

Caving and Cave Diving in Vanuatu

Richard Harris

Introduction

I arrived in Vanuatu to live for 2 years in January 2004, and this paper serves to summarise my caving activities there. I came as a doctor to work with AusAid at the Vila Central Hospital, but I was also drawn by amazing tales of caving and cave diving. Cave reports/updates have been archived with the ASF and CEGSA for anyone planning a trip to Vanuatu. Also check my website on www.divedoc.net

Geography and Geology

Vanuatu (formerly the New Hebrides prior to independence in 1980), consists of a Y shaped archipelago of some 83 islands extending 1176km north-south, supporting a population of over 200,000. It lies on the edge of the Pacific tectonic plate. The first islands of Vanuatu were pushed up from the ocean floor 22 million years ago (Espiritu Santo, Malekula and the Torres group), and the most recent less than 5 million years ago. The islands continue to increase in size due to slow ongoing uplift together with the formation of fringing coral reefs. Hence most of the islands are volcanic in origin but many are coral atolls and hence limestone in nature. In general, the limestone forms a series of terraces, each marking successive still-stands of sea level; caves often occur at the interface between terraces. The largest limestone area is on Espiritu Santo where the eastern half of the island consists of an uplifted block 60km long by 25km wide.

Culture and Land Access

It seems that caving anywhere in the world revolves around problems of obtaining permission to access the sites, and Vanuatu is no exception. The country is divided into 6 provinces and any major expedition should start with a courtesy call to the secretary of the appropriate provincial office. The secretary will simply make a note of your visit and nothing further will come of it, however, in the event that any "issues" arise with the landowners, this will put you in good stead. Every village has a chief and some areas have a paramount chief. You need to ask permission from the chief when you arrive in any area, to access the caves you are interested in. A gift like a big bag of rice or tins of beef/fish will go a long way to smooth the negotiations. Soccer balls, pens and papers etc for the local school and kids are a good idea. Equally importantly, you must also get permission from the actual kastom landowner of the site. This is where you will inevitably come unstuck from time to time, as it is often in dispute who the rightful landowner is. Your mere presence and questions may cause these issues to come to the surface and some disputes or even violence can follow. It is impossible to work this all out as an outsider, so my advice is to be (incredibly) patient, ask permission from as many people as possible, try and verify that you have spoken to all the right people and after doing all that; be prepared to walk away if it doesn't feel right.

Payment for access can be tricky. If you walk in looking like you are part of a major expedition, seem desperate to get into the caves, and start waving Vatu around, it will cost you an arm and a leg and will spoil it for all those that follow. Try and find out what the going rate is from the local expatriates and again, be prepared to walk away if the price is too high. Otherwise you will pay double the next day. We paid Vt1000 per day per porter for carrying heavy equipment plus providing them with food and some small gifts for the village. The chief or "bigman" may want a few thousand extra for himself. Ask if it is OK to film or take photos before you do so, or you might end up paying for that too.

The Sites

I was aware of 2 main islands containing caves before I arrived. On the island of Efate (home to the capital Pt Vila) there are well-documented caves in the tourist guidebooks. To the north, the island of Espiritu Santo (home to the well known shipwreck the SS Coolidge) has been visited by cave divers from the CDAA starting in 1996 after the discovery of water filled caves in the south central part of the island.

After arriving, it became clear from discussions with many local NiVanuatu people that caves abound on virtually all the islands and so the possibilities for exploration seemed endless. However, it requires significant time here to learn about and then find the sites, let alone organize an expedition to explore or dive them. For example I heard from several local sources about a cave in the hills near Pt Vila where boys would carve their initials on bamboo sticks, throw the sticks into a deep cave and then run about 1 mile to the coast and find their sticks washing around in the surf! Such stories can make a cave diver's heart miss a beat and so I searched the area extensively for the alleged cave without success (I found a number of dry caves along the way). However I strongly suspect the cave may have existed but has perhaps been lost during a large earthquake several years before.

The object of this report is twofold. Firstly to propose a numbering system for the caves of Vanuatu that future cavers might add to, and secondly to document the tiny proportion of Vanuatu's caves that I visited. Where possible I made a rough survey of the features, took photos and recorded a GPS reference point (in WGS 84). The GPS points for the caves whilst not published here are archived with the Cave Exploration Group of South Australia (CEGSA) and with the ASF.

Cave Numbering System, Vanuatu

I could find no record of a cave numbering system here in Vanuatu, or with the Australian Speleological Federation (ASF) or Union Internationale de Spéléologie (UIS). Hence I have used the following for my own records, and put it forward for use by those that will follow. This has been ratified by the UIS and the ASF. It is based on that in use and recommended by the ASF.

- | | | | |
|----|---------------|--------------------|----|
| 1. | Country Code | VU | |
| 2. | Province Code | Sanma | 2 |
| | [Region] | Penama | 3 |
| | | Malampa | 4 |
| | | Shefa | 5 |
| | | Tafea | 6 |
| | | Torba | 7 |
| 3. | Island Code | Torres Is | TS |
| | [Area] | Banks Is | BK |
| | | Espiritu Santo | ES |
| | | Ambae | AM |
| | | Maewo | MA |
| | | Pentecost | PC |
| | | Malakula | MK |
| | | Ambrym | AB |
| | | Epi | EP |
| | | Shepherd Is | SH |
| | | Efate | EF |
| | | Erromango | EM |
| | | Tanna | TA |
| | | Futuna | FU |
| | | Anatom | AT |
| 4. | Cave number | numeric identifier | |

E.g. Clearwater Cave, Efate Island VU-5EF0002

[ASF code would be VU5EF-2 Editor]

Should a cave lie on an island not listed, it will be referred to the nearest listed island. Similarly for sea caves. In all other respects the numbering code should try and conform to the system outlined by the ASF in its document entitled "ASF Cave and Karst Numbering Code".

Cave Features in Vanuatu.

Collapse dolines and cenotes, phreatic passage, lava tubes and sea caves all exist on these islands. Large speleothems and cave decorations appear to be uncommon but a healthy bat and other fauna population exists in many of the sites. Tall coralline limestone escarpments veer across the landscape in many areas and dry caves can often be found at their bases, however most of these features have been quite small to date. In other areas, river resurgences like that of the Sarakata River on Espiritu Santo, may give rise to extremely long phreatic passage. Coastal blue holes in many of the islands hold the promise of significant caves also.

A small selection of cave features and some of the exploration were discussed during the presentation.

The Caves of Efate Island

9 caves were described on the main island of Efate.

The Caves of Espiritu Santo

This island appears to hold the greatest potential for significant finds. The eastern half of the island is uplifted limestone. A drive along the eastern coast shows numerous crystal-clear streams and small blue holes by the roadside. But at this time the best finds have been those associated with the tributaries of the Sarakata River, which empties into the Second Channel just west of Luganville.

In Luganville, an expatriate Frenchman named Rufino Pineda is a fantastic source of knowledge of the caves and geography of Santo. Any expedition to Santo should begin with a phone call to this very helpful man. In August 2005, 2 French cave explorers (Bernard and Josiane Lips) spent 5 weeks exploring the caves of Espiritu Santo, in preparation for a very large French biodiversity study occurring in 2006. In November 2005, French cave diver Franck Brehier further searched for diveable (in particular anchialine) caves. Bernard and Josiane Lips were kind enough to share this information with me, and I have a full translated copy of their report.

The Sarakata resurgence cave and the caves on Mt Hope Station nearby (2ES10-2ES32) were first brought to cavers' attention by Russell Donovan, the expatriate leaseholder of the Mt Hope cattle property. It was his original intention to develop one of the sites as a tourist site, offering the adventure of a "duck through" of the short sump in 2ES15. With the help of local cave diver and dive operator Kevin Green (the first person to dive many of these sites), a group of CDAA cave divers came to explore the cave and discovered many more as part of the same system. These explorations occurred between 1996 and 2000. In addition to these caves, approximately 55 other caves are described on Espiritu Santo including the Sarakata Resurgence.

The Sarakata Resurgence. The exact history of the exploration of this site has been difficult to pin down. It was first dived in early 1997 and then again later in that year. I think another expedition occurred in 1999 and possibly again in 2000. The groups contained different members but instrumental in the exploration were Steve Sturgeon (WA) who coordinated much of the exploration. Unfortunately I have been unable to obtain any maps of these dives, and accounts describe a total distance of approximately 1700m, terminating in a breakdown room with only a very narrow way forward (if at all).

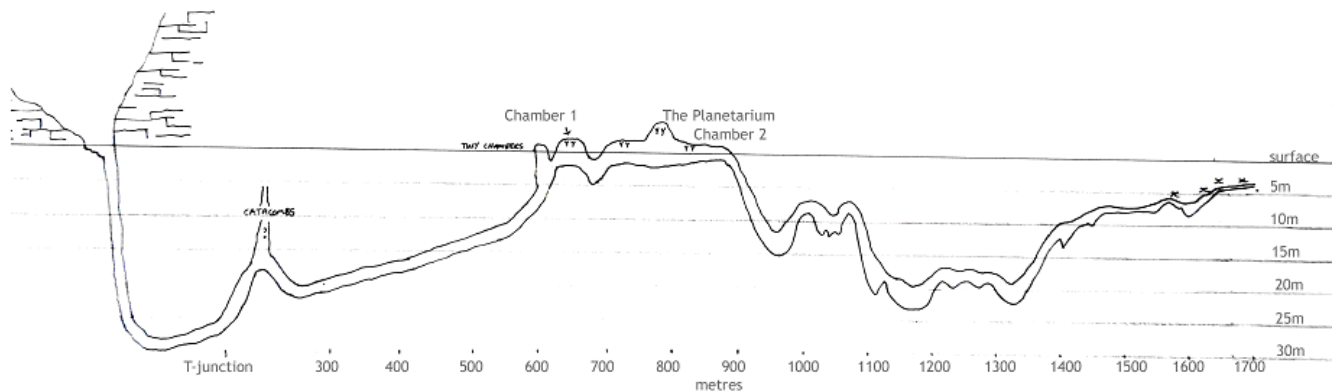
I first dived the site in March 2005. It involves a difficult one-hour hike through the dense jungle and into a steep gorge (only 830m as the crow flies according to the GPS) carrying dive gear. The resurgence pool lies in a north south direction and is approximately 40m long. The water wells up at the base of a cliff, and at this point divers drop straight down to the gravel at 18m then to 30m depth. The cave entrance lies before you and flow in the early section is considerable. A number of masks have been lost in this section! Visibility improves as you enter the cave but in the wet season can be 2-4m with a water temperature of 22 Celsius. The water is drinkable. The resurgence pool contains numerous species of colourful tropical fish and freshwater prawns (Nowra). Further into the cave no life was seen in the fast flowing water except and occasional eel (Namari) and small shrimp.

The cave continues at a consistent 29-30m depth until the first air chamber at approximately 400m in, after which the depth is more in the 15-20m mark. The final 100m of the 3rd sump is 5-7m. 2 large side tunnels have been marked and partially dived in the final sump ("Whim-a-way" and "Green Lane"). There remains enormous potential for exploration in this system.

Partially mapped to 1700m penetration. Full report on www.divedoc.net

Acknowledgements

My thanks for all those who gave me information about their exploration and discoveries, especially the cavers who have explored and mapped the tributaries of the Sarakata River on Espiritu Santo, including Kevin Green, Steve Sturgeon, Gary Bush, Gary Barclay, Linda Claridge, Dave Walton, Warrick McDonald, Tony Davis, Craig Challen, Paul Hosie, Dave Warren. Apologies to any of the original explorers who have been forgotten or overlooked. Thanks to the French cavers Bernard and Josiane Lips, and Franck Brehier for allowing me to include their hard won information. To Barry Holland and Kevin Green from Aquamarine in Santo for all their help and for sponsoring the cave diving exploration. Thanks to Clare Sulis in Pt Vila for her many hours of work in translating the work of Bernard and Josiane Lips...I hope it is accurate! A special thank you to the people of Vanuatu who allowed me explore their beautiful land.



VU 2ES0033 Sarakata Resurgence (section view)

R Harris, B Holland, K Green, S Pittaway, J Currie 2005

ASF 3.2 to end of first chamber

ASF 2.1 after first chamber



