

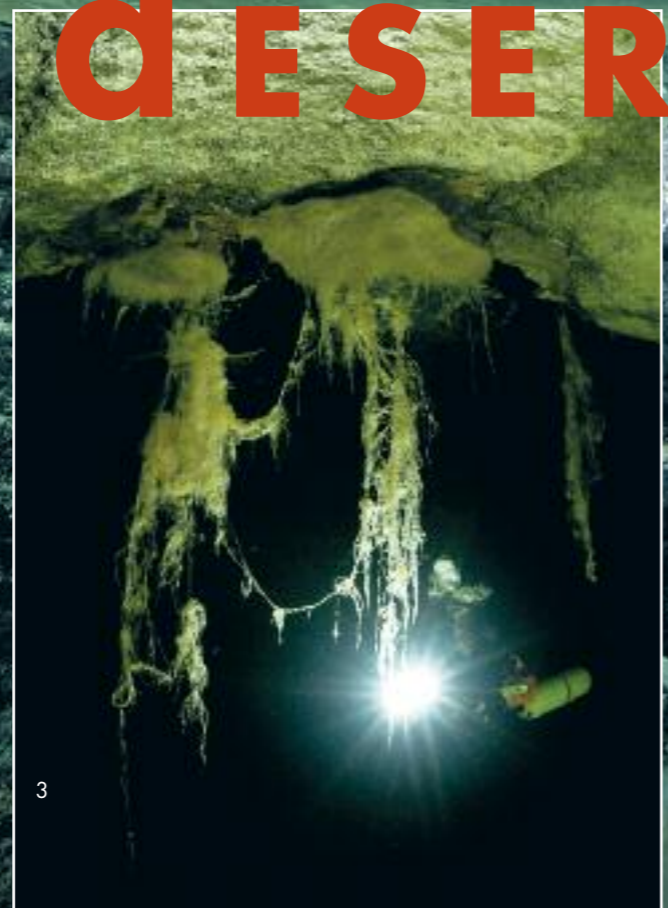
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> GLIDING THROUGH WATER TINGED GREEN WITH TANNIN, MY BUDDIES' LIGHTS GLOW YELLOW AHEAD OF ME AS WE EXIT THIS STRANGE AND WONDERFUL CAVE. SMOKY SILT HAS STRATIFIED IN THE HALOCLINES, LOOKING LIKE HIGH ALTITUDE CLOUD SUSPENDED IN THE SKY. HANGING ROOTS LADEN WITH CALCITE WAFERS DANGLE IN FRONT OF US WHERE THE FLOOR COMES UP TO MEET THE LAKE SURFACE. AND ALL THE WHILE, SCULPTURED LIMESTONE REACHES OUT TO US FROM THE CAVE WALLS. WELCOME TO DIVING THE AMAZING CAVES OF THE ROE PLAIN, WESTERN AUSTRALIA!



DESERT DIVING

IMAGES OF A STRANGE WORLD



The dive over, we spit out our regs and start to babble in excitement about the weird things we've seen during the last 110 minutes underwater. Apart from Paul Hosie, the Perth cave diver who has carefully documented these sites over the past eight years, neither of us have ever seen anything like this. The other caves of the nearby Nullarbor with their shining white massive limestone tunnels bear no resemblance to what we've just glimpsed. It's like we've just immersed ourselves in the waters of another world and nothing could have prepared us for the diversity of natural treasures that we encountered.

To be honest I hadn't even heard of the Roe Plain until a few years ago. The name describes the low-lying parcel of land south of the Nullarbor

escarpment roughly between Madura and Eucla. The existence of karst area has been known for many years but it wasn't until Paul Hosie (following tips from dry caver Max Hall) gave the sites closer inspection, that the underwater marvels that are now known were revealed. Paul and friends did the hard yards walking the tree lines and confirming the presence of several caves in 2001. The first big breakthrough came in early 2002 when Paul got into some serious passage in Olwogin Cave; his only regret was that he was alone and had nobody to share the excitement of the find with! From this point on, Paul explored the area with single-minded determination and with the help of several other key cave divers (Rod O'Brien, Andy Nelson, Alan Polini, Petra and David Funda), he put the Roe Plain on the map as a tremendously important flooded karst wilderness.



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1 The bizarre 'Black and White Raft Room' in Burnabbie Cave. While black bacteria coat the rocks, white shards of calcite raft have fallen to the floor, layered and stacked like white dinner plates. In one corner, some tree roots have grown downwards and then fanned out into the shape of shaving brushes!

2 & 3 An interesting and beautiful feature of these caves are the hanging roots found beneath the toxic air chambers. We think the roots may have already rotted away in some cases and have been replaced by lacy veils of bacterial webbing. Like everything here, the slightest brush by a careless fin will destroy the draperies. With no information on the patterns or speed of their growth, one approaches them very cautiously!



This page

1 Paul Hosie leads Liz and the author through the myriad passages that he has explored and mapped over the past 8 years. The green tannin stained waters combined with the 'jelly-like' disturbance of the haloclines make photography challenging.

2 The limestone is sculptured into amazing patterns. Paul is enjoying himself swooping under this ledge.

3, 4, 5 & 6 Paul has done an excellent job in trying to conserve these fragile sites. Track marking techniques adopted from dry caves have been used to point out delicate areas, and guide visiting divers

around them. Even a diver's exhaust bubbles will permanently destroy some of the root and bacterial formations in these caves, so visitors are encouraged by the first sign to follow the guideline for the next 20m to avoid such problems. At the end of the section, a sign thanks the diver for their cooperation. Nice work!

7 Side mount only! Whilst many of the passages are wide and open, there are plenty of spots where a bit of scraping is required.



After the initial success in the exploration of Olwogin Cave, other sites quickly followed. Burnabbie Cave, Nurina and Slot Caves offered different but equally interesting finds. Now, there are over 7.5km of cave diving passages discovered in the area and evidence of much more still to be explored! Soon after their discovery, Paul realised that these fragile caves could become irrevocably damaged as inevitably, word of the discoveries got out and other divers followed. Hence he started a process of cave conservation and education so that these pristine sites would remain undamaged for as long as possible. Using track-marking techniques utilised by dry cavers, Paul installed signs and guidelines to guide divers around fragile tree roots, bacterial colonies and other delicate features. Information packages were left at the cave entrances urging cavers to dive responsibly and treat the caves with the respect they deserve. The locations have been kept quiet, given out only to those who can demonstrate the necessary diving skills and commitment to cave conservation (e.g. experienced side mount cave divers and members of ASF caving clubs). After the first human enters a cave, it is changed forever and one can

never turn back the clock. But by caving responsibly we can save these places for many more visitors to study and enjoy.

So how did Liz Rogers and I end up diving with Paul in Olwogin and Burnabbie Caves? Part of the process of cave conservation is to document and record the cave features with still photography and video. As enthusiasts in both areas, we didn't need to be asked twice! So Paul patiently led us through

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both these caves on multiple dives modelling for the cameras and pointing out the best the passages have to offer. Photography in these caves is more challenging than in most, and the images shown here are the best of literally thousands of shots that didn't make the cut. The green tainted water absorbs light by the bucketful so even with six strobes being used many images were still underexposed. Black bacterial colonies on much of the limestone sucks up any light that the water leaves behind.

Multiple haloclines (where waters of differing salinity meet) make many images appear to be out of focus, as if the diver is swimming through clear jelly! And just when you hit a clear stretch of water, a diver's exhaust bubbles cause rocks and silt to rain down from the ceiling in these rarely visited tunnels.

Access to the caves presents another challenge, and this in itself will perhaps serve as the sites' greatest guardian. One cave requires a 1.3 kilometre bush walk through dense woodland with all the dive and photography equipment before scrambling down a narrow dry section of cave to the water. Three trips to get all the gear in, means you have nearly 7 kilometres of heavily laden bushwalking under your belt before you even get started. Hey, a bloke could get fit doing this! The other cave can be driven to more readily, but don't let your guard down. A 15-20 metre crawl through tight mud passage with all your gear leads you to the water. Dressing for the dive lying on your side with the roof inches above your head, is followed by great relief when you finally slide into the water!

And of course diving on the Roe Plain is

only part of the experience. After a wonderfully wet winter, it seemed the whole lower half of Australia was alive with long grass and wild flowers. The relatively well-vegetated Roe Plain was covered in yellow ground cover which left our boots coated in pollen, and the undercarriage of the car full of grass seeds. Freezing cold nights (I had to break the ice in the washing up bowl one morning) and sunny days made October 2010 a particularly nice time to visit. Liz's camp oven savoury damper will also be long remembered!

I sometimes wish I worked as a full time karst biologist. I am sure a dozen PHD's could be written on the microbiology of these caves alone. White rock covered in black carpets of bacteria, strange tendrils of micro-organisms hanging from the ceilings and bizarre 'jelly-mites' of bacteria growing on the cave floor. All easily destroyed by a single careless fin stroke. Magnificent draperies of submerged tree roots shift and tear even as the pressure wave from a carefully approaching diver impinges upon them.





1 The exit from the crawl-way in Burnabbie cave.



2 Harry and Paul after a spot of digging in a potential new dive site.

3 Harry loads equipment into Olwolgin.



In Olwolgin Cave, 'Babylon Lake' contains superb examples of these roots. The atmosphere above the water is so toxic that a single cautious sip left me breathless with a momentarily scalded throat. On the water float the corpses of numerous dead white centipedes and spiders. It's hard to imagine a more inhospitable place, and yet it's one that clearly supports its own fascinating ecosystem.

In the 'Black and White Raft Room' of Burnabbie Cave, inverted roots like shaving brushes are suspended in the water whilst the bacteria-blackened floor contrasts with the pure white plates of calcite raft stacked like dishes. You couldn't dream up a more extraordinary place if you tried. Every corner of these caves seems to hold something unique and we hope these images help portray some sense of this. Paul Hosie's efforts to map, preserve and study the caves of the Roe Plain are a fine example of how cave conservation and the sport of cave diving can be happy bedfellows; all we need to do is take a little care.

With our CF cards full of photos and our dive gear thickly coated in mud, Liz and I said goodbye to Paul who headed back to Perth for a rest after two weeks of caving. We headed east to South Australia for a rare opportunity to dive in Warbla Cave – arguably one of the Nullarbor's most beautiful sites, and the subject of another article in a later edition of *Sport Diving Magazine*!

Acknowledgements

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