

GALAPAGOS ISLANDS CAVING, MARCH 2014

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*Galapagos National Park, World Heritage Area
Photo: Cathie Plowman*

The air is filled with the sweet scent of guava as I walk uphill after another day underground. We often see the fleshy guava fruits on the ground when walking to and from the cave; they're a dull-yellow to green on the outer skin and pink inside. They're soft and readily squash beneath your boot to reveal the pink flesh and their many seeds. I'm certain that the guava would be a delectable item for the giant tortoises that we've also been seeing en route to and from the cave each day. But guava is no fruit of paradise; Greg Middleton reminds us that it's a rampant weed here, as it is in many tropical countries.

I'm hot, sticky and grimy, a near constant feeling here in the Galapagos, but I'm also very satisfied after another rewarding day in Cascajo Cave, or indeed Cueva del Cascajo in the local Spanish language.

It's the end of my fourth day in Cascajo. David (Butler) and I have come to the Galapagos for the 16th International Vulcanospeleology Symposium that will be



*En route to the Cueva Cascajo compete with tortoise and machetes
Photo: Cathie Plowman*

held here next week, but we've also been lucky enough to have been included in the surveying expedition led by Aaron Addison and his team from the USA.

Most days there have been three surveying teams either in Cascajo or in one of the other caves nearby. I'm happy to have ended up just in Cascajo; I'm enjoying following the cave, improving my surveying skills and enjoying the company of the people I've been working with. Mostly this has been with Aaron (from Missouri) and Guinevere McDaid (from Texas).



*Descending a lava fall in Cueva Cascajo
Photo: Cathie Plowman*



*Far Left Bella Vista Caverns (including the Tunnel of Love)
Left. David Butler in Soyla Cave
Below Left. Coastal lava cave
Above. Outside the cave pictured below left
Photos: Cathie Plowman*



Our fourth day in Cascajo was to be our last. The cave has now been surveyed to 2590 metres (making it the longest surveyed lava cave in South America). It's not because we've run out of cave that we're stopping. The cave keeps going, and I would sure love to see where to. But there are other things to do, limited time and we've come to a fourth lava fall, with not enough vertical rigging between us to descend this one. There's also the dead cow...

This is the fifth caving expedition to the Galapagos that Aaron has coordinated since 2007. Most of the core team have had several trips here. The 'core' this year is Aaron, Bob Osburn, Rick Haley and Mick Sutton (all from Missouri), Scott Linn (Oregon), Geoff Hoese (Texas), Rick Toomey and Elizabeth Winkler (Kentucky). This year, there were also entomological surveys being done by Steve Taylor and JoAnn Jacoby (Illinois) and photographic work being done by Anne and Peter Bosted (Hawaii), Dave Bunnell (California) and Franz Lindenmayr (Germany).

The team is dedicated to the systematic documentation of the caves in Galapagos, which includes the survey, map production and also gathering photographic, biologic, geologic, and paleontological records. This is no easy task, surveying on Santa Cruz (the island with most services and also 30,000 people) needs time, flexibility,

liaison with local land owners and national park managers re access and permits. There is coordinating taxis and the team as well as the logistics of accommodation and equipment, poor internet access, a different language, different culture and the ever-present heat. Any work on the other islands has added complexities starting with transport, accommodation and added costs.

To date, the team has surveyed over 40 caves, with some of the more notable efforts as follows:

•Cueva Cascajo	2590m
•Cueva Gallardo	2316m
•La Llegada	2066m
•Cueva Royal Palm	1039m
•Cueva Soyla	1037m
•Tuneles de los Piratas	1026m
•Cueva Kubler	929m

Cueva del Cascajo had quite a lot happening besides its length. The cave has multiple entrances, including many 'pukas' or skylight holes. Puka is the Hawaiian word for 'skylight'. Two pukas became very notable to us. The 'owl puka' - there is usually one or both birds of a pair of barn owls, *Tyto alba*, the same species of barn owl we have in Australia. I was thrilled, never having realised that 'our owl' is one of the most widespread birds on Earth. A short distance from the 'owl' was the 'cow puka'. On our first day in the cave, there was dismay that there was a cow with a broken leg. The following day, there was general relief that the cow had died. By day four, not only was the cow abuzz with flies, but its death stench was permeating deep into the cave and it was only going to get stronger. It was time to abandon Cascajo until another time.

Cascajo also had the complexities of up to six layers in places. Geologist Stephan Kempe from Germany spent much time musing and discussing the formation of the



*Fish market, Puerto Ayora
Photo: Cathie Plowman*

different areas of the cave. Stephan also gave a very informative talk on the ways that lava caves are formed during the symposium. (And he is also coordinating a team working on a book on lava caves.)

During the course of the survey week, additional people arrived every day, until by the Sunday evening there were about 80 people gathered for the commencement of the 16th International Symposium on Volcanospeleology. There's a small 'backbone' of people who are the mainstays of the Volcanospeleology Commission of the International Union of Speleology and who are active in the management, conservation and study of volcanic caves around the world. This includes Greg Middleton and Julia James. Some of the group has been involved in lava cave management since the 1960s.

The main organisers of this year's event were Theofilos Toulkeridis or 'Theo' and Aaron Addison. Theo's enthusiasm for the lava caves seems limitless, taking guests from the hotel out caving, and having authored and co-authored two significant books on the Galapagos Island caves. Theo also has a host of former students throughout the Galapagos and we continually met people who had studied under his guidance.

The enthusiasm for this year's symposium meant that there were too many papers for the allotted time, and the program needed to be altered to allow everyone to present their efforts. Aaron Addison coordinated this, making the best of the limited facilities at the venue. There was plenty of time for field trips, including a trip to the very picturesque Isabela Island where the volcanic vent of Triple Volcan was a highlight, with several

members of the group abseiling into the chamber. There were also some pretty impressive meals and we also delighted in seeing giant tortoises, penguins, sea lions and flamingos.

While the logistics of the large group in a remote island environment required patience at times, you would have to say that this was a successful event. Many people saw and were inspired by the lava caves of the Galapagos and the discussion and forums meant that there was increased learning and understanding. Thanks to the organisers and support team as well as the participants who all shared and extended their appreciation of caves.

Following the symposium, Julia James coordinated about 22 people either horse-riding or walking up onto Sierra Negra caldera on Isabela. This is currently the most active volcano in the Galapagos and had a significant eruption in October 2005. Ten of us joined a four day cruise on the boat Tip Top IV, and others found last-minute berths on other boats to see more remote parts of the Galapagos. The Tip Top IV cruise visited a number of islands and had many highlights, including the high cliffs, cactus trees and land iguanas of South Plaza Island, the extensive lava fields of Santiago Island and the volcanic cones of Bartholomew Island, as well as snorkelling with sea lions. While the islands have many conservation issues, they are indeed an ecological inspiration.

I very much enjoyed our Galapagos trip, made especially great by the opportunity to participate in Aaron's survey expedition. We met many good people and enjoyed their friendship and conviviality. Thanks to all.