Cave Diving Exploration in Western Australia

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(Accompanied by 2002 Nullarbor Cave Diving Video by Paul Boler)

INTRODUCTION

In the past two years or so there has been some concerted effort to explore and map some of the lesser known cave diving sites around Western Australia. This presentation will show you some of the remarkable discoveries we have made via Paul Boler's excellent video footage as well as maps and photos, most of which are available at our website: www.trimixdivers.com.

I was trained and qualified in cave diving on the Nullarbor Plain, which, after some four years and a dozen or so expeditions later, I now consider as my backyard !! Sadly, in my opinion, a very poor legacy that was left from the great era of Oz cave Diving in the 70s/80s, was the extremely poor quality maps for what are undoubtedly the country's most magnificent underwater caves (so far !). When we looked at the maps we realised that they had little representation of where we had just been ! It was this lack of quality cave maps that inspired us to get out there and start surveying. We soon learned that an unstated benefit of this tedious underwater work was the discovery of 'new' passages and leads. It also forced us to modify our techniques and dive almost exclusively with sidemount rigs. This took us from being goggle eyed cave divers to explorers.

On that note, let's have a look at what has been achieved in terms of exploration around WA over the past few years, beginning with the Nullarbor.

THE NULLARBOR

The Nullarbor Plain comprises the Nullarbor Plain proper (Northern area – arid), Hampton Tableland (heavily vegetated, southern region where most of the diveable caves are located) and the Roe Plain which is a younger limestone deposit next to the coast between Eucla and Twilight Cove. The water table is a mere 10m below the surface of the Roe Plain (bonus !!) and has the greatest likelihood for the discovery of many more extensive, diveable cave systems. Up until December 2001 only 12 caves on the Nullarbor were known to be diveable, now there are 13.

Warbla Cave

Despite having been dived for many years by many experienced divers, the cave had a poor map so we dived and mapped the cave in 2000 under a SUSS permit. The survey revealed a small roof step which led to over 200m of previously unexplored passages as well as the Lost Lake. Further leads are known of in the cave and more work is required. Being a multi level maze passage type system, the potential is good for additional passage discoveries using sidemount techniques, but access to the cave is limited. Refer to Figure 1.

Nurina Cave

First dived in the mid 90's by Steve Sturgeon and then Andrew Poole, some 90m of joint controlled passage was dived. Following our efforts between 1999 and 2002 using sidemount techniques, the passage length has been progressively increased to more than 400m. The tight and silty conditions within the cave make exploration challenging but there is without doubt much more passage yet to be dived. Refer to Figure 2.

Mullamullang Cave

Probably the cave with the most elusive (and difficult to access) diving sites. It is an enormous cave with about 6km of massive trunk passage. A number of km of multilevel maze passage systems are distributed along the length of the cave. There are more than 27 separate lakes in the cave, the closest to the entrance being at 1km and the furthest 5.5km. A number of cave divers have attempted dives in the lakes throughout the cave over the years with very limited success. Our efforts began in 1999 and since then 80% of the lakes in the cave have been dived, including Lake Gelato in the Easter extension (!!!). Three additional lakes were found that do not appear on

the cave map and early in January and April 2002, more than 750m of underwater passages were discovered, mapped & video'd by Paul Boler, David Apperley and myself. Some small leads remain to be pushed. The passages are in the stunning Easter Lake (150m) and X Lake (600m+).

Olwolgin Cave
Probably the most spectacular cave diving discovery on the Nullarbor in the past 10 years is Olwolgin Cave, south of Cocklebiddy. A number of dolines were spotted from the air and investigated by dry cavers from the ISS and WASG groups during Easter 2001. A couple of the caves went down to water but the dry cavers believed they had little potential for cave diving !!! In January this year I had the privilege of being the first cave diver to investigate these sites for underwater potential. From the very poor looking entrance lake, a small FH broke into a major submerged trunk passage with many side passages, over 400m of passage was dived and surveyed to start with. Refer to Figure 3.

I returned shortly after in February with buddy Andrew Nelson. After walking our 100cuft cylinders more than 1km through thick bush to the cave, we explored and mapped 1.3km of passage with several leads remaining. An attempt to return to the cave to survey and video it in April 2002 was thwarted by heavy rain in the area. Once this has been done, more information will be made available. The cave is named after a nearby bluff on the Nullarbor Escarpment.

OTHER WA CAVE DIVING SITES

Tombstones Cave, Cataby
Being only 200km north of Perth, this is our most accessible cave diving site although it is on private property. Prior to our diving the site last year, about 150m of diveable passage was known which terminated in a narrow, shallow vertical fissure. I could see a dark void beyond the gap and so encouraged, I pushed through this slice of rock and into the start of the rest of the cave! Over several visits during 2001, Craig, Karl & I extended the cave to over 1km of maze and fissure network passages. Future visits are required to complete surveying and video the passages. It is believed that most of the major passages in this cave have been explored, but we should never say never !! There are other known wet caves in the region requiring further investigation.

Cave C215, Exmouth
Located in the Cape Range near Exmouth, WA this cave is a very important site for rare troglobitic fauna. Formed along a controlling joint running NNE, the cave quickly sumps into a small underwater tunnel barely large enough for a single diver to pass through. The sculpted rock has many short sharp protrusions which grab & tear wetsuit material. In the late 90's, 20m of underwater passage was traversed by avid Perth cave diver Andrew Poole at which point a particularly tricky restriction is encountered which he did not pass.

In May 2001 I was able to carefully negotiate the restriction and continue along the shallow narrow passage for 90m at which point it drops through two large floor holes into a large conduit at 9m depth and another floor hole down to –18m.

Returning in June 2001 with cave diving buddies Karl Hall & Craig Challen, we pushed the deeper passage some 200m through keyhole shaped passages and a low flat restriction into a large terminal room with the continuation choked by a silted up floor.

The bottom of the –18m floor hole was choked with silt last year but a recent dive this July revealed that the heavy rains in the area in May have flushed the silt away to reveal a rock choked restriction leading to another low horizontal tunnel at a depth of –20m.

With the recently exposed 'deep tunnel', the end of the cave must also now be reviewed to see if it also now continues on. Other known wet caves in the area also require sump diving techniques applied to them.

The Blue Holes of Lake MacLeod
Jack's Vent is a sea water spring or vent in Lake MacLeod, an enormous salt lake near Carnarvon. Although known of and investigated in the late 90's by Perth cave divers, it was only recently re-

visited and some of the many other Blue Holes in the Lake were visited for the first time. Some were found to be heated artesian waters and others were fresh water springs coming from very small, barely passable tunnels and solution tubes in the lake's limestone substrate. The flow rate is quite high which makes this a somewhat more challenging diving proposition.

Further work with the land managers and CALM is hoped to lead to a systematic investigation of these and other blue holes in the region. Helping to reveal the secrets of the lake's complex hydrogeology will be a reasonable challenge in the years ahead.

Similar blue holes and springs along this part of the coast as well as extensive, unexplored karst areas offer very good potential for some interesting and unique cave diving sites. A recent visit with some friends from the WASG to this magnificent, but rugged part of our coast saw us discover a number of dry caves but none with deep lakes - yet !!

SUMMARY

What has been the key to our successful exploration of these WA cave diving sites?
Four reasons appear obvious to me:
1. Close relationship and communication with dry caving groups
2. Side mount/sump diving techniques.
3. Systematic, detailed surveying and mapping
4. Passion and Persistence

Our efforts have been sporadic, yet persistent over the past few years and it has shown that for those willing, the rewards are fantastic and the diving an absolute privilege.

My sincere thanks to Paul Boler for the use of his excellent video footage from our 2002 Nullarbor trip. More information (maps, photos, data) is available on our website at www.trimixdivers.com which has become a substantial database of Australasia's cave and wreck diving sites.

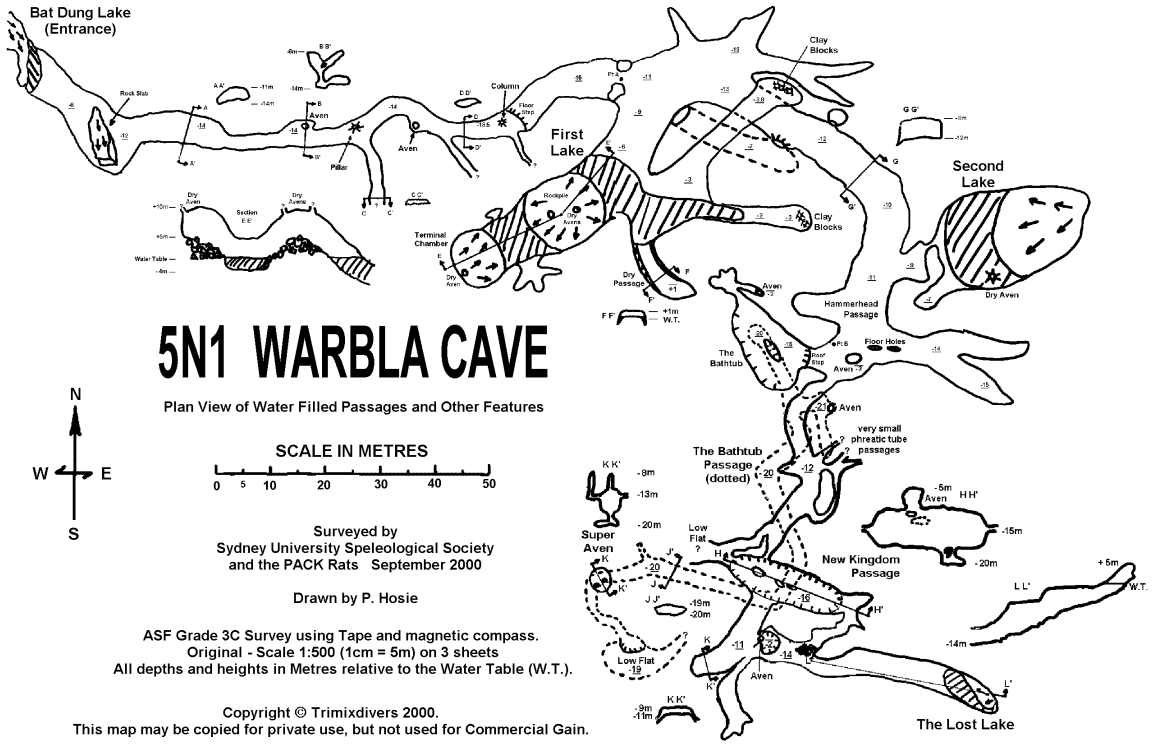

Figure 1 - Warbla Cave Map

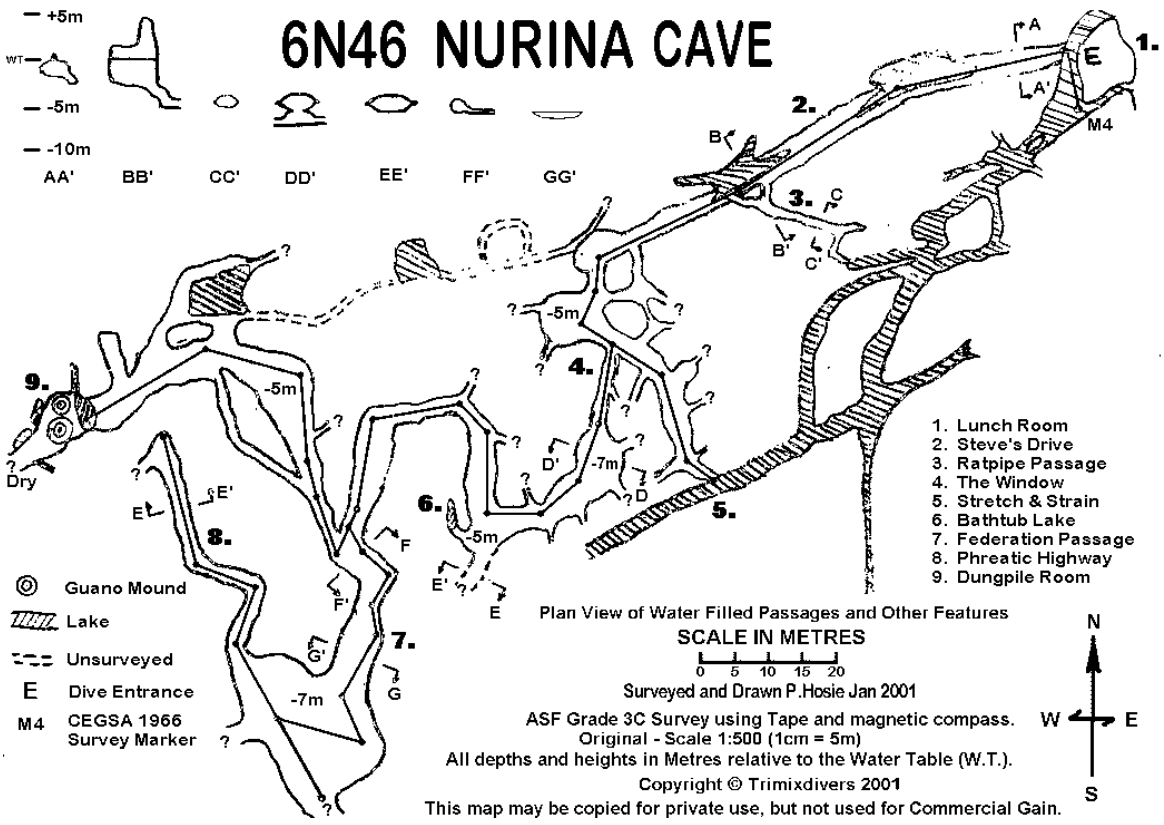

Figure 2 - Nurina Cave Map

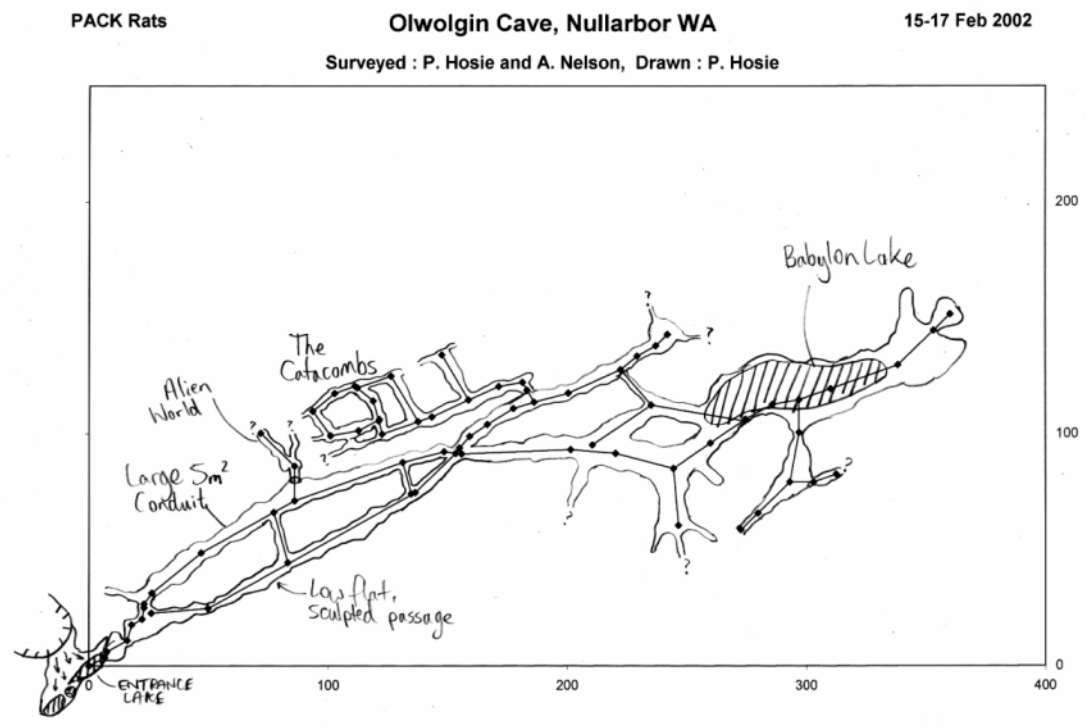

Figure 3 - Olwolgin Cave Sketch