

Blue Creek Resurgence Trip Report: 18 – 26th February 2011

Jamie Obern



Mt Owen and the surrounding area is beautiful

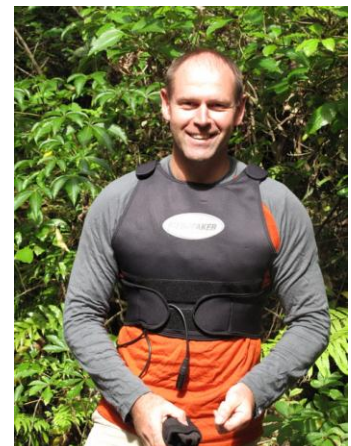
Are you an avid Google Earth user, or do you prefer the touch and smell of a real paper map? Whatever your preference the existence of maps is something we take for granted in the modern world. It is almost inconceivable that we might go somewhere new without a map and although it might sound strange even the first astronauts had maps of where they were going. But what if I told you that right here on earth there are still places which are unmapped and unexplored; places not shown on Google Earth; places which have not been photographed by satellites and which no human has ever seen. I'm talking about caves – the last true unexplored frontier.

Of course all the easily accessible caves were explored 100's of years ago, today what remains are only the most difficult, dangerous, inhospitable or inaccessible ones; or as cave explorers euphemistically call them, challenging. Blue Creek Resurgence near Mount Owen in New Zealand is one of these caves. It is only accessible to divers and only during the dry summer months; it is located a long way from the nearest habitation; it is deep; it is very cold (6 degrees); and most excitingly for us all previous exploration has been extremely limited.

I initially heard about Blue Creek in 2007, but at the time was not in a position to visit. I first visited in September 2009, when I did a non-diving day trip to check out the logistics. In January 2010, together with Mel Jeavons and James Croker I did my first dives into the cave, again checking things out. How tight was it? How clear was the water? How much flow? In April 2010, Mel and I went back, this time with Steve Baldwin and Peter Carruthers. We did 6 dives, going much further into the system and taking a video camera with us. All the dives were still within the 'explored' part of the system, but they had a purpose – familiarisation, preparation, development. Little steps and although we weren't extending the limits of the known world we were learning what was required of us if we wished to do so. In February this year we took the next steps.

STEP 1: The Team

For this trip we decided to take a bigger team than previously, which reflected the additional goals we had set ourselves. There were 4 of us from NZ, James, Mel and myself as per the first trip, plus Mike Batey – who as well as being very keen and enthusiastic is also young, fit and strong – an important consideration when you have a vast amount of heavy equipment to carry. We were also joined by Steve Trewavas and Trent Lee from Australia, who brought a wealth of experience with them. Steve is the National Director of the Cave Diving Association of Australia (CDAA) and Trent is a real Mr. Fixit type of guy (affectionately also known as an equipment geek), the type of person all expeditions need.



Steve modelling his new heated vest

STEP 2: Equipment

Preparing for a week of diving in a remote location is not entirely straightforward. With the nearest town over 80km away and the one dive shop only offering air fills, having your own compressor and the ability to blend trimix is a necessity for such a trip. We purchased a compressor in 2010 and over the last few months we have built a portable trimix blending system, capable of filling tanks with whatever mixtures we require. Having enough tanks for such a trip is also costly: we used 24 dive tanks during this trip, plus had large oxygen and helium tanks with us. The other issue is tools and spare parts – enough to fix any of the dive gear, the compressor, the van and set up a habitat.



Trimix blending

For those of you unfamiliar with the term, a habitat is a dry area of cave created by the use of either a large rigid box or water tank type container, or a more flexible set up like an air tight tent. It is open at the bottom and filled with air to the same pressure as the surrounding water. The habitat is anchored to the cave in some way and allows the divers to duck inside and get out of the water, whilst still remaining at pressure for decompression purposes. (Hopefully the picture explains it better than my words.) The habitat we used on this trip had been designed and fabricated by Trent.



The habitat

The final important equipment we had with us was to help us deal with the 6 degree water – battery powered heated vests and dry-gloves.

STEP 3: Access

Blue Creek is not on a main road unfortunately, but instead in the middle of a national park. After driving along 23km of gravel road you reach a grassy car park and from here it is a 1.7km bush walk to the entrance. And the entrance itself is not simple. The small crack you pass through to get to the entrance pool is set back and down into a rocky gully, bounded on 3 sides by sheer rock walls and on the fourth side by a slope of slippery moss covered boulders.

On our last trip we had trialled hand carts for moving all the gear from the car park along the 1.7km track and we again made use of these. A cart loaded with a twin set and some dive gear can be moved up to the cave in



about 25-30mins. However, the next part of our logistical exercise was a huge improvement from the last trip. We set up a zip-line from a tree at the end of the track right into the cave itself, and whilst this took an hour to set up the time saving was enormous. We could move a set of double tanks into the cave in only a couple of minutes – compared to approx. 45mins if you had to carry the gear up and across the boulder slope. This time saving meant that on the first day we were able to cart all the gear up to and into the cave and still have time to do a first dive. On previous trips we have always been too tired to do any diving on the first day.

STEP 4: Diving

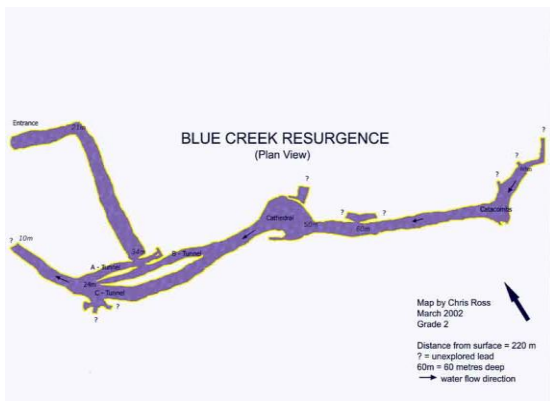
Diving in the cave is quite challenging. Apart from all the 'normal' factors associated with diving in an overhead environment, Blue Creek is cold, deep and in places quite tight. The entrance pool is large enough for 4 divers to be in the water at the same time, but once you descend down the 45 degree slope and pass the 15m mark you are forced to go mainly in single file. The bottom is a gravel slope and depending on rain fall and flow during the winter this slope can be anywhere from 1.5m to 50cm from the roof of the cave. In the latter case you have to push the gravel out of the way in order to progress into the cave, knowing that all the while it is filling in behind you. You continue down the slope to about 35m where you reach an intersection with 4 tunnels. Dropping down the main tunnel you reach a pinch at 40m and then a big rift chamber at 45m. From here you drop down very quickly to 60m. From reading various reports from other would-be explorers most people don't make it to the end of the gravel slope at 35m.



The big upside to the cave is the visibility. Once clear of the gravel slope we had 10-15m visibility on every dive, which massively reduces stress and make mapping far easier. There are also various shallower tunnels to explore which allows less experienced team members to avoid big decompression obligations.

In total we did 12 dives in the cave, which included our set up dives, mapping down to 44m, two photography dives and a familiarisation and exploration dive to 60m.

STEP 5: Mapping and recording

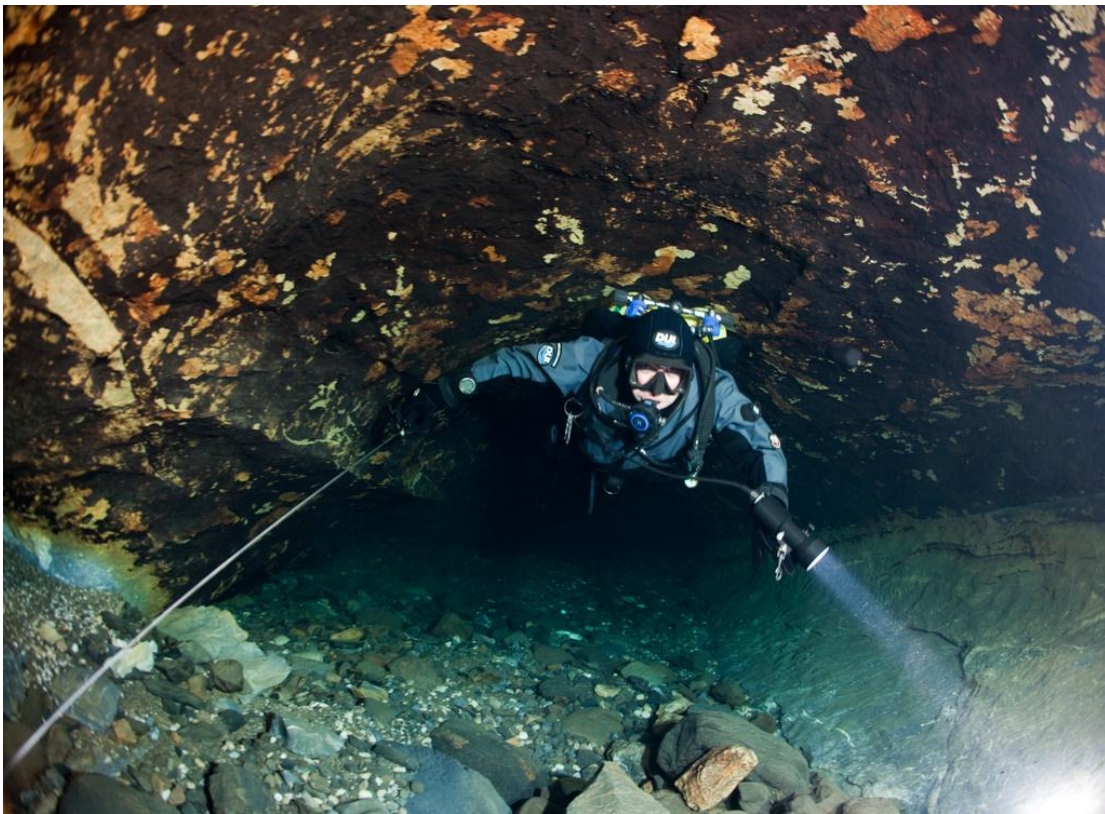


The original map from 2002

As well as working out heating, habitat and equipment moving logistics our two main in water aims were to remap the cave and to take some good photographs. Back in 2002 Steve had helped to do a basic map of the cave (see map by Chris Ross), but we knew this map was inaccurate. We started by laying a main line down to the big rift chamber, tying off at 46m and then laid additional lines up two of the shallower side tunnels. Together with Mel and James I then surveyed all these lines, taking depth, azimuth and distance recordings as well as floor, ceiling and wall measurements. Currently we are waiting for Steve's mapping expert friend to compile all the data.

As for the photographs, well apart from the obvious problems of lighting, not blowing bubbles in the pictures, not creating silt etc. I think it best to simply show our results. (Steve took all the pictures shown below.)

TECH DIVE
New Zealand 





NEXT STEPS

Overall this trip was a big success. The trimix blending worked well, the zip line was an excellent improvement, we managed to install the habitat, we've got plenty of new mapping data and the photos look great. However, as always there are areas to improve.

Firstly everyone needs dry gloves and heated vests. Thick 'lobster' mittens are ok for up to 90 minutes but after that they are too cold. Secondly we need a second compressor as back up, preferably a slightly larger one to save time. Thirdly the habitat needs a few tweaks. Trent designed it to slowly leak air from the seams, but it was leaking a little too much. We'll also make it a bit shorter so that it doesn't rub against the roof.

We've also got a list of few extra tools, spare parts and other little items which will make life easier. Roll on the next trip later this year!

Finally I have to mention the Christchurch Earthquake, which happened during our trip. None of us were in the water at the time but we could feel the shaking very clearly. When we re-entered the cave we couldn't spot any changes, but I'm glad we weren't diving at the time. Chalk up one more potential hazard for cave diving in NZ. We were however (slightly) impacted by the quake. I was due to give a presentation at a dive shop in Wellington (Splash Gordon) on our trip, but our ferry from Picton was hugely delayed due to refugees from Christchurch who 'just wanted to be somewhere the ground wasn't moving'. I hope they have all now found somewhere they feel safe.