

Labyrinth Cave Survey

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Labyrinth cave, which is located in the Augusta region is, as the name suggests, an extensive phreatic maze stretching out to about three kilometers. Labyrinth was first surveyed in 1962 by Lex Bastian and Alex Saar when the watertable was much higher, which is now virtually non-existent. This has allowed more of the cave to be explored and surveyed.

I was fortunate enough to be taught how to survey caves by one of our most experienced and respected surveyors, Barry Loveday. I had been surveying with Barry for about four years when he told me of his plans to update the survey of Labyrinth. However because of personal commitments and changing circumstances he told me he would not be able to do it himself and so he asked me if I would like to survey Labyrinth instead. I eagerly accepted and applied to the department of Conservation and Land Management (CALM), through it's Cave Management Advisory Committee (CMAC) for permission.

Ian Collette from WASG also expressed an interest in helping out, and because of the huge job ahead of us, it was decided a joint venture would be the best way to go. Ian would lead the team from WASG to tackle the Southwest section and the Sump extension, whereas I would survey the Northeast and Northwest sections with SRGWA. We were also given a great deal of support by members from CLINC.

Apart from the usual compass, clino and opened reel tape, we also used an eight metre steel retractable builders tape. This tape was not only useful for measuring the ups & downs, lefts & rights, but was also good for extending into low areas where it was too awkward to crawl. We were also using the blue aluminium reflective discs for survey stations.

Our first survey trip was on the 21 April 2000. A seventeen metre pitch brings you down to the top of a rockpile, after climbing down we came to a flat sandy floored chamber. Following this chamber to the left for about ten metres takes you into the Lunchroom, which is a convenient eating and meeting place. After we had surveyed up to the Lunchroom from the entrance we began to survey into the Northeast Passage for a short distance before we came to a dry sump section, which led into a large heavily decorated chamber.

Continuing on into the Northeast section we surveyed through a series of low chambers and passageways until we came to a Y-junction. First we surveyed the right side of the junction. This led into a maze of tunnels which took two weekends to complete. Then we surveyed the left side which led us around in a loop heading back towards the entrance, where we came into the Artistic Chamber. This is a heavily decorated, high ceiling chamber which is another Y-junction. The left side takes you back to the entrance, whereas the right side leads into the Northwest section.

While we were surveying in the Artistic Chamber I noticed a small hole in the floor about a metre wide. Climbing down, I discovered it led into a cramped lower level that seemed to go back a long way. Unfortunately it was too difficult to survey, however I did see an unusual group of brown and white stalactites. One side of the stalactites was a pure crystal white colour, whereas the calcite on the other side was a dark brown colour. I have no idea how the two colours were formed, but they looked most unusual.

On our next trip we started surveying from the Artistic Chamber and headed up into the Northwest section. After going through a crawl the passage opened up again, where we came across a huge triangular suspension table five metres across that went back about six metres. A short distance past the table, the passage led into another large decorated chamber, which is also a Y-junction. We first followed the passage that went to the right which led into the Bastian Network. This is a series of connecting chambers which loops back into the Artistic Chamber. While we were surveying in this loop, I found a small extension where we had to crawl into a low muddy section. This is where I discovered a pool of water, which is the only part of the natural watertable still in existence in the whole cave. After we had finished surveying the Bastian Network, we went back to the junction which continued on into the Northwest section.

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Going through another short crawl we came into Piccadilly. Piccadilly is a chamber about twenty metres long with a maze of connecting tunnels branching out from the right side of the chamber. Someone had long ago, also gone to the trouble of dragging in a large timber sign which reads, "beware of the trains". The characteristic maze of tunnels continued on for about fifty metres, which meant it was very time consuming to survey.

Pushing on further we came to yet another Y-junction. Now this is a major junction. The left side takes you around a large loop that eventually circles back into the right side of the junction, before it branches off into the Lighthouse. We started to survey from the left side and when we were about half way around the loop, we came across a high rockpile off to one side of the main passage that appeared to choke off at the ceiling. Surveying up to the top of the rockpile, I discovered a three metre horizontal section before it choked off at the ceiling. This flat section continued to the left for about ten metres before terminating. We quickly finished surveying this section as I was eager to get back down to finish surveying the loop back to the junction. But then I noticed a small opening in the far corner of the chamber. Fully expecting this to choke off, I crawled through only to discover a very large chamber on the other side of the rockpile. While I was taking a quick look around I came across a vertical drop. Because I was on my own, I decided not to go down, so I made my way back to the others. This appeared to be a large extension, so we would have to come back another day to survey it. For now we made our way back down the rockpile and finished surveying the loop back to the junction.

Needless to say, on our next trip, we went straight back to the top of that rockpile and surveyed the extension. That vertical drop I had found was quite interesting. It went down about ten metres and was well decorated with flowstone, shawls and crystals on the way down, and ended in a small chamber at the bottom. This extension was not as big as I had hoped. It was mainly a very large chamber that went parallel to the main passage for about fifty metres. Something that caught my eye were some very unusual tree roots. They came from a single stem about twenty centimetres thick and were in a tight twisted spiral from the top to the bottom.

The next day, we surveyed from the loop over to the Lighthouse. This is a chamber with a hollow clump of limestone hanging down from the ceiling, with decoration inside. According to the old map, the Lighthouse marks the end of the cave, where it chokes off at a large soilcone. However when we had finished surveying the Lighthouse chamber up to the soilcone, I noticed a small opening off to the left. Crawling through I discovered a wide spacious chamber with a bewildering number of leads branching out in all directions. Little did I realize I had just opened up Pandoras Box of surveying, because it would take me another ten months to finish the map, with what lay ahead.

Looking around this wide chamber I decided to tackle it systematically. I located a central point near the middle of the chamber where it branched out in different directions. One by one each lead was dwindled down, each time we came back to our central starting point, until all the leads were finished. Then all we had to do was to finish surveying around the circumference of this large central chamber, and our work was done. But just when I thought I had almost finished we came across another one of those small openings in the wall which I had overlooked.

We crawled through into yet another large chamber that extended out into two main directions. We established another central starting point, where we could survey in both directions. First we went to the left through a maze of chambers for a short distance until we came to another crawl. After we had all squeezed through we came into a high central dome chamber with a large rockpile that was reminiscent of a typical entrance collapse. Working our way up to the top of the rockpile and down the other side, I found the cave just kept on going until, to my surprise, the passage led right back to the Lighthouse in a huge loop. It's also interesting to note that all through this whole section, we found old survey markers from the Bastian survey, so we were not the first ones to discover these sections, although for some reason it was never drawn up on the original Bastian map.

When we had finished surveying what we had just found, we went back to our central starting point to survey the right side of that chamber. That's where we planned to start surveying on our next trip,, but not everything would work out according to plan. There were times when something would go wrong. For instance, as you can imagine by now it would take us well over an hour to reach the far end of the cave, just to start surveying. On this occasion Andy Lambert and Chris

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Cummings (CLINC) were with me. We had just travelled up to the far end of the cave at a brisk rate, which took us about an hour and a quarter. As usual, by the time we had reached our destination, we were tired and sweaty. After resting for a while, I began to get my survey gear out of my bag to start surveying the right side of this chamber, when I realised I had left my compass and clino in another bag back at the entrance.

This presented a problem of course. It was understandable that Chris and Andy would not feel inclined to come back with me. It was my fault anyway, so I decided to take a punt and make a dash for the entrance on my own. A potentially risky situation, but all went well. In fact, I knew the cave so well I actually made it to the entrance and back again in just forty minutes. You can imagine how I felt when I got back to the others, but my determination was stronger than my aching muscles.

Anyway, we finally started surveying the right side of that chamber. The characteristic maze of passageways continued for some distance until we came to a small hole in the wall. This led into a tight passage which terminated in a small chamber, with an interesting solution pipe going up into the ceiling.

When we were making our way back to our central starting point, we found another passage leading off from the main chamber. We followed this passage for about twenty metres around a few corners until it terminated at a small circular chamber. Now, this appeared to be all there was left to do. However because it was too late in the day to survey this section, we decided to come back for one last trip to finish off the whole survey.

At the next general meeting, on the 25 July 2001, I boldly announced that this would be the last survey trip for Labyrinth. Norm Poulter, Vicki Bresnan and Michael Whitworth were with me on this trip. After travelling up to the far end of the cave, we started surveying into the passage we had found, then on into that small circular chamber. We had almost finished when I noticed Norm was poking around a tiny hole near the ceiling and pulling out rocks. I remember thinking to myself, "you're wasting your time Norm, I've already checked this chamber out, let's get it finished so we can go home early". But before I could turn around again, Norm had climbed through the hole he had made and disappeared out of sight. Twenty minutes later he came back to proudly announce that he had found, what appeared to be a huge extension that had never been discovered before.

When I got over the shock of having my work load considerably increased, we pushed on into Norm's Extension, as it became known. One chamber lead into another through a maze of connecting passages. By the end of the day we had surveyed about fifty metres with no end in sight. As we made the long journey back to the entrance, I began to speculate on just how long it would take to finish the survey, that's if we ever could find the end to Labyrinth Cave.

Andy Lambert, Michael Longman (CLINC) and my son Steven joined me on our next trip. After making the even longer journey to the far end and on into Norm's Extension, we started surveying from where we had finished off last time. Andy found a small skeleton which was almost completely calcified. This proves there may have been another entrance of some kind in the past. As we were surveying I noticed what appeared to be a sizeable lead off to our left, but we would have to come back to that later. For now we kept surveying along the main passage which was wide and spacious with good head room. When we had surveyed about a hundred metres into the extension with still no end in sight, we decided to call it a day and head back. By now it was taking us three hours to make the return trip, to get into and out of the cave, which meant we were spending ten to twelve hour days to make it worthwhile.

On our next trip we planned to have one long day's surveying to see if we could finally finish off the entire survey. I was so determined this time, I was even brave enough to announce that this would definitely be the last survey trip. Could this really be true, after all there was still that lead I hadn't even looked at yet. Time would tell.

Ida Newton, Norm Poulter and Vicki Bresnan (SRGWA) were with me this time. When we had finally arrived at our destination, I showed Norm the small skeleton that Andy had found the trip before. He was able to collect a jawbone for identification at the museum. Continuing on from where we last finished, we pushed on deeper into Norm's Extension. Eventually we came to a low lying muddy

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section which we had to crawl into, and when we came up on the other side, I found something I had been looking for, for months. And there it was dead ahead. There could be no mistake this time, I had found it at long last. It was the END OF THE CAVE. This is the furthest point from the entrance to the end of the Northwest section, which is the longest part of the cave.

We finished surveying a few pockets that were near the end, then we made our way back to begin surveying that lead I had noticed earlier. This turned out to be a long parallel passage which eventually joined up with the main passage towards the end of the extension.

Norm's Extension came to a total length of two hundred metres, which was a very significant find. It extended the cave far beyond its outer limits. And yes, it was true, for after nearly two years and over six hundred survey stations, the Labyrinth survey finally came to a end.

Although the cave will be trackmarked in appropriate areas, the original survey markers from the Bastian survey will be upgraded and left in place. These have proven to be a valuable navigational aid. Certain discoveries have also been tied in to these points.

The Labyrinth survey proved to be a huge success, not only in producing a quality map, but it also produced a good spirit of cooperation and support between the three clubs. I would like to take this opportunity to thank all those who helped us out.

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Inside Karst

Andrew Eavis

ABSTRACT

A highly illustrated lecture on caves around the world including many of the largest passages, chambers and cave systems. The lecture will be an overview of caves and cave formation using photographic examples taken from British Expeditions over the last 30 years. Spectacular photographs of gigantic caves will be used from many areas around the world. These include Brazil, Mexico and USA in the Americas, Uzbekistan and China in Asia, Malaysia, Indonesia, Papua New Guinea, Australia and New Zealand in Australasia, not to mention pictures from all over Europe.