of these early dives we took care on the way in to preserve visibility for the exit, but upon exiting we tried to stir things up as much as possible behind us as we made our way out. The reasoning behind this was to eventually dislodge all the silt from above which would settle to the floor, creating great visibility for future divers.

In one section the diver is forced to turn on an uncomfortable sideways angle and slide themselves through a sloped crack before continuing ahead along rift passage. This section was a total blackout after the first diver and never cleared in time for

the return journey, earning the name 'that bastard bit'.

Eventually, the passage goes almost straight up into a small air chamber. There are two holes in the ceiling, and a 2+ m high mud pile that peeks up out of the water. A passage continues off from this air chamber, but it's much smaller and descends rapidly down to -16 m. It levels out at the bottom for a short distance before reaching the base of what seems to be a narrow rift. Settled on the floor is almost 1 m of soft silt.

By lying on your side with one arm ahead you can wiggle about a body length into the rift before it becomes tighter. Your shoulder sinks well into the soft bottom which then starts coming up over your face. Personally, this is the point where I reached maximum 'nope' factor and turned back. It probably is possible to push through here into ongoing passage, but as it stands that is the furthest point of underwater exploration.

Attentions were then focused on the tantalising holes in the roof of the air chamber. We tried free-climbing up there via a variety of bridging attempts and even a human ladder that would make Cirque du Soleil proud.

Then we acquired a fancy slingshot with wrist brace. This ate up multiple trips as the goal (to get up to the roof hole) seemed so close and achievable. The slingshot worked well at getting a lead sinker and fishing line through a large thread just beneath the roof hole, but it always stuck on the mud on the other side, never falling down low enough to be reached. The angle meant that it wasn't possible to attack from the other side. Eventually, we had to admit defeat and give up on these attempts.

There was a very tight side rift branching off from the main passage not far from the air chamber, but it was initially discounted as being impossibly tight and horrible. After becoming more familiar with the cave over time, it seemed less scary, and after a few false starts (aka chickening out) I eventually found a way through at the end of a survey trip.

It's a very narrow and tall vertical rift where the diver needs to move up and down in the water as they move through to stay in spaces wide enough to fit through. Thankfully this suffering is short and it opens into a medium-sized chamber. The diver crosses the chamber and ascends a mud slope on the other side before reaching a second air chamber.

When water levels were high, Alex Boulton and Adam Hooper bravely decided to chimney the walls of the rift above this second air chamber, and were able to fix a



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Lugging gear to the lake

handline around a solid chockstone that is firmly wedged in a formation choke up high. The price of this heroic endeavour was a torn drysuit which made for a painfully uncomfortable return journey through the 14 degree water.

I returned on a later trip and was horrified to see that the water level had dropped significantly (the thought of landing in water feels more comforting than a bed of mud and stone).

The chimney up was awkward and I found it harder than the guys had described, so I was thankful for the grippy material of my thick wetsuit. At the top of the chimney, you can shuffle along the rift carefully in either direction. One direction had a thick false floor of stones and mud that you could teeter across (all the while thinking about the drop underneath). Just around the corner this ended in a rockpile choke that would be suicide to disturb.

Heading in the other direction (towards the 'main drag' of the cave) the rift continues a short distance before reaching a mud choke. This could be dug, but thanks to a voice connection being made with Greg Ryan in the main air chamber, we know that this isn't necessary.

Looking up, the rift passage continues at least 12 m straight up. The smooth limestone walls have large sections coated in formation and water sprinkles down like a rain shower. The potential for this climb seems enormous. If this were in the dry section of Mammoth Cave, any keen climber would chimney up the walls to explore what is at the top. Because this is at

the wrong end of a difficult dive, it would require bolting for safety.

Looking at a plan view of the cave, this passage is heading well and truly into the unknown, deep in the mountain. The water will eventually connect back in with Lower River or Slug Lake (two other significant dives in Mammoth Cave) but the path, distance, depth, and size are all unknown.

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