

# DIVER



DIVE FLEETS MERGE | MACHO MAKO | OLYMPICS DIVE SECURITY | MOZAMBIQUE MAGIC | MONACO | TREKKIE DIVING

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# DIVER

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**COVER:** If you're a cave diver then Australia's Cocklebidy will be on your 'to do' list. It is the country's longest known subterranean cave system, explored by a mere 50 or so divers in the three decades (almost) since its discovery far beneath the Nullarbor Desert. This southern region of Australia is unique. It's home to the world's single largest piece of limestone, covering an area of some 80,000 square miles (200,000 square kilometers) and stretching 750 miles (1,200km) wide between south and west Australia. It's a Mecca for cavers. This 2009 expedition met with successes and failures and a new record for a female diver. The story begins on page 18. Mark Brown, aka 'Wiz', is shown on the cover as he cruises through Cocklebidy's spectacular 1.5 mile (2.5km) long 'sump two', leading to Toad hall. Photo: © Leigh Bishop - www.deepimage.co.uk



Beyond Toad Hall





# Beyond Toad Hall

Cave Diving  
Beneath Australia's  
**Nullarbor Desert**  
Text and Photography  
by Leigh Bishop

In 1982 three Australian cave divers surfaced in a huge subterranean lake after an exploratory penetration 2.5 miles (4km) into the Cocklebiddy cave system deep beneath the country's Nullarbor desert. Their bold discovery dive – then a world record for its length – revealed a cavern 33 feet (10m) high and over 800 feet (250m) long, linked to a series of dry rock chambers the likes of which had never before been seen in the land down under. Their spectacular find was named Toad Hall for the residence of Mr. Toad, Esq., of Kenneth Grahame's enduring children's story *The Wind in the Willows*. Though there have been many longer dives since, the penetration of Cocklebiddy remains a long distance undertaking of skill and endurance and, ultimately, accomplishment.

As Hugh Morrison, Ron Allum and Peter Rogers did 27 years before me, I surfaced in Toad Hall after a spectacular swim through a succession of stunning cave formations. Travelling that distance underwater was a thrill in itself. But for my dive partner Agnes Milowka, a young Melbourne diver born the year before Toad Hall was discovered, and me, it was only the beginning of the excitement. We couldn't wait to clamber out of the water and begin exploring the cavern.

On the rocks we quickly located a plastic slate bearing the names of those who preceded us over 27 years. The list of fewer than 50 divers, including one woman, is a veritable who's who of cave explorers in the southern hemisphere. We were pleased to add our names and get on with an exploration of Toad Hall, high levels of CO2 be damned.

## Agnes Rocks!

At the far end of the linked chambers the cave breaks down in typical Cocklebiddy fashion to a pile of rocks that lead to yet another sump – submerged passage – and more cave. It was here three days later that Agnes geared up and dived almost the entire swimmable length of sump three – beyond Toad Hall – to claim an Australian record for the furthest underwater cave penetration by a female diver.

We spent a couple of hours or more photographing these

chambers before preparing for the return dive. With many more photographs taken on the return, completing a round trip of almost five miles (8km), mostly underwater, we arrived back at the entrance lake, emerging after 14 hours. The dive had gone off without a hitch...almost. A minor DPV malfunction meant Agnes got a little more exercise than planned, swimming about one and a half miles (2.5km) of the total. Nothing she hadn't done before, so she said!



■ Veteran cave diver Ken Smith prepares to leave the entrance lake that leads to the Cocklebiddy cave system.

Our expedition was a full on assault of the cave system with the very latest dive technology, and a continuation of the previous attempt by the same team to find Cocklebiddy's upstream origin. Our photographic mission into Toad Hall seemed insignificant next to the dive operation planned for sump three – and wherever it might lead – which was busily unfolding around us. Leading this expedition were Australians Dr. Craig Challen, Dr. Richard Harris

and Rick Stanton who, like me, had travelled from the U.K. A highly experienced team of divers participated to support each man in his attempt to explore the far reaches of the cave system. And the key to success – next to the collective expertise on hand – was in the expedition technology: closed circuit rebreathers and long-range diver propulsion vehicles (DPVs) powered by the latest lithium battery technology.



## The Nullarbor

Penetrating deep into Cocklebiddy Cave divers are far beneath the heat of the vast Nullarbor Plain desert, the world's single largest piece of limestone, covering an area of about 80,000 square miles (200,000 square kilometres). At its widest point it stretches some 750 miles (1,200km) from east to west between South Australia (SA) and Western Australia (WA). The Nullarbor is typical arid/semi-arid desert with daytime temperatures as high as 120°F (almost 50°C). At night it's a different story, with freezing conditions and nocturnal creatures whose daylight whereabouts are a mystery to me.

Although the Nullarbor is flat and featureless it's home to thousands of kangaroos and the odd deadly spider, making tightly zipped tents a top priority. Being the largest single piece of limestone in the world also makes the Nullarbor a Mecca for cavers, who travel long distances to camp out and explore the region's many subterranean delights. Our mission, specifically, was to explore Cocklebiddy, which offers the greatest (known) underwater penetration of any cave in Australia.

Our team of 14 arrived March 24 last year following the Oztek technical diving conference in Sydney. We set up our base of operations directly outside the cave entrance. On the Nullarbor there are no showers, no toilets...no water. Everything must be brought in. The large generators we towed out to the site powered everything – the camp and far below it the dive commencement site.

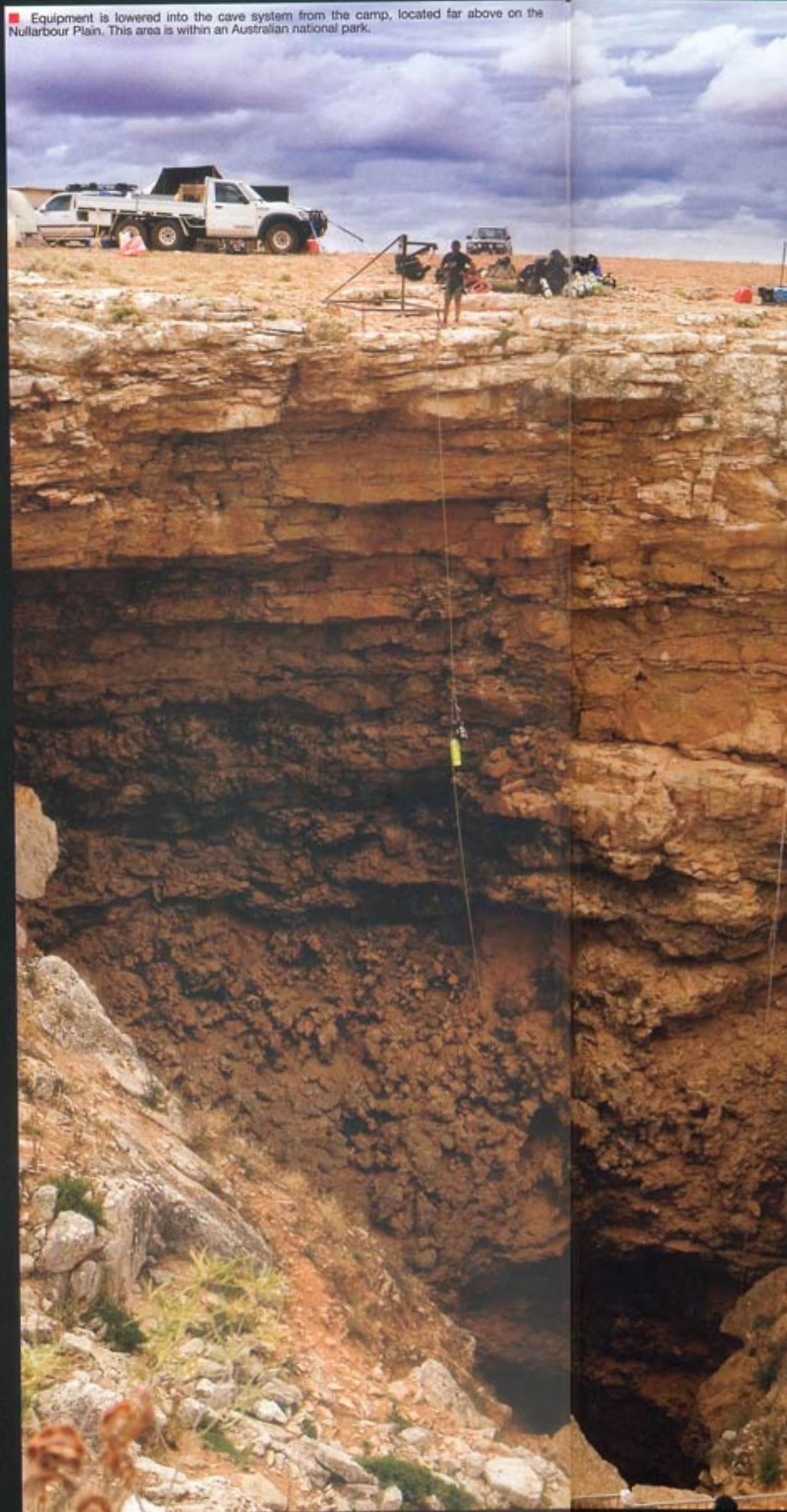
We lowered a huge quantity of dive gear into the cave utilizing an A-frame block and tackle and then carried everything further down to a huge underground lake – a 300-foot (90m) vertical drop pretty much, followed by a 660-foot (200m) boulder pile...lots of fun to navigate in the dark. Setting up the dives then took several days. This involved placing safety cylinders at strategic points along the cave in sump number two, in readiness for the big dives, as well as stockpiling all required gear for dives beyond Toad Hall at its far side. Of course, we'd have to remove all this gear later.

## Mount Everest Experience

In the southern hemisphere the Cocklebiddy cave complex is regarded as the Mount Everest of cave dives, whose magnificent sump two is attempted only by a handful of the most experienced divers. The cave is essentially three dives. Sump one at 0.7 miles (1.2km) long, runs from the lake starting point to a rock pile air chamber – over 330 feet (100m) of collapsed rocks a diver must traverse, gradually descending to the sump two entry point. Spectacular sump two is 1.5 miles (2.5km) long and leads to Toad Hall where, again, the diver removes all his or her equipment and carries it to sump three, a hike through several chambers totalling about 725 feet (220m) in length. Sump three is about one mile (1.7km) in 'explored' distance, of which 0.7 miles (1.2km) is reasonably large and easy going before closing down, though still swimmable with back mounted breathing apparatus. About 0.9 miles (1.5km) along this sump passage it becomes too small and tight to swim with a back mounted system. From this point it's a side mount equipment dive and before long – less than 350 feet (100m) – the passage narrows down, forcing a diver to remove and push whatever his or her breathing rig may be, in front of them.

Of course, if you're this far into the cave – a distance of some 3.5 miles (5.7km), you're not likely using conventional SCUBA. We were using custom configured rebreathers that are considerably smaller in size next to a standard manufactured unit. These had been transported to the far end of the cave in readiness for the final push.

Equipment is lowered into the cave system from the camp, located far above on the Nullarbor Plain. This area is within an Australian national park.



Equipment is readied to be lowered to the cave entrance below.



Mick Green scooters along in sump one.



## First Dives

The very first dive in Cocklebiddy was back in 1961 although equipment of the day limited cave penetration of any distance. The first serious dives in the early 1970s saw several hundred meters of line laid. By the mid 1970s a joint South Australian team penetrated 0.9 miles (1.5 km) to discover the first air chamber – called the Rock Pile – a long lake with, you guessed it, a heap of rocks 65 feet (20m) high by over 260 feet (80m) long, beyond which they discovered sump two. During most of this (late 1970s) time annual expeditions into sump two were mounted in hopes of finding other air chambers. More passage was penetrated utilizing the technique of pushing underwater sleds that carried breathing cylinders.

In 1983, a year after Toad Hall was discovered, a five person team of French cave explorers headed by brothers Francis and Eric Le Guen, set a new world record for underwater penetration. On the first dive Eric managed a 4,800-foot (1,460m) penetration into sump three, beyond Toad Hall. Later, his brother Francis pushed another 300 feet (90m) by squeezing through one restriction only to be stopped by a second, at least when wearing his back mounted cylinders. They laid almost 5,100 feet (1550m) of line in sump three. When they finally surfaced back at the entrance lake, 47 hours had passed from start of their dive. Soon after, the Australians reclaimed what was rightly theirs and since then cutting edge cave divers have continually pushed into sump three to its present point.



## Dive GRAND CAYMAN

### Definition:

Of or relating to the sea; depicting the sea; below the surface of the water.

### Related Words:

Skilled, advanced, experienced, knowing, practiced, schooled, seasoned.

### Actions:

- 1 Diving One of the World's Top Site - Stingray City
- 2 Dive the Hotspots: Tarpon Alley, Eagle's Nest, Chub Hole, Ironshore Caves - Over 159 to choose from
- 3 Take a Specialty or Technical Course from our Experts
- 4 Chilling Out at Rum Point, North Side
- 5 Exploring Nature Along the Mastic Trail
- 6 Diving down our 6,000' Walls Covered in Marine Life
- 7 Catching Air or a Wave at Black Pearl Skate & Surf Park
- 8 Visiting Pedro St. James Historical Site
- 9 Explore One of our Many Wrecks
- 10 Kick Back at a Beach Bar

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## Rebreathers Arrive

Australian Dr. Craig Challen of Perth is the latest man to take up the challenge of exploring the far reaches of Cocklebiddy. In 2008 he laid 330 feet (100m) of line beyond a point reached by his predecessor Chris Brown. On that occasion Challen found himself in a very low 'bedding plain', pushing against water flow in almost zero visibility. Low gas levels forced him to retreat but on this expedition his hope was to push beyond his 2008 point. With him was Dr. Richard Harris, an Adelaide-based technical diver who holds the record for the deepest dive in Australia and New Zealand. Both would attempt further penetration and their respective efforts were to be followed by well-known U.K. cave diver Rick Stanton. Each of these explorers would make independent dives on different days since the nature of the cave suggests there's room for just one man at a time.

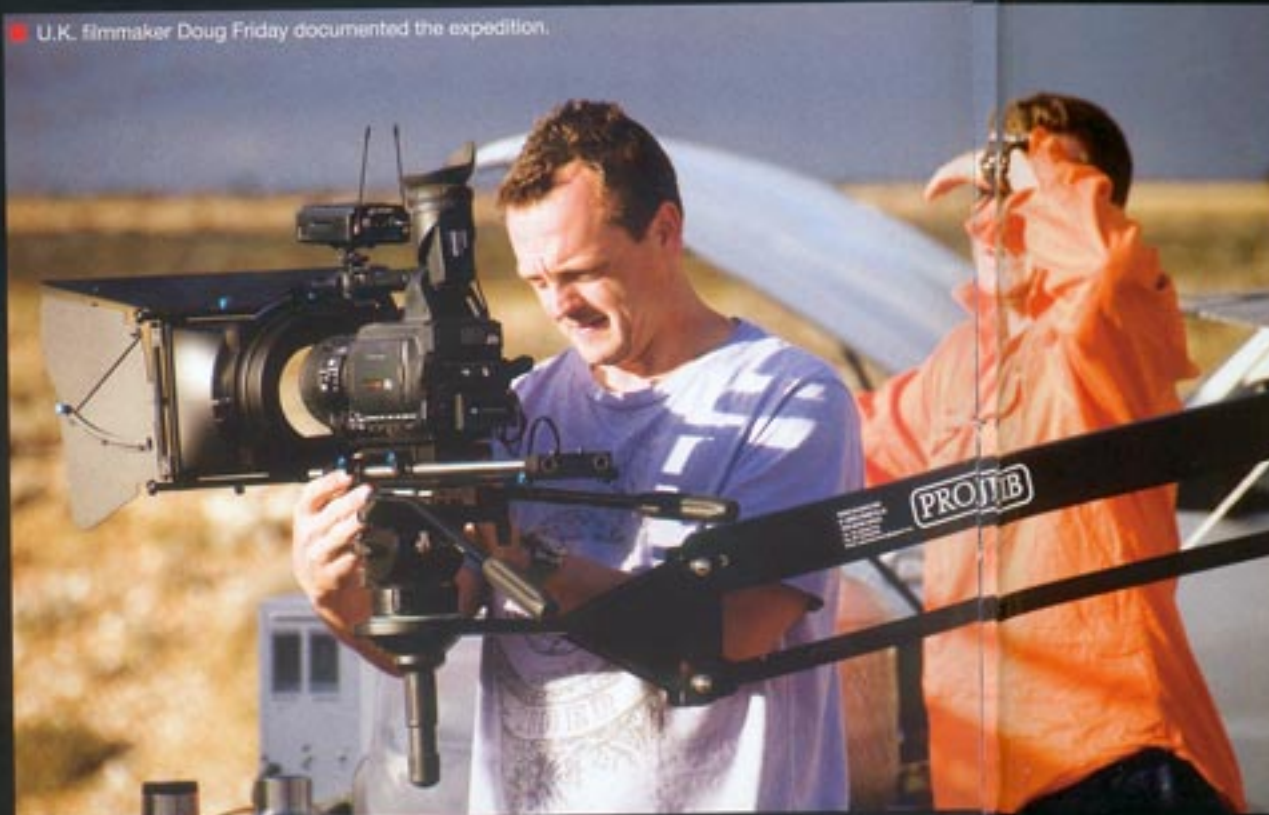
Until this expedition no diver has succeeded in going farther than Challen in 2008, but the introduction of rebreather technology to Cocklebiddy offers new hope for extending penetration. And there's another equipment advance the team will benefit from thanks to team member John Dalla-Zuanna, a Melbourne-based diver whose lithium battery-powered diver propulsion vehicles (DPVs) will allow the men to cover the seven mile (11.5km) round trip marathon without having to swim the entire distance.

## Cocklebiddy The 'Best'

The entrance to Cocklebiddy – as with many Nullabor caves – is thanks to a surface collapse at a point along the cave's length. Long ago, the cave had become too big to support the rock above it, leading to the collapse and the opening that provides access. One theory suggests there's a southern passage, for which an entrance hasn't yet been found, so today's explorers head in the only direction they can – upstream.

The full extent of Cocklebiddy is unknown. It was formed about 10 million years ago as rainwater permeated the limestone and mixed with saline groundwater causing the corrosion that created the deep horizontal cave system. Quite possibly there are other caves under the Nullarbor even bigger than Cocklebiddy.

Corrosive action over the millennia has made much of Cocklebiddy – especially within sump two – a subterranean world that takes your breath away, figuratively speaking. On a global scale it is superb. Although he slept on it, the day after his first dive in sump two, Rick Stanton, veteran of cave dives the world over, declared this section of Cocklebiddy to be the best sump he had ever dived. The passage is unlike the others in that it is extraordinarily large; you could drive two of London's double-decker buses side by side down this section of the cave. As it winds along, your DPV pulls you through a beautifully decorated passage of calcite and white flowstone in what I can attest is crystal clear visibility. The more powerful your dive light, the more amazing your experience will be! This was, hands down, one of the best dives of my life. So spectacular was this experience that I sometimes wonder if my recall of those dives is actual memory or some imagined fantasy.



U.K. filmmaker Doug Friday documented the expedition.



DPV-equipped divers begin their long journey into the far reaches of the cave.

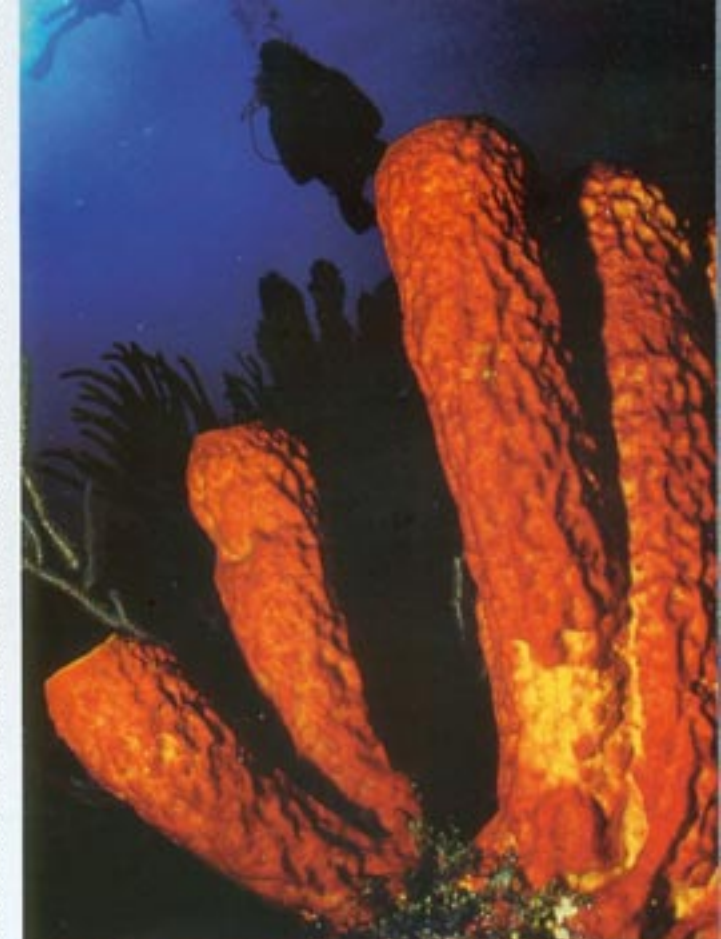


Author Leigh Bishop in sump one with 'Death Ray' light mounted on his DPV.



The floor of sump two is covered in crystal calcite. Photo: Courtesy Ken Smith

A diver is dwarfed by the expanse and beauty of sump two, between the 'Rock Pile' and Toad Hall.



## Dive CAYMAN BRAC

### Definition:

To go below the surface; to plunge into headfirst; to enter deeply.

### Related Words:

Descent, jump, leap, plunge, submerge, sound, muscular, fit, robust, adventurous, go deep.

### Actions:

- 1 Dive the Hotspots: M.V. Capt. Keith Tibbetts, East Chute, Tiara Tunnels, Anchor Wall, Rock Monster Chimney
- 2 Experience Unlimited Visibility...Usually 100 to 150 feet... with Little or No Current
- 3 See 100 Different Hard and Soft Corals
- 4 Swim with over 500 Types of Fish
- 5 Rappel Down Bluffs, Climb Up Sheer Walls
- 6 Go Bird Watching
- 7 Discover our Hidden Treasures on a Nature Tour
- 8 See the Island by Water in a Kayak
- 9 Hike Along the Rugged Eastern Bluff
- 10 Relax with a Cold One under a Coconut Tree



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## The End?

Unfortunately for Challen and Harris, equipment problems prevented them from probing new reaches of the cave system. Rick Stanton made progress of a sort monitored by the surface team with the help of radiolocation pingers, which also helped map the cave system.

As well, it was my plan to see Rick safely off from the lake and later that night to meet him at the Rock Pile between sumps one and two. I did and was able to radio the surface of our rendezvous and to tell them that Rick, on his inbound trip, had passed Agnes Milowka in sump three on her return dive.

Eventually Rick reached the end of Craig Challen's 2008 line, tied off his own and advanced a few meters more. Here the cave bedding plain widens 65 to 100 feet (20-30m), offering just enough clearance for a diver to navigate along erosion channels in the floor. There were few, if any, features on which to tie his line and the going was elbow deep in mud. Visibility was zero. As this is a percolation

cave we hunch that this point – reached by Challen in 2008 – could well be the water intake source. It was here Rick reeled in the few metres of line he'd run out and retreated, claiming no more passage than Challen the year before. Can more progress be made? Maybe. But from here onwards there's a diminishing likelihood the cave opens up again to allow a diver to advance.

Agnes Milowka and Ken Smith met Rick at Toad Hall where they videotaped his 'push dive' commentary before he continued outbound to the Rock Pile. Later Agnes and Ken followed with a haul of stage cylinders from sump two, marking the start of our expedition clean up.

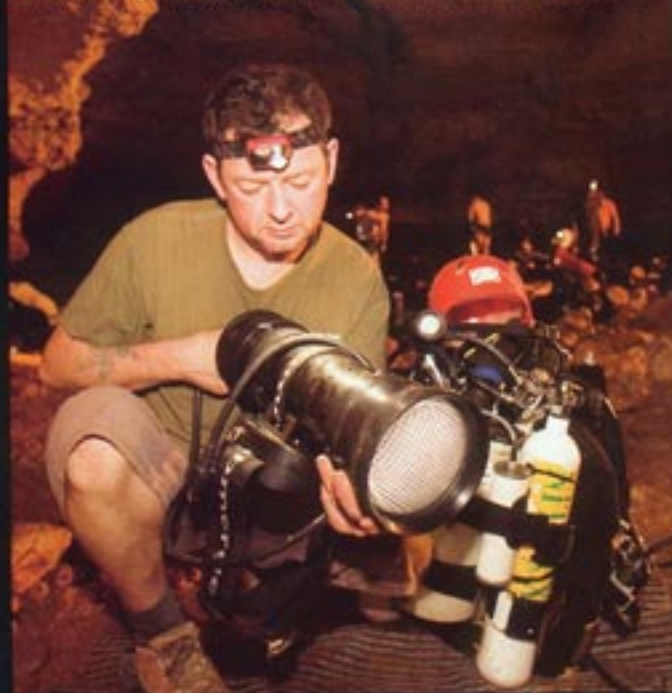
I had waited five hours for Rick in the darkness of the Rock Pile, providing hourly radio updates to the surface. At a point when a storm was passing through the camp far above, Rick arrived, his powerful lights emerging from the sump to illuminate the black cave. We carried his heavy equipment over the rocks to sump one during

which he recalled his experience and outlined his theory on the geology of the furthest upstream reaches of the cave. A few hours after my last update to the camp above we dived out together, through sump one and to the entrance lake.

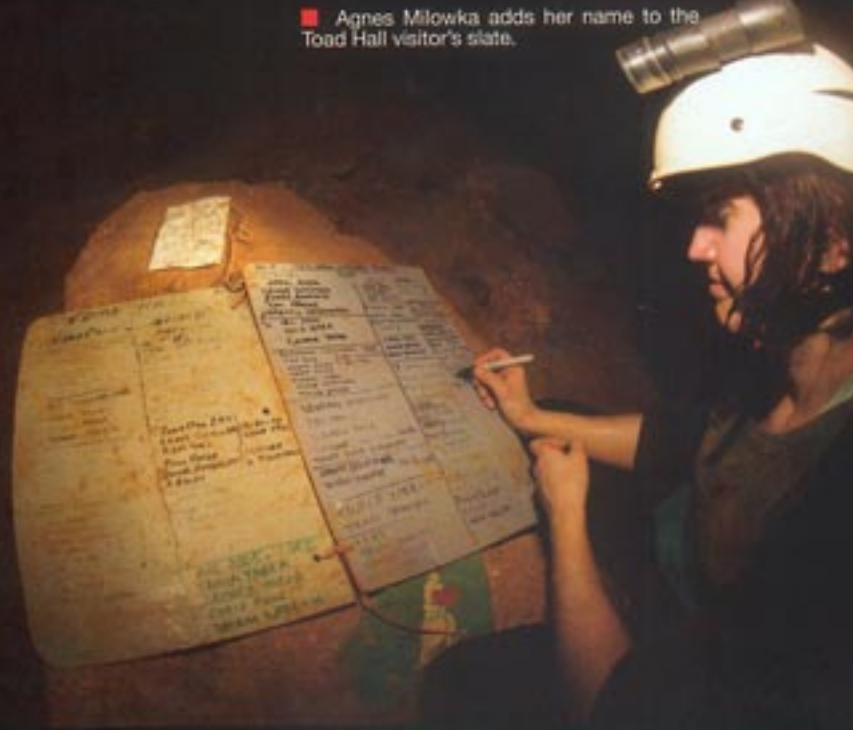
Our adventure was at an end. Eleven people had journeyed to Toad Hall, more than on any previous expedition. And among us were two female divers, exploring sump three for the first time, one of whom set a new distance record, mentioned earlier. Collectively, our exploits afforded a clearer understanding of Cocklebidy geology beyond Toad Hall though I'm sure subsequent explorations will reveal new insights. Team members were: Dr. Craig Challen and Dr. Richard Harris, expedition leaders, Ken Smith, Geoff Paynter, Leigh Bishop, John Dalla-Zuanna, Rick Stanton, Doug Friday, Mark Brown, Mick Green, Agnes Milowka, David Bardi, Sandy Varin and Jamie Brisbane. ♦

*All those interested in diving Cocklebidy must be fully qualified cave divers in possession of the necessary dive permits, issued through the Cave Divers Association of Australia (CDA) [www.cavedivers.com.au](http://www.cavedivers.com.au)*

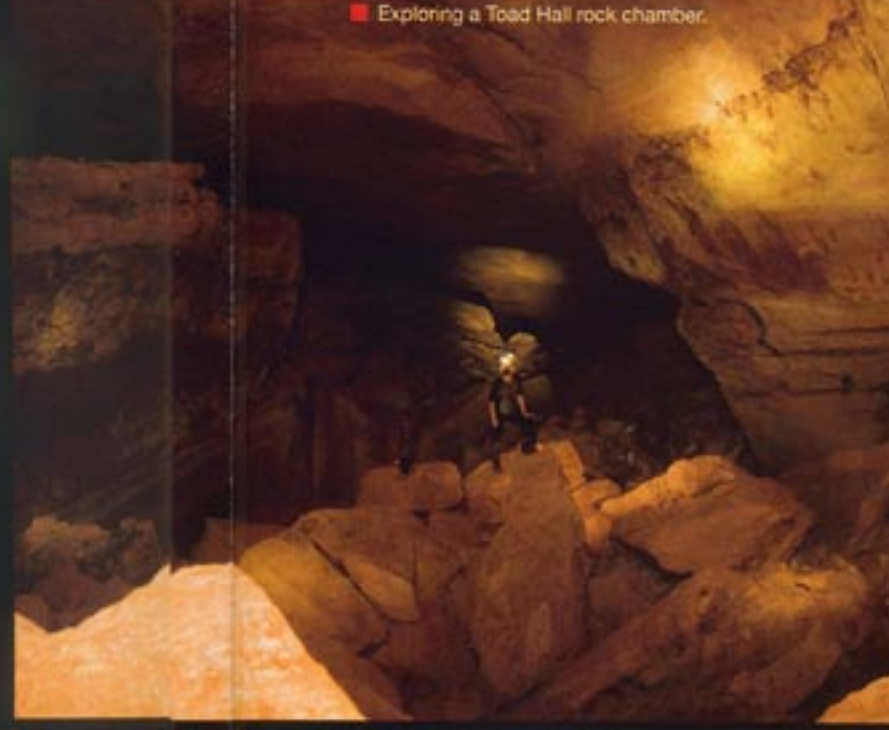
■ Author Leigh Bishop prepares his 200 watt HMI light before a dive.



■ Agnes Milowka adds her name to the Toad Hall visitor's slate.



■ Exploring a Toad Hall rock chamber.



■ Rick Stanton just before his big push to the end of the cave.

■ Dr. Craig Challen ready for a long dive to the end of the cave system.



■ Dr. Richard Harris set to depart on his attempt to penetrate deeper into the cave.



■ Melbourne's Agnes Milowka after setting a new cave distance record for women in Australia.



■ The 2009 Cocklebidy expedition team from left: Leigh Bishop, Doug Friday, David Bardi, Sandy Varin, Geoff Paynter, John Dalla-Zuanna, Jamie Brisbane, Mark Brown, Ken Smith, Richard Harris, Rick Stanton, Agnes Milowka, Craig Challen and Mick Green.



## Dive LITTLE CAYMAN

### Definition:

Proceed easily without effort or concern; to make less tense or rigid; to seek rest or recreation.

### Related Words:

Hushed, peaceful, placid, quiet, serene, still; untroubled, calming, restful, soothing, reposing;

### Actions:

- 1 Experience the Exhilaration of Bloody Bay Wall
- 2 Dive the Hotspots: Jackson Wall, Randy's Gazebo, Eagle Ray Roundup, Marilyn's Cut, School Bus
- 3 Night Diving with Octopus and Squid Flashing Colours
- 4 Explore Enticing Caves and Sink Holes
- 5 Feed Iguanas at Mahogany Estates
- 6 Hike the Salt Rock Nature Trails
- 7 Cycle around our 22 Miles of Spectacular Coastline
- 8 Kayak Over to Owen Island
- 9 Break from Diving with a Stroll along Point O'Sand
- 10 Celebrate your Day's Dive by Relaxing in a Hammock

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