

Irish Caving Expedition to
– PAPUA NEW GUINEA –



December 2011 – January 2012

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Part A

INTRODUCTION

1. BACKGROUND AND SUMMARY

Pipe-dreams of a Papua New Guinea expedition started back in 2009, not long after the intrepid Foggs came back from their adventures with stories of going caves, friendly locals and amazing scenery. They had both been to areas in the west of the country on previous occasions, but it was Tim's expedition with the BBC's *Lost Land of the Volcano* television series that was to become our primary focus.

This expedition in 2009 saw a team of naturalists, a television crew, and their associated safety entourage, descend upon the village of Fogoma'iu near the extinct volcano of Bosavi in the Southern Highlands province. They spent six weeks here as guests of the Kosuan people, recording the rich wildlife as part of a three-part television series. The series included cave exploration on the island of New Britain; however, Tim also had spare time to visit some of the nearby caves with the locals.

There were tales of boat journeys along the Hegigio River with glimpses of massive resurgences, and caves a day's walk from the village where they had to turn back because of lack of lights. Tim and Pam gave a round-up of their recent foreign expeditions at the 2010 Irish Annual Caving Symposium in Ballyvaughan, Co. Clare, and the Bosavi region featured heavily. Aside from the caving, the emphasis was on the open welcome extended by the Kosuan people, and their eagerness to encourage more visitors.

With all of these established contacts, we had no excuse not to take up the challenge, and a chat over some pints with Tim and Pam had us on course to formulating a plan. This mode of planning suited us well, and the usual Thursday night session at Belfast's Errigle Inn, once devoted to idle banter, became a hotbed of expedition scheming. At that stage, it was the local contingent of the Shannon Group, but we were soon having frequent Skype conferences with the other team members in Dublin, Clare, Germany and Australia.

With the Foggs' help, we made contact with key people in Australia and Papua New Guinea, and also with cavers who had been to Papua New Guinea before. The planning really started to get feverish towards the latter half of 2011. Mention must be made of the über spreadsheet, which became our roadmap: it started as a gear list but evolved to become a budget, first aid list, field contacts and next-of-kin database, flight schedule and injections reminder!

On the 10th of December 2011, we reached a critical point. No more planning could be done: we were off to PNG!

Over the course of the next month, we reached our destination, and surveyed 24 caves totalling 6.7 kilometres in length, mostly horizontal in character. The area has excellent potential for further discovery, especially on the nearby Darai Plateau.

Furthermore, we made friends with the Kosuan people, laid the foundations for a future expedition, and had the experience of a lifetime.

Expedition Timeline

Date	Activity	
09 Dec	Travel	Finish work, travel to Dublin, accommodation chez Mac Coitir.
10 Dec		08:50 flight: Dublin-Dubai-Sydney-Brisbane (30 hours).
11 Dec		22:00 arrive Brisbane, meet Séamus, Axel, Jock, Ed and Santa Claus in airport. Mr Claus is from PNG and gives us some tips. Find out that next day's flight to PNG has been cancelled without warning. Sleep in airport.
12 Dec		Manage to book onto another flight. Arrive Port Moresby and meet Paul & Ally. Stephen, Stephen, Séamus & Jock fly to highlands capital, Mount Hagen, and stay in missionary hostel. Others overnight in Port Moresby hotel.
13 Dec		Mount Hagen team buy food and hardware in Mount Hagen; Port Moresby team collect satellite phone and mobile phones donated from Digicel. Port Moresby team fly to Mount Hagen. Both groups take road trip to Mendi, with two G4S vehicles. Sleep in guesthouse (arranged in advance by Jenny at Mendi Airport).
14 Dec		Charter flight to Fogoma'iu. Arrival celebrations with locals, meet with chiefs, settle in our house.
15 Dec		Caves: Itaki, Tutuku.
16 Dec		Caves: Tauwaremano, Yebisakaro.
17 Dec		Caves: Walofani.
18 Dec		Caves: Semetesa, Kaflomaiyu, Manena.
19 Dec	Willy & Wakitu	Hike to Willy's/Chief Wakitu's camp in jungle.
20 Dec	Camp	Caves: Mefon Karisine, Natila, Obote
21 Dec	Camp	Caves: Sayamelegi, You.
22 Dec	Village Camp	Hike back to village.
23 Dec		Caves: Walofani (photography).
24 Dec		Caves: Parobe.
25 Dec		Christmas Day celebrations, share pig feast.
26 Dec	Nick	Hike into jungle (Nick's camp). Caves: Hasawana Serala, Sawei.
27 Dec	Camp	Caves: Himasili, Natene.
28 Dec	Albert Camp	Caves: Nomini. Hike to Albert's camp. Celebrations & traditional welcome.
29 Dec		Caves: Kikiwari, Ekisayaseray.
30 Dec	Michael Camp	Caves: Weini. Hike to Michael's camp.
31 Dec	Village Camp	Caves: Pokabi, Bei. Hike back to village.
01 Jan	Camp	Packing. Final leaving celebrations, dancing, sing-sing, feast.
02 Jan	Travel	Charter flight to Mendi, bus trip to Mount Hagen.
03 Jan		Stay in missionary hostel.
04 Jan		Day in Mount Hagen city, visited coffee plantation and factory. Dinner and drinks in social club. Final night in missionary hostel.
05 Jan		Flight to Port Moresby, sleep in hotel.
06 Jan		Flight to Brisbane. Trad session at Séamus' friend's house. Sleep in hostel.
07 Jan		Flight: Brisbane-Abu Dhabi-Dublin.
08 Jan		Arrive Dublin 06:50
09 Jan		Work @ 08:30!

The Team

Alegra (Ally) Beatus
Midwife



Séamus Breathnach
Medic/Spiderman



Axel Hack
Photographer/Paparazzi



Brían MacCoitir
Medic/Witch Doctor



Stephen Macnamara
Organist



Stephen McCullagh
Pot scrubber/Enforcer



Paul O'Dowd
Commando



Stephen Read
Mystic



Ed Whelan
Chartered Accountant



2. SPONSORS AND ACKNOWLEDGEMENTS

We are indebted to our main financial sponsor, the Speleological Union of Ireland (SUI).



Speleological
UNION OF IRELAND

www.caving.ie

The following organisations and people (in alphabetical order) also gave financial aid or donations in kind for which we are very grateful.

- Air Niugini
- Bengal Brasserie Belfast
- Celerion Belfast
- Cotswold Outdoors Belfast
- Digicel
- Tim & Pam Fogg
- Gaze Restaurant Belfast
- German Alpine Federation (DAV)
- Ian Miller
- Jackson Sports Belfast
- Movie House Cinemas Belfast
- Paul O'Dowd
- Speleo Concepts

We would also like to thank the following people for their support and help – before, during and after the expedition.

- The Kosuan people, for their great warmth, hospitality and helpfulness: without them, the expedition would have been impossible.
- Tim and Pam Fogg, for giving us the initial ideas and contact details, and a host of information before we set off (as well as a donation to be spent within Fogoma'iu).
- Joe Sydney, for providing useful maps, contact details and information.
- Rachael Finlay, for organising the fundraising quiz.
- Aileen Connor, for acting as home contact during the expedition.
- Claire Dunphy, for assistance with surveys and report.
- Other family and friends, for support and understanding!

3. AIMS AND OBJECTIVES

The following aims and objectives were agreed before the expedition. Our success in each is shown by colour: green (successful), orange (partially successful/work still to be done), or red (unsuccessful).

Aims and Objectives – Successes

Aim	Objectives	
1. Establish relationship with local tribes	1.1 Make contact with local village chief/dignitaries through existing contacts	Green
	1.2 Establish camp in or near village	Green
	1.3 Find information from tribespeople about caves in vicinity	Green
	1.4 Accept and return hospitality to foster relationship for future expeditions	Green
2. Conduct surface survey of area	2.1 If possible, conduct aerial reconnaissance during charter flight	Red
	2.2 Trek the area around Fogoma'iu with local guides & information	Green
	2.3 Record GPS coordinates, maps, sketches and photographs of tracks, waypoints, cave entrances, karst features	Green
	2.4 Re-establish camp closer to promising cave areas and repeat the process, covering as much ground as possible within 3 weeks	Green
3. Explore caves	3.1 Enter each cave as far as the equipment allows (note – only limited ropes being brought for reconnaissance expedition)	Green
	3.2 Log all caves visited, noting potential for extensions	Green
	3.3 For significant caves, conduct survey/sketch/photography and note water and air flows	Green
	3.4 Estimate flooding characteristics of caves (e.g. is significant flooding a routine occurrence during afternoon rainfalls?)	Orange
	3.5 Record and document any animal life found within caves	Green
4. Report on completed expedition	4.1 Generate an expedition report, including a summary of all of the above data and suggestions/priorities for future expeditions	Green
	4.2 Submit papers to at least 2 caving publications	Orange
	4.3 Present at at least 2 international caving conferences	Green
5. Promote caving in Ireland	5.1 Arrange fundraising "Undiscovered Ireland" lecture series to raise profile of spelaeology as an exploration sport and science in Ireland	Green
	5.2 Use local and international media and internet to promote the expedition and raise the profile of caving	Orange

Each numbered objective is discussed below.

1. Establish Relationship with Local Tribes

1.1 Most of the clan leaders in Fogoma'iu, and some from nearby Sienna Falls, met with us and became interested and involved in our expedition. The clan leaders

usually appointed their sons as our jungle guides, so we met and became friendly with a significant number of key contacts.

- 1.2 Our base camp was in the heart of the village, in local Jack's house. This became a focal gathering point for many of the locals during our visit.
- 1.3 On our first evening in Fogoma'iu, after introductions and celebrations, we had a long meeting with clan leaders and their families to explain what we hoped to find. They were very forthcoming with cave names, descriptions and invitations to guide us. This picked up even more as they got to know us during the expedition, and we were furnished with hand drawn maps and stories and legends about the caves.

Group Photo – Albert's Camp on Slopes of Bosavi



- 1.4 The village welcomed us wholeheartedly, with song, dance and costume on our arrival and our departure, and also on Christmas Day. Celebrations were often accompanied by pig feasts – which our guide Paul assured us was a great honour. Our returned hospitality was alas not as colourful, but we gave various gifts of books, hurleys, footballs, t-shirts, key rings and torches. We also gave a donation to the clan leaders of camp equipment, medical supplies and money to be spent on the village school or education. Exchange of gifts is a central part of Kosuan culture, and we left with woven hunting bags, kina shells, bows and arrows, and other handmade items.

The village leaders seemed especially grateful when they learned we had written a feature on our expedition and on Fogoma'iu in the in-flight magazine of the PNG national airline, as they hoped this would encourage tourism in their

area. Having adopted a conscious decision not to accept short-term profitable deals with logging companies, they are taking an enormous leap of faith in embracing tourism as an alternative revenue source. This is a farsighted and brave decision from a community with little or no money for basic medical supplies or for more than elementary education for their children.

Tourism in such a remote location will be a difficult dream to achieve, and while we could assure them of *our* intention to return, we were uncomfortably unable to give any such assurances when they asked us to encourage others to visit. This said, we left Fogoma'iu with a generous invitation of help, hospitality and new caves for whenever we did make a return expedition.

2. Conduct Surface Survey of Area

2.1 On our return journey from Fogoma'iu, the cloud cover was sparse enough to allow us to see the ground, so we asked the pilot to take us on a quick (unpaid) detour over the edge of the Darai Plateau. This is an area of interest for future trips. Like the area around the village, however, dense forest coverage meant that dolines or cave entrances were not definitively identified on our short flight. Nonetheless, it did help us appreciate the seriousness and difficulty of a potential expedition here. The terrain was described aptly by Paul as an inverted egg box of karst pinnacles and hills, with no vantage points from the ground.

A proper aerial reconnaissance, by helicopter if possible, would be desirable before launching a full-scale expedition to the Darai Plateau.

The Darai Plateau



- 2.2 Every day involved a hike with local guides, and all of the main routes from the village were covered. We did not stray far from the existing cut tracks because there were plenty of caves on or near them to keep us busy. We did not spend time mapping tracks with a view to travelling independently. Using guides was the best and only option for us: they knew exactly where the caves were, could take us there quickly and safely, and were eager to help. Exploring a clan's land without a guide clan member would have been discourteous, and likely seen as trespassing.
- 2.3 GPS locations were taken for most caves, and some karst features and landmarks along the routes. Plotting caves like this was useful, as it was impossible otherwise in the jungle to visualise the locations of caves on the map.
- 2.4 In three weeks on location, we surveyed 24 caves in a 14 km wide area east of Mount Bosavi. We moved camp progressively deeper into the jungle, culminating in a remote camp high on the cool, misty slopes of the mountain. We are nowhere near exhausting the caving potential of the area. We had originally hoped to explore some of the Darai Plateau, but quickly realised that we were not prepared for this remote location: it is at least a day's hike from the village, with no tracks, water or known human inhabitants.

3. Explore Caves

- 3.1 Equipment was not restrictive: we used a small amount of rope (100 m sufficient for deepest cave), and only (!) one bolt. Caves were short, and we explored and surveyed to the end in most cases. Several were left however with ongoing leads, due to time constraints.
- 3.2/3 Twenty-four surveys are available with detailed descriptions and notes on potential for extensions. The most significant and picturesque caves were photographed and filmed.
- 3.4 We were not caught in any floods because we timed our caving to finish before the afternoon rain. Flooding could be severe, but being aware of the predictable rain patterns allows you to conduct an expedition in this region without undue risk. No detailed study was done on flooding characteristics.
- 3.5 Although biology was not a focus of the expedition, we did document finding of fruit bats (most caves), cave swifts, a probable new species of frog, an amblipigid, crabs, and a host of spiders and centipedes.

Amplipigid (Manena Cave)



4. Report on Completed Expedition

4.1 This report.

4.2 A scientific report on the spelaeology of the area is scheduled to be published in the next issue (21) of Irish Spelaeology. An article will also be submitted to Underground in 2014. Expedition articles have already been published in:

- Nargun 44 (May 2012) – Victorian (Australia) Speleological Society
- Caves Australia 192 (March 2013) (appended)

4.3 Slideshow presentations on the expedition were given at:

- April 2012, Annual Irish Student Caving Forum, Killtyclogher
- April 2012, German Alpine Federation (DAV), Forchheim, Germany
- April 2012, German Alpine Federation (DAV), Erlangen, Germany
- May 2012, Victorian Speleological Association meeting, Australia
- October 2012, Annual Irish Caving Symposium (SUICRO), Drumshanbo
- October 2012, New South Wales Cavers' Annual Dinner, Australia
- January 2013, German Alpine Federation (DAV), Bamberg, Germany
- April 2013, The Society of Natural History (NHG), Nürnberg, Germany

and another is planned in:

- January 2015, Fernweh Festival, Erlangen, Germany

5. Promote Caving in Ireland

5.1 An “Undiscovered Ireland” lecture night was held in November 2011 in Queen’s University Belfast. This was well attended by mountaineers and others with an outdoor interest, and featured a lecture about recent cave discoveries in Fermanagh and a lecture on first climbs of Donegal sea stacks.

The “Undiscovered Ireland” series will be continued as part of fundraising for a future Darai expedition.

Slideshow presentations of the expedition were also given at:

- 2012 University of Ulster Mountaineering & Canoeing Club Memorial Weekend, Ballycastle.
- 2012 “What If, Why Not” Adventure Film Festival, Galway.

5.2 A website (irishcavingexpedition.wordpress.com) and Facebook page were set up to publicise the expedition plans and results.

We have published accounts in several non-caving publications:

- Air Niugini in-flight magazine “Paradise”, Vol. 4 2012 (cover photo and 6-page article - appended)
- Irish News newspaper, 20 January 2012 (appended)

We would hope to make more use of mainstream media (e.g. newspapers, radio, etc.) to publicise a future Darai expedition.

Presentation to German Alpine Federation, Forchheim, April 2012



die Höhlen der Kosua

eine Expedition ins entlegene NeuGuinea

**2. April
19:30 Uhr
Magnesia Kletterhalle
Trettlachstraße 1
91301 Forchheim**

Diavortrag
„von Dschungel, Höhlen und Eingeborenen“
Höhlenforschung am Ende der Welt

Eintritt frei !



<http://ahjourney.wordpress.com>



AH JOURNEY'S BLOG
PICTURES FROM BELOW
<http://ahjourney.wordpress.com>

PAPUA NEW GUINEA
2011
IRISH CAVING EXPEDITION

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Presentation to New South Wales Cavers' Annual Dinner, October 2012

**SEAMUS BREATHNACH
AND THE CAVES OF KOSUA**

IT IS HUNTED FOR THIS YEAR'S **ANNUAL CAVERS DINNER**, INTREPID VSA CAVE EXPLORER SEAMUS BREATHNACH, WILL THRILL US ALL WITH TALES OF HEROISM AND FEATS OF DARING ON THE RECENT IRISH CAVE EXPLORATORY EXPEDITION TO THE,

CAVES OF KOSUA- PAPUA NEW GUINEA

NESTLED AT THE FOOT OF A GIANT EXTINCT VOLCANO, SET IN A PREHISTORIC ATMOSPHERE, A LIMESTONE PLATEAU WAITS TO BE EXPLORED BY A DARING FEW, LISTEN IN AWE WITH TALES OF GIANT SCORPIONS, HUGE BLOOD SUCKING VAMPIRE BATS AND NATIVES RESTLESS FROM TOO MUCH PARTYING WITH THE IRISH, WELL, WE MAY JUST STORIES OF TOO MUCH PARTYING AND GOOD OLD FASHION CAVING.

SET IN A TROPICAL THEME AND WHILST BEING ENTERTAINED, FEAST ON AN EXOTIC 3 COURSE MEAL.

NANPAWAN KAIKAI; TRANSLATES TO ENTREE

BIKPELA KAIKAI LONG BELO; TRANSLATES TO 3 MAIN DINNERS;

SWITPELA KAIKAI; TRANSLATES TO "DESSERT" -FRIED ICE CREAM

I CAN BRING YOU DRINK; TRANSLATES TO BYO ALCOHOLIC DRINKS OR BUY AT RESTAURANT/BOTTLESHOP

DRESS CODE FOR THE EVENING WILL BE EXPEDITIONARY, NATIVE OR WHATEVER TAKES YOUR FANCY

PITH HAT AND GRASS SKIRT OPTIONAL!

BEST DRESSED WINS A PRIZE!

ALL CAVERS AND FRIENDS WELCOME.

DATE: SATURDAY OCTOBER 27, 2012

LOCATION: GOLDEN TERRACE CHINESE RESTAURANT
2A HAIG AVE, GEORGES HALL (NEXT TO BOTTLE SHOP)

TIME: 6PM MINGLE, 7:30PM START.

COST: \$28 PER ADULT/\$20 PER CHILD

RSVP: NO LATER THAN MONDAY 22 OCTOBER FOR CATERING PURPOSES

CONTACT: JOE SYDNEY OF THE HIGHLAND CAVING GROUP
jesydney@choice.com.au
0405 039 398

Part B

GETTING THERE

4. PLANNING AND CONTACTS

The expedition could not have happened without the help of Tim and Pam Fogg. They gave us numerous useful contacts, both from the BBC “Lost Land of the Volcano” filming trip and from a previous expedition to another area of Papua New Guinea. These included British and French cavers, who all confirmed that the area of interest had not been explored by cavers before.

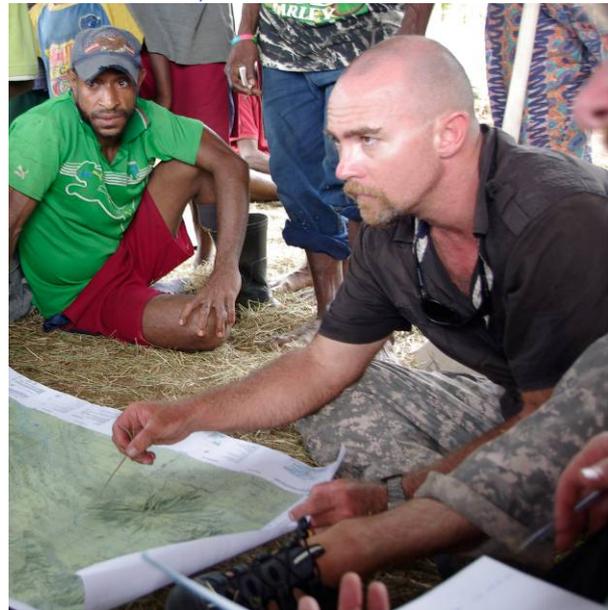
During expedition planning, the team was in regular contact with Paul O’Dowd, an Australian working with a Papua New Guinean trekking company. He had worked with Tim for the BBC film, as “logistics manager” for travel and accommodation for the BBC team. Paul had extensive experience of Papua New Guinean terrain, customs, tribal politics, logistics and language (Pidgin English). He also knew many of the Fogoma’iu villagers personally, having been to the village several times in preparation for the BBC’s arrival. Paul joined us as an expedition member for the duration of the trip.

Through Paul, initial contact was made with Martin, a local landowner in Fogoma’iu (and expected future village chief). Martin also had worked as a guide for the BBC expedition, and was fluent in both English and Pidgin. He proved to be a vital contact to help with logistics, local negotiations and payments, and was instrumental in establishing good relations with local tribes people.

Martin, Fogoma’iu Clan Leader



Paul O’Dowd, Australian Guide



Paul’s initial contact with Martin ensured that the village was informed of our plans in advance, and had time to prepare the grass airstrip, and arrange accommodation and hospitality. The arrival of a team of 9 people in a remote village like Fogoma’iu is a big event (their last hosting of such a group was the BBC team some years previously).

The team contacted several cavers who either lived in Papua New Guinea or had visited. Séamus Breathnach is an Irish caver and SUI member resident in Australia,

and joined us as a member of the expedition team. Having Séamus based in the local time zone proved to be invaluable when it came to planning and organising a significant amount of our transport and logistics in the run up to the expedition.

We also informed cave rescue teams in Australia of our plans – a key contact being Joe Sydney. He found maps of the area for us, and put us in touch with some medics in Papua New Guinea.

Other Contacts

A number of other people helped in the planning, either in advance of our leaving Ireland, or on the ground during the expedition.

In PNG

- Oilsearch Ltd. Dean Dennis and Geraldine Hannan from the medical team. Contact information for medical center (including their mobile phones) and advice on how to evacuate quickly if required.
- G Force (G4S) security. Jenny on +675 73632958 or Anthony on Anthony.Poyou@pg.g4s.com.
- South West Airlines. Jenny (not the same as G4S Jenny!) was very helpful organising local accommodation in Mendi, organising return transport to Mt. Hagen and arranging our Charter flight: +675 71464254.
- Air Niugini. Illan Kaprangi worked with us for arranging an extra 50kg of excess baggage sponsorship in return for an article for their “Paradise” in flight airline magazine. lkaprangi@airniugini.com.pg.
- Other contacts for accommodation and transport are listed in those sections.

In Ireland

- Director of the tropical medical bureau, Graham Fry.
- Les Brown and Aileen Connor. International points of contact.
- Lorna Roge in Digicel, who helped us with mobile phone sponsorship.

In Australia

- Joe Sydney, New South Wales Cave Rescue Squad. International Cave Rescue, Maps of the area, some local knowledge.
- Elery Hamilton Smith, Victorian Speleological Association. Useful information and stories about life in the PNG bush.
- Paul O’Dowd. Before, during and after the expedition.
- The Victorian Speleological Association. They allowed us a loan of a Suunto tandem compass/clinometer and were helpful with arranging insurance and finding local information about PNG. <http://www.vicspeleo.org.au>.
- TR Bearcom, rental of satellite phone. <http://www.trbearcom.com.au>.

Fundraising

Fundraising for the expedition took on a number of different strands. The two main income sources were the Quiz (kindly organized by Rachael Finlay) and an “Undiscovered Ireland” lecture night nominally organized by Queen’s University of Belfast Caving Club and QUB Mountaineering Club (but mostly by Stephen ‘Jock’ Read – not formally a member of either).

The Quiz took place in a private function room upstairs in the Errigle Inn, located in the Ormeau Road, Belfast. Rachael independently suggested that she would organise it and was the driving force behind the quiz.

The entrance fee was £3 per person with a raffle. The raffle prizes were a meal voucher for The Bengal Brasserie, a meal voucher for Gaze Restaurant, Movie House tickets, perfume, make up set, aftershave and big tins of Celebrations and Heroes. The quiz was a great success and raised £243.

[Rachael Compèring the Fundraising Quiz, Errigle Inn](#)



The lecture night was held on 23rd November 2011 in the Medical Biology Centre of QUB. It was well attended and both talks were received well with the attendees. The first talk, “Ten Years Hard Labour”, given by Stephen McCullagh, documented the history of modern-day exploration in Shannon Cave. The second talk was given by Iain Miller and covered his exploits off the Donegal coast climbing sea stacks. It was an entertaining affair to say the least.

Promotional Flyer for Lecture Night



Undiscovered Ireland

The Final Frontiers of Ireland.

From isolated sea stacks in the Atlantic Ocean to unexplored river passages deep below ground, there are still parts of Ireland where no man has stood before.

Hear about recent pioneering first ascents and new discoveries above and below ground in Donegal and Fermanagh.

Iain Miller – The Realms of Chaos
Donegal

10 Years' Hard Labour – The Underground Source of the River Shannon
Fermanagh and Cavan

Queen's University Belfast Caving Club and Queens University Belfast Mountaineering Club
Date: Wednesday November 23rd 7.30pm
Venue: MBC Lecture Theatre LT1, Lisburn Road, Queen's University Belfast

Recommended £5 entry fee or donation of your choice in support of the Irish 2011 Papua New Guinea Expedition
<http://www.irishcavingexpedition.wordpress.com/>

This fundraising added to the kind sponsorship we received from other sources.

5. TRAVEL AND ACCOMMODATION EN ROUTE

Visa Requirements

Visas are required for travel to Papua New Guinea and Australia. These are relatively easy to organise if you plan ahead.

Papua New Guinean Visa Requirements

Tourist visas granting a 60-day stay in Papua New Guinea need to be acquired from the nearest PNG High Commission. These need to be planned in advance as postage and processing can take a few weeks.

- From Ireland, the nearest PNG High Commission is in London. A passport with at least 12 months' validity from the date of intended travel is required.
 - Also required is proof of entry and exit – a copy of airline tickets will suffice – and an entry fee of 20GBP.
- In Australia, the PNG High Commission is in Canberra. A passport with at least 6 months' validity from the date of intended travel is required.
 - Fees for Australia are 35AUD and again proof of entry and exit are required.

Australian Visa Requirements

Transit and tourist visas can be organised on the Australian immigration website with relative ease given a few days' notice.

Travel Route

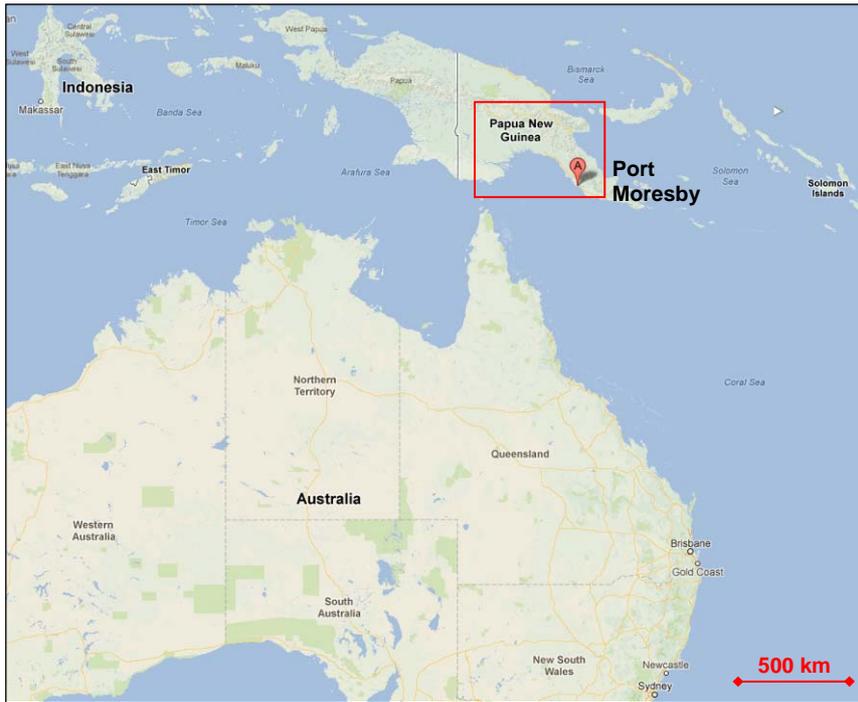
Travelling through Papua New Guinea is a wonderful and rewarding experience. A bit of patience helps a lot; timetables are often only theoretical and unpredictable events tend to be frequent enough to keep you on your toes.

Organising travel & accommodation from overseas is also a rewarding experience but explaining logistical requirements over an infrequently answered, poor quality international telephone line, via a language barrier, requires a good sense of humour!

In the months leading up to the departure date, we had many discussions on how we could minimise our travel costs without impacting the expedition objectives. We chose a route that we thought would get us cheaply, efficiently and safely in and out of the country, maximising our time in the jungle but leaving enough margin for unexpected events.

Travel Summary

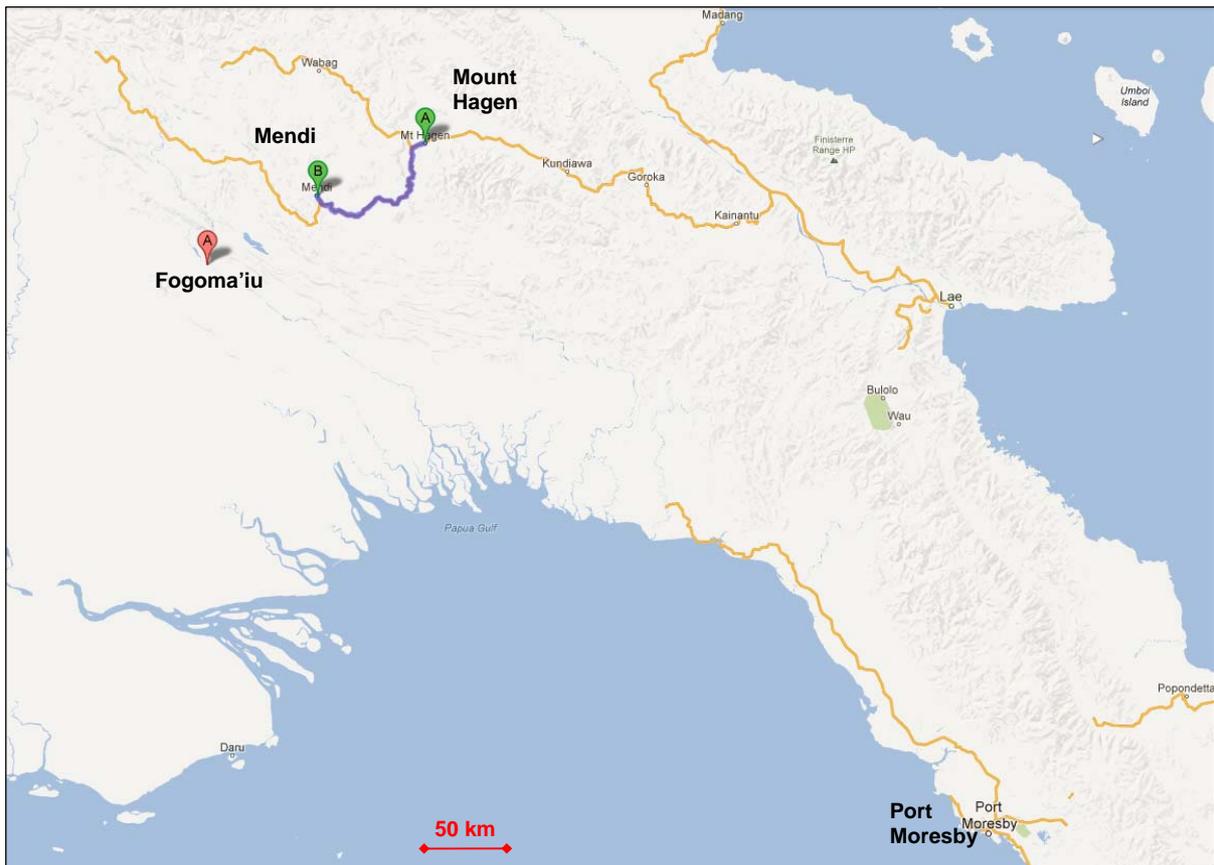
Dates	Leg	Detail
8-11 Dec 2011	Europe – Australia	The lads from Europe fly to Brisbane. Seamus also flies to Brisbane from Melbourne (commercial flights).
12 Dec	Australia – Papua New Guinea	Paul and Ally fly Cairns to Port Moresby (Air Niugini). 3 x Steves, Brian & Seamus fly Brisbane to Port Moresby (Air Niugini). Axel and Ed fly Brisbane to Port Moresby (Airlines PNG).
12 Dec	First leg to Mt. Hagen	3 x Steves & Seamus fly to Mt. Hagen (Air Niugini). Remainder of team overnight in Port Moresby.
13 Dec	Second leg to Mt. Hagen and onwards to Mendi	3 x Steves & Seamus shop for supplies in Mt. Hagen, arrange transport and meet remainder of team at Mt. Hagen airport. Full team are driven by Security escort to Mendi (G4S security).
14 Dec	Mendi – Fogoma'iu	Full team fly Mendi to Fogoma'iu (South West Airlines).
3 Jan 2012	Fogoma'iu – Mendi and onwards to Mt. Hagen	Full team fly Fogoma'iu to Mendi (South West Airlines) and are driven to Mt. Hagen (local PMV).
5 Jan	Mt. Hagen to Port Moresby	Full team fly Mt. Hagen to Port Moresby (Air Niugini).
6 Jan	Papua New Guinea to Australia	Team depart from Port Moresby: Paul and Ally fly to Cairns, Brian flies to Sydney and the remainder fly to Brisbane.
<p>Distance travelled from Dublin airport to Fogoma'iu village: Approximately 19,000 km</p>		



Map Overview

(boxed area zoomed below)

The road network is very limited in Papua New Guinea, with no connection between the capital (Port Moresby) and the centre or north of the island.

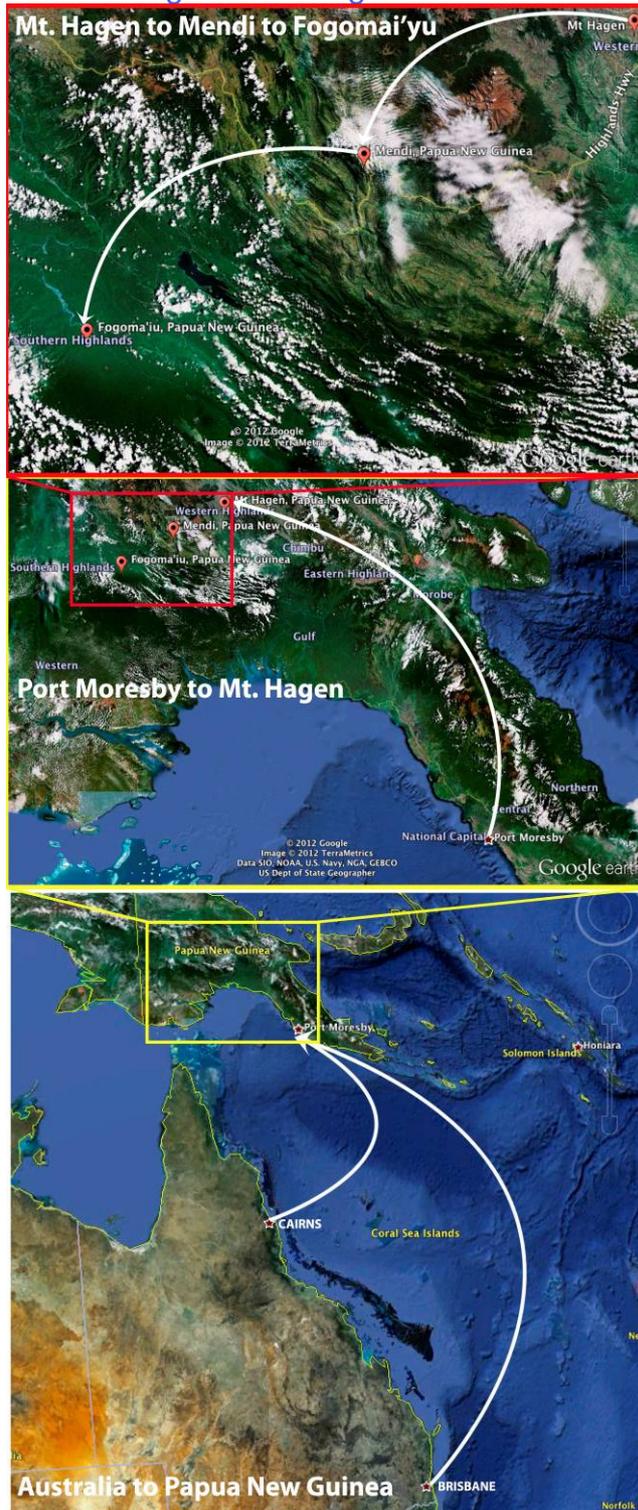


Travel Diary

Inbound: 12th December 2011

- Paul and Ally fly from Cairns to Port Moresby. They complete some errands for generator repairs and other items.
- The 3x Steves and Seamus fly from Brisbane to Port Moresby.
 - The plan was the 3x Steves and Seamus would meet Paul and Ally at Port Moresby airport to sort out finances and confirm last minute provisions. However the Air Niugini flight from Brisbane was rescheduled to a later time without notice, which subsequently caused the lads to miss the rendezvous.
 - The excess baggage allowance kindly sponsored by Air Niugini was queried and originally denied at the check in desk in Brisbane. Through a process akin to swings and roundabouts, with a few phone calls to management thrown in for good measure, the check in crew finally agreed that our excess baggage allowance was legitimate and allowed it through.
 - A similar experience in Port Moresby negotiating the approval of excess baggage meant that we left PLENTY of time to check bags in for the remainder of our flights.
- The 3x Steves and Seamus fly onwards to Mt. Hagen to make a start at shopping for some food and equipment required for the jungle stay.
 - In Mt. Hagen airport it is customary for baggage to be removed from the aircraft on a pallet by a fella in a fork lift truck.
 - After asking a local police officer for advice on a bus to the town centre, he was kind enough to give us a lift to our accommodation at the Mt. Hagen Missionary Home in his police 4x4. Turns out he was friendly with the Missionary which worked out well for us!
- Ed, Axel and Brian arrive in Port Moresby a little later and meet with Paul and Ally at the Comfort Inn hotel.
- Ed and Axel travel to the Digicel offices to collect the mobile phones sponsored for the expedition.

Route to Fogoma'iu Village



Route from Australia to Fogoma'iu village
 Maps © 2012 Google, TerraMetrics

Inbound: 13th December 2011

- The 3x Steves and Seamus commence food and equipment shopping in Mt. Hagen. Later they rendezvous with G4S Security who help transport the lads and their shopping around town for the remaining errands. Next stop is G4S Security headquarters to sort out payment [in cash only] and collect the security crew for the journey to Mendi. The lads and a crew of 4 security guards in an open back truck and a 4x4 travel to Mt. Hagen airport to meet the rest of the expedition team who are arriving on a flight from Port Moresby.
- The full team travel by road along the Highlands Highway to the "Old Compound" in Mendi (Drive time of approximately 3 hours) where they meet Jenny from South West Air who directs them towards the accommodation.
 - Steve Bus, Jock and Seamus take turns in the back of the truck to "supervise" the security guards. We heard stories of Security crews sometimes taking a peek through luggage so we didn't want to take any chances.
 - We were stopped at the border crossing between the Western Highlands province (home to Mt. Hagen) and the Southern Highlands province (home to Mendi) for an alcohol inspection. The Southern Highlands province is a dry province with alcohol restrictions in place. These restrictions are enforced at the borders and had the officers searched a little deeper, a Mr. Jameson or a Mr. Bushmills may have caught their eye...

Inbound: 14th December 2011

- The full team get a lift to Mendi airport across the road from the accommodation.
 - South West Airlines advised us that they would wait for suitable weather before flying. Poor weather in the morning caused a few doubts but eventually the weather cleared and we were called to come across to the airport for our flight.
 - Everyone is weighed along with their baggage to gauge fuel requirements for the twin otter aircraft.
 - “It’s a small world” when we discover the New Zealand born co-pilot of our aircraft happened to have lived for some months in Gortin, Tyrone – next village over from Stephen McCullagh’s home village of Plumbridge.
 - Regular questions from the Australian and New Zealand crew: “what on earth are you doing in Fogoma’iu?!”
- Full team fly from Mendi airport to Fogoma’iu airstrip.
 - This was on a small, “Twin Otter” fixed-wing aeroplane, which with 9 people plus baggage was filled to capacity.

[Leaving Mendi](#)

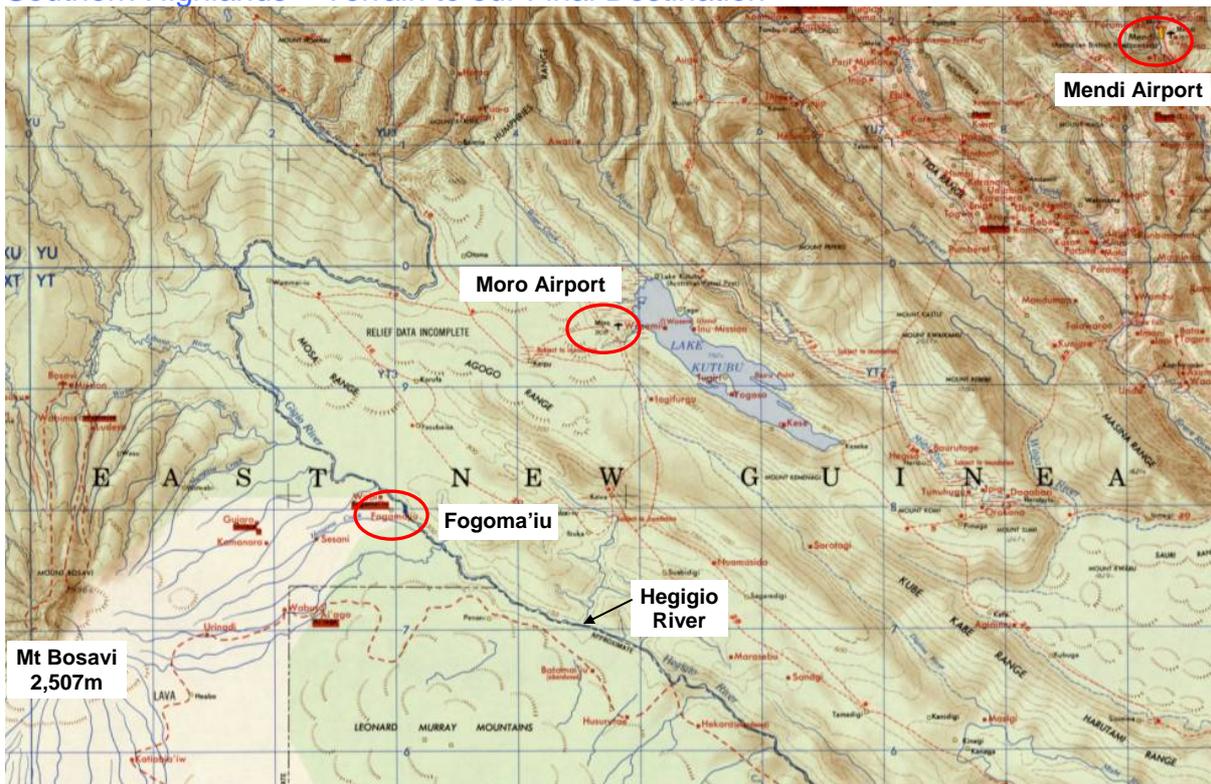
- The flight lasted a short but spectacular 20 minutes, in which we had several glimpses of the terrain where we would spend the next 3 weeks.

- o Fogoma'iu airstrip is a clearing in the jungle, long enough to land a small aircraft. The clearing activity was coordinated by the Missionaries a few decades ago with help from the Kosua tribe.

A clearing in the jungle - Fogoma'iu airstrip from the air



Southern Highlands – Terrain to our Final Destination



Outbound: 3rd January 2012

- The full team fly back to Mendi airport from Fogoma'iu village, again with South West Air.
 - On the inbound flight to Fogoma'iu, our equipment including food and supplies for the expedition took up a lot of space on the aircraft. On the return/outbound flight to Mendi, we had less equipment to transport and we were able to offer seats on the flight to a number of people from Fogoma'iu village who needed to travel to Mendi for medical and various other reasons.
- The full team travel to Mt. Hagen by minibus to accommodation at the Mt. Hagen Missionary Home.
 - Jenny from South West Air was able to book us a minibus/PMV and driver to take us from Mendi airport to our accommodation in Mt. Hagen.

Outbound: 4th January 2012

- Rest day exploring Mt. Hagen and surrounding countryside.

Outbound: 5th January 2012

- The full team fly from Mt. Hagen to Port Moresby at various times. All rendezvous at Port Moresby airport.
 - Return flight schedules had changed from original booking times which at this stage we were prepared for...
- The full team travel from Port Moresby airport to accommodation at the Mapang Missionary Home.
 - We have the first major dispute of the trip, this time with a taxi driver trying to overcharge for a taxi fare.

Outbound: 6th January 2012

- The team splits and departs Port Moresby at various times throughout the day to make their way to Australia and Europe.

Key Travel Decisions Made

- 1) Some of the team would go ahead to Mt. Hagen while the rest would stay in Port Moresby and join up the next day.
 - Team members had booked flights to Port Moresby from Australia individually which meant that people were arriving to Port Moresby at different times. This prevented the whole group from travelling to Mt. Hagen the same day. Therefore some of the group flew ahead to Mt. Hagen and some stayed and

picked up provisions in Port Moresby.

- The bulk of the group shopping had to be done in Mt. Hagen as it couldn't be brought on the flight from Port Moresby. This was going to take some time. An advance group flew ahead to arrange this and to meet with the Security escort.
- Group accommodation costs were more expensive in Port Moresby so having part of the group staying in cheaper accommodation in Mt. Hagen helped reduce costs.

2) Driving from Mt. Hagen to Mendi and using a Security escort for the journey.

- Getting from Mt. Hagen to Mendi by air required a charter flight. This flight quoted being very expensive especially when an option to drive this leg of the journey was available. We tried options of chartering smaller planes and got quotes from different companies but couldn't make it any cheaper.

G4S security transport at Mendi



- The Highlands Highway is notoriously dangerous to travel on under certain circumstances. Weather conditions can lead to landslides, flooding and road closures at short notice. Tribal wars, political unrest and general banditry can lead to car hijackings, robbery and assault if you end up in the wrong place at the wrong time. Any tour company, accommodation contacts, guides etc. that we contacted prior to the expedition advised against travelling by road if possible.
- After discussing options such as car rentals and travelling by public bus (PMV) or private bus, we decided on a compromise. We decided to travel by road but to do so as safely as possible using a security company. While more expensive than other driving options, this was still significantly cheaper than flying, allowed for greater flexibility in travel arrangements, helped with shopping for provisions around town and gave us peace of mind during the entry stage of the expedition.
- We had options to travel from Lae but that increased our costs by air and by road due to the additional distance to Mendi - despite it being slightly cheaper to fly from Port Moresby to Lae.

- 3) Returning from Mendi by road to Mt. Hagen and NOT using a Security escort for the journey.
 - We specifically did not book a return journey from Mendi to Mt. Hagen by Security escort as we decided to gauge the road journey ourselves first. We would then make our return travel decision based on better local knowledge. The Security escort was also available at short notice if required...
 - Despite the dangers in travelling on the Highlands Highway, the dangers were often isolated to the situations mentioned in point 2 above. We were monitoring the political situation around Presidential elections while we were there but all remained peaceful for our travel dates. Instead of making ourselves a target travelling by public bus (PMV), we hired a local PMV driver to drive us from door to door in his minibus at a reasonable price, which was significantly cheaper than the price of a Security escort but a bit more expensive than general public transport.
- 4) Departing from Fogoma'iu 3 days earlier than our scheduled flight from Mt. Hagen.
 - We had a limited amount of time to get from Fogoma'iu to Mendi to Mt. Hagen and to finally to Port Moresby to catch our international flights.
 - A reasonable degree of visibility from the air is required to land an aircraft on the Fogoma'iu airstrip. The weather in Fogoma'iu can be quite unpredictable and at the time of the year we were there, it wasn't unknown to have a few days of heavy cloud cover in a row. Therefore we left a buffer at this point in our return schedule to cater for delays due to weather.

Alternate Travel Options Possible

Depending on the size of the group and the amount of equipment being carried, a number of alternative travel options would be possible to reduce costs and travel time.

- Fly direct to Moro from Port Moresby. Moro is the nearest town to Fogoma'iu with a commercially serviced airstrip.
 - Travel from Moro to Fogoma'iu could be arranged with further chartered aircraft.
 - It is also possible to travel some distance to Fogoma'iu by road and travel the remainder on foot. This option is a day's walk and best attempted with a daypack and well worn boots.
 - A road is currently being constructed that would bring traffic a little closer to Fogoma'iu village, reducing the time to walk in.
- Fly direct to Mendi from Port Moresby, bypassing the need to transit through Mt. Hagen.

- Charter flights from Port Moresby to Moro, Mendi or Mt. Hagen.
 - A charter flight from Port Moresby would be more economical and flexible than a commercial flight but this is very dependant on the amount of people travelling.

Charter Companies

We contacted a number of companies when sourcing a charter flight to Fogoma'iu village. The requirement was to fly from Mendi to Fogoma'iu on the 12th of December, returning on the 3rd of January carrying nine people with approximately 400kg of equipment. We chose South West Air as they had the most local knowledge of Fogoma'iu airstrip, were the most helpful, had a good reputation and worked out the best value for money.

We also requested quotations for helicopter charters to assist us in surveying the landscape but this ultimately worked out to be too expensive.

Other charter companies contacted

- Airlines PNG
- North West Aviation
- PNG Airlines
- Mission Aviation Fellowship (MAF)
- Trans Niugini Tours

Accommodation En Route

Accommodation costs varied greatly from location to location. Paul O'Dowd's excellent negotiation/bargaining skills meant we were able to arrange more favourable deals at some of our lodgings

Many of the cheaper accommodation offerings in Port Moresby, who advertise on the web and in guidebooks, are often difficult to book for groups or are located in unsafe areas.

Accommodation Summary

Dates, Location	Accommodation Name	Price	Contact Details
12 Dec 2011, Port Moresby	Comfort Inn	2 x twin rooms booked at 505PGK per room. 1 x single room booked at 405PGK per room. Breakfast and airport transfer included. Paul was able to negotiate a cheaper price by combining people into fewer rooms.	Corner of Angau Drive and Mairi Palace, Boroko, Port Moresby. +675 325 5091

Dates, Location	Accom- modation Name	Price	Contact Details
12 Dec 2011, Mt. Hagen	Mt. Hagen Missionary Home	1 x 4 bed dorm room booked at 300PGK in total. An extra 20+PGK per person (approximate) for dinner and breakfast. Airport transfer is possible if owner is available at the time. Owner very obliging for transport around town.	Kuminga Road (opposite the Mt. Hagen hospital), Mt. Hagen. +675 542 1041
13 Dec 2011, Mendi	The Old Compound	Twin rooms to cost approximately 200PGK each. Breakfast and Dinner not included. Paul was again able to negotiate meals and a better rate on this accommodation.	Located at the rear of the Health Centre, across from the airport in the town. Arranged through South West Airlines
3/4 Jan 2012, Mt. Hagen	Mt. Hagen Missionary Home	As above.	As above.
5 Jan 2012, Port Moresby	Mapang Missionary Home	Booked shared dorm rooms at approximately 150PGK per person per night.	Lot 17, Section 25 Lahara Avenue, Boroko, Port Moresby. +675 7700 4269

6. PROVISIONS

A number of factors influenced the decisions we made around food and equipment required for the jungle.

Reconnaissance expedition

- As this was a reconnaissance expedition, we specifically limited the amount of technical caving equipment we would bring as a team. For example, we limited our usable rope to just over 100m (with a similar amount in reserve for rescue purposes). Any caves requiring more equipment would be logged for a return expedition. We were able to divide this equipment amongst the team luggage as we had an excess baggage allowance sponsored by Air Niugini.

Living in a village

- We were dependant upon an availability of fresh food from Fogoma'iu village and this minimised the amount of food we had to transport in with us (see food section for more information on what was available locally). As a general rule we were able to purchase fruit, vegetables, sago, and occasionally some meat from families in the village. We didn't see as much protein as we thought we would and occasional plates of pig, crayfish and flying fox were welcome treats when they appeared.

Living in the jungle

- Personal and group equipment was tailored for the heat and humidity of the jungle. This was mostly brought from Europe & Australia. Notably the team all purchased Hennessy Hammocks for the expedition, which worked well for sleeping in. The hammocks could be erected easily (no problem finding a few trees in the jungle), kept us raised off the ground (away from animals) and had built in mosquito nets (kept the bugs out). Not to mention they were lightweight, had good air circulation and were quite cosy.

[Hennessy Hammocks in Use](#)



- Tarps, shovels, machetes and other general hardware for bush camping were purchased in Mt. Hagen and donated to the village on departure.

Living in a remote region

- A lack of any electricity required the use of solar chargers to charge batteries as well as an amount of disposable AA/AAA batteries. 8 AA batteries and 4 AAAs seemed to be an average amount required for lighting needs over the few weeks.
- Fuel proved difficult to get into the village despite having an oil base a day's walk away. Airline regulations dictated that fuel could not be transported with passengers and would therefore require a dedicated charter flight for a fuel run. This proved to be too costly and we attempted to walk some fuel in from the oil base to save on costs but on the day of our attempt, there was no fuel available.
- A Satellite Phone was brought from Australia and Mobile phones and VHF radios were also used.
- GPS units with PNG contour maps were brought from Europe & Australia.

Availability of Food and Equipment in PNG

- Technical items such as generator parts were most reliably sought in Port Moresby. Being the capital city, it had the most variety of outlets for equipment.
- General food, utensils and hardware was purchased in Mt. Hagen without too much difficulty as it has a large (but not cheap) supermarket, market, hardware stores, pharmacies, etc. Anything outside of the "general" category we purchased in Port Moresby. A good example is that we assumed we could pick up camping gas in Mt. Hagen without too much issue. We were wrong. Despite searching around different parts of the city, we couldn't source it anywhere and had to do without. Similarly, Paraffin and WD40/Aerostart were difficult to come by.
- Mendi is a small town with limited availability of stores for supplies. However it had a reasonably well stocked supermarket which was able to provide some basic food supplies for our return journey to Mt. Hagen.
- Even in the smallest towns you could easily find mobile phone "top up" credit and a can of coke but could struggle to find other basic supplies...

Core purchases

Some essentials, all purchased in Mt. Hagen:

- Porridge – consistent source of energy to start a day.
- Tinned meats & fruits – jungle proof and complemented the local food supply.
- Bags of rice, spaghetti and noodles – can be mixed with everything and bulked up local food offerings.
- Flavouring: curry powder, salt, soups, tomato paste, honey – essential, and helps cheer up the taste of bland after the few weeks eating the same food.

See appendix for communal shopping list with items purchase in PNG and brought from Ireland. We stuck mostly to the items on the list when shopping in PNG but things ended up being more expensive than estimated.

Part C

LIFE WITH THE KOSUA

7. FOGOMA'IU VILLAGE

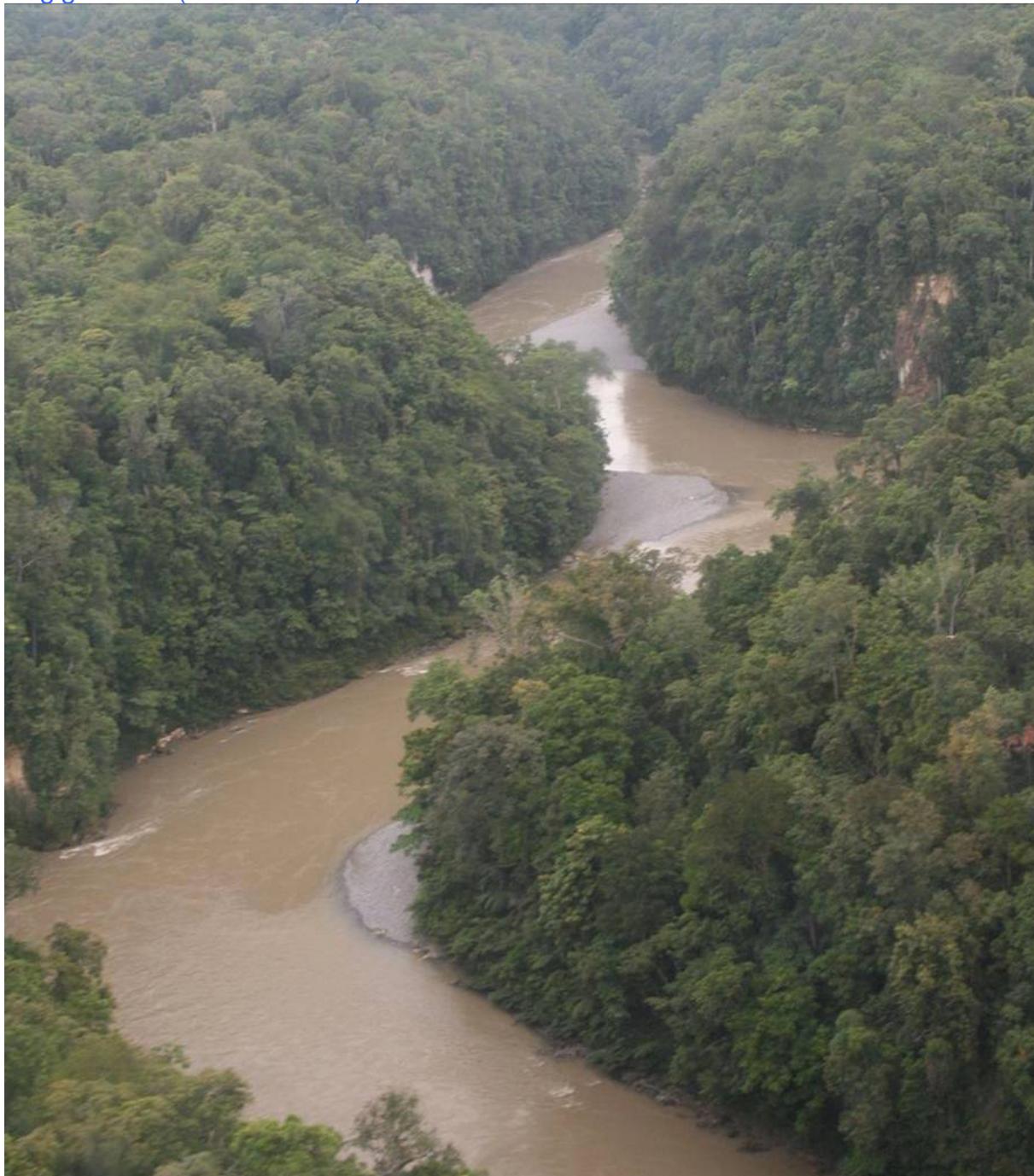
Fogoma'iu is a collection of several dozen houses and cultivated land, surrounded by rainforest. Located in the Southern Highlands province of Papua New Guinea, east of Mount Bosavi, it is inhabited by the Kosuan people, who were our hosts and guides for the expedition.

Fogoma'iu Village



The village is relatively isolated, the only land access being by cut jungle paths. The village is bounded on the northeast by the Hegigio River, a significant, fast-flowing river that requires a boat to cross. The nearest town is the mining town of Moro, a river crossing and a day's hike eastwards. From here, the tracks become navigable by vehicle and lead to Mendi, the capital of the Southern Highlands.

[Hegigio River \(taken from air\)](#)



When missionaries arrived in the 1970s, the villagers established a church and school in the village. The church is used regularly by many (however a significant proportion retain their traditional beliefs). The school is used less, due to the dependence on a visiting teacher from Mendi. When we visited, the school had been closed for several months. Many people send their children to Mendi for schooling.

The locals are in the process of building a “spirit house”. This is very much a community project, with all of the clans assisting. They were very proud to show us the construction to date, which is entirely built by hand using bush materials. When finished, it will be a large wooden building with two rooms, where ceremonial dances, sing-sings and rites will take place. This part of their culture is very close to their hearts, and we were lucky to experience some of the ceremonies before we left.

[Spirit House Under Construction in Fogoma'iu](#)



An grass airstrip was cleared by the locals in the 1970s, after missionaries visited, but is rarely used. It continues to be maintained however, and was the route of access we chose for the 2011 expedition.

Our accommodation in Fogoma'iu was courtesy of local Jack (nicknamed “Captain” since the BBC’s visit, when he was the principal ferryman for their motorised dinghies). Captain Jack hired his house out to us for the duration. Like the other houses in the village, it was made entirely from wood, bamboo and leaves; and it was built on stilts, with the main room upstairs. This design allows airflow to keep the house cool, and keeps animals out. The upper room had a central fireplace for cooking, and low platforms for sleeping. Most of us chose however to sling hammocks on the “veranda”, which ran around the outside of the upper level.

Captain Jack's House – our Village Accommodation



View from Veranda During Afternoon Rain
Airstrip behind the banana trees and pineapple plants



Upstairs in Captain Jack's

Standing in background – Martin, clan leader; sitting in middle ground – Jack (left) and Yama Lus, clan leader (right); sitting in foreground – Michael



There was an outhouse nearby, and a couple of streams for washing. The Hegigio River also offered an invigorating swim, although the flow was very strong and there were alligators.

8. A BRIEF HISTORY OF THE KOSUAN PEOPLE

As far as we are aware there is no written history of the Kosuan people. The details below are based on notes taken during the expedition based on conversations with Paul and the tribal elders. It would be a worthy undertaking to properly record and document the vibrant history of the Kosua and their culture. This lack of written history extended to a naming convention for many of the local landmarks so establishing how to spell out certain cave names lead to several interesting but fun discussions.

2 main Kosua tribes inhabit the northern and southeastern slopes of Mount Bosavi. Approximately 1000 members of the Northern Kosua are based around 3 main population centers, Fogoma'iu, Talasu and Seni Falls. There are 2 other regularly frequented camps known as Yelibasi, an offshoot of Seni Falls, and Wasana, an offshoot of Fogoma'iu. Most of the main tribal families seem to own parcels of land of significant proportions throughout the region, most families own and regularly visit bush houses on their home lands.

A smaller population of Southern Kosua numbering about 700-800 is based around 3 main population centers Igisulibu, Mushra and Iwatubu on the southern end of Bosavi.

The main languages spoken are Kosua and Pidgin English; the tribe also has a special, spiritual crater language that is only spoken by a few men within the crater of Bosavi.

The crater is regarded as a special place to all the people. The spirits within the crater are angered by commands, actions or descriptions of animals in the Kosuan tongue so this necessitates the need for a spirit language spoken only in the crater.

The people's first contact with white man is thought to have occurred around the 1930s, around the same time as the Leigh brothers were first exploring the southern highlands. The people remember stories of planes fighting in the sky and their grandparents retreated to the Darai plateau in order to escape the warring white man. The believed first contact with outsiders was most likely a visit from Australian "Kiaps" in the early 1930s.

Kiaps were multi functional administrative field officers who worked in remote locations throughout Papua New Guinea when under Australian governance. Every village in Papua New Guinea was to be visited by a Kiap at least once per year for an annual census. The kiaps operated extensively across Papua New Guinea after the Second World War up until independence in the 1970s. The patrol officers would gather the clans to build a house kiap. The house kiap was to be built as a base to assist in the governance of various administrative areas.

Each house kiap had a native policeman. Waco and his brother Senis Keni from the BBC film served as the first village policemen for the Kosua. The kiap experiences and custom still drives how the local people deal with white man to this day. The kiap would meet the people on relatively regular visits and mainly deal with any land or

local village disputes. Formal paydays and prolonged tok-toks are still a central part of this legacy.

Our final camp on Michael's land was located at one of the first organized clan camps from these early days with the Kiaps. The main proportion of the tribe has since settled on Martin's land at Fogoma'iu. Seni Falls is a relatively recent creation due to a disease that wiped out a large proportion of the original population at the first Seni village. The expedition did not visit any of these other villages outside of Fogoma'iu.

Cave Legends and Art

The caves have a prime place in the local folklore and religions. They are used as burial grounds and hunting grounds, and are the focus of creation legends and stories. Rock art was present in a large number of caves we visited, and the locals did not remember how long ago these were created. The art features in the cave stories.

Cave Art on River Bank



Ossuary Rock Outside Nomini Cave



Amos wrote out one of the cave stories for us.

Weini Legend Historical Story (Weini Cave) – transcribed by Amos

Long time ago there was a couple that lived by themselves in the jungle beside the river bank. Their names were Weini a man woman was called Opuri. Opuri was pregnant and she lived by herself because she was trying to give birth to a baby. One fine morning she went fishing. However in our custom pregnant woman are not allowed to hunt or fish. But in the place that they were there was no one to assist them to hunt and fish. So the poor woman went fishing by herself.

On the way up to the stream there was a crocodile hiding behind a rock, pretending to be as normal as a stone. The woman was trying to pick up wood behind the rock when suddenly something, the crocodile got up and swallowed the pregnant woman and sank into the water. Suddenly the water created a cave by the force of the crocodile. The woman was struggling for safety and the surface but she didn't, she cannot.

While she was struggling her baby was crying at the side. However the baby turned into a bat and flew up inside the deepest part of the cave. During the afternoon the man came back from the hunt and seen nothing at home. He was looking for a woman in her small home but she was not there. Till evening the sun setting down, to the west he ran down to the river stream and followed his wife's footprints.

He cries in his heart, it's very hard to forget a wife in life but he never met his wife again in life. He walked off into the jungle and turned into a Sago tree.

The story here is describes how Weini cave began and there is some information about how two couples disappeared in Weini cave.

Weini Cave



9. POLITICS

Papua New Guinea as a country comprises essentially of one half of New Guinea and several large islands (Papua). Brought into existence as a distinct country as a result of colonial intervention it eventually gained its independence from Australia in 1976. Although considered 'backward' by today's standards it was, several thousand years ago, on the cutting edge of agricultural development unfortunately much of the country hasn't developed much since. Although there are some large 'developed' towns and cities the population, in the main, is rural and to a large degree tribal in nature.

While we were in PnG (December - January 2011/2012), politics as defined by Western standards were emotive. In the developed areas the people had elected a new president; however the incumbent leader was not in agreement to this causing tension throughout the country. However to the people of the Kosua, outside politics was an irrelevance. In their own words they believed they were abandoned by the country's government. No government official had visited them since independence (1976) and it didn't appear that this was going to change any time soon. With no external interference the people govern themselves through a system controlled by 'elected' tribal leaders and local land owners.

Before we travelled to PnG our research on local customs gave us some indication of what to expect from the local population when we got there. Numerous sources pointed to the tradition of 'Tok Tok' as the main means of negotiation. The 'Tok Tok' conducted in the local language or Pidgin English was well renowned to be a tiresome activity that required a degree of 'robust' argumentative posturing to get what you wanted but often, due to unknown reasons, resulted in stalemate and frustration. This thought concerned us immensely throughout our planning stages. To have any chance of achieving our expedition objectives within the short period of time allocated we would need to minimize this unnecessary 'downtime'.

To this end one of our earliest decisions was to invite Paul O'Dowd along on the expedition. Paul is fluent in Pidgin English but, more importantly, he had been in the area previously with the BBC and had made good contacts with the locals. This local contact proved to be invaluable to the expedition.

Several weeks before we arrived in PNG, we asked Paul to contact Martin, a Kosuan landowner who lived in the village. The reason that we wanted to do this was that we were the first non-locals to visit the area in over four years, probably the first 'tourists' and, apart from Tim Fogg, the first cavers. We considered that it was the correct etiquette in the situation. The contact was made surprisingly easy; over the last few years mobile phone signal had been extended in PNG (courtesy of Digicel) to cover vast areas of territory and Martin had obtained a phone recently. Although this was the correct approach it caused some mild consternation in the village. In Ireland (and probably in most other countries) it is sometimes difficult to explain to a non-caver what the sport of spelaeology is about, and it was no different with the Kosuans. The Kosuans are not totally isolated from the outside world, and were well aware that outsiders did not always have the best interest of the locals at heart. Therefore our request to visit was viewed with a degree of suspicion; particularly because we

wanted to look at holes in the ground. Nevertheless Paul assuaged some of these doubts and the locals welcomed us into their village with open arms.

Arrival

The first day in the village was a joyous affair and caving wasn't discussed until later on in the evening. The coming of the 'tourists' was a big event and the whole village turned out for the welcoming ceremony and stayed until the 'Tok Tok' began. Initially the definition of what a cave is was a difficult concept to convey to the locals (and probably to most non-cavers worldwide). Paul had advised us that the first thing we should define is the size of a cave and secondly how close by to the village we needed the caves to be. The concept of cave size was explained as a hole that was big enough for a person to walk into and must go a long way into the darkness where no light can be seen. These caves were called 'Bigla' caves (Bigla is 'Big' in Pidgin), a term that was used throughout our stay in the area.

Negotiations



Distances in the conventional sense proved more difficult. The locals measured everything in units of a day's walk rather than metres/miles. Similarly hours were also confusing as the locals did not typically use watches. We immediately recognised that a day's walk for a Kosuan through the rainforest was probably many days' walk for us Irish. To add to this Tim Fogg had explained to us that while he was there he was told on many occasions about areas that were one day's walk away that were actually just outside the village and conversely caves that were nearby were found to be a couple of days' hard trekking.

The initial discussion was a difficult couple of hours. After an extended time these concepts were got across to the satisfaction of both parties and then we sat down to our main business of finding caves.

To aid our orientation and to allow us to start gathering data we brought out two maps. These maps were new to the locals, however with a bit of orientation using Mount Bosavi, the Hegigio River, and the location of the village, the locals were able to point out some local landmarks. Unfortunately, at this juncture, cave locations were scant and after a long session only five leads were offered. This was rather disappointing, but at least it gave us an objective. Next on the agenda was payment. We knew beforehand that we would probably have to pay some money for guides and for land access. As this was new to the locals the conversation became slightly disjointed. It was decided at that point that negotiations would be suspended for a day to allow us to rest. It was also agreed that us 'cavers' would go exploring the next day and Paul would continue with the 'Tok Tok'.

The Business of Finding Caves



The 'Tok Tok' started early the next day. The Kosuans are early risers and were up before 6 am. Four local landowners together with some of the tribal leaders sat down with Paul to discuss payments and logistics. Fortunately this allowed us cavers to get our first experience of trekking and caving in PNG. Unfortunately 8 hours later we came back to find Paul still in deep conversation. On our arrival back the discussions broke off. Paul explained that the 'Tok Tok' was going well, however the locals had decided that they wanted to charge us 300 Kina per cave accessed and 15 Kina per day per guide with a minimum of 2 guides per group of cavers. A quick totalling and we realized that this was an unsatisfactory arrangement for us. This payment plan would only allow us to do 5 caves in total before we were broke. We expressed our dissatisfaction with this offer to Paul and explained in no uncertain terms that the

price was unacceptable. Paul went back to the tribal group and explained our situation. Eventually he came back with a figure of 150 Kina per cave.

We discussed this again within our group and the eventual consensus was that we considered this price to be excessive and we really did not want to encourage charging for cave access. We were at a low ebb and considered our options. The next day the 'Tok Tok' started again and was going nowhere. A counter proposal was needed fast or our trip would be potentially bogged down in unnecessary negotiations. We sat down and looked at our money situation and estimated that we had a float of approximately 1000 Kina with enough additional money to cover 4 guides per day. With this in mind we suggested to Paul that we would only offer the 1000 Kina if it was to help with caving logistics. The next day we went caving again and Paul went back into 'Tok Tok' mode.

On our return, the whole atmosphere at the negotiation had changed considerably; Paul came back from the 'Tok Tok' with good news. The counter proposal had worked and we now had full access to any caves we wanted. Though the amount of potential leads were still a bit disappointing. With this negotiated it had the effect of lightening the atmosphere and also 'refreshing' the memory of the locals. Where we had only 5 leads it now turned out that there were many leads, some of which were just 10-minute walk away.

This unexpected turn of events allowed us to start picking off the leads and also encouraged the locals to propose different areas to look at. That evening they came back with a proposal to do two multi-day trips away from the village. One was a 4-day trip to visit a caving area which had one campsite owned by two local landowners. The second trip was a 7-day round trip which took in three different campsites owned by different landowners. The 1000 Kina was used to fund these camps and supported the logistics of feeding us and the locals.

Over the 22 days we spent with the Kosua we got first hand views of local politics. 'Tok Tok' was not just a concept to frustrate outsiders. The village had a number of 'discussions' that usually involved everyone standing in the local square. The loud and sometimes heated exchanges were always kept between the aggrieved parties. At times the arguments sounded and looked intimidating; however we were never in any danger ourselves and the locals made it clear that it was nothing to do with us. In fact on several occasions when the 'heat' died down the parties even came and apologized to us.

Part D

LIFE IN THE JUNGLE

10. FOOD

One of the things our local fixer, Paul, had been keen to warn us about was that we should bring as much food as possible for our stay, as the local food was not great for outsiders. Unfortunately for us, we were somewhat shocked to find that the cost of imported (i.e. Western style) food in PNG was many times more expensive than in Ireland or Australia. Our food buying was correspondingly limited, and, as a result, we ended up eating quite a lot of the local food.

The staple food in the region was called sago, a 'delicacy' created by hacking down a sago tree, and then beating it to a pulp and straining it to extract the starch from the tree trunk. This starch was then dried to a powder, which could easily be stored.

The sago was cooked by adding it to water to create a paste, then stuffing this paste into bamboo and cooking over a fire. In texture, sago came out of the bamboo moist, and somewhat chewy, and then dried and hardened into something with the consistency of fruit gums. The fairest way of describing the flavour is to say it was bland. The sago was always cooked with some local plants (called greens) which added a salty flavour and nutrients to this dish. This was our main meal for about half the days we were in PNG. The other days we ate from our rice, pasta and tinned meat range of imported foods.



◀ Our First Taste of Sago (foreground), "Greens", and Plantains (background)

Washed down with... ▶

Water Served in Bamboo Shoots



We were pleased to find the local water supply didn't have any adverse reaction with our puny western digestive systems (thus saving us a lot of bother with boiling/puritabs), and the locals used this water to fill bamboo shoots (the plastic of the jungle in terms of its versatility) with water, and a local mint-flavoured plant which was particularly refreshing after a day of trekking and caving.

For snacks, the locals were able to provide us with coconuts, bananas and pineapples (with salt!), and, for a special treat, sugar cane. Of course, this was a special treat because the biscuits had run out after the first week.

Finally, and most importantly in local cuisine, was the pig. Pigs were more than just a tasty snack in the jungle: they were a status symbol, and a store of wealth. In an environment deprived of protein, pigs were a big treat! Slaughtering and eating pigs was something that happened rarely, and was an event of some significance. We were treated to this event several times; on arrival, for Christmas, and on our departure. Paul, our guide, was surprised by this, and he believed that, in eating the local fare, immersing ourselves in their culture and helping the villagers with any medical complaints, we had won the respect of the tribe.



Pigs and pineapples



How to Cook a Pig in the Jungle



◀ Prepare the fire pit several hours in advance with wood and stones

Wash the pig▶



◀ Rekindle the fire with dry banana leaves, and sear the pig to remove hair and dirt



◀ Butcher the pig on a raised table made from jungle leaves

Set the stones to one side and line the fire pit with fresh banana leaves▼



How to Cook a Pig in the Jungle (contintued)



◀▲ Lay a bed of ferns, plantains, pumpkin leaves and sago powder onto the banana leaves



◀ Add cuts of meat and carefully place hot stones on top ▶



◀ Cover with banana leaves and add another layer of greens and meat

Cover with a final layer of leaves and logs and wait for 2-3 hours ▶



11. JUNGLE TREKKING AND CAMPING

As there are no roads around Fogoma'iu, the only way to get around is on the jungle tracks. While we believed there would be many tracks from the village, we were not sure how overgrown these would be or indeed if they would be easy to find or follow. As it turned out, only some machete work was needed, all of which was done by our local guides.

Setting Out from the Village



The Village Boundary Ditch



The guides also performed an excellent and professional “tour guide” job and helped all members of the team move relatively efficiently through the rainforest. And that help was needed! The rainforest is a tricky place to hike in – sometimes it felt like the place had been booby-trapped, such was the persistence at which we tripped, slipped and generally crashed about the place. In contrast, our barefooted guides seemed to glide over the mire and easily sidestep the creepers and lianas. Our guides were also adept at bringing us to local supplies of clean, drinkable water, which we supplemented by bringing some water bottles with filters (an excellent item for any prospective groups in this environment).

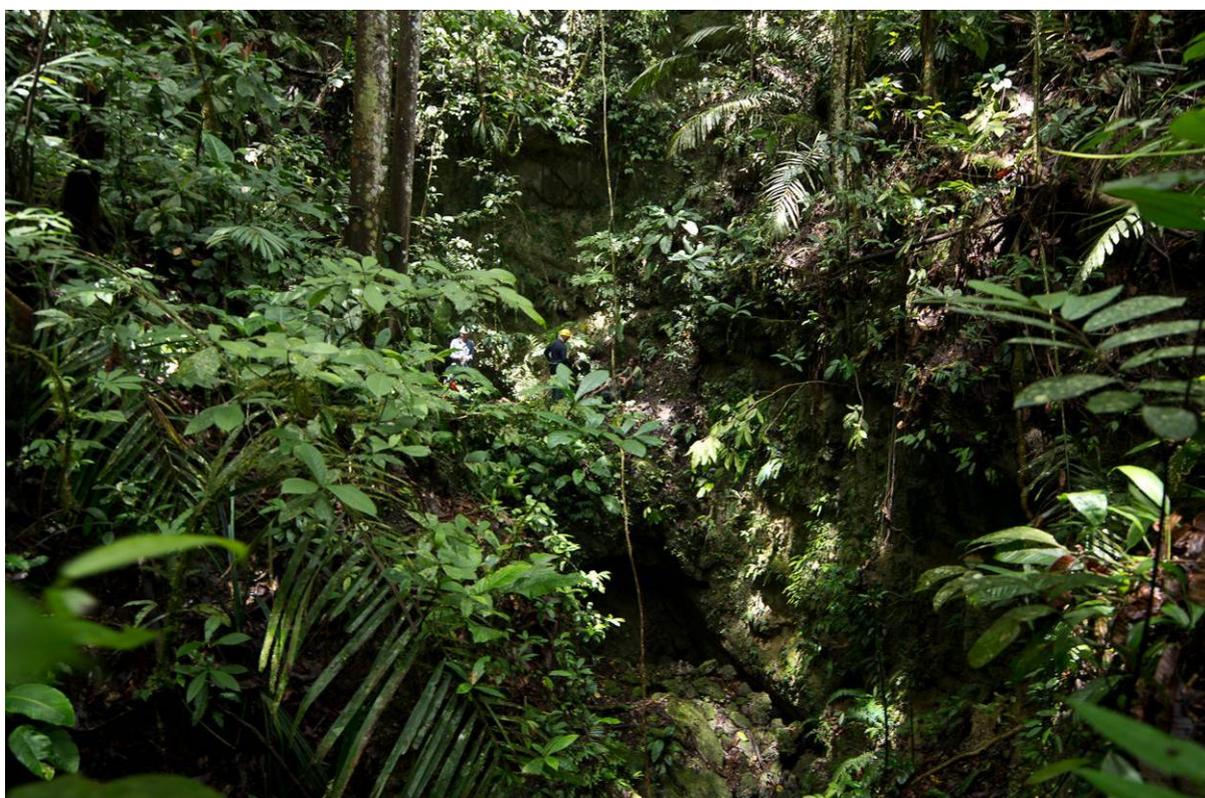
The ‘highlight’ of the trekking was the river crossings, where we were occasionally up to our waists in fast-flowing water, using sticks and walking poles to prop us up while the women and kids ran through, chatting and laughing, normally carrying some big bundle on their heads. It was here as well, that we discovered the importance of keeping your feet dry the hard way. We didn’t do this and suffered as a result.



On our longer excursions into the jungle, we were put up in temporary camps which had been prepared a day or two in advance by the locals. These were assembled with amazing efficiency. A clearing was made in the jungle, with trees available to sling hammocks. The camps were located close to water. A sheltered cooking area was provided in each case. Some camps were routinely used for extended hunting trips by local clans, and these had a substantial house. All of the camps were made

exclusively with jungle materials, but very comfortable and welcome after the long hikes.

In de Jungle



Fallen trees were sometimes a hindrance...



...and sometimes a help.



Food on the Trail



Arriving at the Cave



Back Late = Back Soaked



The Locals Putting Us to Shame



Relative Luxury: Nick's Camp



Albert's Camp



Best Meal of the Expedition? ►
Sago, Crayfish, Greens, Lemongrass and Pork Upon
Arrival at Albert's Camp on the Slopes of Bosavi



The Beast of Bosavi

SteveBus

So what is the scariest animal in the jungle? That's a difficult question and I reckon it all depends upon the circumstances. On the trip to Papua New Guinea (PNG) the list of potential candidates is long and fearsome. First thing is to define what a beast is. Now most people's thoughts are that a beast must be big, hairy and full of teeth. That's not how I look at it: a scary animal is something that on first sight puts the "fear" on you.

In a jungle environment that doesn't rule much out, however my limited experience will guide you through the dos and don'ts.

General PNG jungle life contains many animals that in some circumstances can certainly hasten your death. Mosquitoes kill more people per year than any other animal yet you hope that all the drugs and precautions you have taken before arriving will mitigate any danger; usually all this works and you should arrive home without a nasty dose of malaria or yellow fever. They may be annoying but on a night in the jungle you just deal with it.

Leeches in the main are irritants. Certainly finding one on your lip (or eyeball) discourages you from taking them to your heart. They disgust the squeamish and make grown men scream like a girl, yet one squeeze and they are dead. You just must remember the red blood you see is yours.

Spiders on the other hand are some people's worst nightmare. They certainly fit the scary mould and encourage cautiousness when putting your boots on in the morning. We were fortunate not too encounter too many of these and apart from an unlucky Séamus, avoided them. Séamus didn't really see what bit him, yet two small puncture marks lead to a case of arm elephantitis. This was the closest we came to using the satphones for a quick exit.



Bees may also fit the mould. In PNG we encountered two types. The first was a small black one that formed huge swarms particularly at the top of pitch heads. These flying feckers were harmless. Certainly they annoyed us, yet for all their buzzing they didn't sting. Well that's what we thought initially. With all their swarming their one overriding talent was getting caught up in your hiking possessions. Encouraged by the copious salt, they worked their scheming ways into every fold and crease in your clothes and waited there for the unsuspecting. On exiting a cave and donning the said clothes the previously annoying bee suddenly find what their stinging tail is for. This typically led to moves that would impress an expert contortionist.



The second type of bee was unlike anything I had encountered before: large, angry and with a penchant for chasing you. These Bee-elzebubs were nasty; even the locals screamed when they saw them, yet for all their aggressive behaviour they provided one of the best caught-on-camera scenes. Jock accidentally leaned on a colony just outside a cave. Thirty metres of sprinting and after as many F@*ks that it would take to impress a docker, the rest of us were entertained as Jock illustrated the downright relentless viciousness of these creatures. Twelve perfectly round pinholes surrounded by flaming red hoops. Jock was not in his happy place.



Cassowaries have a fearsome reputation. According to the late Steve Irwin they stand as high as a man and own a pair of talons that any velociraptor would be proud of, and have been known to de-bowel the unwary. Yet for all these stories the cassowary is much maligned. The locals considered them a delicacy and they were highly prized, particularly as a gift prior to a wedding ceremony. As such they were rare and apart from two recently captured chicks we didn't see any.

The above covers most animals we met, yet I can't finish this story without three personal stories.

The first story began while rigging a cave up above Willy's camp. Obote cave involved a pitch. I chose to rig. It wasn't an easy rig, a few naturals down to a sharp rub point. I was swinging on a rope looking for a reelay; the rock not being suitable for bolts. Behind my head in the direction of a small passage

there was a rock spike, a three metre swing and I was there. The spike would provide a perfect hang and the floor of the cave was mine. I swung back and forward building momentum then, while reaching forward with a sling to hook the spike; out of the corner of my eye I saw movement. A flicker of a tongue; a forked one.

I had seen snakes in a zoo before but never so close. Hastily penduluming backwards in the return swing, I reconsidered my limited options temporarily forgetting the laws of motion would lead me back to the snake's lair. I froze and stared into its dark eyes. My limited knowledge of snakes wasn't going to help here but I had Willy, chief of this land, on the surface. He would help me in my hour of need. I shouted to the surface. "SNAKE!!" I heard a few mumbles being translated, then a question from Jock "What colour and pattern?" I described it as best as possible. "Dark with a diamond-ish pattern, eight foot long possibly". More mumbles then nothing. I shouted up again "What do I do?" I heard a long discussion being translated back and forth between Northern Irish brogue and Pigeon English followed by a bit of puzzlement and then more discussion. Growing impatient I shouted again. Finally Jock shouted down to me "Willy says to do the following". I waited with bated breath. All of Willy's sixty plus years of jungle life knowledge will get me out of this. "Willy says 'You must ask the snake for permission to enter the cave'".



Bemused but with no other rationale solution to my predicament I turned and stared at the snake. The snake lifted up its head and fixed its eyes on me. I spoke firm and clear “I am only visiting this cave for a short time. I graciously ask you permission to enter your cave”. The snake pondered and flicked its tongue again. The snake then turned round and reptated back up the small passage from where it had come. It appeared we had come to an understanding: the snake had allowed me permission to use his rock spike and, after affixing a sling, I abseiled down to claim the bottom of the pitch.

Later that week I was speaking to our resident fixer, Paul. He told us that one of the top ten most venomous snakes in the world lived in PNG and the description I gave sort of matched the description. Whether it was one of these top ten most poisonous snakes or not, it certainly made me think.

In the second encounter we were at another cave, Natene. Natene would go on to become one of the highlights of my caving trips in PNG. The encounter occurred while Steve (Muh) was rigging. In these previously unvisited caves, the flying foxes were never previously disturbed. On this particular day the presence of us rigging had a major unsettling effect on the furry flyers. The locals, who were with us, knew that this may happen. They had come to raid their food larder. Although our intentions were to never help the locals hunt these animals, we understood that they considered them as a managed food source and indeed the caves as their farm. We cavers went about our business while Nick, the landowner, and his kin built a couple of ‘fishing’ rods. The fishing rods consisted of 10-foot poles with a lattice of barbed strands fastened to the end. These rods were waved back and forward in the direction of the bats with the hope that the thorns would catch the wings of the bats.

While Steve placed our only bolt of the expedition, I watched Nick and his family chase the bats from a sitting position 10 feet below them. Twenty minutes went by with no success until a particularly large flying fox was hit by Nick. The bat spiralled through the air and landed in my lap. To say I was surprised is an understatement. I quickly reached down with both hands and grabbed the tips of both wings, one in each hand, leaving my hands about two-foot apart. Unfortunately that meant that the head of the bat was facing me about one foot from my nose. For such a small animal, the flying fox has excessively large teeth within a disproportionately huge mouth. From my

Baby Flying Fox



sitting position I couldn't move. Both my hands were required to keep the flying foxes gnashing teeth from biting me and I quickly realized that I was in a standoff and neither of us were winning. The bat was screaming at me and I was screaming back. Thankfully, after a few minutes Nick came to my rescue and dispatched it with a quick twist to the neck. I was saved.

My final encounter with a scary animal was the most terrifying of all. On the last night of our final seven-day hike we arrived in Michael's camp (the old village) tired, hungry and ready for a good night's sleep. During these camps we slept in our hammocks which were hung from hastily constructed poles in the middle of the camp. The hammocks were our home from home, and consisted of a top sheet to keep off the rain and an integral mosquito net to keep our little friends away. Once ensconced in these sealed nests the jungle felt safe. That night I fell quickly into a deep sleep unaware that my impenetrable cocoon would soon be invaded.

A few hours later my brain awakened, I thought for a second. Why was I awake? I became aware that something was not right. I could sense that I was not alone. It was pitch dark and my light was at the other end of the hammock. I lifted my hand and started feeling around. I felt something beside me. My brain whirred. What was it? I grabbed a hold of the object. It was big, as wide as my wrist, and bony. The last few weeks played quickly through my mind. Was it a snake? It couldn't be, as it was slightly warm; maybe it was a flying fox? It was certainly bony enough. However it couldn't be a flying fox as it had no wings. I grabbed harder and started struggling with the intruder. How it got in to my hammock I didn't care, I just needed to subdue the beast and remove it. As I struggled, it struggled even harder. No matter what I did I couldn't overpower the now thrashing beast. I started to shout. Everyone else was in their hammocks and the locals were in their beds. As I continued to struggle, I shouted louder, my heart was racing. At first I heard nothing, and then eventually I heard stirrings from the other hammocks. I knew rescue was coming but would it be quick enough? I slowly began to overpower the beast but I still didn't know what it was. Brian was first out and I could hear him running in my direction. As he came close, I finally came to full realization of the horror of what I was struggling with ... I had encountered the Beast of Bosavi.

It turns out during the night I had fallen asleep awkwardly. My right arm was jammed below my body and had gone numb and slightly cold. When I had reached round with my left hand, the bony wrist-sized beast was actually my own bony wrist-sized arm. My brain must have been asleep and after the previous encounters with animals it had deduced the worst. So to answer my first question, "What is the scariest animal in the jungle?" Well in these circumstances, for me it was my numb, slightly skinny right arm encountered in a suffocatingly small hammock in the middle of the night!

Where's My Boots?

Brían

When doing my final packing for the trip my bags were well overweight so I had to ditch some things. I decided that I'd manage with a single pair of hiking boots and packed my older boots with the intention of leaving them behind me when I was finished. Not a bad idea until the same boots literally fell apart on their first journey into the jungle. We set off alright in the morning but in the afternoon and within a quarter of an hour of each other the souls of both boots separated from the uppers. I had to walk back to the village with my boots strapped together with laces, belts and bandages. Thoughts of being knocked out of the expedition ran through my head because I had left my spare boots at home and you can't move in the jungle without boots. My cross trainers which were back at the village were of no use in this terrain. When we discussed the options back in the village we found that no one had a spare pair of boots suitable for me and so it looked like my expedition would be confined to the village for the next few weeks. All seemed lost until our Australian interpreter and village negotiator Paul offered a suggestion. He knew that across the river and beyond the town of Moro an exploration company had set up a base and offices in a place called Waro. If I could make my way there there was a possibility that I could purchase a pair of work boots that would do me for the remainder of the trip. I was up for it! There was another reason for suggesting I try to get to Waro. There was a generator in the village left by the BBC when they were there a few years previously but there was no petrol to run it. Waro had a fuel depot and I could also purchase a few litres of petrol which would give us light at night and allow us to power laptops and camera chargers. While I was going that far, I was asked if I would also change the large bank notes we had into smaller notes in order to allow us to pay our guides individually. This is seen as an important occasion and would make the payments much easier to manage.

Early the following morning a small band of travellers set out from the village. In addition to myself there was Martin, one of the village leaders and our direct contact with the village, the diminutive Yamu who was also a village leader and landowner. Martin's son Henni and Yamu's son also came along with us for the trip. The first obstacle was the Hegigio River. In order to cross it we would have to canoe across. The local canoes are 4-man hollowed out wooden canoes with wooden paddles used in a kneeling position. I've paddled before but nothing prepared me for this. While the river looked calm it was in slight flood and we had to paddle upstream on our side in order to get a suitable spot to ferry across. After about an hour and a half we were all across. I was told that Moro was a day's hike from the other side of the river. Twelve hours, 2 more rivers and four hills later we reached a beautiful tarred road head that stretched out from the jungle. The road makers just stopped at that point. Another hour had us in Moro. This was a strange town with a mixture of new and old. Although many of the houses were traditional, there were brick built houses as well as a local hospital. There was a single shop with bars on the counter separating the customers from the goods, not that there was very much in the shop. There is no such thing as a B&B or a hotel but Yamu and Martin knew somebody that we could spend the night with and so we called to the house where there was chat, food and a fire going. I was given a room at the back, set up the hammock and promptly fell asleep to be eaten by mosquitoes during the night. They must have thought Christmas had come and they were having a feast.

We rose early the following morning to catch the local work bus taking workers to the plant in Waro. After about two hours on the tarred road we reached our destination. Waro isn't exactly a town but is focussed around the activities of the exploration company. The company built their own landing strip and within the compound they had workshops, stores and offices as well as the landing strip. Out of the town they had built a refinery and were piping gas out of the region. Paul had given me the name of the company's community liaison officer, a Mr Eric Wange, who might be able to help me get a pair of boots. After waiting outside the security hut for over two hours I finally got to meet Mr. Wange. He was very pleasant but told me he couldn't help me. The company didn't hold any stock of boots in the stores and even if they did they weren't allowed to sell items to non-company personnel. After a bit more discussion he asked me to wait and left the room. When he came back he had a pair of boots with him that he said he got from one of the lads who had a spare pair. He couldn't sell me boots but he could give me a pair. The boots were two sizes too big but the only thing available. I thanked him for his generosity and took the boots with me.

While I was in the compound, Martin and Yamu took the empty billy cans to the fuel depot. What do you know, no petrol! They hadn't fuel for the last few days and they didn't know when they were going to get any. There was no point hanging around waiting for delivery as it could be tomorrow or next week. We'd have to return without the fuel. The last job of the trip was to change the large notes into smaller ones. There was a bank set up in the town. If the town looked like something out of the Klondike, the bank was out of the Wild West. The grounds were compounded with armed sheriffs outside. The bank tellers were behind bars and when I changed the notes I ended up with pockets full of the smaller notes. I had been warned that Waro was a bit lawless so I should be careful with the money. Before I left the bank I split up the big pile of notes into manageable bundles and stashed them in various closable pockets about my person. Safe as houses. There was some shopping to be done and Henni got the job of carrying a 30kg bag of rice back to the village. When we met up it was time for lunch and so I treated everyone to half a roast chicken each washed down with a coke. This was the staple fair in the only eating house in the town. When we finished we caught the first minibus back to Moro where we again spent the night.

The boots I was given were too big for me but I had to make them do or I wasn't going to be caving for the next few weeks. I stuffed the toes and tightened the laces enough to get them to squeeze around my foot. The boots were new and stiff so in order to break them in I decided to wear them on the trek back to the village. I think the boots broke me as after about an hour of trekking I had to take them off and put back on my runners. The trek back to the Hegigio River and the village was shorter than the day before. We met a number of groups also on the trek as people were making their way to their villages including Bosavi for a holiday that was coming up. When we got back to the village I took stock of the last few days' adventure. For the last three days I had trekked across the main river and crossed another few, over a few hills and travelled on the bus over and back from Moro to Waro. I had a pair of boots that were no good to me, no petrol for the generator and it turned out that I was missing five hundred Kina. Was I a happy camper or what? It turned out that the remainder of the team had had a very successful first trip into the jungle staying overnight in Willy's camp as well as camping in the jungle on a small island.

Paul, our Australian interpreter was also feeling a bit miserable after his adventures. He had gone for a walk to another village and on the return trek twisted his knee, aggravating an old injury he had. His walking days were over for the trip as he couldn't put much weight on the knee or walk far. We could both be confined to the village.

Paul offered his boots to me for the duration of the trip on condition that I minded them. They were American made double-lined specialised jungle boots but about a half size small for me. I jumped at the offer and promised to take care of them. Each morning I squeezed into them and peeled out of them again in the evening. They were pinching me all the time but the alternative was unthinkable. The jungle boots worked as I was the last to succumb to the foot rot that was doing the rounds. It didn't catch up to me until the very last day. I didn't mind too much as I was heading to Bondi Beach in Sydney for a week before returning home. I didn't get away scot free though. Whether it was wearing the too-small boots for too long or the too-big boots for long enough – but the result was the loss of two toenails on each foot while I was in Sydney. I have to say it was worth it but the next time I will pack that second pair of boots.

- 0 -

At the end of February 2012 the team were informed of Yamu Rus's death. This came as a shock as when we left the village he seemed on top of the world. We spoke different languages but personally I felt a great connection to him. He wasn't unlike my own father in stature, demeanour and care of family, community and sense of place. The three days I spent in his company travelling to Waro are as fresh in my memory as when they happened. He encouraged me and almost carried me on that journey, he pointed out interesting things and demonstrated his jungle skill in every step he took. This was his place and he was at home. He would cheekily tell me about the aches and pains he had to get a simple pain killer from my stash but when his daughter was ill it was that that focused his mind.

Yamu was at the forefront of activities in the village, he was there directing people at the airstrip on day one, distributing food in the hut, participating in tok-tok and even leading or minding the dancers during the sing-sing. When he realised my interest he fetched his bow and arrows and proudly demonstrated his skill with these tools even going as far as trusting me with them. Yamu was the one to enter and calm the scene when tension flared in the jungle, he was usually the last to leave us at night and he was there to wave us off when we eventually left the airstrip.

I was deeply saddened by Yamu's death. There aren't enough good people like him in the world. I'm the better off for having met him and the world's a poorer place with his passing. *Ar dheis Dé go raibh a anam! (May his soul rest on the right hand of God).*

12. MEDICAL

Preparation

We knew before leaving Ireland that from a medical perspective we would have to be self-sufficient. If we had an issue we couldn't just call the local GP – there wasn't any. Our information was that there wasn't any medical care within easy reach. We were told that the nearest help was a medical centre in Moro, across the Hegigio River and at least a day's hike away through the jungle when you're in good health. We would have to bring with us any equipment and medications we were likely to need.

We did have an emergency plan if things really turned South. Séamus had sourced a satellite phone in Australia and had contacted the operations manager of a mining outfit operating not too far from where we were going to be based. While nothing was guaranteed, the backup plan was that in an emergency, the mining company helicopter could be called to evacuate a badly injured/sick expedition member to hospital.

While everyone travelling to a certain extent had to be able to look after their own needs, both Séamus and myself were WEMSI-trained wilderness emergency medical technicians (WEMTs) and were designated as the expedition medics. We discussed what was required from a team basis and how we were going to manage any "big sick" incidents. To distinguish, "little sick" can be considered as anything that results in pain or hurt from an illness or accident that may stop you performing but isn't likely to kill you. This could be a fall or injury or a bite, sting, infection or suchlike. "Big sick" is a bit like little sick but it could kill you if not managed correctly. The causes could still be a fall or injury, a bite, sting or an infection.

The preparations began long before we left home as vaccines were required and the advice we got was that every one should get vaccinated against Japanese Encephalitis, Tetanus, Typhoid and Hepatitis A & B. Most people as children were already vaccinated against polio and this was checked. While Cholera vaccination is sometimes recommended for PNG, rabies is not, so these weren't included on our list. Vaccinations are expensive, costing a few hundred Euro – unless you walk into you're local Shankill Road NHS clinic and ask for them for free. I think it was the novelty of giving them that they forgot to charge.

Malaria is prevalent in PNG so everyone had to take precautions. A number of medications are available and I took Doxycyclene which is a mild antibiotic. I started taking it before travelling and continued for 4 weeks after returning. Malarone was another drug of choice. To avoid malaria, avoidance of bites is important and so full body cover was recommended, but this is hard to maintain in the hot and humid jungle. Mosquito nets at night are needed and the hammocks we used had inbuilt nets which were ideal.

From a first aid point of view, we brought both personal and camp kits. Everyone needed to bring a 1st aid kit to manage their own minor injuries and ailments. This had to have the bases covered but could be split up to take some bits with you when you leave camp and have the majority of the stuff back at camp. Suggested contents included wound wipes, baby wipes, hand cleaning gel, various plasters, blister

plasters (Compeed), steristrips, triangular bandage, bandages or ambulance dressings, pen knife, duct or insulating tape, condoms, iodine or betadine, Vaseline, moisturiser, pain relief, diarrhoea relief to include Dioralyte, antibiotic for cuts/grazes/bruises, constipation relief, insect repellent, bite cream, glucose tablets, antihistamine (Zirtek), Daktarin or similar powder to treat foot rot and crotch rot. In addition, everyone brought multivitamin tablets to last the duration.

In addition to the above, we had a camp stock as well as a range of gear that was aimed at treating the bigger sick and the accidents. This kit almost fit into two Darren drums and contained field guides, CPR mask, gloves, biohazard bags and tools including shears, tweezers, clamps, scalpels, stethoscope, syringes & needles, sutures and splints. Medications carried were for pain, allergy, vomiting, infection, diarrhoea and constipation. I also packed kit to make up a hotpoint if needed including foil blankets, candles & matches and ration packs. The lists of bits and pieces we brought are appended.

We knew that dealing with snake bites was going to be an issue. Anti-venoms are not carried in the field as they require refrigeration and need to be administered IV. We weren't sure as to what types we might come across in the area and to a certain extent it didn't matter. If the snake bite resulted in small sick we had to deal with it locally, if it indicated big sick we were looking for rapid outside help as evacuation would be necessary. The advice we got and from looking at websites suggested that the area we were going to was relatively free of snakes. I printed off pictures of the various snakes we could potentially meet and advice on how to treat a bite. In each case the advice was try to not get bitten!

In the jungle humidity is 100% most of the time but when working during the day and caving in dry caves dehydration can be a real problem. Before leaving we didn't know if fresh potable water was going to be available so we each had to ensure we had some system for cleaning the water available if required. Some people took steriliser bottles that can be filled from any water source, others brought sterilising tablets. As it turned out, fresh water was in abundance and the locals were very adept in finding clean water for us when the water bottles were running low.

Another problem with living with 100% humidity is the high chance of suffering from fungal infection, affectionately referred to as either foot rot & crotch rot. As we were going to be in wet shoes most of the time, it was almost guaranteed that some of us would suffer from some sort of foot rot. Depending on our hygiene regime and whether we would be sweating/swimming a lot there was also a likelihood of infection in other delicate parts of the body. Each person was advised to bring a medicated powder that could be applied to the feet at night and when changing socks.

Diarrhoea was almost certainly going to affect some people so everyone had to be prepared. The way to avoid problems is good hygiene which also includes food and water precautions. Everyone was advised to have a suitable antibiotic and an anti-diarrhoeal drug that could be taken if diarrhoea struck.

Expedition

Despite all our preparations and “what if” scenarios no team member suffered any accident or injury. That’s not to say that we got away unscathed. As expected foot rot set in midway in the expedition and knocked out different members for between one and three days at a time. Even resting the feet for a single day had a great effect. In order to keep going, any and all means were employed to treat and protect the sore and delicate feet. We were lucky that no one suffered from fungal or any other infection to our other delicate parts.

Galloping Foot Rot



As everything in the jungle seemed to want to either bite, scratch, scrap or trip us up we got away relatively unscathed. During the night, I got badly bitten by mosquitoes when I had to trek to Moro for new boots. The anti-histamines were a godsend for the itch. During that trek I found that the leaches were much more abundant on the far side of the Hegigio river. Either that or somebody told them we were coming. It was impossible to keep the leaches off my skin as they could get around any clothing and work their way through any creases in clothing. Talking with the lads on the walk, they preferred to go barefoot as they could stop and periodically scrap the leaches off with their machete. Few caves had leaches but Jock did manage to pick up a hitch hiker on his upper lip in one.

Séamus and the Spider? Bite



With all the potential in the jungle, there were very few scratches, scrapes or stings. We only suffered a single serious insect bite. Without seeing the culprit, Seamus suffered a double puncture bite on the lower arm. Within hours the arm swelled dramatically and we kept the satellite phone close to hand in case the swelling spread. Although the bite prevented Seamus from caving for a few days, it didn't slow him down and he stayed on the trek.

Shortly after being welcomed into the village of Fogoma'iu a local presented himself with a cut on his thumb. While constructing one of our camps he caught his thumb with the machete. The infected wound was cleaned and dressed and the man went away happy. After that and for the duration of the expedition, many more people looked for our assistance. Little or no medical service exists outside the major towns



and so our help was sought to assist in treating a number of ailments and injuries. We hadn't prepared sufficiently for this as each evening when we returned to the village or reached a camp we spent at least an hour treating different people. We rationed our first aid stocks and had used up all dressings and bandages by the time we left. Some of the injuries were within our capability and some beyond the scope of what we could help with. We did, when leaving

have the opportunity to transport a number of people to Mendi to get to hospital.



A number of our guides carried injuries that had been sustained for a long time. Henni, a young guide with good English had a protrusion on his lower leg that he said he had since he was a child. He said he cut his heel with a machete when he was about six years old and it was never right after. When he wore boots or shoes it resulted in an open wound. We dressed this wound a number of times but he'd head off playing football and the

dressing ended up on the ground after him. In the end we made a neoprene protective sock fashioned from a tinny holder to protect him when wearing boots.



Moses, another guide, fell on a bamboo which pierced his thigh six months before we arrived and the wound had never healed properly. While it was beyond our capability



to give him anything for the infection we were able to clean and dress the wound for him and at the end of our stay it had almost closed.

Two people came to us that showed how difficult jungle life was. While in Albert's camp, his uncle, who didn't speak English, had injured his knee a number of weeks before our arrival. It was bandaged up but he couldn't put any weight on his leg. When he twisted it he felt something snap but there was no external injury. The knee was swollen, tender and sore. That man walked down to Fogoma'iu which took a number of days. The only way he could be treated was by getting to a hospital and so he was given one of the seats on the plane to Mendi. Another case was a young breast feeding mother who had developed lesions (sores) on her breast which had become infected. As everything in the tribe is communal, there was a "tok-tok" held before it was decided to ask us to help. When we suggested different options for treatment again the women held a "tok-tok" to consider what would be done. This woman wouldn't leave the village, would continue to breast feed her own baby and clean and dress the sores as instructed. We left her with the remaining dressings in order to continue to do this in our absence.

Lessons Learnt

The experience of expedition is amazing but preparation is the key. A lot of thought and discussion went into “what if” scenarios and our kits were prepared to allow us to cope with a wide range of situations. We were lucky in the sense that we had no team injuries. A single person incapacitated in the jungle would have required the whole team to extract them back to the village. While we anticipated the possibility of foot rot or crotch rot we underestimated how debilitating it could be. Future expeditions should have a more detailed focus including alternative footwear, better foot hygiene and more effective treatment protocols.

As we were a relatively short time experiencing village and jungle life the management of diets wasn't a major issue. In the last few days people even started fantasising about having a burger and greasy chips. We all lost weight and the majority of this can be put down to the long days and the high work load of everyone. If future expeditions are undertaken lasting four or more weeks serious consideration would need to be taken of camp management and balancing dietary requirements. Our first aid and medical supplies were focused on our own and the team's needs. We had no awareness or appreciation that we would be called upon so much by the locals to provide even the limited care that we did provide. Any equipment and supplies that could have been carried could have been used or left in the village. Any follow up expedition should consider having a medical person involved and carrying as much medical supplies as possible with them. This is tangible aid to the village and the people.

A follow on from the last point is the ability to transport people from the village to Mendi in order to get to the hospital. When we flew in we carried an amount of food and supplies that we weren't bringing back out again. This gave us the ability to bring four people to Mendi. While who gets a seat on the plane is the choice of the expedition it can present a moral dilemma unless clear criteria are set for making the decision.

Part E

CAVES AND GEOLOGY

13. CAVING

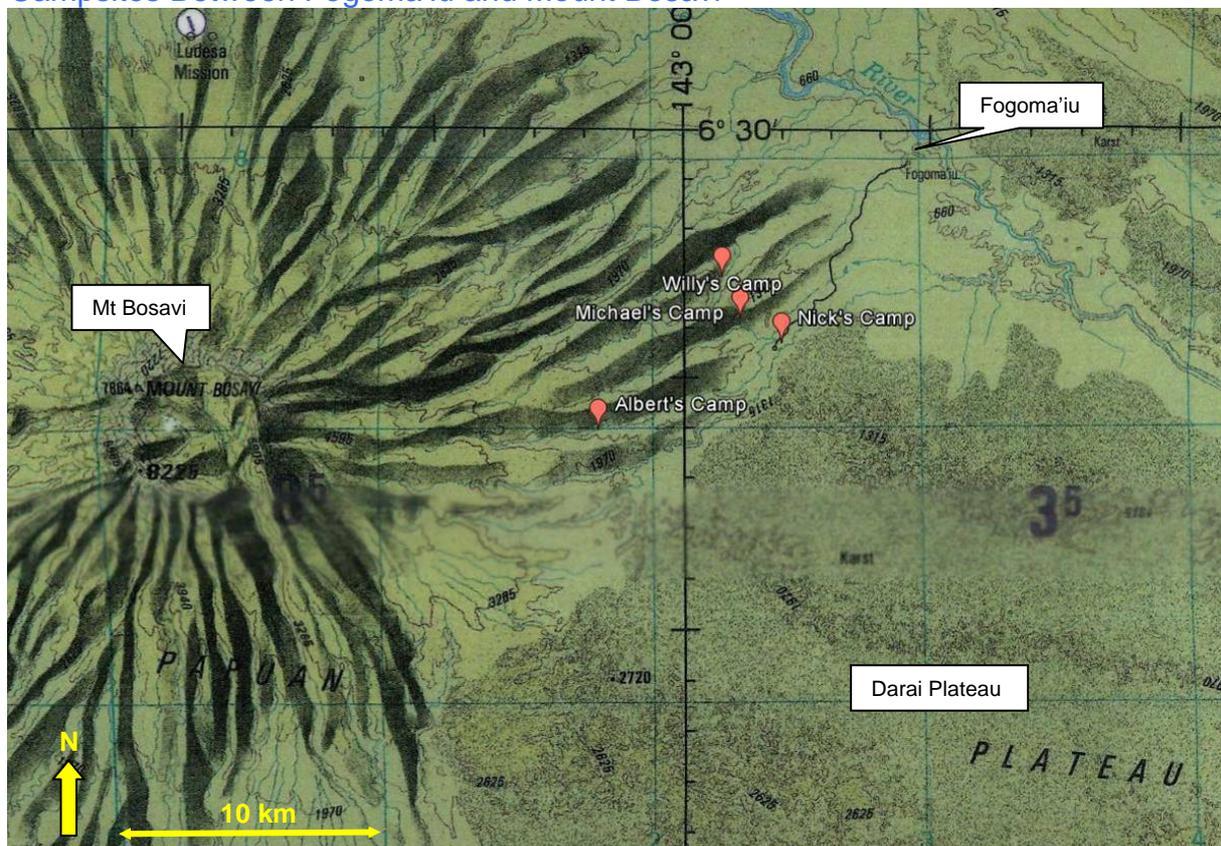
Our expedition was a general survey of the region for caving potential. The dense forest coverage made systematic searching of an area, either by land or air, very difficult. The detail of available maps of the area is limited for the same reason.

We therefore depended heavily on local guidance. The Kosuan landowners and clans had intimate knowledge about their own areas of the bush, from hunting and living off the forest for generations. Caves in particular were of particular interest to them as sacred sites, and also as hunting grounds for fruit bats. After explaining to them what interested us (e.g. big caves with rivers), they were very forthcoming in describing to us all such caves on their land. They were then very proud to guide us directly to as many sites as we had time to visit.

We can add the Kosuan word for “Cave” to the travelling caver’s phrasebook: “Ulabu”.

During the week of our arrival, we explored sites within easy reach of Fogoma’iu village, typically with an early morning start and an afternoon return to the village to avoid the heavy rain that reliably fell every evening. Later in the expedition, we moved base to campsites deeper in the jungle, which had been built in advance for us by the locals. Our first such excursion was a four-day round trip via Willy’s camp. We returned to the village for a few days over Christmas, before a final seven-day round trip via Nick’s camp, Albert’s camp on the slopes of Bosavi, and back via Michael’s camp.

Campsites Between Fogoma’iu and Mount Bosavi

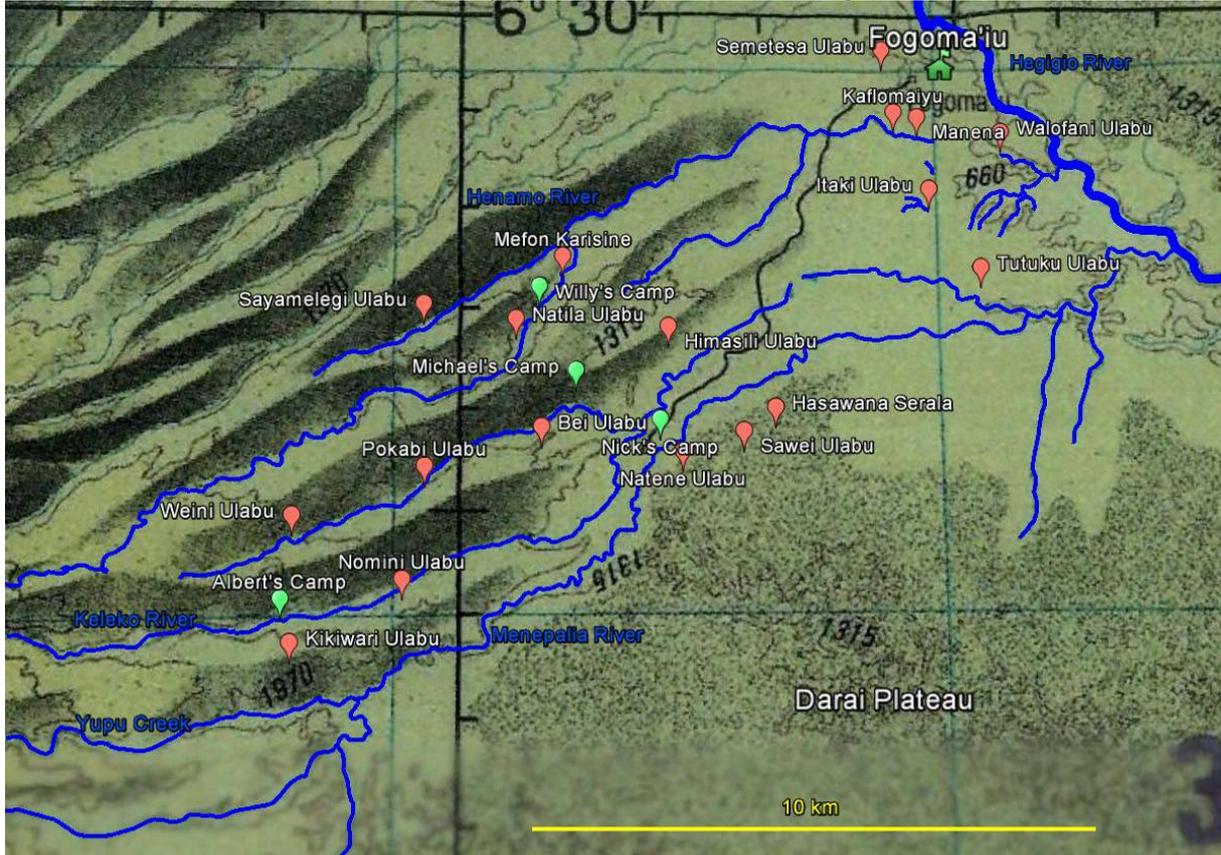


The 7-strong team stayed together while moving between camps, but during the day we generally split into 2 groups, allowing 2 or sometimes 3 caves to be explored in a day. In this way, we explored and surveyed 24 caves in total. Surveys and descriptions of these caves are appended.

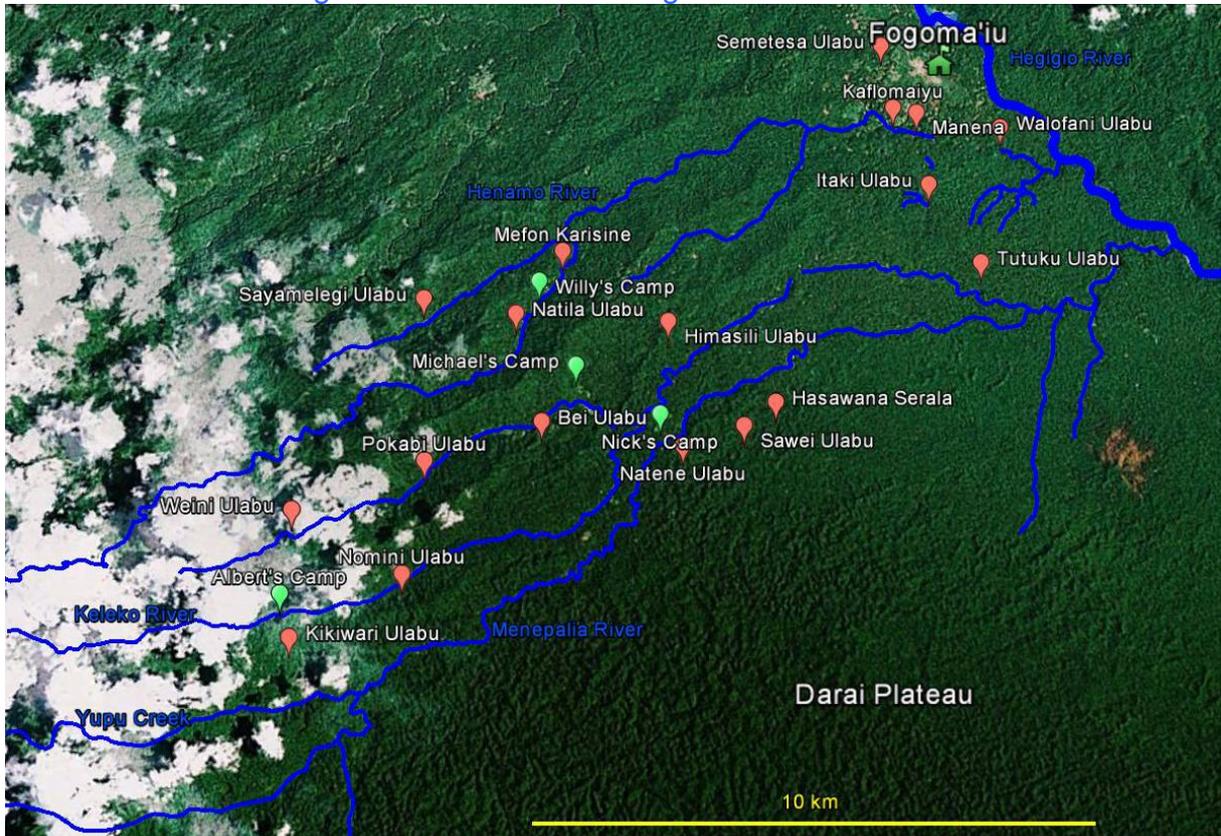
Caves Explored and Surveyed: Summary

	Name	Approximate Coordinates	Surveyed Length, m	Surveyed Depth, m
<i>Caves Near Fogoma'iu Village</i>				
1	Itaki Ulabu	6°31.887' S 143°04.752' E	394	35
2	Tutuku Ulabu	6°32.729' S 143°05.280' E	287	17
3	Tauwaremano Ulabu	6°31.187' S 143°04.514' E	362	32
4	Yebisakaro Ulabu	6°30.760' S 143°05.416' E	281	13
5	Walofani Ulabu	6°31.364' S 143°05.280' E	488	26
6	Semetesa Ulabu	6°30.502' S 143°04.311' E	303	13
7	Kaflomaiyu Ulabu	6°31.146' S 143°04.423' E	61	10
8	Manena Ulabu	6°31.205' S 143°04.660' E	251	13
9	Parobe Ulabu	6°31.446' S 143°04.758' E	56	20
<i>Caves Near Willy's Camp</i>				
10	Mefon Karisine Ulabu	6°32.641' S 143°01.089' E	550	14
11	Natila Ulabu	6°33.269' S 143°00.631' E	156	13
12	Obote Ulabu	<i>unavailable</i>	102	50
13	Sayamelegi Ulabu	6°33.134' S 142°59.732' E	325	10
14	You Ulabu	<i>unavailable</i>	706	28
<i>Caves Near Nick's and Michael's Camps</i>				
15	Hasawana Serala Ulabu	6°34.138' S 143°03.203' E	332	8
16	Sawei Ulabu	6°34.371' S 143°02.886' E	144	4
17	Himasili Ulabu	6°33.339' S 143°02.137' E	155	11
18	Natene Ulabu	6°34.574' S 143°02.278' E	552	17
19	Bei Ulabu	6°34.338' S 143°00.888' E	204	6
<i>Caves Near Albert's Camp</i>				
20	Nomini Ulabu	6°35.819' S 142°59.546' E	173	52
21	Kikiwari Ulabu	6°36.419' S 142°58.485' E	64	18
22	Ekisayaseray Ulabu	<i>unavailable (near Kikiwari)</i>	120	10
23	Weini Ulabu	6°35.202' S 142°58.502' E	216	75
24	Pokabi Ulabu	6°34.727' S 142°59.756' E	392	50
TOTAL			6,674	545

Caves on Eastern Side of Bosavi (River Names Provided by Amos)



Satellite View Showing Extent of Bush Coverage



Caving Conditions & Equipment

The caving was a welcome respite from the jungle heat. The caves were still warm, with a light boiler suit only needed (thermal undersuit unnecessary). We used our hiking boots inside the caves – although this did wear the boots considerably, and we would take separate caving boots on a future expedition.

Most of the caves we visited were horizontal. A few required rope for an entrance pitch, and trees were obviously plentiful for rigging. Only one bolt was required during the expedition.

Water was present in the majority of caves, with swimming required in some. The water was warm – we generally swam in our boiler suits, which was comfortable even in caves which required a couple of hours' submersion. We had an inflatable boat with us to help in surveying and photographing the more aquatic caves. Also, a sleeping mat wrapped around the body with a belt proved an excellent personal flotation device.

Each group had survey equipment (Disto Laser Finder or Tape, and Suunto Tandem) and we followed a rule of surveying as we explored.

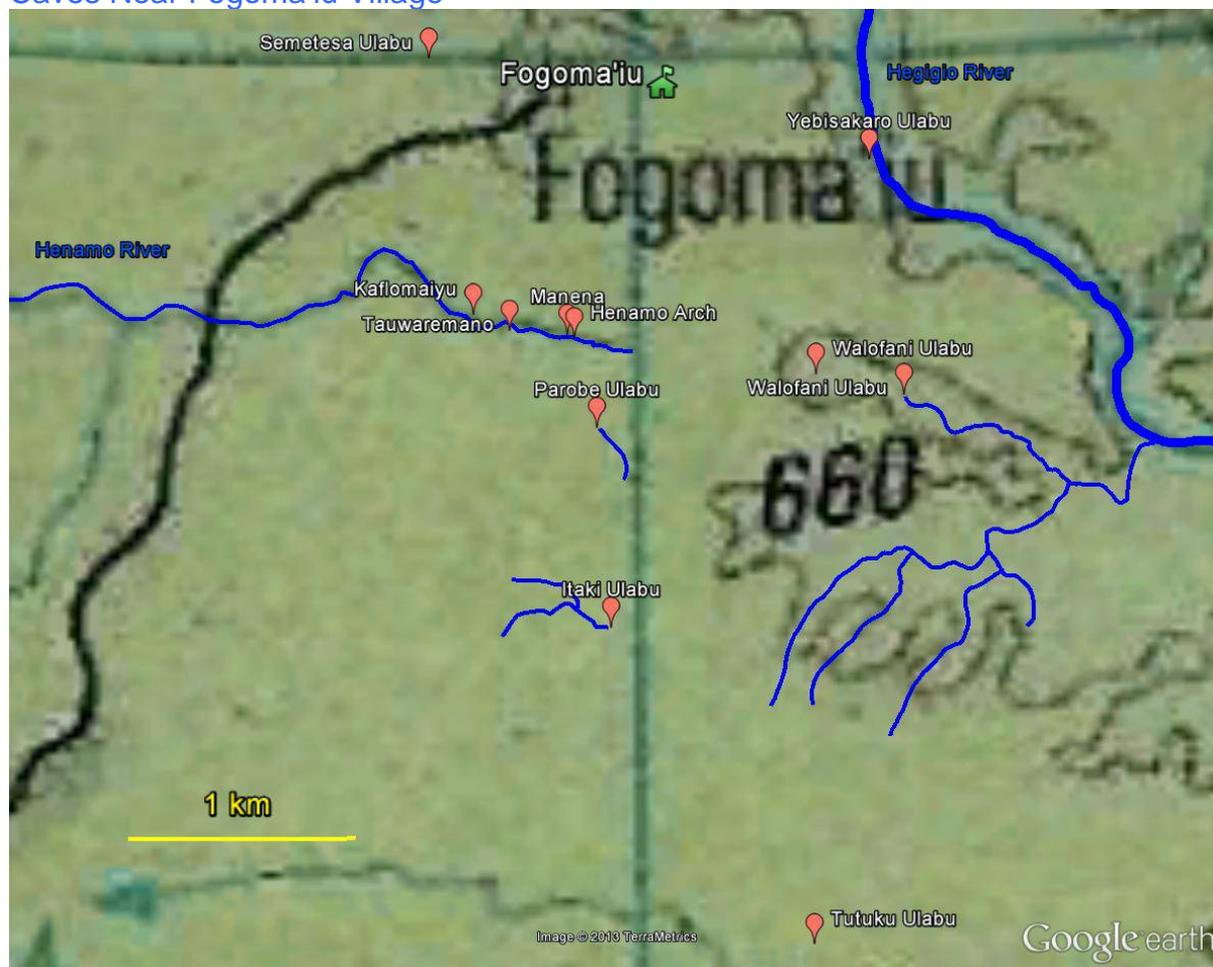
15th-18th, 23rd-25th December: Fogoma'iu Village and Surrounds

Fogoma'iu village is located beside the large Hegigio River. It is surrounded by jungle. There are several caves within a few hours' walk or less from the village. Many of those we visited were associated with the Henamo River, a tributary of the Hegigio.

The Henamo is one of a series of rivers that drain the eastern slopes of Mount Bosavi. It sinks near the village and appears again at the entrance to the large river cave Walofani, 750 metres due east, flowing a further 300 metres through the cave before emerging again to daylight.

The locals do know of several other caves in the area, although these are probably less significant than the caves we were shown.

Caves Near Fogoma'iu Village



Cave	Date Visited	Comment
Itaki	15 Dec	River cave with several side passages, and numerous swifts. At least 2 going leads left.
Tutuku		12m pothole entrance into stream passage; upstream surveyed with multiple side passages; downstream to major junction – unsurveyed but good potential.

Cave	Date Visited	Comment
Tauwaremano	16 Dec	Mainly relict cave with small stream, perched above Henamo River.
Yebisakaro		Canyon entrance leads to cave passage with large dimensions. Small stream meanders from side to side and is followed upstream to a boulder blockage.
Walofani	17, 23 Dec	Large enigmatic river cave (through trip), with rock art, flying foxes and formations.
Semetesa	18 Dec	Stooping, then walking along stream passage leads to a downstream sump. Unexplored walking passage upstream.
Kaflomaiyu		Relict cave above Henamo; draughting boulder choke.
Manena		On bank of Henamo River, through trip. Impressive rock art.
Parobe	24 Dec	Cave found by Nelson (clan leader Martin's son). "Parobe" is Nelson's real Kosuan name. Decorated vertical pitch to a flooded chamber with possible sumped continuation.

19th-22nd December: First Excursion – Willy's Camp

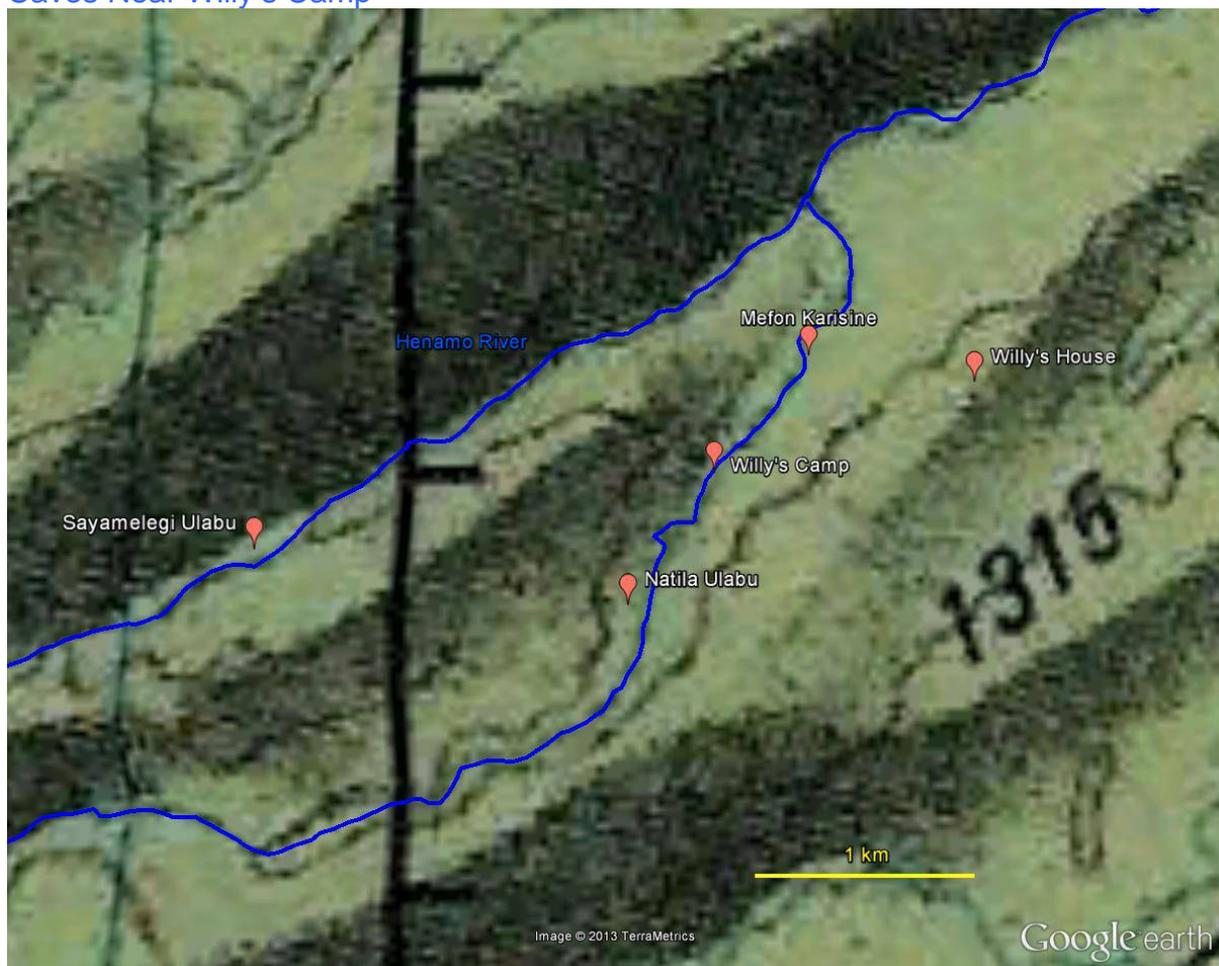
After four days of caving near the village, we began our first bush "excursion" on 19th December with a day's hike southwest of the village towards a camp, which had been prepared by Willy (clan leader) and Chief Wakitu (chief of nearby village Sienne Falls).

The hike took us past Willy's house, which was at the top of a hill offering one of the finest panoramas we saw over the course of the expedition. The camp (Soriminie Camp) was on an island in the middle of a tributary to the Henamo. This unfortunately required wading through the river each morning and afternoon, but otherwise was a perfect location. There was an area of flat ground with space for slinging hammocks, and a cooking/eating shelter and a toilet enclosure constructed from bush materials.

Willy's and Chief Wakitu's families camped close by in a cave entrance beside the river.

At all camps, in addition to logging caves we visited, we took details from the locals of nearby caves we did not have time to see.

Caves Near Willy's Camp



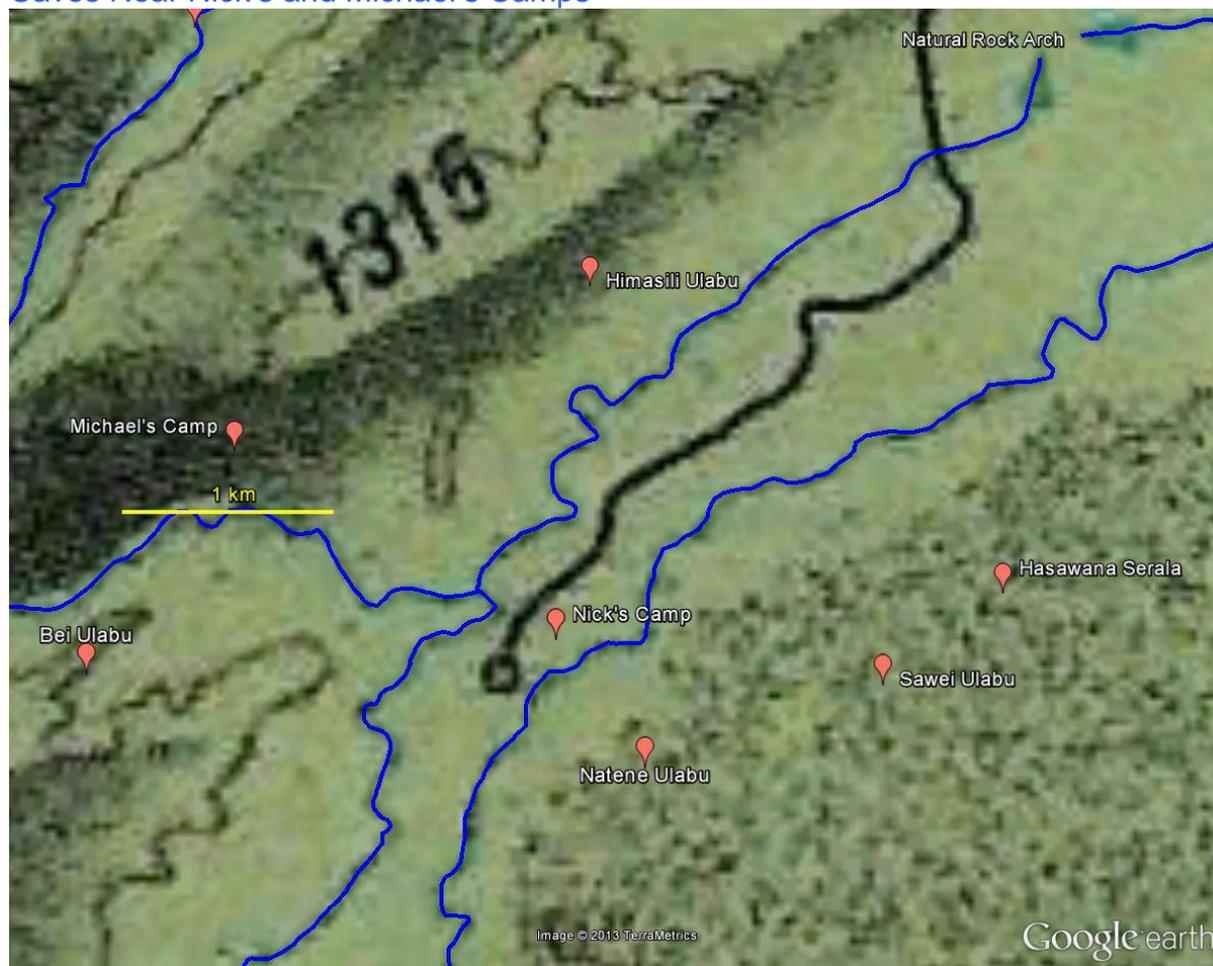
Caves Near Willy's Camp (contd.)

Cave	Date Visited	Comment
Mefon Karisine	20 Dec	Long horizontal cave with stream and several skylights in upper section.
Natila		Short cave with stream and possible low continuation.
Obote		Vertical shaft into chamber with short passage from base.
Sayamelegi	21 Dec	River cave with many side rifts, and a complex junction chamber at upstream end with unexplored leads.
You		Fine river through trip, some swimming sections. Probably a tributary of campsite river (flowing eastwards to join it).
Swarie	Not visited	Back up the hill towards Willy's house.
Soleyamini		For camp only, where the families stayed upstream of our camp.
Alugomiu		Needs a rope; chief Wakitu had been in the cave before.
Seamodi		Walk in, 1 hour.
Meabea		Close to Natila.
Kentebei		–
Sekemo		–

26th December-01st January: Second Excursion – Nick's, Albert's and Michael's Camps

The second excursion began after Christmas festivities, with a hike on 26th December to Nick's Camp. We spent 2 nights here before moving to Albert's Camp on Bosavi. On our return from Albert's we spent another night in Michael's camp nearby.

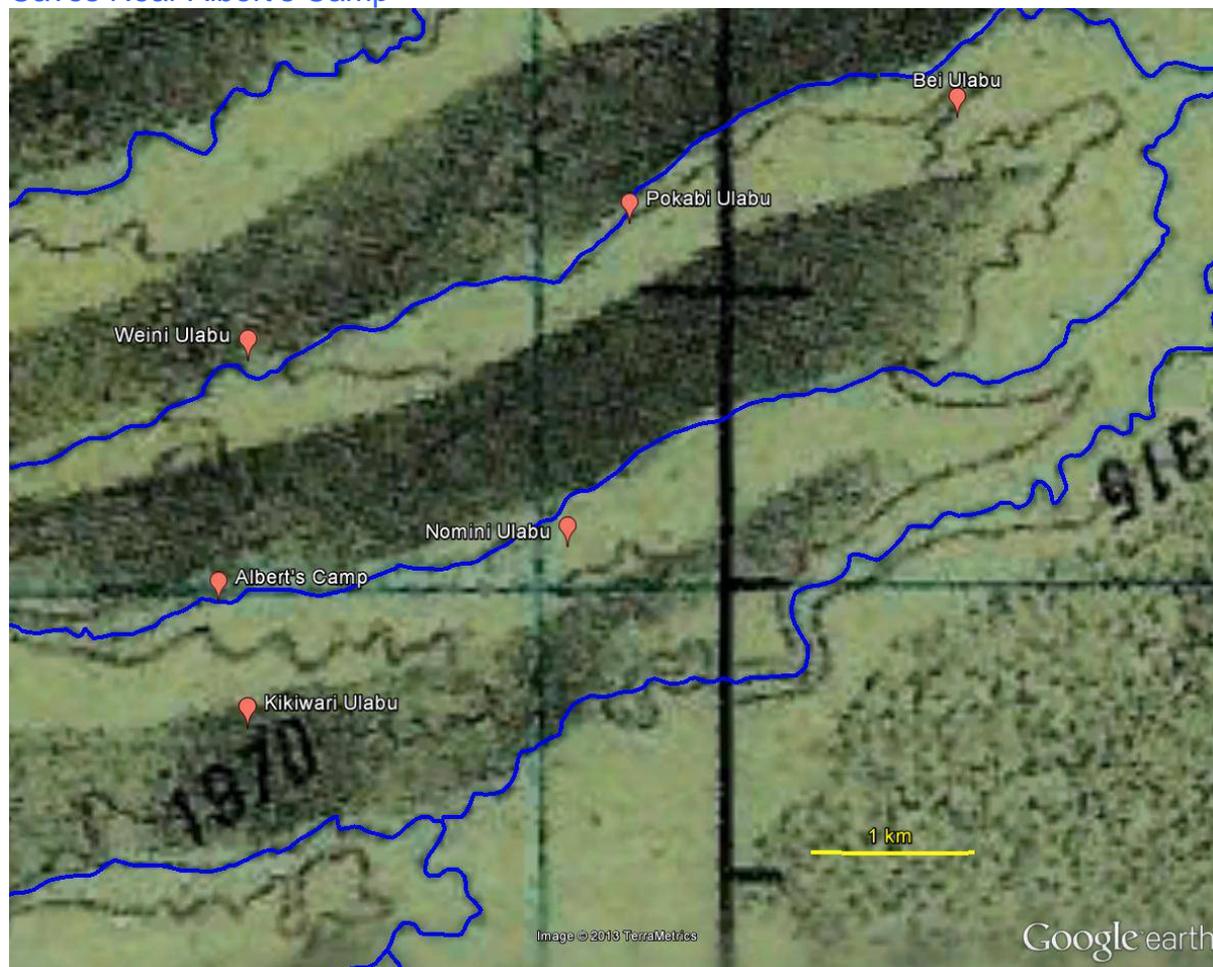
Caves Near Nick's and Michael's Camps



Cave	Date Visited	Comment
Hasawana Serala	26 Dec	2 short cave sections (through trips) with fast flowing water requiring swimming.
Sawei		Short through trip of wading and swimming; pretty skylights near downstream end.
Himasili	27 Dec	Large impressive entrance passage leads quickly and disappointingly to a crawl which becomes too tight.
Natene		Impressive river canyon cave with huge entrance doline requiring climb down vines. Ends with sump.
Bei	31 Dec	Cave has multiple entrances, a complex of passages and rifts at upstream end and a large lake at downstream end.
Ulianadi	Not visited	No rope, nobody has been to the end - 1 hour away.

Albert's camp (Wasi Camp) was the highest and most westerly point we visited during the expedition.

Caves Near Albert's Camp



Cave	Date Visited	Comment
Nomini	28 Dec	Large chamber with deep guano and "bat catcher" construction.
Kikiwari	29 Dec	Short rift cave with minor stream, ending with tight crawl.
Ekisayaseray		Short rift cave with plentiful flowstone
Weini	30 Dec	Impressive waterfall pitch with large river passage at bottom.
Pokabi	31 Dec	Pitch into large decorated chamber, with a network of passages at bottom.

The following list of caves was transcribed directly from first hand notes provided by one of our main guides on our second excursion, Amos. Amos was a well-respected, educated relation of Albert. He had the best understanding of English amongst our guides and was a great help when it came to documenting cave names and stories and legends associated with many of the sites.

Caves Near Albert's Camp (Not Visited)

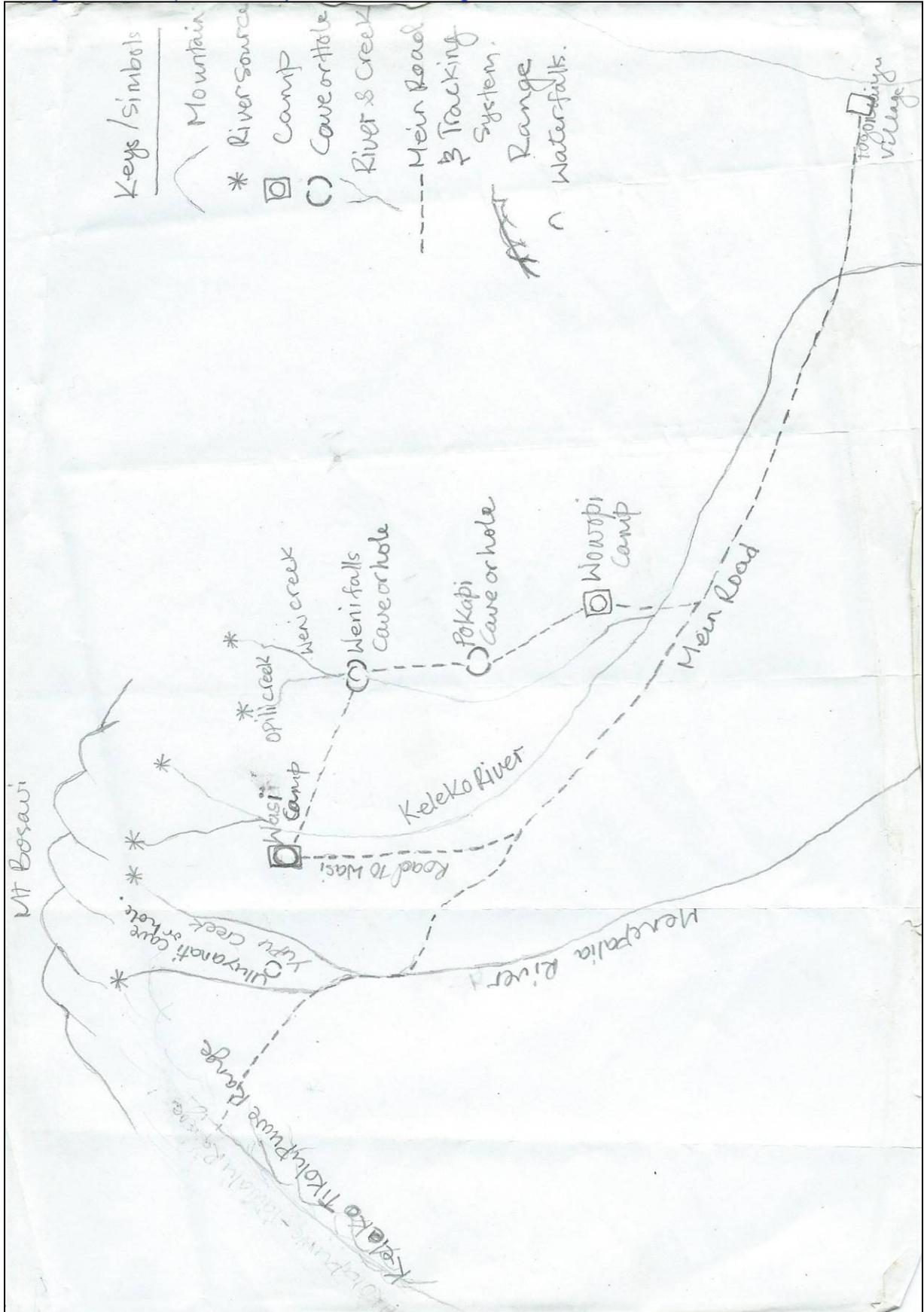
Cave	Comment
Fogedie	No rope, people have been to the end but not every passage. Big water beside a river, full day walk from Albert's camp toward Bosavi.
Okuwedo	No rope, nobody has been inside. There is water inside and it is close to Fogedie cave.
Awasaku	Needs rope for a short distance, no water inside, nobody has visited.
Wilolo	No rope, long distance to walk, no one has explored.
Flibilu	No rope unexplored, no water.
Hoisebe	No river, no water, no rope 2 days walk from camp.
Iaiyumaiyu	No river, no water, 2 days walk from camp.
Kapalubi	Dry water, rope needed 2 days walk.

On the way to Albert's camp we were first introduced to a strong, respected village elder, Joe the Bushman. All of the Kosuan people were very respectful to him. He didn't speak any English and had limited Pidgin, although he was still a very friendly, fun and personable guide. From what we could tell, Joe owned land closer to the Darai Plateau and was more familiar with the outer limits of Kosuan territory, far away from any of the main settlements. He was very keen for us to record the caving potential on his land and was eager to facilitate future trips.

Caves on Joe's Land (Not Visited)

Cave	Comment
Kusalabe	More rope needed, no river/water inside, a whole day walk.
Kuwolupu	No water inside, rope is needed, a whole day walk.
Kolapo -1	No water, no rope needed, a whole day walk; there are two caves located in the same area.
Kolapo -2	Water inside with a very different species of fish found inside. Rope is needed that water kill the sickness. Not a long distance about 3 hours.
Pakolupu	Rope needed, nobody has explored inside the cave as yet, 3 hours to walk from the camp.
Wapila	There large cave and there is a small cave inside the big cave, rope needed, water inside. 4 hours from camp.
Kaleyo-Kowane	No water inside, rope needed - takes 4 hours.
Yebisele	No water no rope needed long distance to walk 3 days.
Keani	Rope needed, water inside, 6 day walk.
Tukusonowe	Water inside, rope needed 4 or 7 days walk from camp.
Idonol	Rope needed no water inside 6 day of walk from the camp. There is no creaks water from drink or wash so you have to bring your own water by using helicopters.
Owanediki	Waterfalls inside no rope needed one week walk from the camp no water for drink and wash.
Nevi	Water inside rope needed one week walk from camp - with local legends and stories.
Oluku	water inside rope needed long distance one or two weeks from camp.

Rough Area Map Drawn by Amos, Showing Local Names



14. GEOLOGY

Cave Potential of Mount Bosavi and the Darai Plateau

When it came to choose the cave reconnaissance area we had a number of criteria that we needed it to meet.

1. It must be remote and it must be an area where little or no caves had been previously discovered
2. There must be some potential for caves indicated by either the geology or indicated by maps of the area
3. It must be remote but allow reasonable chance of access.

Mount Bosavi and the Darai plateau met all these requirements.

Our initial curiosity for the area was piqued by the visit of Tim Fogg, who was a member of the BBC team who visited Mt. Bosavi during filming of the 'Lost land of the Volcanoes'. Tim came back describing visiting several caves in the local area which he believed indicated that there were many more to discover. An extensive search for maps of the area resulted in three different maps being obtained: a geological survey from the 1970's (txu-oclc-6552576-sb54-12 Lake Kutubu), a terrain map 1950's (Darai Kikoro Map) and a Google® map. The Google map was of least use geologically as the terrain is covered in rainforest (and a lot of cloud). However the combination of the other two maps gave us enough additional knowledge to back up Tim's claim.

Geological Summary of the Area

The geological terrain of the area is dominated by three features. Firstly, Mount Bosavi, an extinct volcano (Pleistocene stratovolcano Bosavi, 2,397 m¹) with a distinct horseshoe shaped crater 4 km wide and 1 km deep.

Secondly the Darai Plateau which is a vast tract of upland area to the southeast of Mt Bosavi. The plateau reaches approximately 400 m above sea level. The Darai Plateau is a major geographical feature of the Papuan Fold Belt², which forms an extensive belt of inhospitable karst limestone country developed on thrust blocks of Late Eocene to Late Miocene Darai Limestone. The Darai plateau has extensive dolines, karst pinnacles (an isolated hill consisting of an eroded remnant of limestone with vertical or near-vertical convex side slopes) and sharp-edged escarpments and is covered in dense lowland forest.³

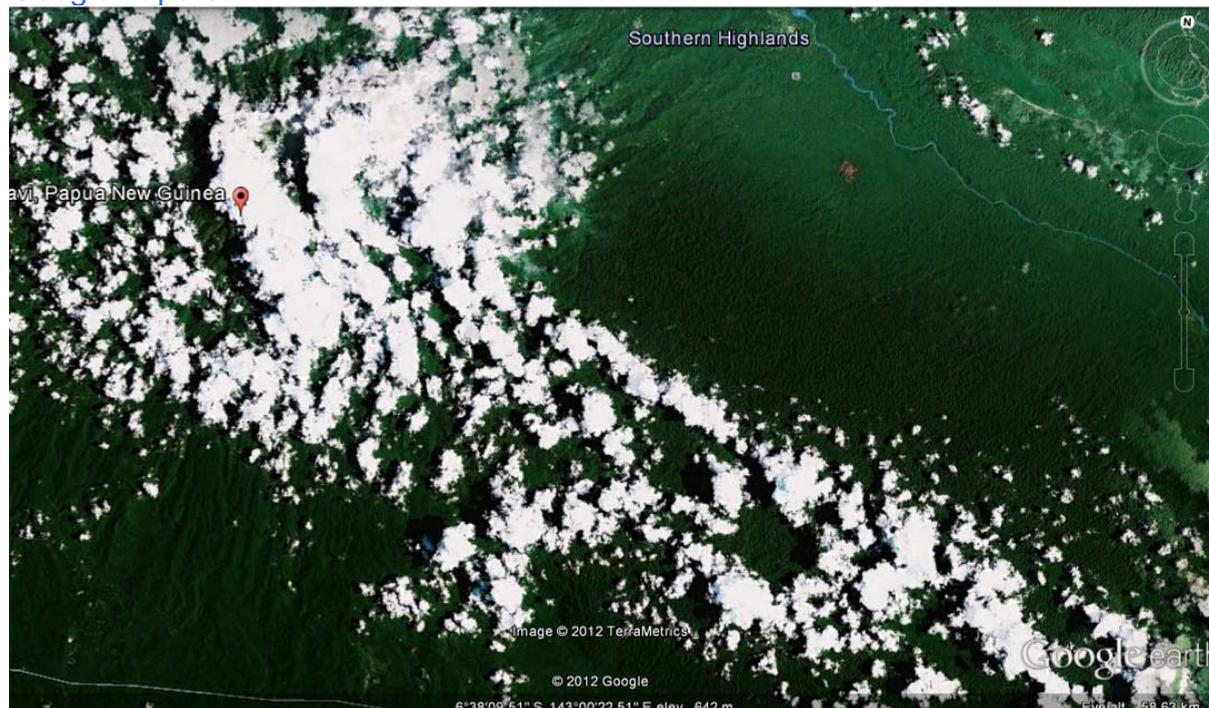
Finally, the Hegigio river (eventually becoming the Kikoro River) which (probably) forms the main drainage for the area (in particular the eastern side of the Darai plateau).

¹ Hugh L. Davies, The geology of New Guinea - the cordilleran margin of the Australian continent, Earth Sciences, University of Papua New Guinea

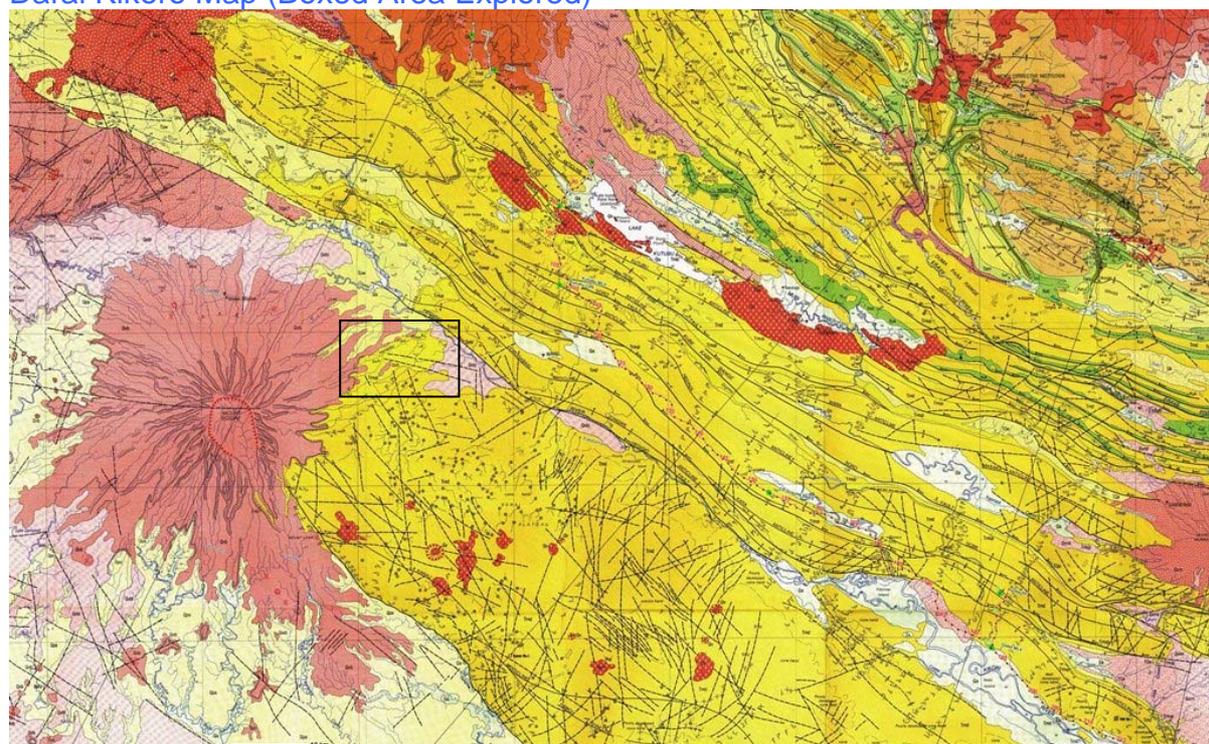
² The Geology and Mineral Potential of Papua New Guinea, Edited by Anthony Williamson and Graeme Hancock, Papua New Guinea Department of Mining

³ Environmental Impact Statement PNG LNG Project

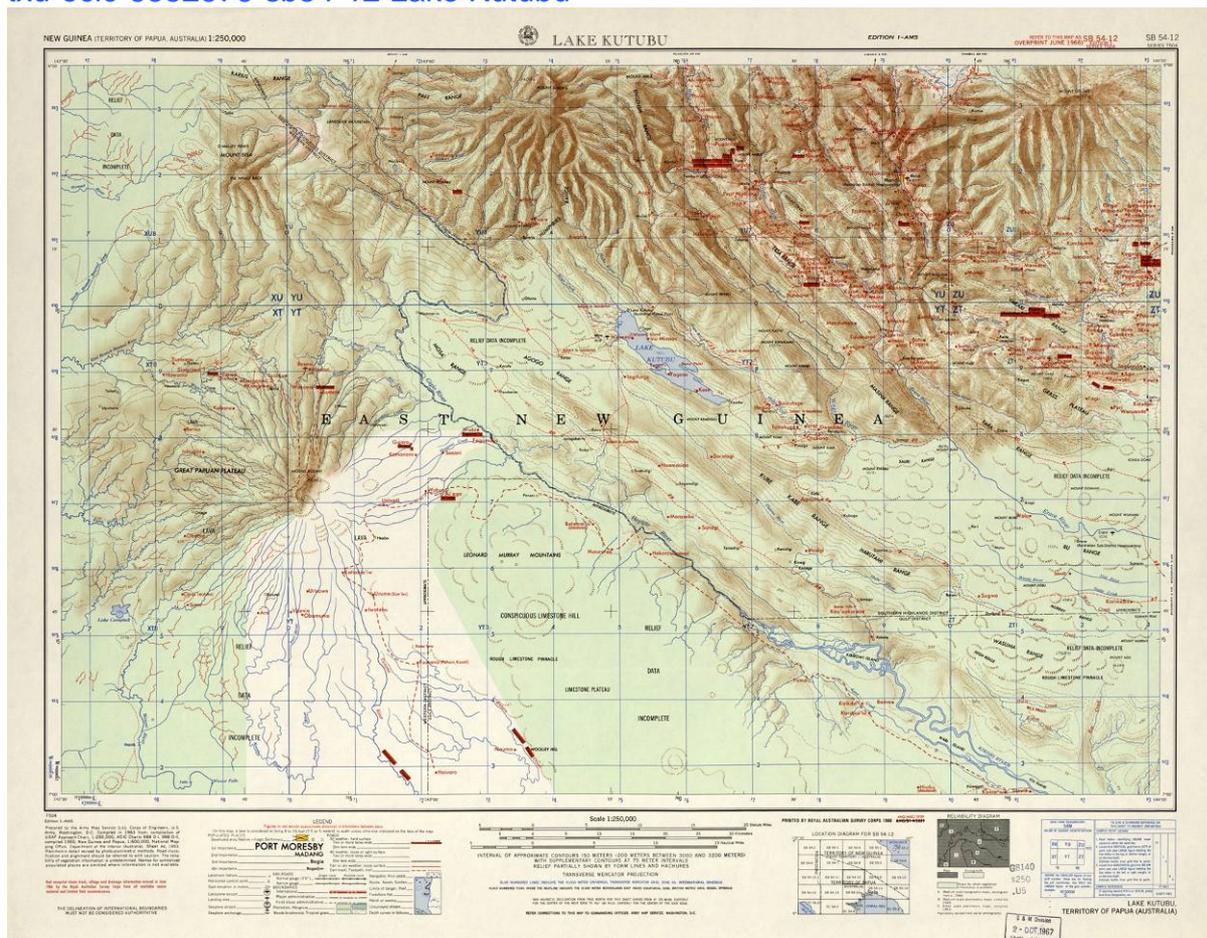
GoogleMaps®



Darai Kikoro Map (Boxed Area Explored)



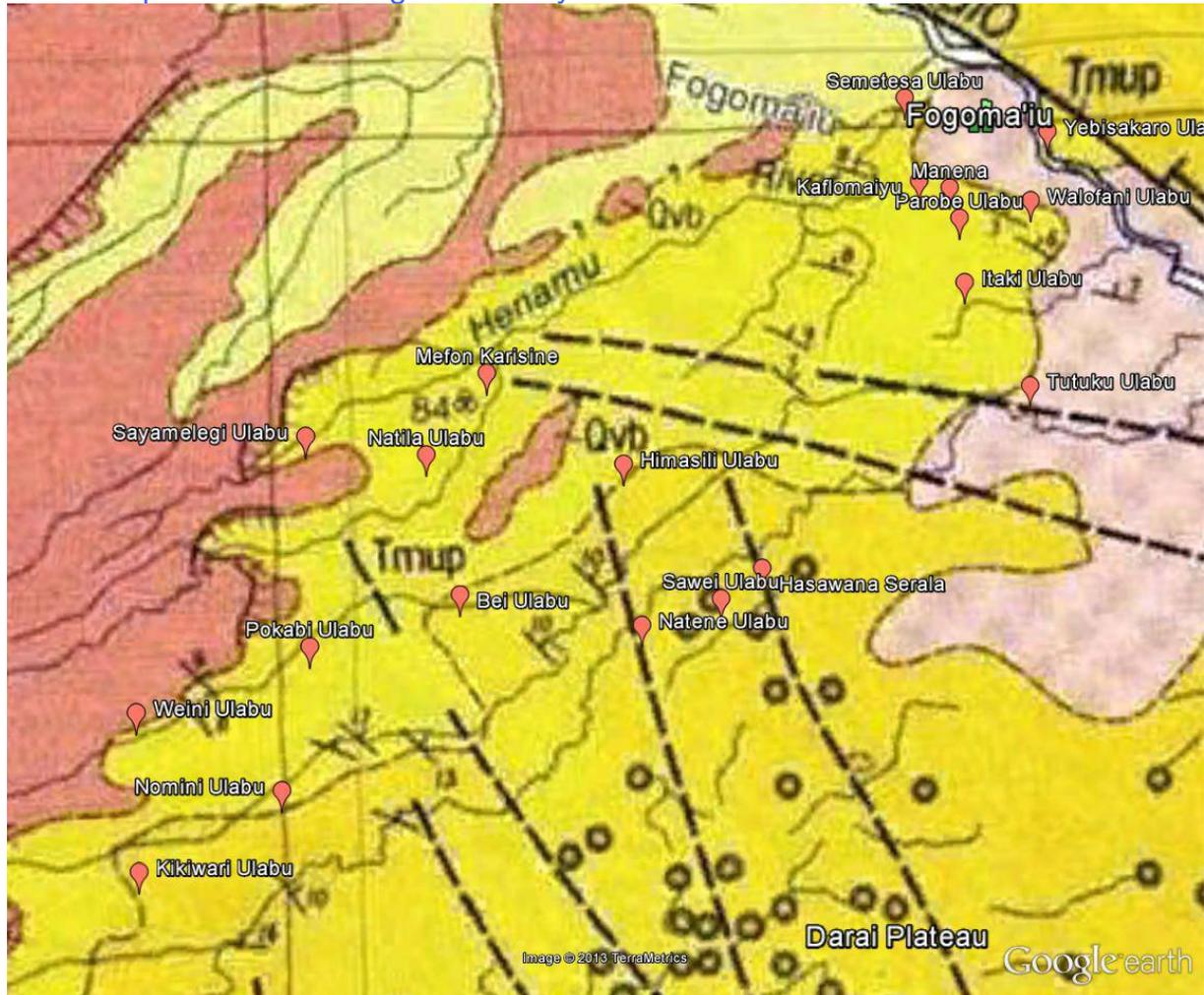
txu-oclc-6552576-sb54-12 Lake Kutubu



The geological map of the area obtained indicates that there are a number of distinct geological areas within the region. Mount Bosavi, with its volcanic rock. To the north and right around to the eastern and southeastern slopes there exist large areas of ancient volcanic ash and lava flow. To the southeast of Mt Bosavi there are a number of areas of white limestone, which further down merge into the vast area of limestone of the Darai Plateau. The Darai plateau itself extends for at least 100 km in the southeasterly direction and encompasses an area of well over 3000 square kilometres.

Of the caves we visited on this trip, most were located close to the basalt/limestone interface. The caves, in the main, contained active stream ways (in some cases rivers) with some sections of fossil passage. The caves towards the top of the area were mainly in white limestone (reminiscent of 'Ulster White Limestone') with chert/flint nodules.

Caves Explored with Geological Overlay



Cave Discovery

For future cave discovery the Darai plateau and the areas downstream along the Hegigio are obviously a good target. The geological maps indicate that there are numerous sinkholes in these areas. Although the potential for cave discovery is great (potentially 600 km+? based on the total cave length in the area we surveyed) the logistics of getting to the cave entrances made (and will make) discoveries difficult, but not impossible. The Kosuan people have a good knowledge of the immediate and surrounding areas of Fogoma'iu stretching up towards Mt Bosavi. However even then some of the caves we explored were previously unknown to the locals. The Darai plateau is a different prospect. The area is presumably uninhabited (certainly the Kosuan people believe so) and hasn't been visited by the Kosua in a generation. A well-organised expedition to this area will pay dividends.

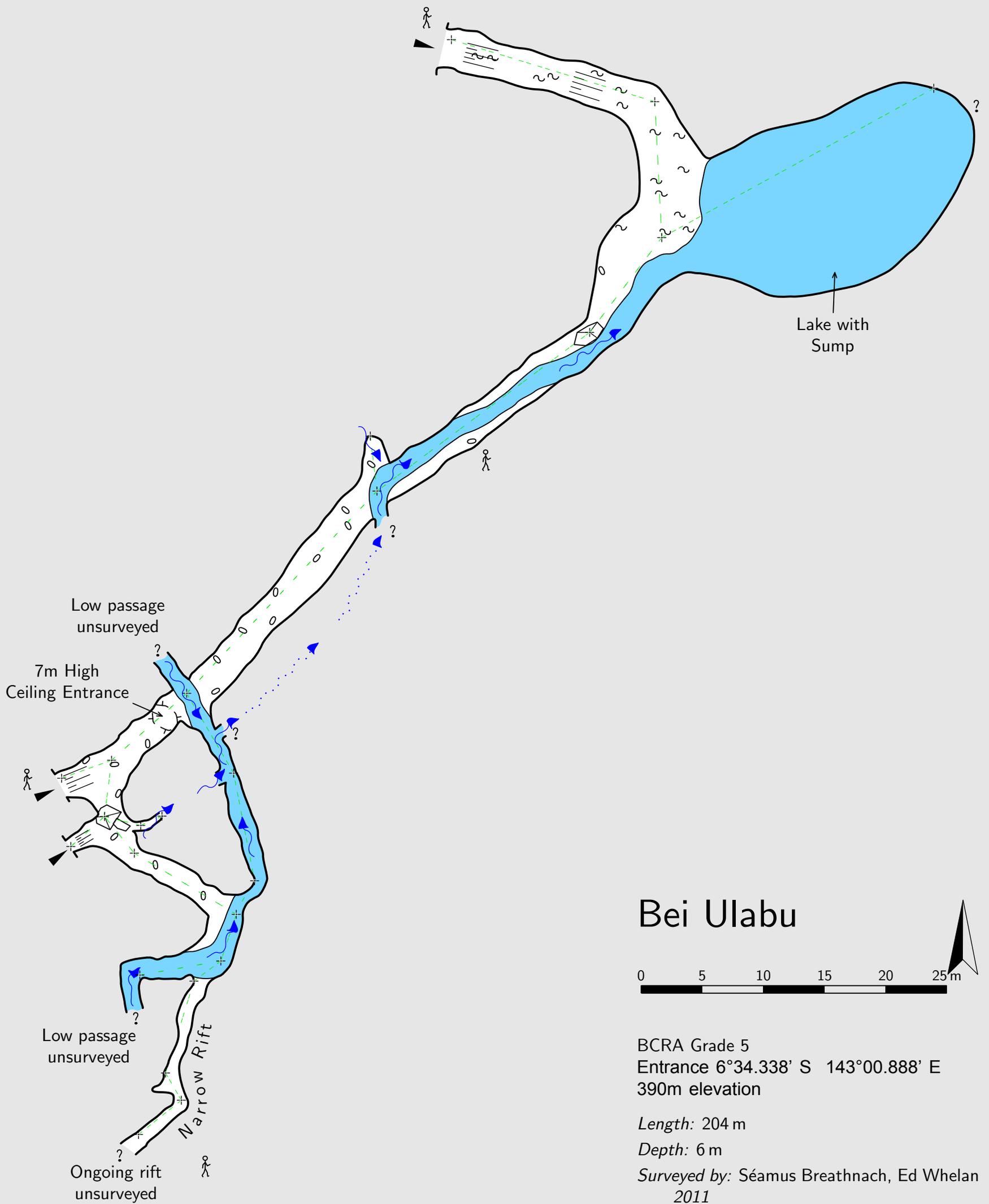
Appendix 1

CAVES SURVEYS AND DESCRIPTIONS

Bei Ulabu

Within an hour's walk of Michael's camp, the cave itself is on Talyx's land. A climb over some vegetation and boulders leads to a short descent into some roomy canyon passage. The obvious route ahead continues downstream in comfortable walking passage where a small stream can be seen intersecting the passage from left to right under a daylight break in the ceiling. The main streamway enters from a small inlet on the right after a further 30m. The passage retains its size for another 50m or so before the roof lowers and widens into a lake that ends in the terminal sump. Shortly before entering the lake, a sandy crawl up to the left can be followed for 20m to another small entrance.

Just inside the main entrance, a climb over a boulder to the right enters a low series of initially confusing intersecting passage and streamways. A short climb up to the right also leads to another entrance. The small streams eventually combine and disappear in the direction of the main streamway. All routes were pushed until becoming too tight to continue.



Ekisayaseray Ulabu

Situated 40 minutes' hike away from Albert's cave on top of the ridge. The cave is formed entirely along a fault. The entrance requires a climb down a rift to the top of a 6-metre drop easily rigged from naturals. The cave immediately gains large dimensions and the passage is followed down and then up a couple of boulder filled slopes. There are large flowstone formations throughout. After 100+ metres the main cave passage ends and the route to the rest of the cave is followed down a rock slope to the left to a small passage that ends at a blind passage. No further passageway could be found.

Ekisayaseray Ulabu

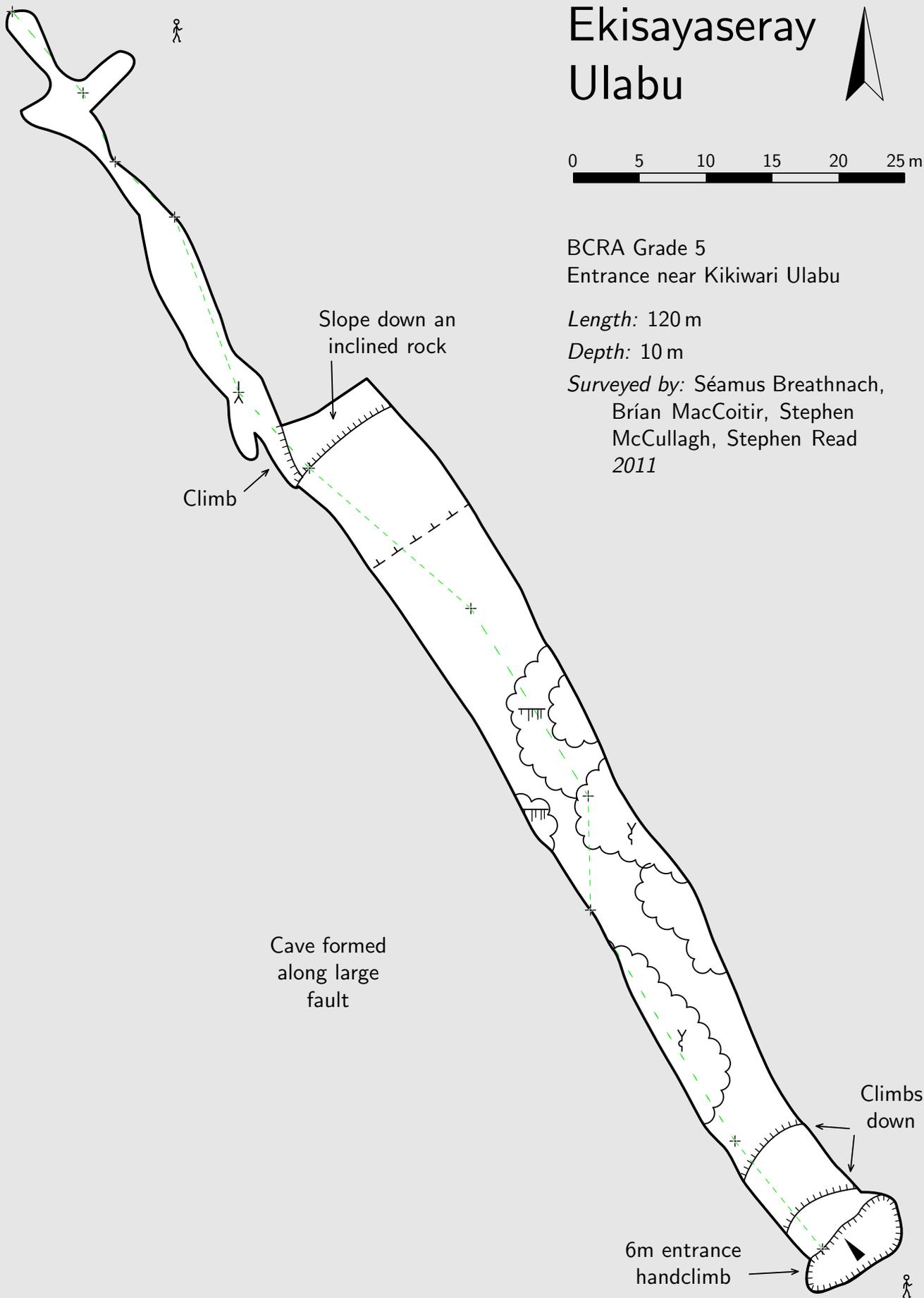


BCRA Grade 5
Entrance near Kikiwari Ulabu

Length: 120 m

Depth: 10 m

Surveyed by: Séamus Breathnach,
Brián MacCoitir, Stephen
McCullagh, Stephen Read
2011



Hasawana Serala Ulabu

Found 20 minutes off the track from the walk between the village and Nick's camp the cave is entered at the end of a thigh deep, narrow fast flowing (and cold) river. The passage is at first large but narrows and loses height until it enters an area where you are forced to swim in deep lakes (with some quite disturbingly large tree trunks for company). Although short, the swim back up passage would prove to be difficult. Downstream the lakes become shallow and then the cave opens up to the surface for a short period of time (no escape route) before entering a short second cave that forces the caver to swim again. Finally the cave opens up again with a convenient escape route. The cavers found it preferable to go back via the overland route even though it required a lot of jungle bashing!

Hasawana Serala Ulabu



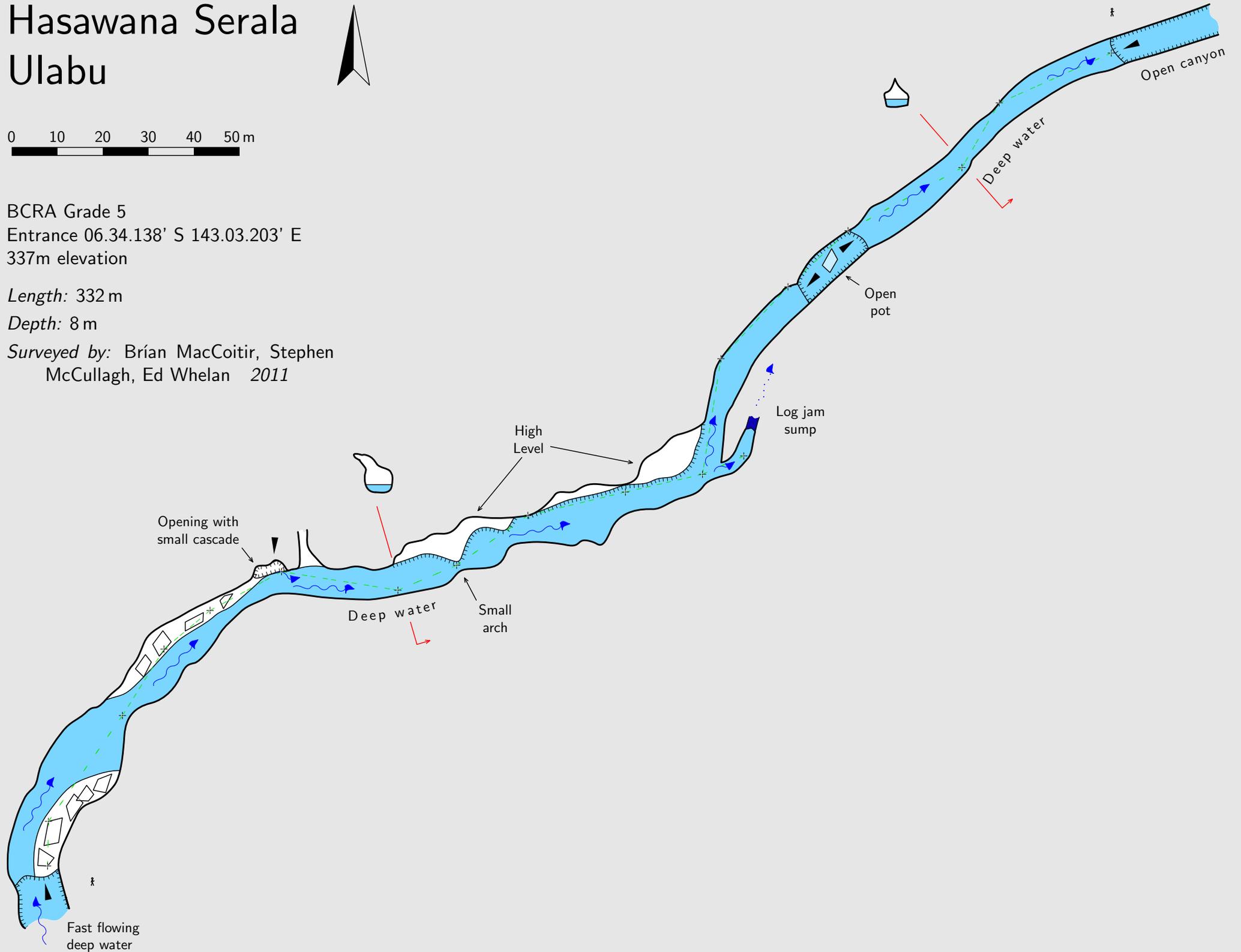
0 10 20 30 40 50 m

BCRA Grade 5
Entrance 06.34.138' S 143.03.203' E
337m elevation

Length: 332 m

Depth: 8 m

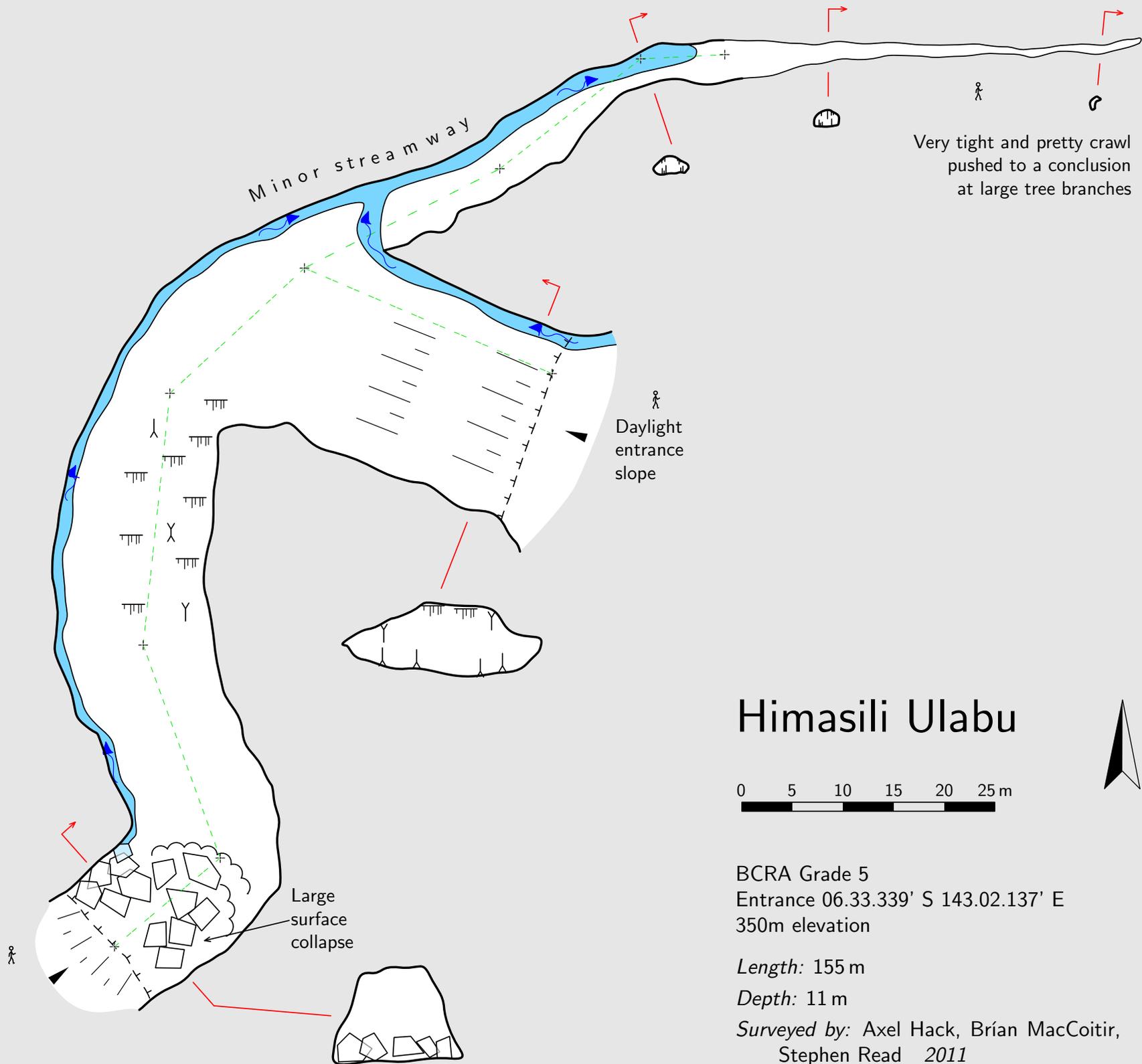
Surveyed by: Brían MacCoitir, Stephen
McCullagh, Ed Whelan 2011



Himasili Ulabu

Short, dry, but beautifully decorated cave. A wide daylight entrance passage can be followed for approximately 25 meters to the main junction. The wide southern passage on the left can be followed for over 50 meters through a stunning forest of huge columns and stals. This terminates in a large boulder pile that could likely be pushed to the surface. A minor streamway can be followed along the north-eastern passage for over 50 meters. This section of the cave closes down in an increasingly tight Shannon-esque crawl that was pushed to a conclusion amongst a pile of tree roots.





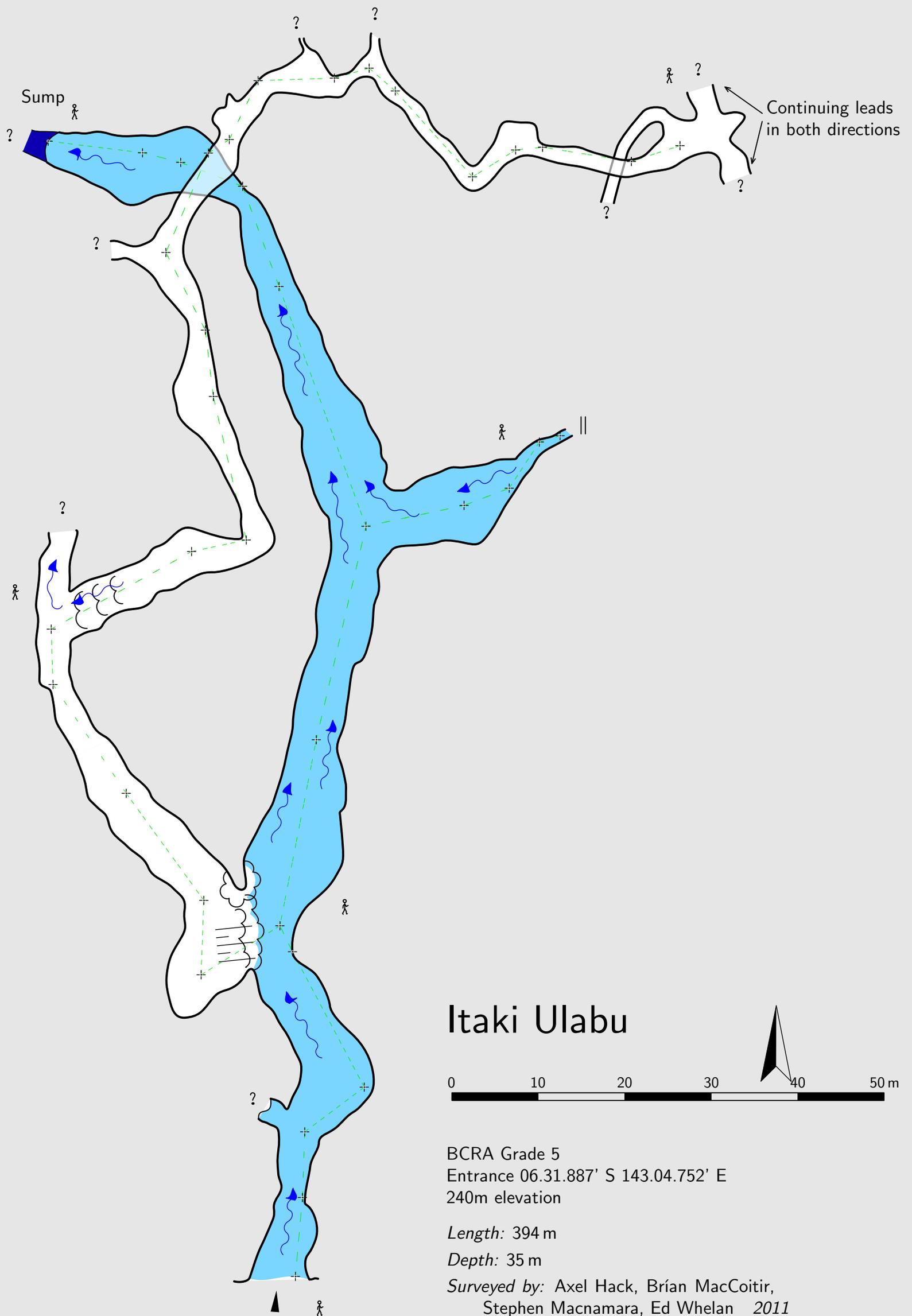
Itaki Ulabu

A moderate stream is quickly met after entering, which flows along a boulder-strewn large passage. The stream grows in size to reach a sump 170 metres downstream.

A tributary on the right before the sump issues from a fissure which is too tight to enter.

50 metres from the entrance, a tributary cascades in over flowstone from the left. Climbing up the flowstone, the caver enters into a significant high level series of passages with numerous bats and cave swifts. The survey was suspended at a large chamber about 200 metres into the high level series, due to time restraints. This portion of the cave has a complex of junctions. Two were followed (unsurveyed) for at least 100 metres each, with significant passage continuing in both directions, including a separate streamway and an air draught. These are very promising.





Kaflomaiyu Ulabu

Located 30 minutes from the village on the side of a river. The small entrance is followed down a climb into a mud-filled chamber. Up the other side a slope leads up into a continuation that ends quickly. There are possible ways on at the bottom of a tight mud filled slope. Of more interest is a small slope that leads up to a blockage with a strong draft blowing. A crowbar and a hammer may allow easy access to further cave.

Entrance



Kaflomaiyu Ulabu

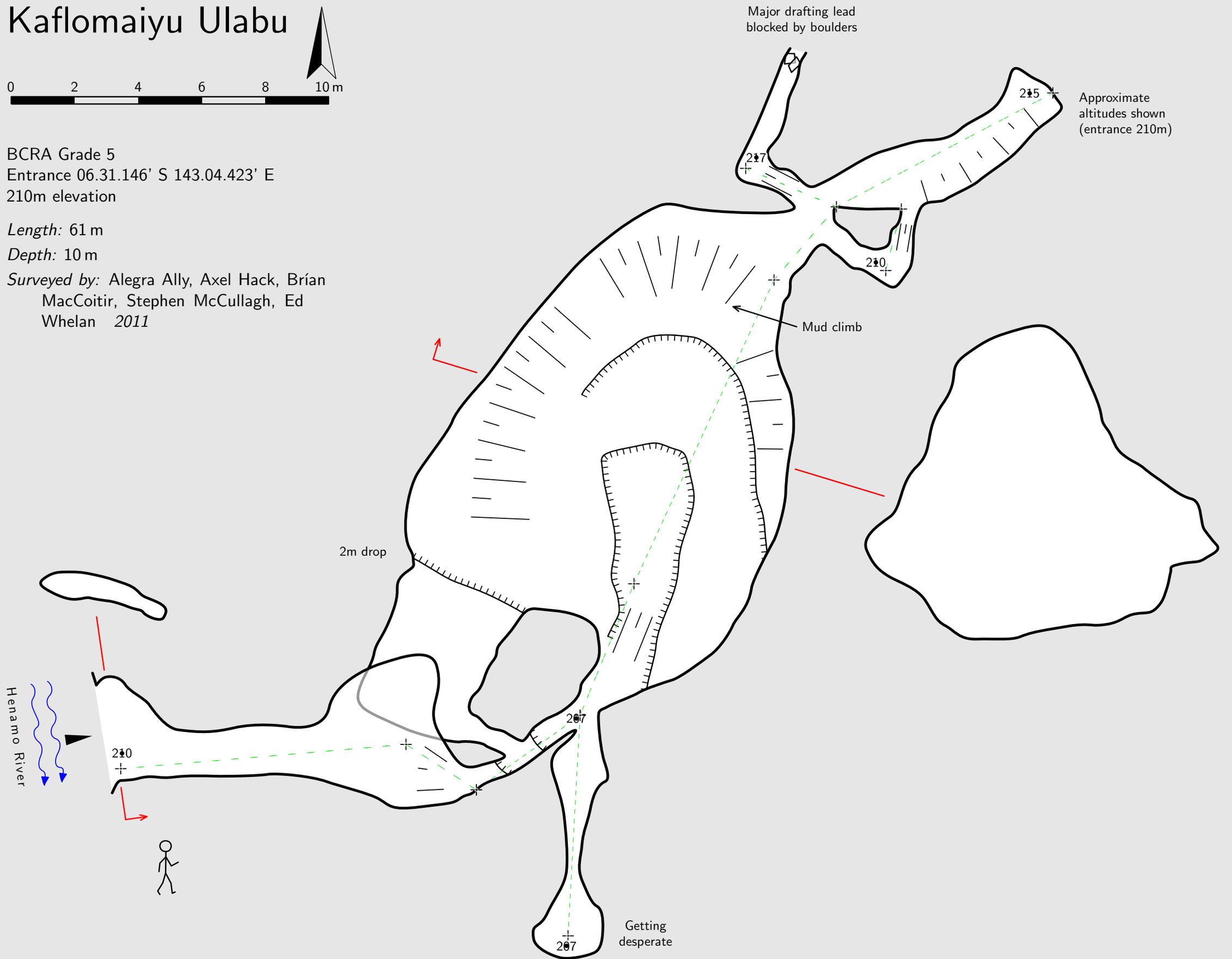


BCRA Grade 5
Entrance 06.31.146' S 143.04.423' E
210m elevation

Length: 61 m

Depth: 10 m

Surveyed by: Alegra Ally, Axel Hack, Brian MacCoitir, Stephen McCullagh, Ed Whelan 2011



Kikiwari Ulabu

Cave was located high up on the ridge 45 minutes above Albert's camp. The entrance was quite large but decreased in size quickly to a small rift passage that closed down to an impenetrable crack. A small bit of boulder moving was performed but no way on was found.

Kikiwari Ulabu

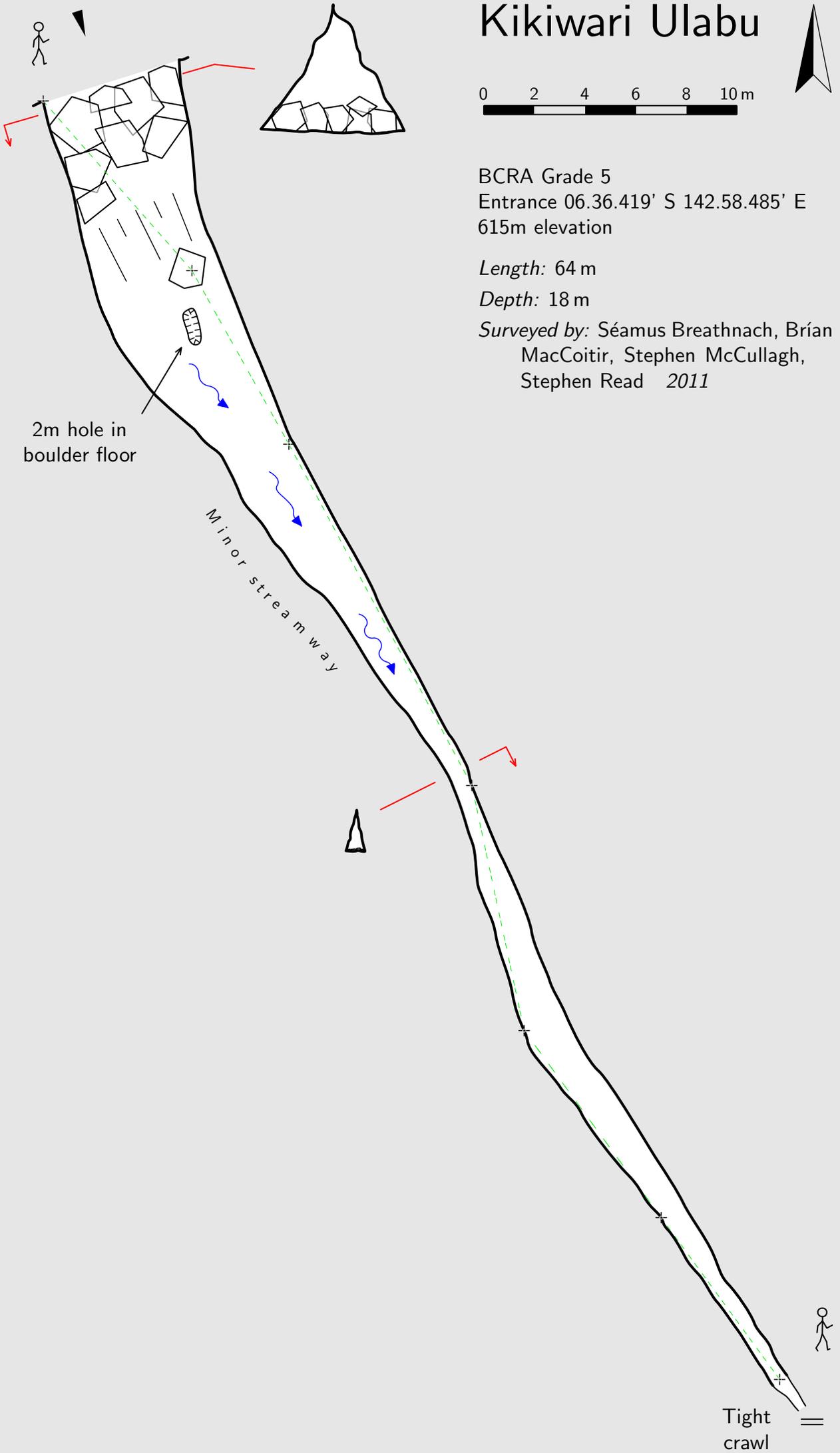


BCRA Grade 5
Entrance 06.36.419' S 142.58.485' E
615m elevation

Length: 64 m

Depth: 18 m

Surveyed by: Séamus Breathnach, Brían MacCoitir, Stephen McCullagh, Stephen Read 2011



2m hole in boulder floor

Minor stream way

Tight crawl

Manena Ulabu

On the northern bank of the Henamo River, a short distance upstream of a natural rock arch spanning the river, a steep forested track runs up to the base of a cliff. There are some impressive rock art carvings on the cliff and nearby rocks.

The cave entrance is a rift at the foot of the cliff, which leads down a mud bank to a modestly-sized, meandering stream passage. The stream sinks immediately downstream, presumably to join the Henamo, while upstream it continues at the same dimensions for 230 metres to a small sump and the upstream entrance. There is a further entrance halfway along the passage.

A possible new species of frog, some large spiders and an amblipigid (see photo in Introduction section) were spotted on the mud banks and walls.

Manena Arch, Over the Henamo River



Taking a Breather at Cave Entrance



Manena Ulabu

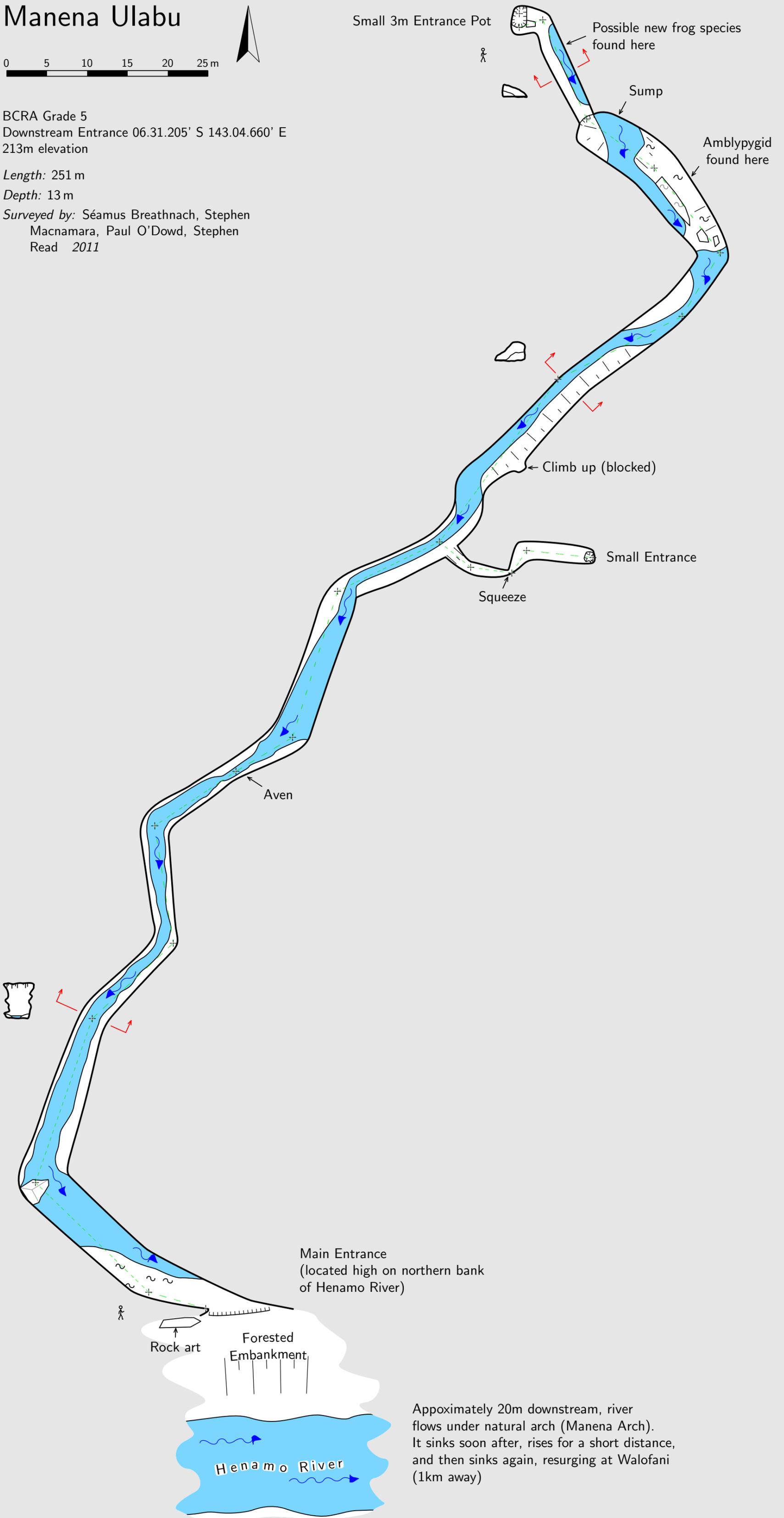


BCRA Grade 5
Downstream Entrance 06.31.205' S 143.04.660' E
213m elevation

Length: 251 m

Depth: 13 m

Surveyed by: Séamus Breathnach, Stephen Macnamara, Paul O'Dowd, Stephen Read 2011



Approximately 20m downstream, river flows under natural arch (Manena Arch). It sinks soon after, rises for a short distance, and then sinks again, resurging at Walofani (1km away)

Mefon Karisine Ulabu

This cave is on Chief Waikitu's land, less than an hour's walk from Willie's camp. The elderly but agile Chief Waikitu joined us on the trip along with his grandson Chokol and frequently popped up unexpectedly around the odd corner while we were surveying. They had visited the cave on many occasions but had not pushed it very far beyond any of the entrances. The cave was named after an old man who went chasing flying foxes but got his beard caught underwater! While not so many flying foxes were seen on this trip, there were numerous birds nesting along side the streamway. There were far fewer birds left as we exited the cave after our guides had captured their share to vary their evening's dining options.

The cave follows a shallow rocky river bed that meanders downstream in comfortable walking passage until meeting a junction and a tributary from the right after 100m. Both streamways combine and sink through a chamber on the left. Another entrance is encountered around the corner through the left wall of the chamber.

The cave passage is followed upstream along the tributary for 60m where a small chamber is reached and the steam can be seen entering the cave from the left under a boulder. Around the boulder through the right hand wall of the chamber is a further entrance. The cave continues along canyon passage for another 300m, mostly of walking dimensions until the passage widens into an almost rectangular chamber. Around the corner to the right at the end of the chamber, two small sloping passages were entered and pushed until they closed down to put an end to the exploration.



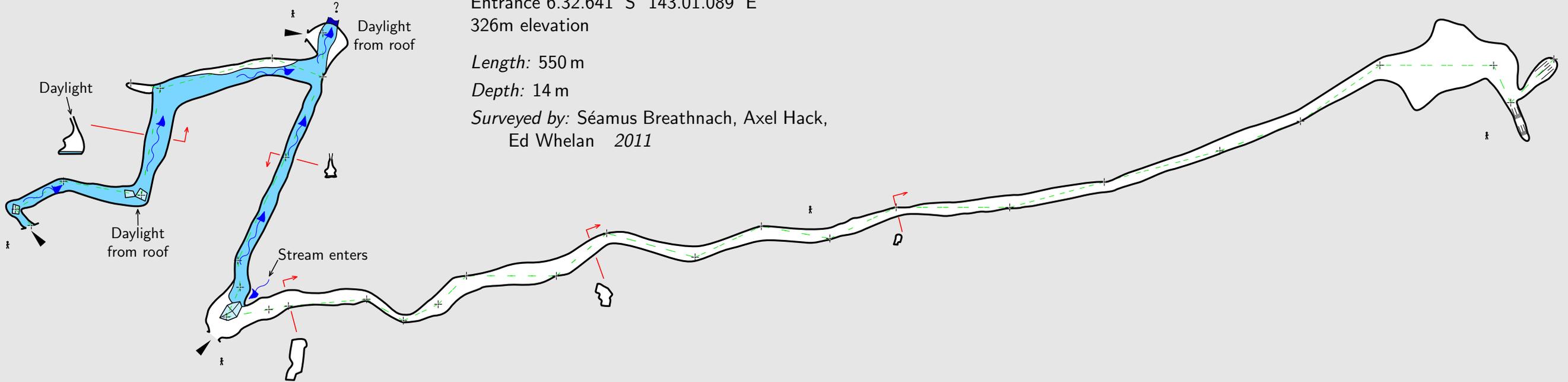
Mefon Karisine Ulabu



BCRA Grade 3
Entrance 6.32.641' S 143.01.089' E
326m elevation

Length: 550 m
Depth: 14 m

*Surveyed by: Séamus Breathnach, Axel Hack,
Ed Whelan 2011*

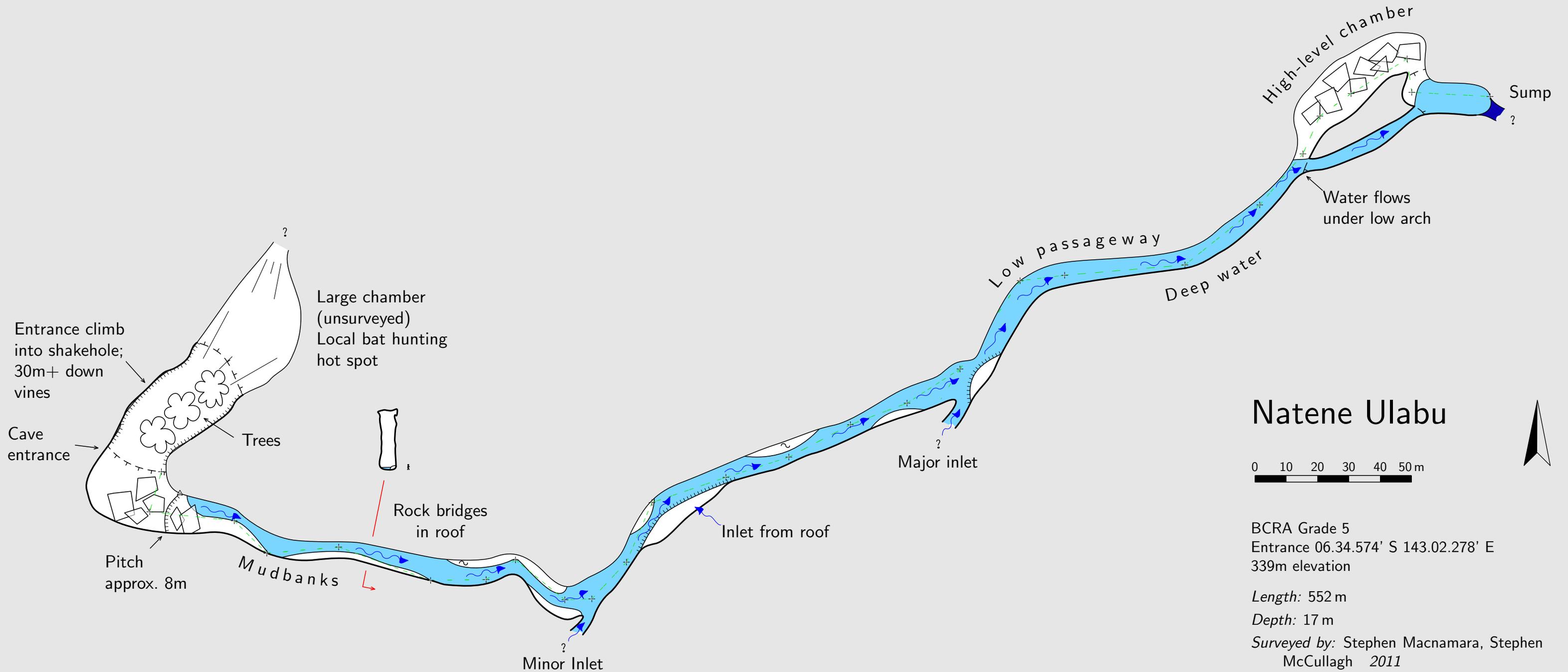


Natene Ulabu

Natene is a cave known by Nick and is located about 50 minutes hike away from his camp. The path to the cave was little travelled and required some energetic climbing to get to the top of the entrance doline. The last 20 minutes of the hike involved forcing our way around the top of the doline until we found a "convenient" entrance point. While we were getting kitted up to abseil into the deep pot, the guides (including a couple of young boys) hot footed their way down tree roots and vines down a 25 m pitch. Not wanting to be embarrassed we packed our kit away and followed them down a scary jungle climb. At the bottom is an impressive boulder pile. To the left (looking out from the climb down) a huge cave entrance with many flying foxes was visited but not surveyed (short cave). To the right a second huge entrance is followed down a slope to the head of an awkward 12 m pitch (the site of our only bolt and my first 'close' encounter with a flying fox). At the bottom of the pitch the high stream passage is followed for a hundred metres until it passes a small stream entering from the right (not entered). A hundred metres later a large river enters from the right containing 75% of the total water. This passage (which is considerably smaller than the one we were in) was followed for a little while on ledges above the deep water. This passage would be extremely promising (though possibly flood prone) for future exploration.

Further downstream the cave widens but the roof lowers to a stoop in waist deep water to where it flows into a low passage. To the left a climb lead up into a high-level large chamber which is followed down to a sump. A river enters here and is likely to be the downstream part of the river that was left previously.

On the surface Nick highlighted that there was another cave located very close by that he had personally followed for a considerable distance. This area would be worth a revisit.



Natene Ulabu



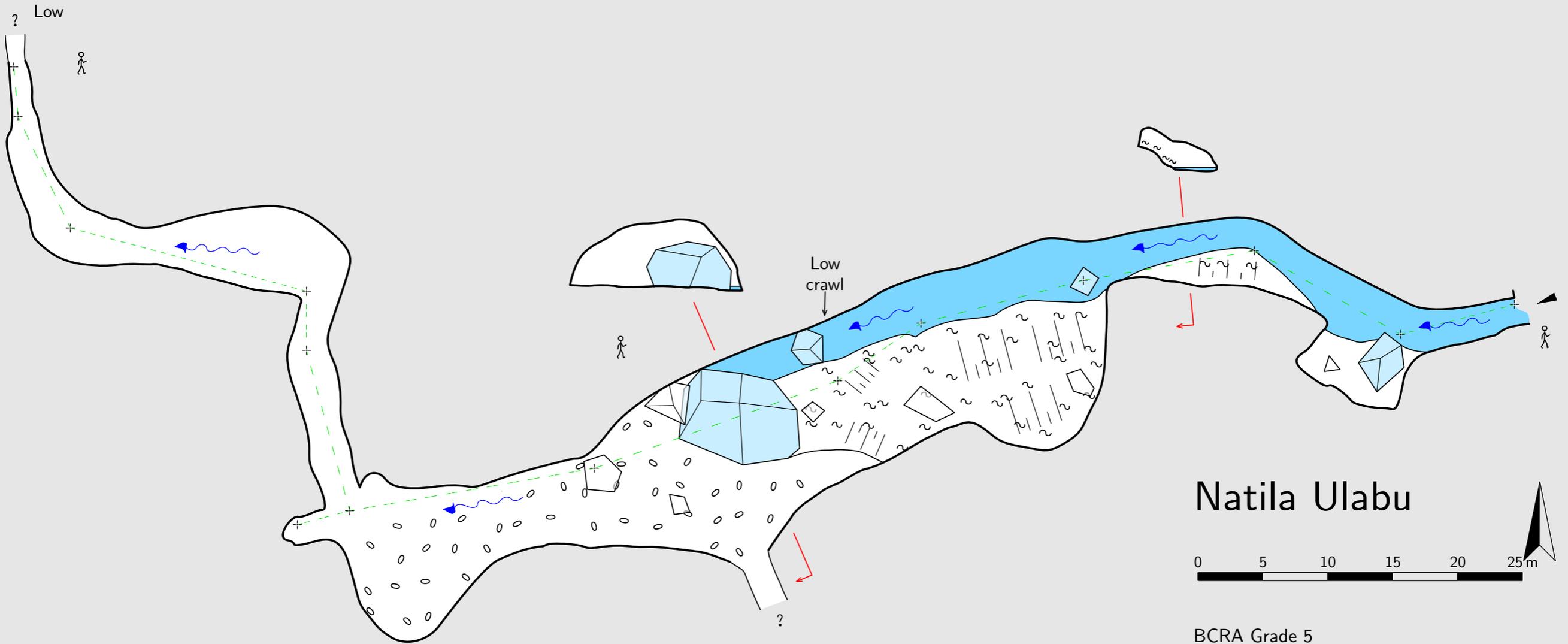
BCRA Grade 5
 Entrance 06.34.574' S 143.02.278' E
 339m elevation

Length: 552 m
Depth: 17 m
Surveyed by: Stephen Macnamara, Stephen McCullagh 2011

Natila Ulabu

This cave is on Chief Waikitu's land, located a short walk from Willy's camp, en route to Obote Ulabu. A shallow stream is followed into the cave where the passage starts out at walking dimensions but increases in size into a large well-decorated passage after 30m. Some large stacked boulders at the end of the passage can be bypassed by a climb up and over to the left or via a low crawl down to the right. On the far side of the boulders a small passageway on the left was pushed for a few metres before becoming constricted but may have potential for the curious slender caver. Most of the water from the stream dissipates after the boulders and the large pleasant passageway seems to end abruptly after another 25m. The cave continues via some smaller passage to the right and meanders until finally becoming too low and narrow for further progression.





Natila Ulabu



BCRA Grade 5
 Entrance 06.33.269' S 143.00.631' E
 332m elevation

Length: 156 m

Depth: 13 m

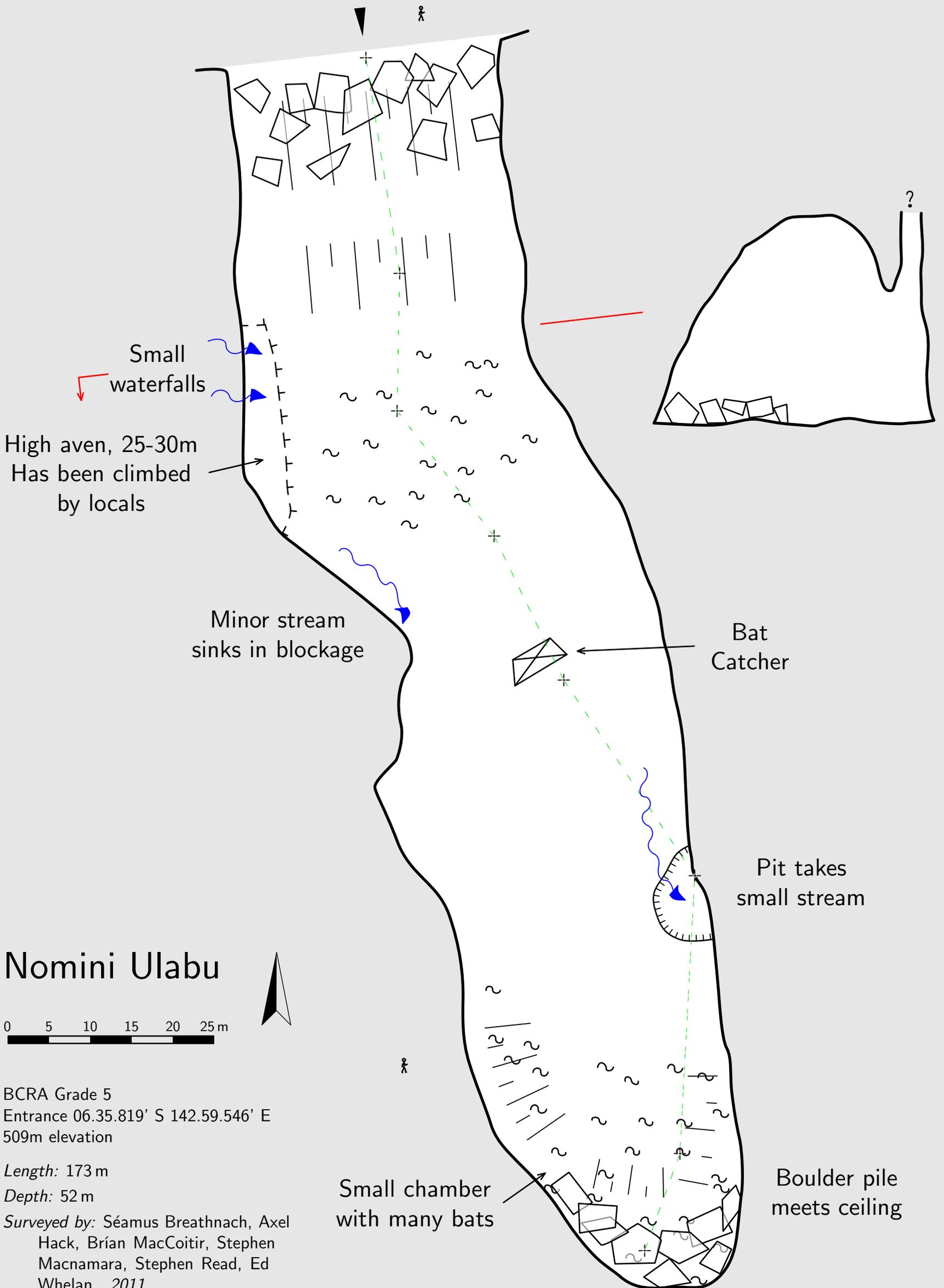
Surveyed by: Séamus Breathnach, Axel Hack,
 Ed Whelan 2011

Nomini Ulabu

This short but impressive cave was on a detour from our walk between Nick's and Albert's camps. The entrance is a wide arch over a long rubble slope. Eventually reaching the bottom of the cave, a flat mud floor is met with a couple of small trickle streams. There are boulder slopes towards the back of the chamber. In the centre stands an enigmatic large construction, which we later learnt was a bat catcher.

Outside the cave near a cliff face is an ossuary rock, where the locals proudly showed us the bones of their recent ancestors (our guide held up a skull and introduced us to his aunt).





Nomini Ulabu



BCRA Grade 5
 Entrance 06.35.819' S 142.59.546' E
 509m elevation

Length: 173 m
 Depth: 52 m

Surveyed by: Séamus Breathnach, Axel Hack, Brían MacCoitir, Stephen Macnamara, Stephen Read, Ed Whelan 2011

Small chamber with many bats

Boulder pile meets ceiling

Bat Catcher

Pit takes small stream

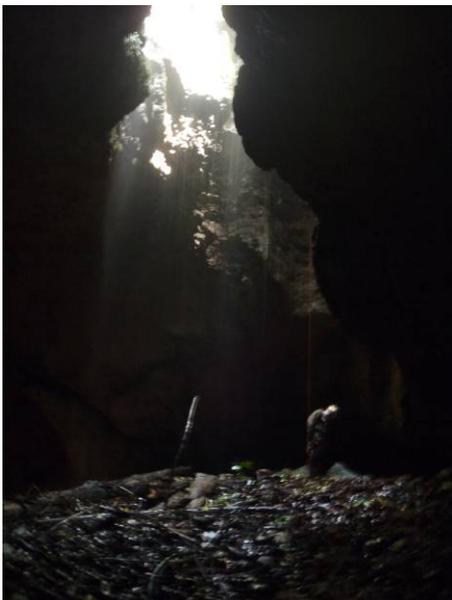
Small waterfalls

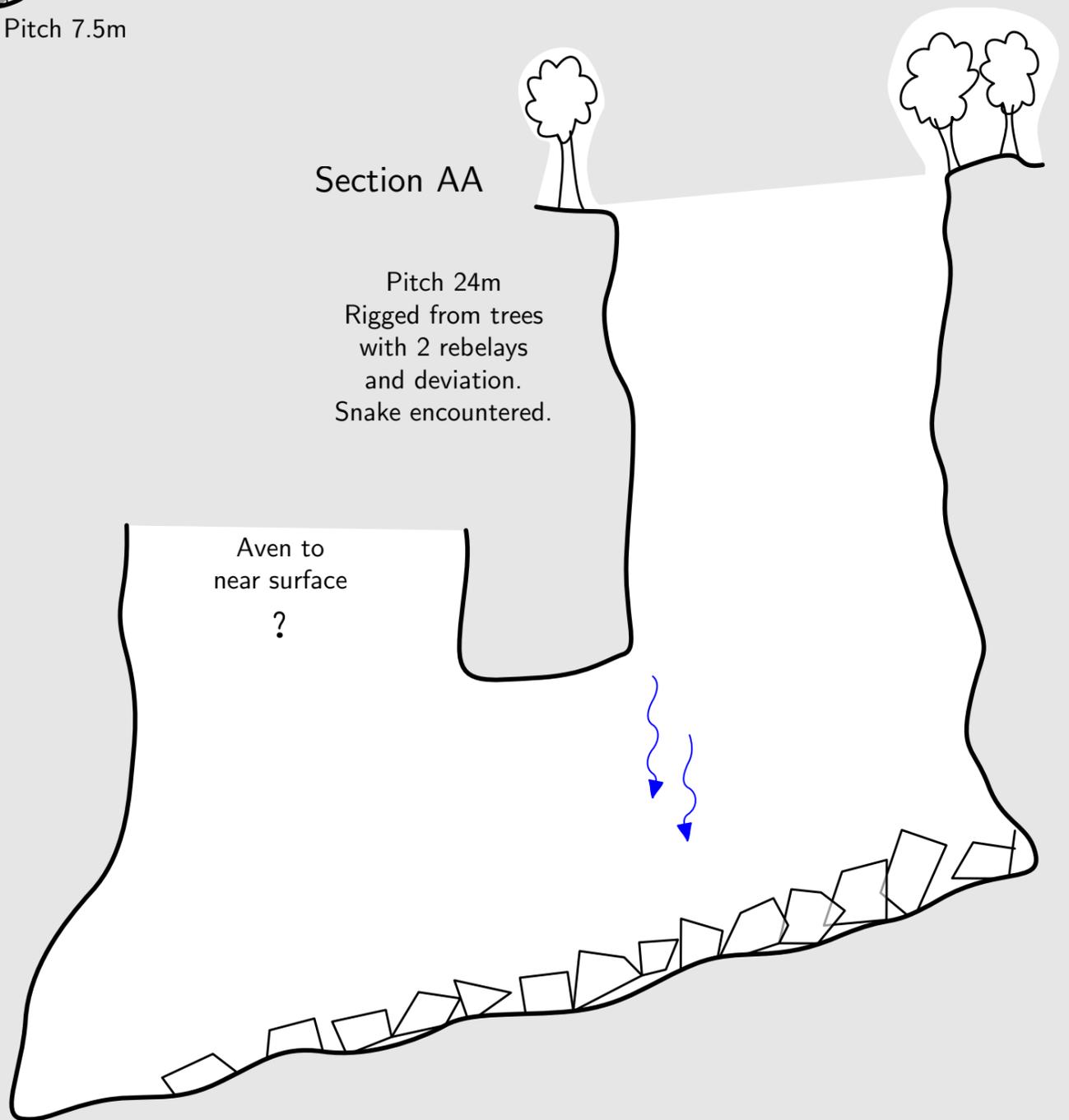
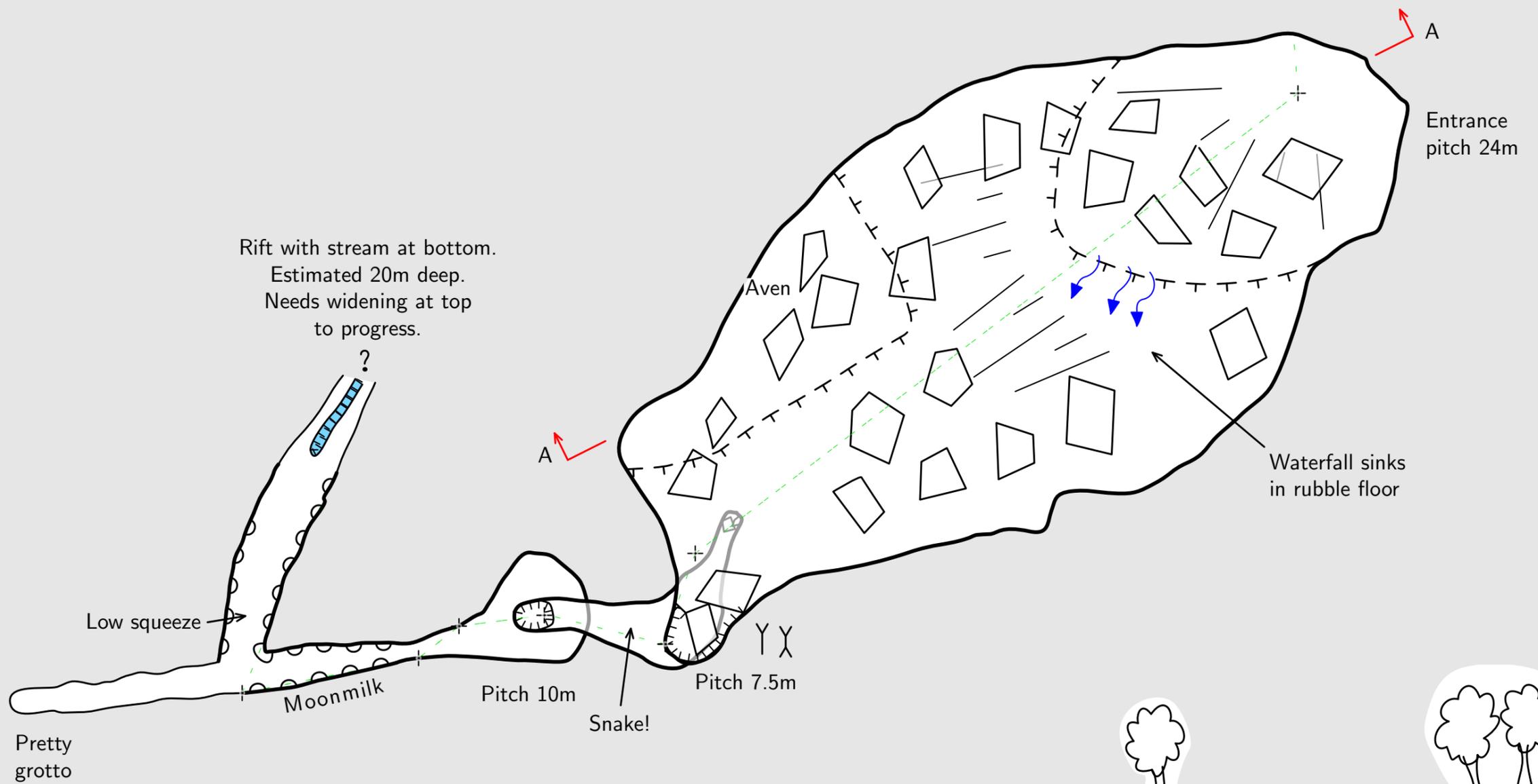
High aven, 25-30m
 Has been climbed by locals

Minor stream sinks in blockage

Obote Ulabu

Located high up on the ridge above Willy's river camp, the cave is entered through a deep pothole requiring a couple of natural rebelayes. The rope is rigged relatively easily from naturals to the cave floor. At the bottom the way on was to follow the chamber straight ahead and to the left. On the far left a second pitch was rigged down to a small passage which was followed to the top of a third pitch. At the bottom of the third pitch two crawls were followed. The first, to the left ended at a choke. The second hidden crawl to the right was followed to the top of a tight rift. It may be possible to enlarge the rift. Stones dropped here appeared to fall a considerable distance. The cave has many bats and cave swifts and, more disturbingly for the explorers, snakes.





Obote Ulabu



BCRA Grade 5

Length: 102 m

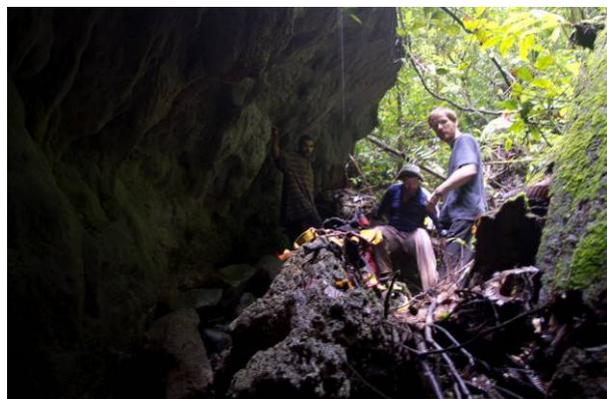
Depth: 50 m

Surveyed by: Stephen Macnamara, Stephen McCullagh, Stephen Read 2011

Parobe Ulabu

Martin's eldest son, Nelson, led us to the entrance of this cave on a detour from our walk to Manena. He discovered the cave himself, calling it Parobe after his own name in the Kosuan tongue. We noted that the cave was quite different from the others in the area because of its verticality, and returned on Christmas Eve equipped with rope.

The entrance is in a small shakehole. A small stream flows through a short upstream cave, along the shakehole wall, and into the main cave. A 20-metre, well-decorated, flowstone slope/pitch can be rigged using natural anchors, and lands straight into a flooded chamber. Brian swam the circumference of the lake but found no dry continuations. Presumably the continuation is sumped.



Parobe Ulabu

0 2 4 6 8 10 m



BCRA Grade 3

Entrance 6.31.446' S 143.04.758' E

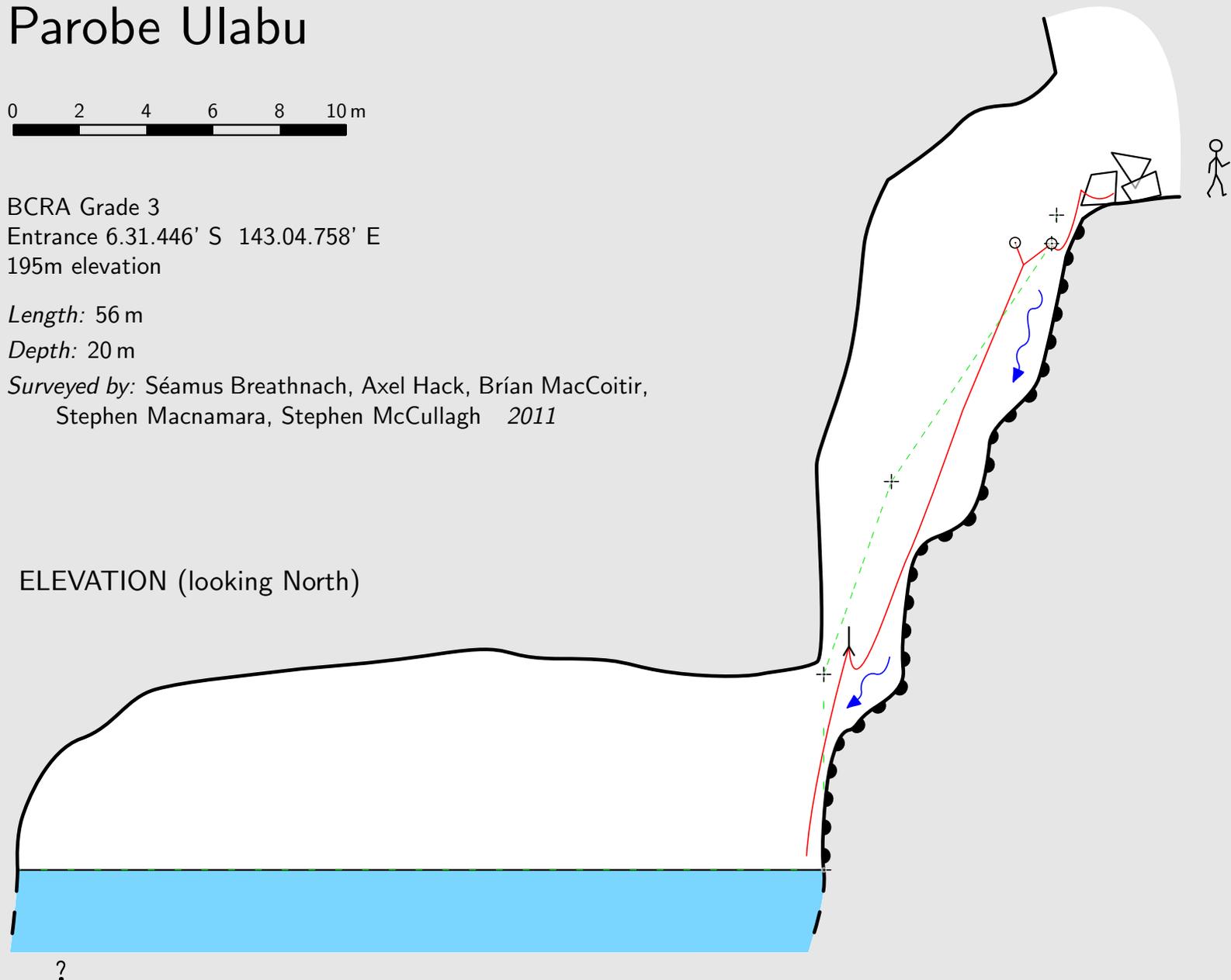
195m elevation

Length: 56 m

Depth: 20 m

Surveyed by: Séamus Breathnach, Axel Hack, Brían MacCoitir,
Stephen Macnamara, Stephen McCullagh 2011

ELEVATION (looking North)

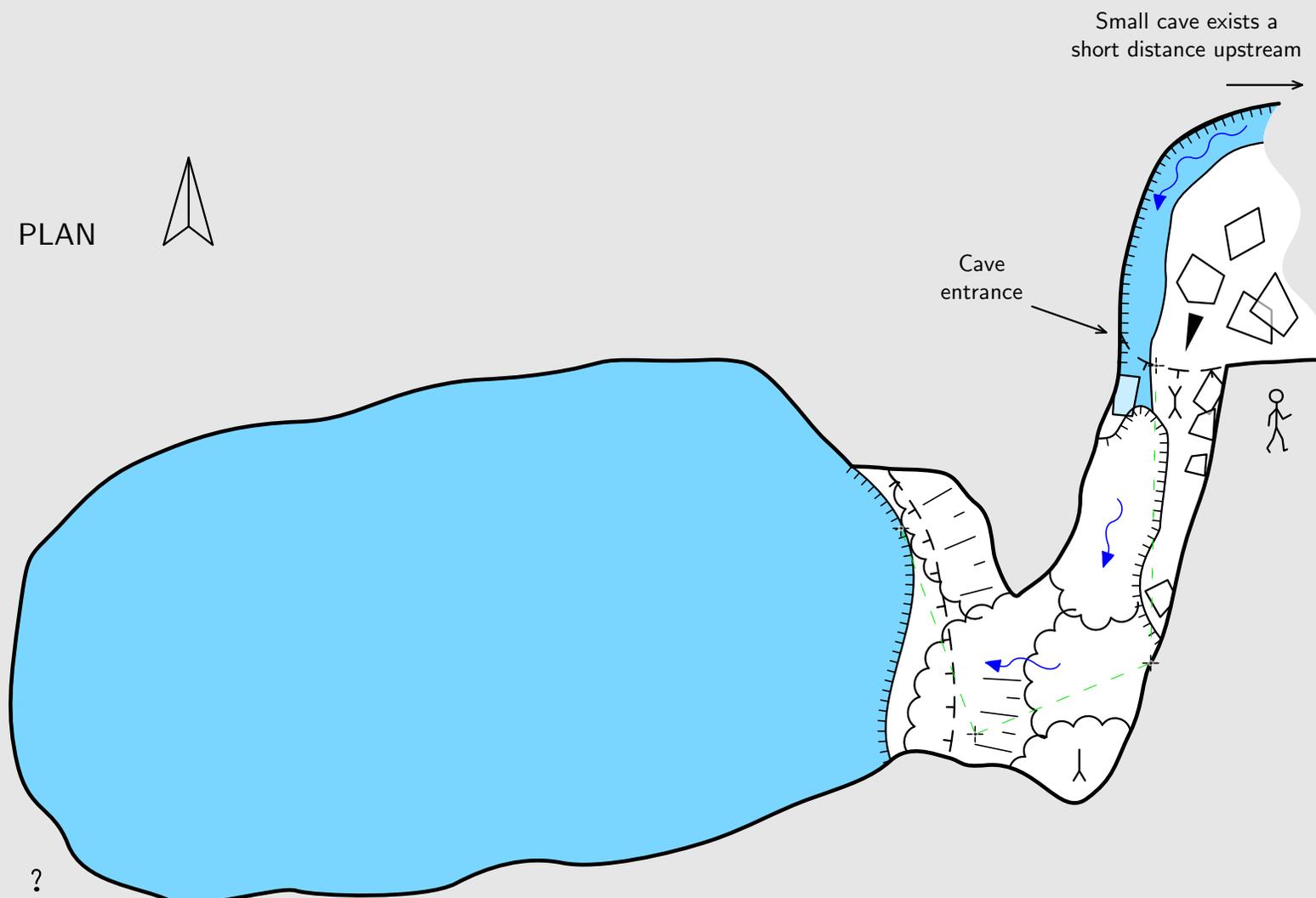


PLAN



Small cave exists a short distance upstream

Cave entrance



Pokabi Ulabu

Located a good one-hour's hike from Michael's camp (the old village) the entrance of this cave is quite impressive with a large pothole dropping down into the main chamber. The chamber is entered by using a 50 m rope hung off a few trees and rebelayed half way down on an extremely small ledge. From the surface the pitch appears to be deeper due to the slope at the bottom. The main chamber is quite impressive with many ancient formations. Right from the pitch (looking away) goes down into the main chamber and then up into a boulder collapse where no further progress could be made. Left from the pitch lead down into the chamber and up a slope into an impressive passageway. The passage has many stalagmites (named the Organ Chamber) and continues past a deep pit (bottomed to a small stream), a high chamber (with flying foxes) until it splits in two. To the left leads down a steep climb to a smallish passage with chambers that ends in a boulder choke with a couple of small pits. To the right the passage leads up a slope and through a small hole into a calcite filled chamber with a small stream flowing from the left to right.

No obvious leads were left. It is interesting to note that the cave appears to have been visited several times by the locals to gather flying foxes, the cave having being entered using long vines and trees.

As told by our guides: *Albert's ancestors used to visit this cave to hunt flying fox. They would use vines to make ropes and many candles to hunt. That cave was always there and was owned by Michael's ancestors. There was an old man who lived in the cave (maybe like a giant monkey). The first time the ancestors had visited the cave they saw this naked old giant man sitting inside the entrance. The man said 'Do not disturb me and move to the other side of the cave or he would cut their ropes'. So that is why one side of the cave is blocked to visitors. There is still the skeleton of the man in the cave.*

Entrance Pitch



Python at Cave Lip – That Night's Dinner



Entrance Chamber, Pokabi



Pokabi Ulabu

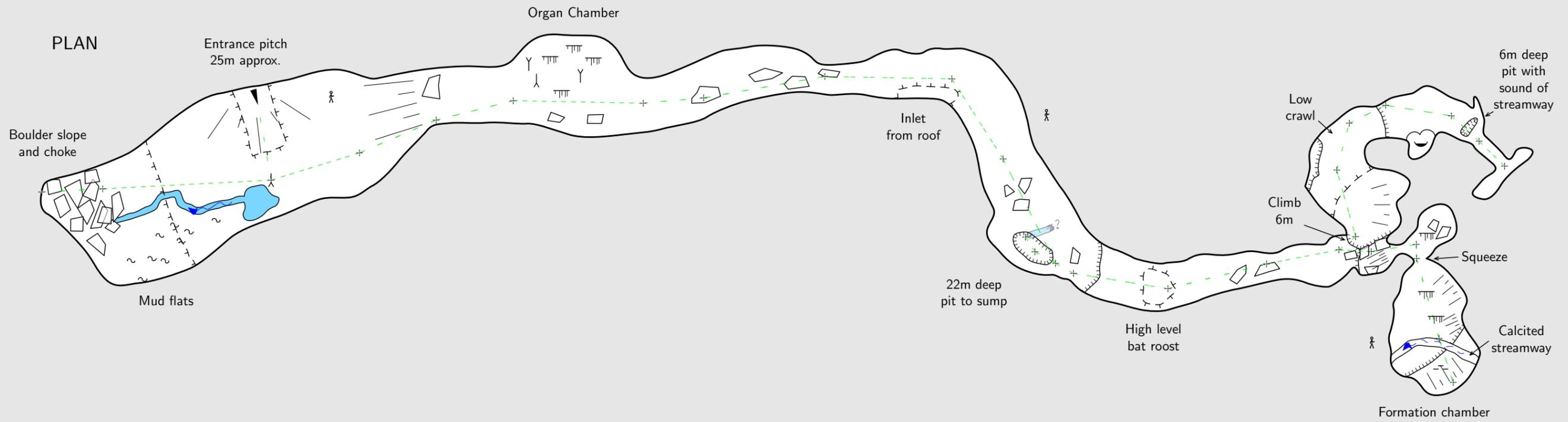


BCRA Grade 5
Entrance 06.34.727' S 142.59.756' E
517m elevation

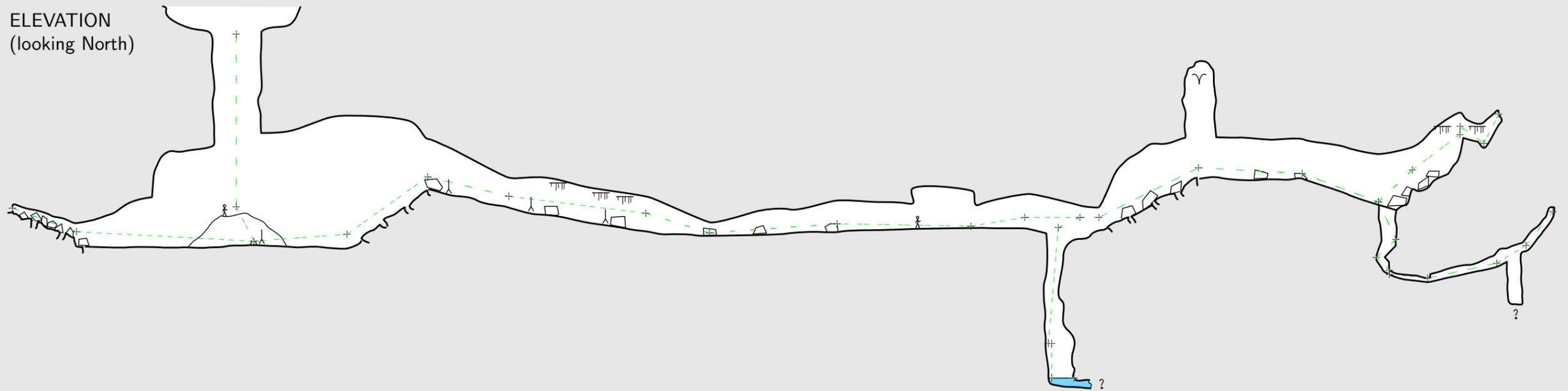
Length: 392 m

Depth: 50 m

Surveyed by: Axel Hack, Brían MacCoitir, Stephen Macnamara, Stephen McCullagh, Stephen Read 2011



ELEVATION
(looking North)



Sawei Ulabu

A very photogenic river canyon cave followed upstream for over 200 meters. The river could be waded for most of its length with a few short, deeper swimming sections. This cave was visited by Axel, Steve Muh and Jock roughly half way along the approach hike to Nick's camp. Our guide for the day was *Simon* and the cave was located on Yamu's land. The water in this stream way was noticeably colder than most of the other river caves that we had visited closer to the village. In addition this was one of the first caves where our guides began hunting for flying foxes as they waited at the entrance for the cavers to finish their swim and map-making. Flying foxes caught that day made a welcome addition to the menu at Nick's camp that evening for the first time. Access to the stream way proper was from an awkward, vegetated, ant-infested 3-4 meter down climb from the forest.

One of the most notable features of this cave was the impressive skylight just past the entrance proper. This reflected a lovely turquoise/green glow and made for a fine photograph. No prospects for further exploration in this cave.

[Jock's diary extract 26 Dec 2011: *Nick's Camp: Sawei cave, so named after a poor unfortunate man called Sawei who climbed up an aven half way through the cave never to return because he was unable to get back down again! It was a really beautiful stream passage with a bit of swimming. Samo (Simone) and Salix lead us there after a good slog about half way along the trail towards Nick's camp.*

Seamus is down with a pretty nasty random bite from something. His arm has swollen up quite badly but thankfully he hasn't been sick and seems to be handling it very well. He is going to stay at camp for a few days to see if the swelling dies down. Shortly after leaving the Fogo village for Nick's camp we were greeted by a rather fired up mud clad nephew of Yamu brandishing a machete pitched up on the other side of the river barring our way along the trail to camp. He was highly irate over some dispute about wages, there was brief talk about eating people but none of it was directed at us and thankfully Nick managed to talk him down and shortly after we were apologised to and assured that the dispute was nothing to do with the white man.

Nicks camp is amazing. The lads have put a lot of effort into building us a fine open diner and for the first time in weeks I'm writing from a proper table and chair! All in all a great day out but pretty tired after a heavy bag carry but it is good to get back into the bush for the first of our 6-night Christmas round trip.]

Entrance, Sawei



Sawei



Sawei Ulabu

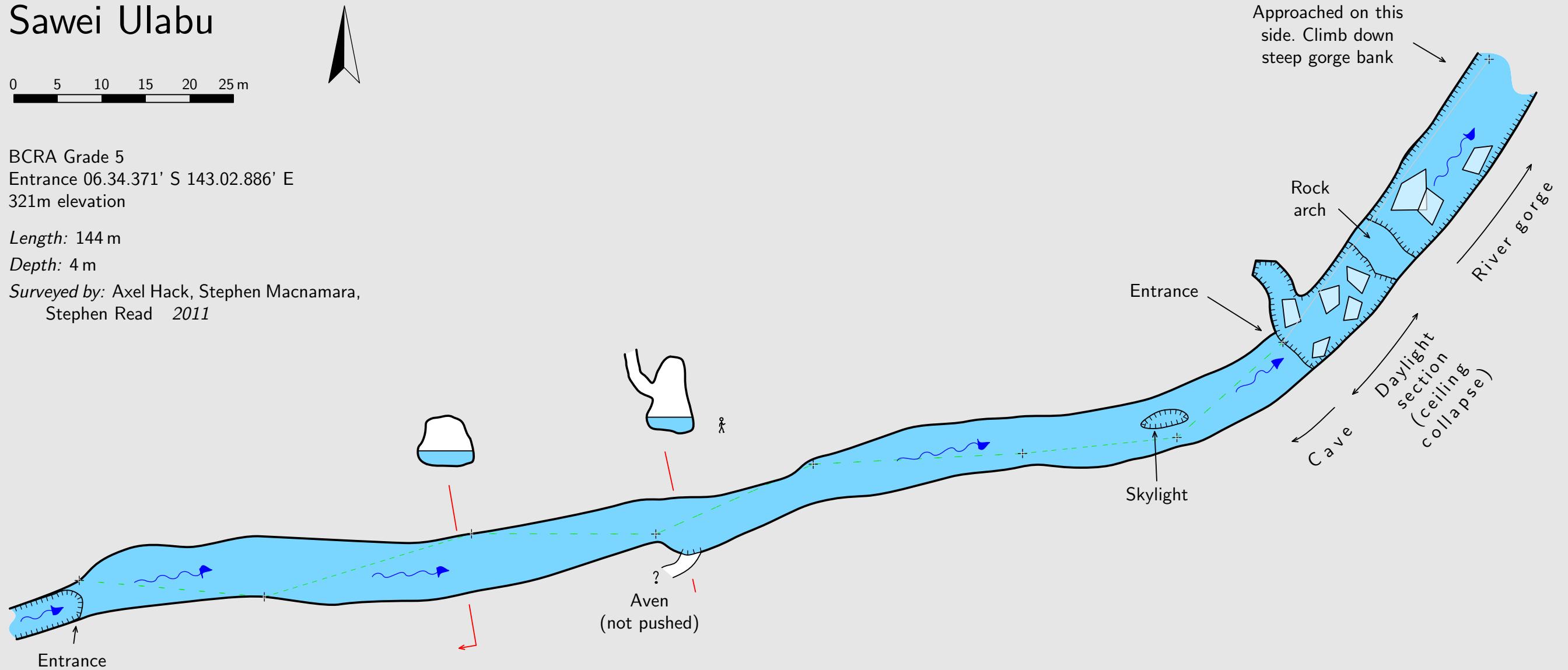


BCRA Grade 5
Entrance 06.34.371' S 143.02.886' E
321m elevation

Length: 144 m

Depth: 4 m

Surveyed by: Axel Hack, Stephen Macnamara,
Stephen Read 2011



Entrance

Aven
(not pushed)

Skylight

Entrance

Rock arch

River gorge

Cave
Daylight section
(ceiling collapse)

Approached on this side. Climb down steep gorge bank

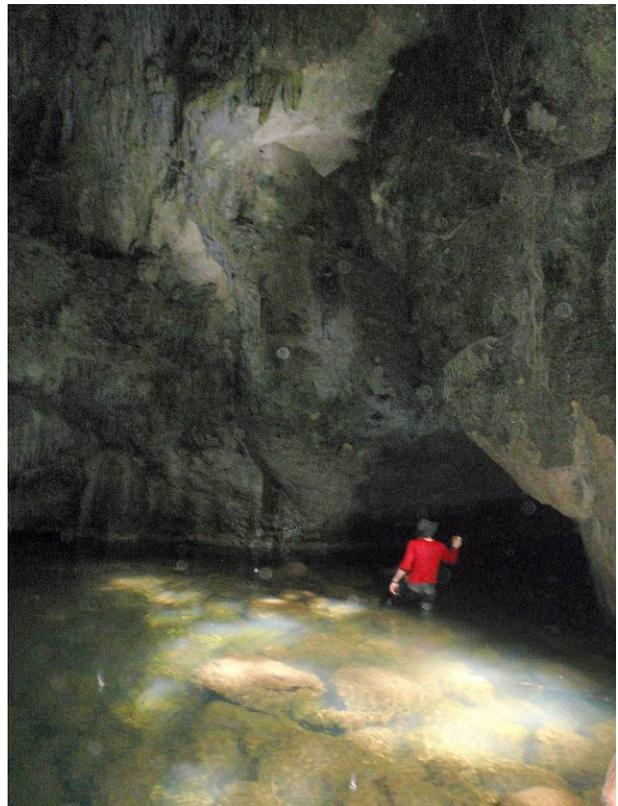
Sayamelegi Ulabu

Located a good 1½ hours' hike above Willy's river camp, Sayamelegi is a cave of two distinct parts: an active river passageway and a fossil high level cave.

The active river cave contains a medium sized river and was entered from the downstream end. The passageway was followed upstream via a 10 m swim and several cascades for a few hundred metres to an area where there were a number of additional entrances. Following the stream, the cave height dropped drastically to a low crawl which was followed until a large chamber was entered.

From the chamber three routes on were located and followed for short distances (not surveyed). The first route required a scramble up a steep mud slope to the left of the chamber to gain a high level pretty passageway which lead off past an aven. The second route was followed via two different ways both in the right hand side of the chamber. An awkward climb was pushed by Jock and a 'free diveable' sump was pushed by Stevebus. Both passages joined before ending abruptly at an awkward aven climb with a deep pool.

The third route required following the by now small streamway and climbing up into a high-level large fossil gallery. This passage was followed over huge boulders with large drops until it dropped back down into a large rift passageway. The locals claimed that this passageway lead for a considerable distance. It would be worth pushing this passage if in this area again.



Sayamelegi Ulabu

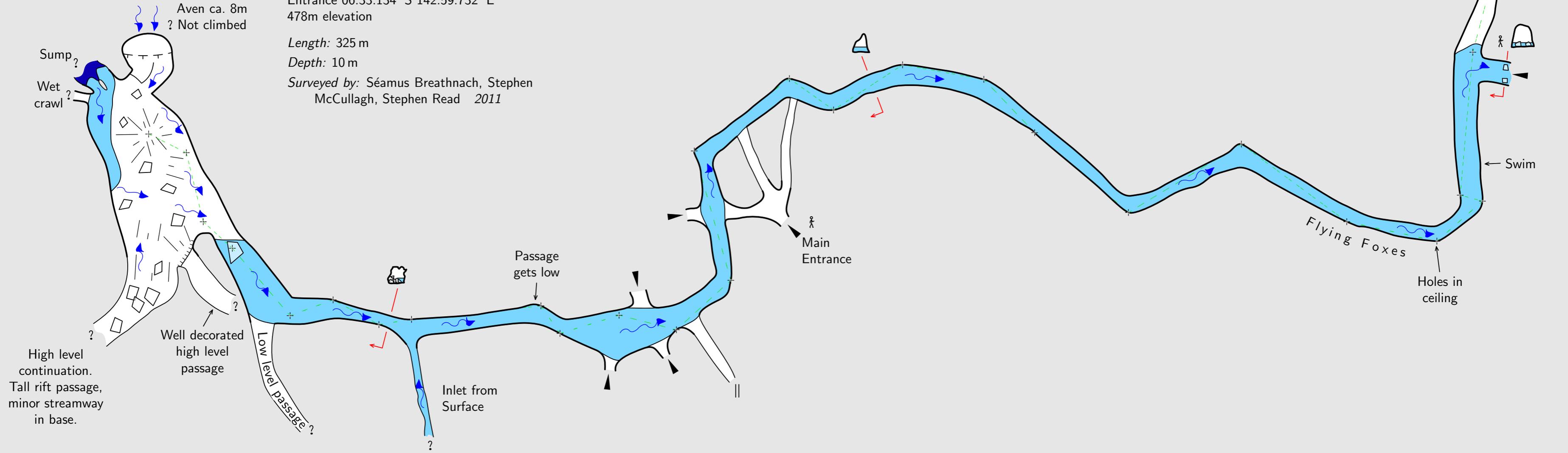


BCRA Grade 5
(Western Chamber Grade 1)
Entrance 06.33.134' S 142.59.732' E
478m elevation

Length: 325 m

Depth: 10 m

Surveyed by: Séamus Breathnach, Stephen McCullagh, Stephen Read 2011



High level continuation. Tall rift passage, minor streamway in base.

Well decorated high level passage

Low level passage?

Inlet from Surface

Passage gets low

Main Entrance

Flying Foxes

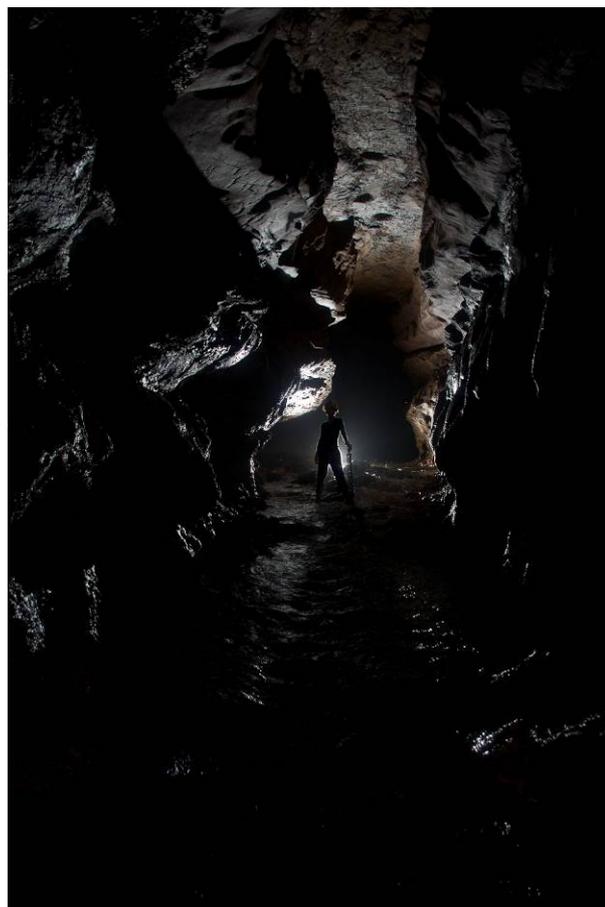
Holes in ceiling

Swim

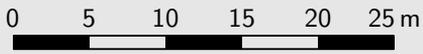
Tight crawl

Semetesa Ulabu

Located close to the village, the cave entrance is actually visible from one of the villager's huts. The cave is found at the bottom of a large doline, where an ancient roof collapse allows you access to the river. Upstream a small passage can be seen (and according to the locals leads for a considerable distance). We explored the downstream end only. The cave starts off in a stooping fashion but quickly changes to a comfortable walking cave. The stream takes up much of the floor but is shallow and fast flowing. The passage flows quickly down a few small cascades for a few hundred metres until it becomes a deep canal before meeting the inevitable sump. No further progress will be made in the downstream passage; however the upstream passage seems very interesting and is worth future exploration.



Semetesa Ulabu

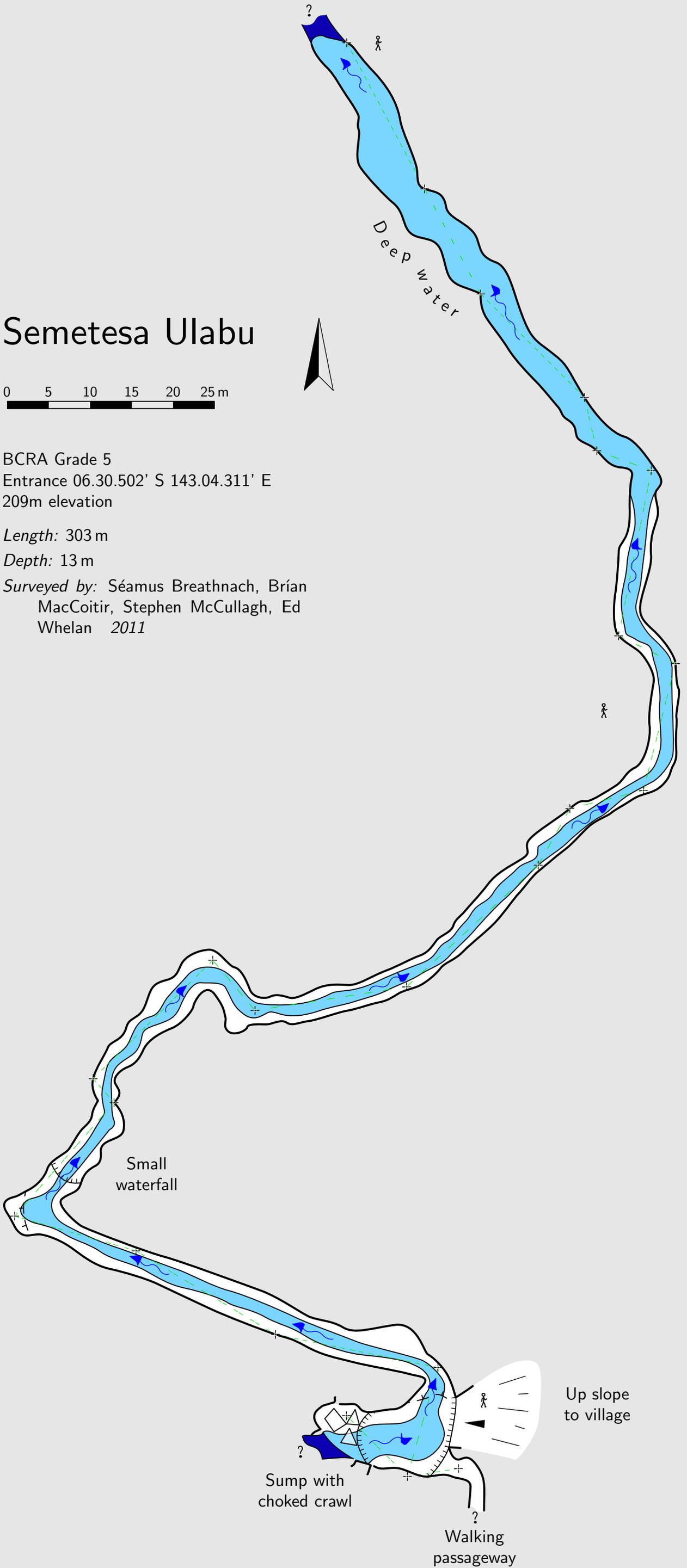


BCRA Grade 5
Entrance 06.30.502' S 143.04.311' E
209m elevation

Length: 303 m

Depth: 13 m

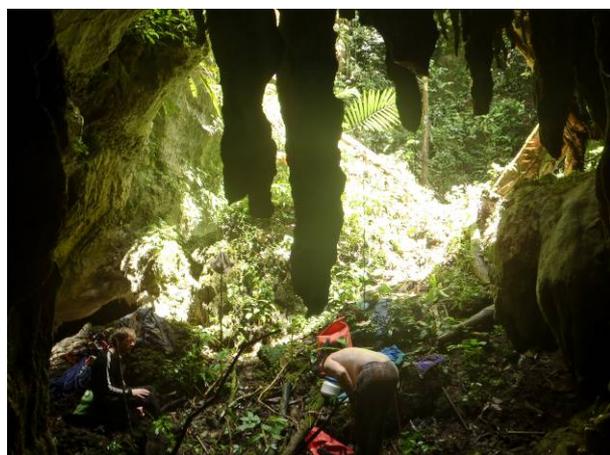
Surveyed by: Séamus Breathnach, Brían MacCoitir, Stephen McCullagh, Ed Whelan 2011



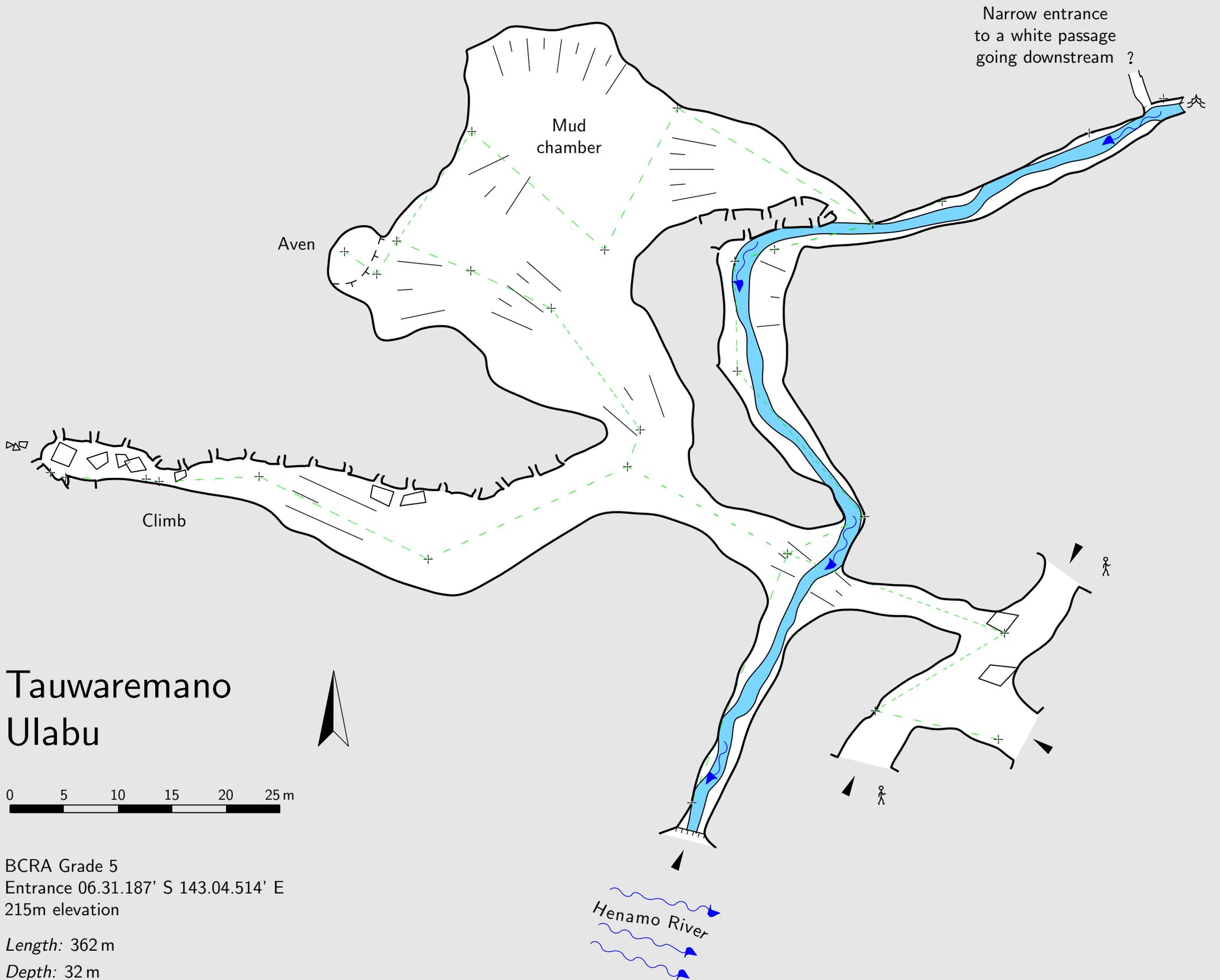
Tauwaremano Ulabu

An excellent cave located approximately 30 minutes' walk from Fogoma'iu village. This cave has been well travelled by the locals. A fine entrance quickly leads to a crossroad junction. Turning left (south) from this first junction a daylight canyon type passage can be followed for just over 20 meters to meet the main river. Turning right (north-northeast) at the first junction a small stream can be followed past a boulder pile for approximately 50 meters. This northeasterly passage terminates at some nice flow stone where a narrow squeeze to the right was pushed into an interesting stretch of tight white canyon passage. (This passage was not surveyed or pushed to a conclusion). Heading straight ahead from the entrance junction a drier, muddy stretch of passage can be followed (west) for over 50 meters, this section ends after a couple of climbs in a large boulder choke. To the north we spent some time clambering around to survey a huge pile of guano that seemed to take up the bulk of the impressive main chamber. No leads were located around the edge of this chamber although it was possible to squeeze through to the north eastern stream passage through a boulder pile.

[Jock's diary extract 17 Dec 2011 - Today we had a late start and headed out with Charles, Kerin, Muh and Brian to Tauwaremano. An excellent trip only 30 minutes' walk from the village. This cave had been well travelled by the locals. Kerin (without helmet) and I squeezed into an interesting stretch of tight white canyon passage that seemed to be taking a small streamway and heading off in the opposite direction to the rest of the main cave. Kerin assured me that no one had been in this section of the cave before. I was keen to push further but decided better of it as I was a slightly worried about my companion's over-eagerness to follow, barefoot and without a helmet..]







Tutuku Ulabu

Requiring a two hour hike from the village, this cave provided an ideal introduction to jungle hiking and caving in PNG. The cave is entered down a 12 m deep pothole to a streamway. Upstream the cave follows a passage that lowers and then splits into many smaller passageways. Most of these were entered and surveyed to the end. One low passage containing a stream was not pushed as it required a committed crawl (and even more committed survey) in cold water. A few metres downstream from the entrance pothole the passage hits a T-junction where the main cave passage is entered. This part of the cave was not looked at but would be extremely interesting to revisit. From reviewing the survey the part of the cave that we entered and surveyed appears to be only a small tributary.



Tutuku Ulabu



0 5 10 15 20 25 m

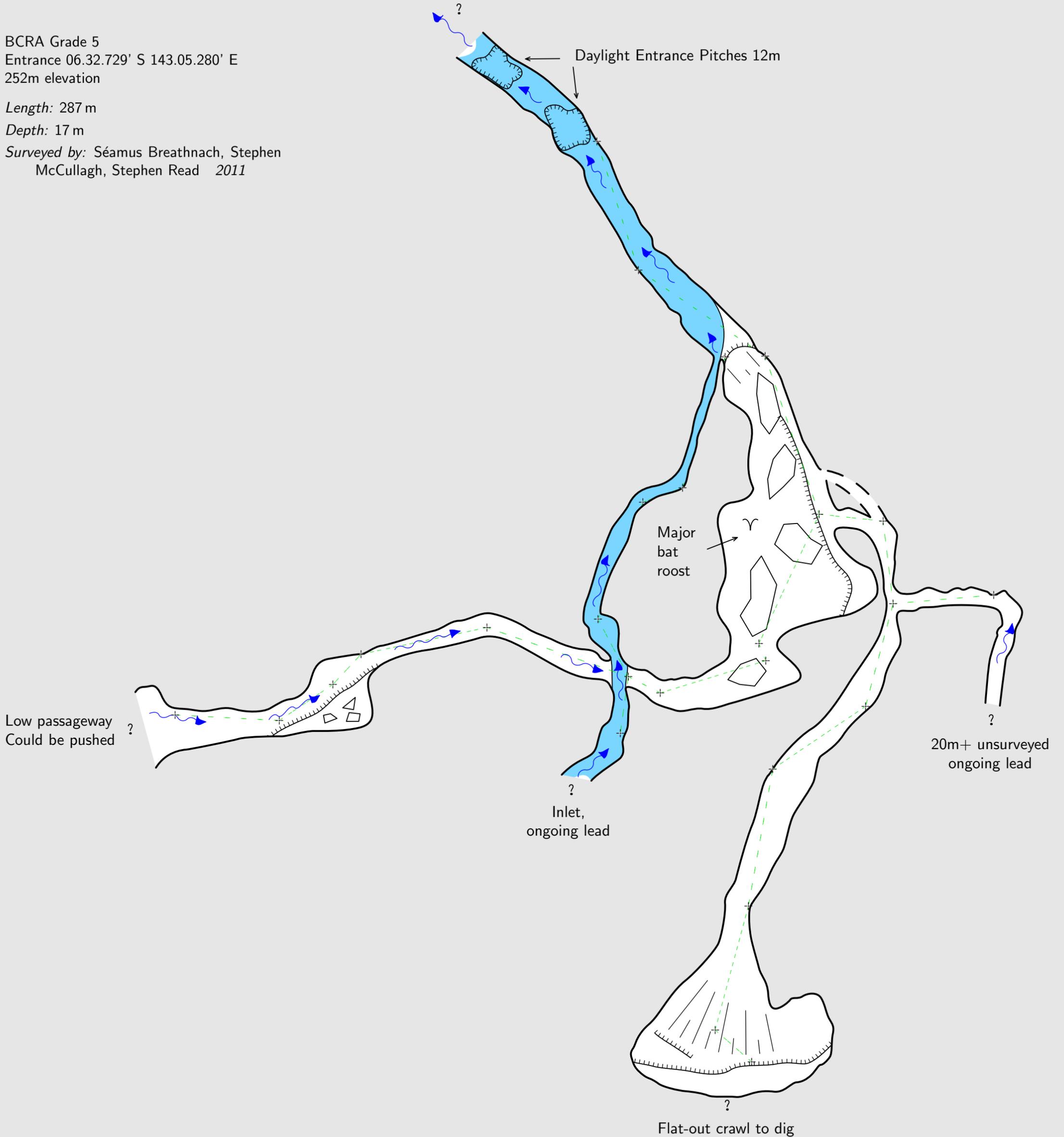
BCRA Grade 5
Entrance 06.32.729' S 143.05.280' E
252m elevation

Length: 287 m

Depth: 17 m

Surveyed by: Séamus Breathnach, Stephen McCullagh, Stephen Read 2011

Downstream Leads to major T-junction; large stream flows from left to right



Low passageway
Could be pushed

Inlet,
ongoing lead

Major
bat
roost

20m+ unsurveyed
ongoing lead

Flat-out crawl to dig

Walofani Ulabu

The largest cave in terms of cross-section investigated during the expedition, the cave has been previously visited by a number of outside explorers, though we appeared to be the first to survey it. The cave is quite photogenic, and contains some rare rock art (*Wall-O'Fanni* – could the name of the cave be from colloquial British influence?)

The cave is located 40 minutes from the village and even though the entrances are quite large it would be quite difficult to locate without villager support. The upstream entrance is huge and leads down a slope to the resurgence of the river which appears to bubble up through boulders at the bottom of a deep pool. The cave dimensions are massive throughout and it is suggested that flotation devices should be used for the long deep river sections. Going downstream the river appears to increase in volume over a length of 50 metres. The cave is frequented by many bats and cave swifts and has huge mounds of guano in the high-level dry sections. The river meanders from side to side taking up most of the passage except for the downstream parts where there is a dry riverbank initially to the left and then to the right of the cave. At the exit the river speeds up and could trap the unwary (though it is possible to traverse and then climb to the right at the exit). There was only one true side passage found, which was located about 50 m downstream of the upstream entrance. This was high-level and contained many stal formations. The passageway could be followed to another exit.





Walofani Ulabu

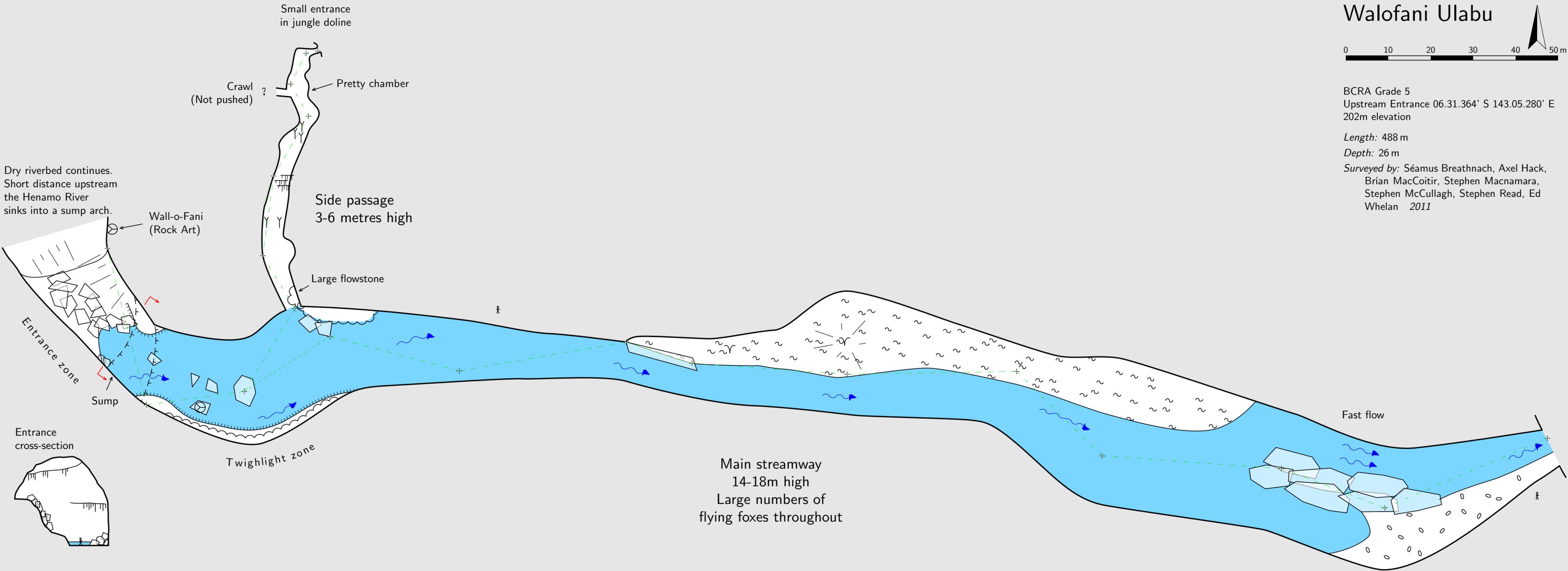


BCRA Grade 5
Upstream Entrance 06.31.364' S 143.05.280' E
202m elevation

Length: 488 m

Depth: 26 m

Surveyed by: Séamus Breathnach, Axel Hack,
Brián MacCoitir, Stephen Macnamara,
Stephen McCullagh, Stephen Read, Ed
Whelan 2011



Dry riverbed continues.
Short distance upstream
the Henamo River
sinks into a sump arch.

Wall-o-Fani
(Rock Art)

Small entrance
in jungle doline

Crawl
(Not pushed)

Pretty chamber

Side passage
3-6 metres high

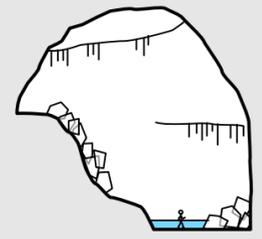
Large flowstone

Twilight zone

Main streamway
14-18m high
Large numbers of
flying foxes throughout

Fast flow

Entrance
cross-section



Weini Ulabu

Weini was one of the “signature” caves of the expedition. We visited on our return from Albert’s high camp.

The impressive entrance shaft is 25 to 30 metres in diameter, and 33 metres in depth. We rigged from trees and dubious rock spikes on the southern side. Opposite, a significant stream races in, crashing loudly to a floor of large, angular rocks.

15 metres south of the main entrance pitch head, Albert’s Route provides quieter access to the cave: this route was favoured by Albert for hunting. It gains the main shaft floor via a series of smaller pitches, white moonmilked rock, and imaginative rigging (presumably more so when using vines).

From the base of the main shaft, a rift series of climbs was pushed eastwards to near the surface, and abandoned when the climbs got too dodgy. Downstream, the river can be followed by hopping between ledges and rocks until the passage widens and the whitewater subsides. By climbing up to the right before leaving the main shaft chamber, a high, well-decorated ledge can be followed for 40 metres, giving a spectacular view of a second waterfall entrance falling down to the canyon below.

Despite the promising start to the cave, the passage disappointingly takes a sudden bend westwards under an undercut ceiling, and slopes quickly down to a sump. Before this, there is a large boulder and guano slope to an aven.

Main Shaft Entrance



Albert’s Route



Main Passage, Wider Section





Weini Ulabu

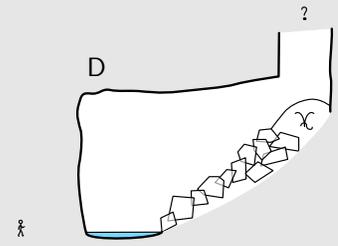
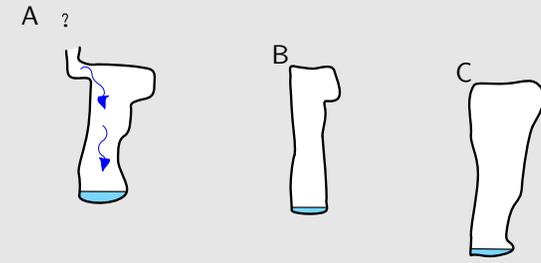


BCRA Grade 5; Albert's Route and Eastern Rift off main pot Grade 1
 Entrance 06.35.202' S 142.58.502' E
 673m elevation

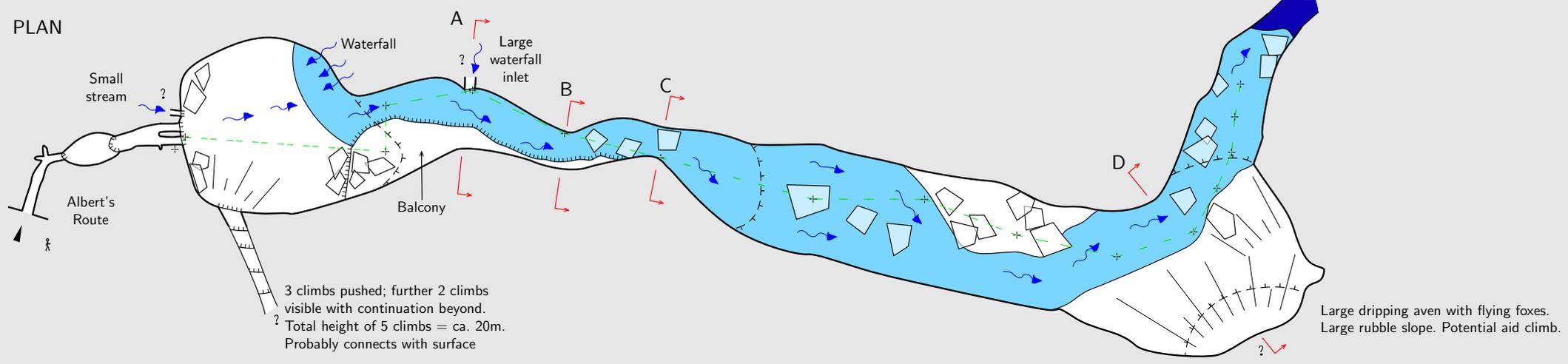
Length: 216 m

Depth: 75 m

Surveyed by: Séamus Breathnach, Axel Hack, Brían MacCoitir, Stephen Macnamara,
 Stephen McCullagh, Stephen Read, Ed Whelan 2011



PLAN



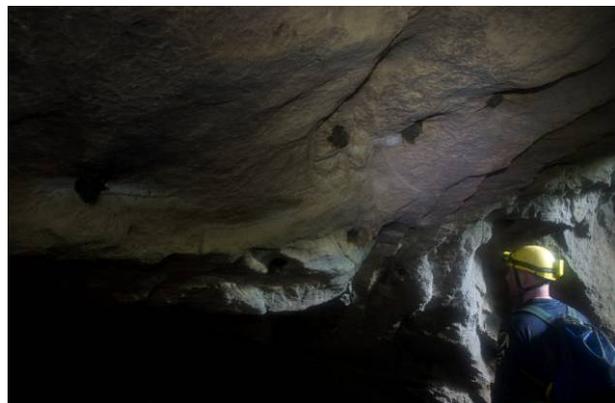
EXTENDED ELEVATION

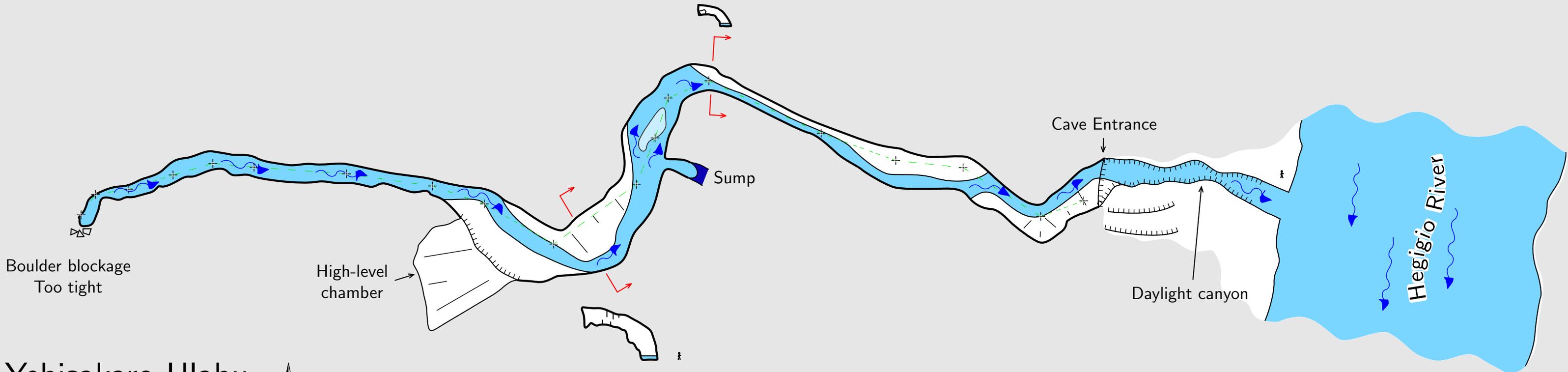


Yebisakaro Ulabu

Located about 30 minutes from the main village the walk starts off across the airfield in a down river direction. The walk takes you past a number of huts and eventually arrives at a slope leading down to the Hegigio. The cave is set back from the river with a small but deep canyon leading from the river up to the cave entrance. The entrance requires climbing down the side of the canyon over a large rock, which partially blocks some of the entrance, into the main river cave. The cave sustains quite large dimensions throughout with a small river meandering from side to side. At the furthest end, the cave forces you to follow the river within a large boulder choke in the right hand side of the cave. The cave finally ends where the river emits from a too tight blockage. High level routes were checked but no obvious way to bypass the boulder blockage was found. Prospects for further discoveries are limited.

Bats and cave swifts were in evidence throughout.





Yebisakaro Ulabu



BCRA Grade 5
 Entrance 06.30.760' S 143.05.416' E
 218m elevation

Length: 281 m
Depth: 13 m

Surveyed by: Séamus Breathnach, Dennis,
 Axel Hack, Stephen McCullagh 2011

You Ulabu

One of the finest caving trips of the expedition. The cave is a through trip, which we entered at the downstream end. There is abundant and impressive rock art on the gorge wall at the approach to the entrance.

The cave continues as meandering active streamway, typically 3 to 4 metres in diameter, with a boulder cobble floor. Wading is required at times. There are numerous oxbow balconies, and the entire length of the cave is beautifully decorated and scalloped.

There are many waterfall inlets from cracks in the ceiling, and they become more frequent towards the upstream end. The last section is very active, and a thorough soaking from the waterfalls is unavoidable. 700 metres from the downstream entrance, daylight is again reached, and the river cascades in from 20 metres above. A free-climbed exit may be possible here, but rope would be advisable.

Rock Art at Entrance



Approaching Cave Entrance



Appendix 2

PUBLICATIONS

The Irish News, January 2012

THE IRISH NEWS
FRIDAY JANUARY 20 2012

NEWS 3

Caving in for the trip of a lifetime

A group of Irish cavers has travelled deep into the rainforests of Papua New Guinea to map dozens of unexplored caves, braving snakes and punishingly humid conditions along the way. **Claire Simpson** reports.

WHEN people think about planning the trip of a lifetime, they usually have a cruise or safari in mind. But not six Irish cavers and a German photographer who spent four and a half weeks over Christmas trekking through the dense rainforests of Papua New Guinea's southern highlands region to map dozens of unexplored caves. Stephen Read, one of three cavers from Belfast who took part in the expedition, said they camped in the rainforest for days to survey 25 caves, many of which had not even been seen by villagers who live in the region. "The caves were huge. Some of the systems were massive," he said. "We thought the locals might be

frightened of the caves but actually they had visited some of them to hunt flying foxes and some of the caves had local myths and legends attached to them. "Over half the caves the locals had not been to because they just don't have the proper equipment to explore them. "We explored 25 caves and must have surveyed about six kilometres of passages." Mr Read said while some of the caves were relatively easy to access the cavers had to use ropes to explore many of the others, some of which were formed over underground rivers. The group was based in the village of Fogomaiu, home to some of the 800-strong Kosua tribe. However, they also travelled to caves several days' walk away

from the village. "For the first four or five days we went to caves within half a day's walk from the village," he said. "Then for two and a half weeks we went on long exploratory trips into the jungle. "We slept in hammocks around camps the villagers made. "We needed village guides with us because we could so easily have got lost. "We have about 10 years' caving experience each but really there was little we could have done to prepare us for the rainforest with all the humidity." The area the group visited is so remote that the villagers have had almost no contact with the outside world, apart from some Christian missionaries. Papua New Guinea gained its independence from Australia - 160km away - in 1975. The villagers who hosted the Irish team are evangelical Christians but they have also fought to retain some of their tribal values and customs, including 'sing sing' ceremonies held during celebrations or to welcome visitors. However, they are coming under

increasing pressure from logging companies, who have offered large sums to secure logging rights to the villagers' land. One of the few contacts the village has had with the outside world was when a BBC crew visited the region to film the acclaimed series *Lost Land of the Volcano* three years ago. "It was actually one of the BBC guys behind the series, who now lives in Fermanagh, who put the idea into our head," Mr Read said. "He gave us contacts who could help with the logistics." Mr Read said that despite the scale of the trip the group is anxious to return to map more caves on a very remote plateau, far to the east of Fogomaiu village. "This expedition was really a reconnaissance one to try and get a feel for the geography and establish good contacts within the village," he said. "What we want to do next time is visit a limestone plateau one or two weeks' hike from the village. "We think there are a few massive caves there that have never been explored."



■ **EXPLORATION:** Stephen McNamara treks through jungle in Papua New Guinea with guides and other members of the Irish exploration team to explore remote caves. Right, members of the Kosua tribe in traditional dress perform at the Irish group's 'sing sing' welcome ceremony

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EXPLORATION

Irish Caving Expedition to Papua New Guinea

December 2011 – January 2012

Seamus Breathnach

VSA

BACKGROUND

Ireland is a country not particularly renowned for its warm, humid weather, expansive rainforests or exotic wildlife. But it has a healthy caving scene and Irish cavers regularly wander off on various expeditions, keen to pursue some exploration outside of their home turf.

In 2008, the British Broadcasting Corporation (BBC) visited the village of Fogoma'yu, located in the jungles of the Southern Highlands province of Papua New Guinea.

Their goal was to film *The Lost Land of the Volcano*, a documentary about the remarkable ecosystem nestled around and in-

side the crater of the nearby extinct Mount Bosavi volcano.

Tim Fogg, a venerable caver and rope access specialist in Ireland worked as a safety and caving consultant with this BBC film crew. He returned to Ireland with stories of abundant unexplored cave systems on the lands of the Kosua tribe in the Fogoma'yu area and this was the seed that ultimately grew into a plan to send an Irish caving expedition to Papua New Guinea in 2011/2012.

PREPARATION

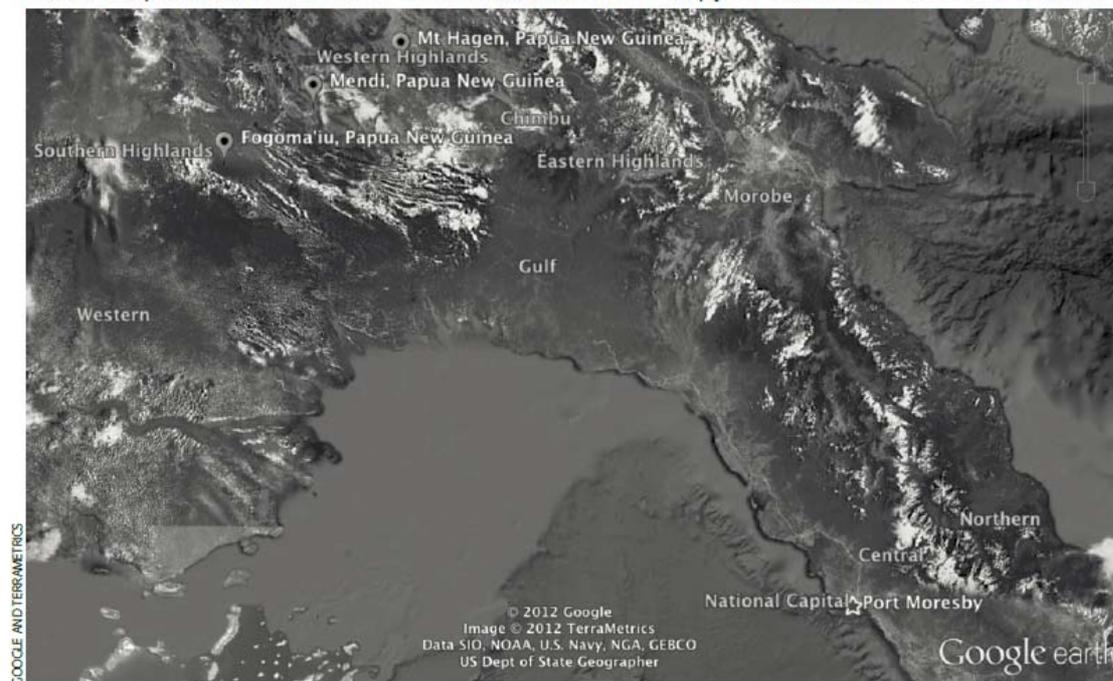
Preparations began in mid-2010 and an idea was hatched over a few friendly pints

of Guinness after a weekend's caving trip.

With a concept in hand, we checked with our European and Australian caving colleagues and verified this area had not been previously explored by cavers.

Soon afterwards the first of the international flights were booked and we began to form a plan. In the Southern Highlands the difference between the rainy season and the dry season is little, in that the rainy season (December to March) gets a little more rain than the dry season and is still hot, wet and humid.

We locked in the dates of 12 December 2011 to 6 January 2012 to maximise available holidays over the Christmas period.



IRISH CAVING EXPEDITION TO PAPUA NEW GUINEA

EXPLORATION



The team at Mendi airstrip. From left: Ed Whelan, Steven 'Bus' McCullagh, Seamus Breathnach, Brian MacCoitir, Alegra 'Ally' Beatus, Axel Hack, Steven 'Muli' MacNamara, Paul O'Dowd, Stephen 'Jock' Read

The aim was to travel to PNG on a reconnaissance expedition to explore and document as many caves as possible and evaluate potential for future expeditions.

Our research on local PNG customs gave us some indication of what to expect from the population when we got there.

Many sources pointed to the tradition of 'Tok Tok' as the main means of talks—negotiations. The Tok Tok, which is conducted in the local language (or in Pidgin English), is well renowned as a tiresome activity that requires a degree of robust argumentative posturing to get what you want. And often, due to unknown reasons, it results in stalemate and frustration.

We would have to sit through many a Tok Tok in negotiating land access, guides, food etc. This thought concerned us throughout our planning stages.

To have any chance of achieving our expedition objectives in such a short period of time we would need to minimise this unnecessary downtime.

To this end, one of our earliest decisions

was to invite Paul O'Dowd along on the expedition. Paul is an Australian national and specialises in local relations and natural history support for remote expeditions, notably to areas in PNG. He is fluent in Pidgin English but more importantly he has also been to the Fogomai'yu village a number of times with the BBC and has cemented good contacts with the local tribe.

Throughout the length of our expedition, Paul spent most of his time in discussions with the village negotiating our logistical requirements, allowing us to concentrate on our caving activities.

When Paul first contacted the village to ask our permission to visit them for this expedition, the request caused some mild consternation in the community.

In Ireland (and probably in most other countries) it is sometimes difficult to explain to a non-caver what speleology is about and it was no different with the people of the Kosua tribe.

Despite living in a remote jungle region, the Kosua people are not completely iso-

lated from the outside world and were well aware that outsiders did not always have the best interests of the village at heart.

Logging and mining companies, amongst others, had encroached upon their way of life in recent years and therefore our request was viewed with a degree of suspicion, particularly because we wanted to look at holes in the ground.

Nevertheless, Paul helped calm many of these doubts and the people of Fogomai'yu welcomed us into their village with open arms.

GEOGRAPHY

The rugged terrain and dense rainforests around Mount Bosavi are not documented in tourist topographical maps.

Extensive searches for maps of the area resulted in some interesting finds; two of the maps are shown on page 11—a geological survey from the 1970s (txu-oclc-6552576-sb54-12 Lake Kutubu) and a terrain map from the 1950s (Darai Kikoro Map).

The geological survey and some other maps we were able to get a look at (which unfortunately cannot be shared because of copyright restrictions) showed what seemed like hundreds of sinkholes around the Mount Bosavi foothills, validating Tim Fogg's claim that the area had some good caving potential.

Although the potential for cave discovery is great, the logistics of getting to the cave entrances made (and will make) additional discoveries difficult, but not impossible.

The Kosua people have a good knowledge of the immediate and surrounding areas stretching up towards Mt Bosavi, and even at that, some of the locals found new caves while we were there.

The area around the village of Fogomai'yu is dominated by three geological features. The first and most prominent is Mount Bosavi, an extinct volcano that lies to the South West of Fogomai'yu. Mount Bosavi is a 2,397 m high Pleistocene stratovolcano¹ with a distinct horseshoe-shaped crater 4 km wide and 1 km deep. To the north of Mount Bosavi, right around to the eastern and southeastern slopes, there exist large areas of ancient volcanic ash and lava flow.

The second is the Darai Plateau, a vast tract of upland area to the southwest of Mount Bosavi that extends for at least 100 km in the southwesterly direction and encompasses an area of probably well over 3,000 square kilometres. The plateau rises to approximately 400 m above sea level and is a major geographical feature of the Papuan Fold Belt.²

It is an extensive stretch of karst limestone country and is particularly inhospitable

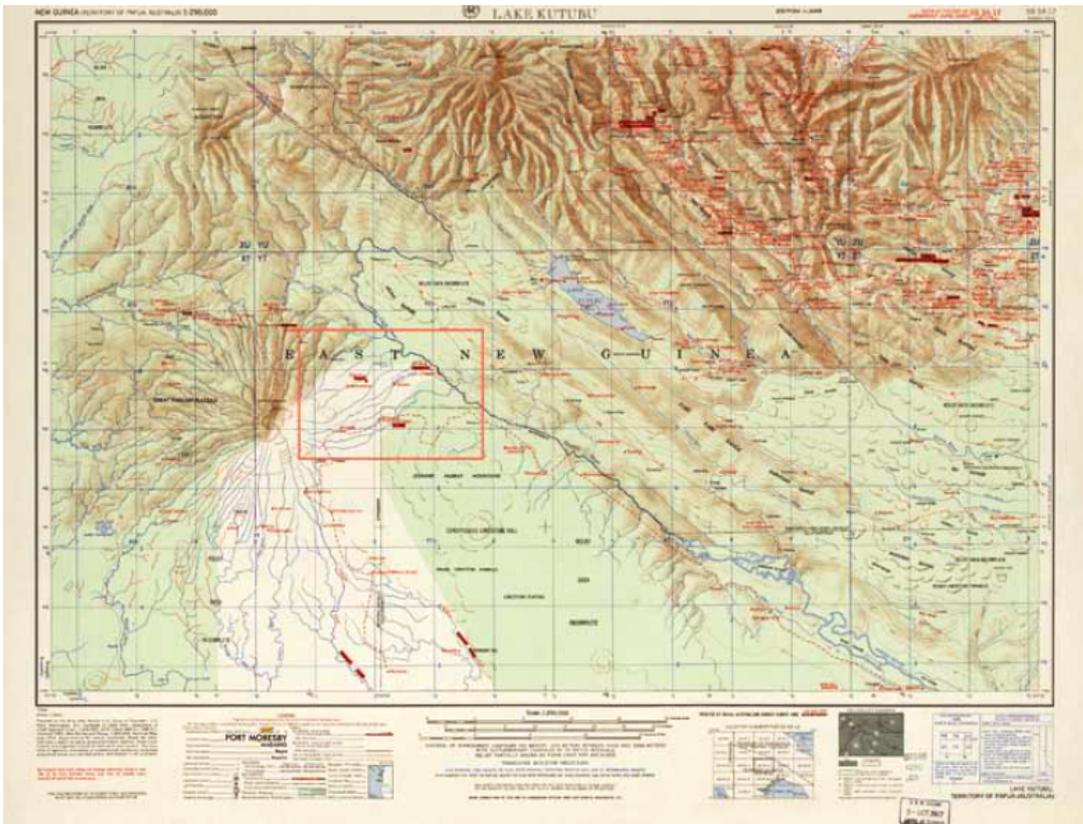


Being welcomed in ceremonial style to the village of Fogomai'yu by the Kosua tribe

IRISH CAVING EXPEDITION TO PAPUA NEW GUINEA

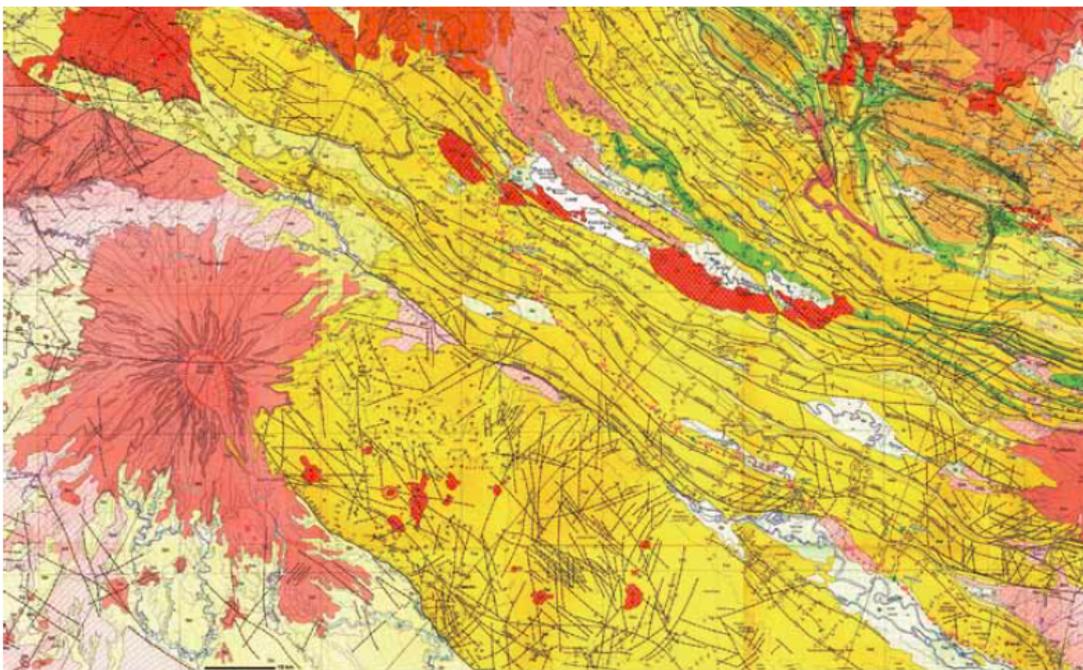
EXPLORATION

AUSTRALIAN ARMY SURVEY CORPS



1967 map of the Fogomaiyu region

CREDIT AWAITED



Darai Kikori map - Geological map of the Mt. Bosavi and Fogomaiyu area.

IRISH CAVING EXPEDITION TO PAPUA NEW GUINEA

EXPLORATION



The team in the entrance of Walojani Cave

ABEL HACK



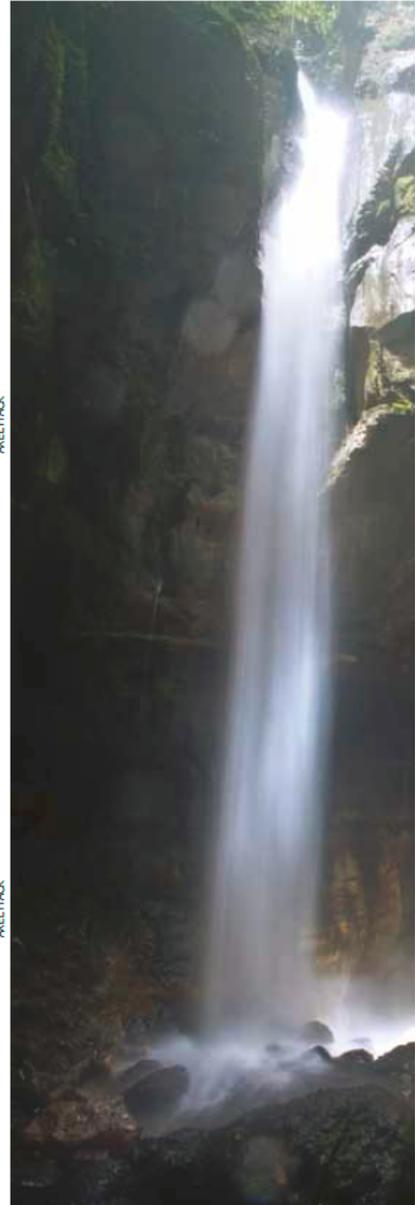
Steve 'Muh' in the main streamway of Kikiwari Cave

ABEL HACK



Man-made structure for catching flying foxes in cave entrance

ABEL HACK



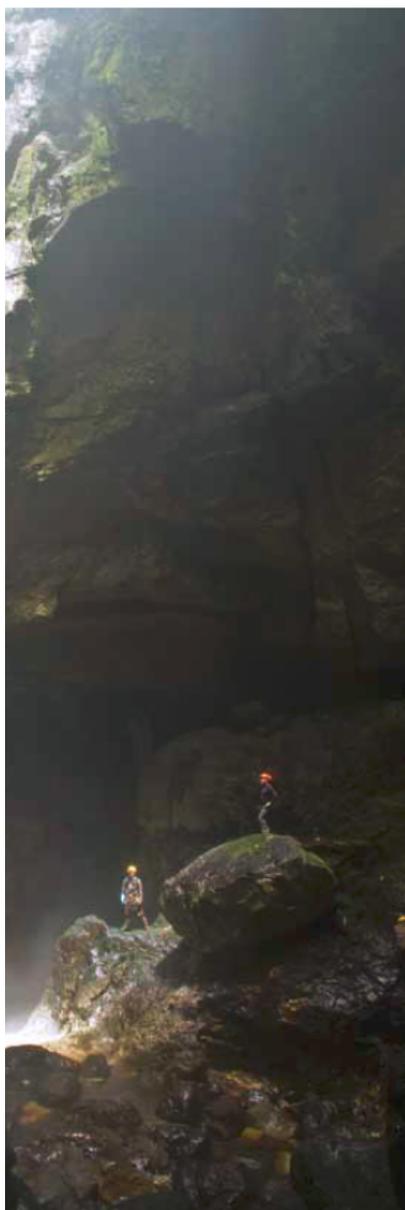
Jock and Steve 'Bus' under



River crossing

IRISH CAVING EXPEDITION TO PAPUA NEW GUINEA

EXPLORATION



the waterfall of Weini Cave



at Albert's camp



Steve 'Bus', Steve 'Muh' and Jock inside Walofoani Cave



Decoration in Himasili Cave



Seamus at helictites in Natila Cave

IRISH CAVING EXPEDITION TO PAPUA NEW GUINEA

EXPLORATION



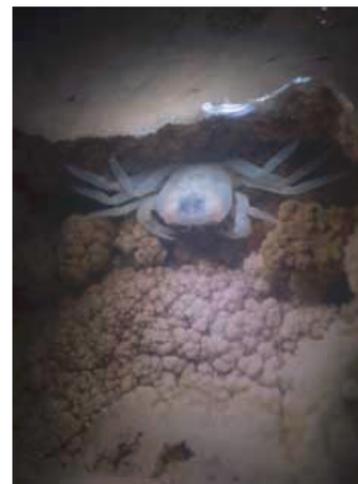
A child holds up dinner, a flying fox at Fogomai'yu village



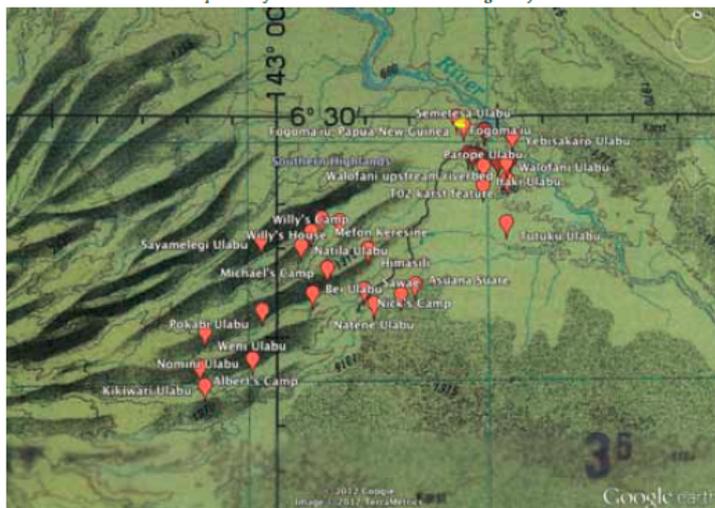
Paul holding an Amblypygid, also known as a whip spider, in Manena cave



Dispersion of caves around Mt. Bosavi and Fogomai'yu



Cave dweller—Cave crab in Manena cave



Closer view of caves visited around Mt. Bosavi and Fogomai'yu



Jungle dweller— a Eupholus snout beetle

GOOGLE AND TERRAMETRICS

GOOGLE AND TERRAMETRICS

AXEL HACK

AXEL HACK

AXEL HACK

AXEL HACK

IRISH CAVING EXPEDITION TO PAPUA NEW GUINEA

pitiable due to its extensive dolines, karst pinnacles, its sharp-edged escarpments and the cover of dense lowland forest.³ The people of the Kosua or nearby tribes rarely visit this area as surface water is scarce and progress through the terrain is difficult, especially in bare feet on sharp rock. As far as they know, the area is uninhabited.

The Darai plateau developed on thrust blocks of late Eocene to late Miocene Darai Limestone. Darai Limestone is a sequence of Oligocene deep-water shelf limestones overlaid by extensive Miocene reef limestones.

These formed in the shallower areas of the marine carbonate platform. The carbonate reef growth kept pace with the sea level fluctuations until the mid Miocene when the area was covered by rich siliceous (quartz) sediments from the uplifted parts of the Papuan Basin. As a result of this the lower Miocene limestone is quite thick.

Finally, the village of Fogomai'yu is situated a few hundred metres in from the western banks of the Hegigio River, which eventually becomes the Kikoro River further south. The river runs in a south-easterly direction and probably forms the main drainage for the area, in particular the eastern side of the Darai Plateau.

Of the caves we visited, most were located close to the basalt/limestone interface at the foothills of Mount Bosavi. In the main, the caves contained active streamways or larger river passages with some sections of fossil passage. The caves toward the top of the area were mainly in white limestone (reminiscent of Ulster White Limestone) with chert/flint nodules.

GETTING THERE

The approximate distance travelled from Dublin in Ireland to our destination in Fogomai'yu village was about 19,000 km, covered over five days or more, depending on international flight options. Due to its location, the only viable access to the village is by air and it is not served by commercial flights. It has a small grass airstrip suitable for light aircraft and only usable if the people of the village cut the grass on the airstrip beforehand.

An option to walk in to Fogomai'yu (one day's walk) via the town of Moro is possible, but logistically challenging.

Our route involved flights to Australia and then onwards to Port Moresby. Air Niugini kindly allowed us to bring an additional 50 kg of equipment on board in return for an article for their in-flight magazine.

As this was a reconnaissance expedition, we specifically limited the amount of technical caving equipment we would bring

as a team. For example, we limited our usable rope to just over 100 m, with a similar amount in reserve for rescue purposes.

Any caves requiring more equipment would be logged for a return expedition. We were able to divide this equipment amongst the team luggage thanks to the excess baggage allowance.

A further commercial flight got us to Mount Hagen, the capital city of the Western Highlands province where we purchased all of our food and equipment supplies.

From there we travelled by road via the highlands highway to the town of Mendi, the provincial capital of the Southern Highlands province. This is where we met our charter plane, a Twin Otter aircraft, to bring us the final leg to our destination about 80 km west-south-west of Mendi. Our co-pilot for the flight to Fogomai'yu village was from New Zealand and had lived in the North of Ireland for some time near the caving region of County Fermanagh. It turned out that he knew some of same people we know back home: small world.

THE TEAM

Our caving team consisted of six Irishmen and a German, none of whom had visited Papua New Guinea before but who were all well accustomed to expedition caving.

Each member had plenty of work to do in planning the expedition. As I lived in Australia (and therefore in a similar time zone to PNG), my primary role was arranging anything that involved contact with folks in PNG and locally in Australia. This included travel, accommodation, security escort, international cave rescue options, medical support from the nearby Oil Search oil base.

Travelling through Papua New Guinea is a wonderful and rewarding experience. A bit of patience helps a lot; timetables are often only theoretical and unpredictable events tend to be frequent enough to keep you on your toes. Organising travel and accommodation from overseas is also a rewarding experience. Reliable communications, even to well-populated areas in PNG, are sometimes difficult. Western conveniences such as email can be scarce so explaining technical logistical requirements over an infrequently answered, poor quality telephone line—via a language barrier—requires a good sense of humour.

Paul O'Dowd, as mentioned earlier, joined the team to help manage access and interactions with the local tribe. And finally Allegra 'Ally' Beatus, a portrait photographer/documentarian from Israel but based in WA, also accompanied us into the area.

VILLAGE CAVING

Our arrival in the village was amazing. From the air, all you can see after leaving Mendi is rainforest, in every direction. As our plane touched down on the village airstrip, we saw that the men, women and children of Fogomai'yu had turned out to meet us.



AXEL HÄCK

A welcoming party in ceremonial tribal dress sang and danced a traditional sing while beating Kundu drums. It was an emotional experience clambering out of the plane to this spectacularly warm welcome, unsure of how to react but overjoyed to finally be there after months of preparation.

More welcoming ceremonies followed after our equipment was unloaded and the plane departed. We were given food and gifts, some speeches were made and then we were asked to announce our intentions.

Paul got to work explaining that we were looking for caves with large rivers entering or exiting, caves with waterfalls, caves with flying foxes, caves with mist or clouds in the entrance. The concept of cave size was explained as a hole that was big enough for a person to walk into and must go a long way into the darkness where no light can be seen.

These caves were called 'bigla' caves (bigla is 'big' in Pidgin English), a term that was used throughout our stay in the area. We produced some maps of the area and took notes as the landowners began to share information in this Tok Tok about caves on their lands.

Our first few caving trips were local to the village. This was deliberate, to help acclimatise to the humidity and terrain. Our base camp in the village was in a hut belonging to Captain Jack, a great fellow who got the nickname from having a patch over

IRISH CAVING EXPEDITION TO PAPUA NEW GUINEA

EXPLORATION



Huts in Fogomai'yu village

AVEL HACK

one eye and being a boatman for the BBC during their visit to the area.

As was the norm in the village, it had no western conveniences such as electricity or running water but it was clean, had a roof and was a place to store our equipment and hang our hammocks and for that we were grateful.

As we were on a budget, we couldn't afford to fly in fuel for generators to power laptops etc. and a later attempt to buy fuel from the nearby town of Moro was unsuccessful. Therefore, we had to do without electricity and relied on solar chargers for charging cameras and other batteries.

Day 1 was a slow starter as we unpacked, checked and assembled our equipment while our guides for the day waited patiently outside. We eventually set off in two teams to hike through the jungle to our first two caves, Tutuku and Itaki.

Tutuku proved to be the more arduous of the day's trips as it was a 2.5 hour hike each way with little water en route. However, we only had time to survey upstream and left it

with a promising downstream lead that will need to be looked at again sometime.

For the Kosua, caves are a valuable resource to have on your land. This is because caves are normally home to bats, birds and most importantly, flying foxes, all of which are a source of food for the Kosua.

Flying foxes are always a local favorite and a team of spectators would often accompany us to cave entrances to swat down and catch any flying foxes disturbed during our exploration. It was no surprise, then, that the Kosua had already been into some of the caves we visited in pursuit of flying foxes and would occasionally follow us into caves in bare feet and a hand torch, despite our protests.

We found that local people had even free-climbed down 20+ m pitches using tree branches as makeshift ladders to hunt for flying foxes. And they've been doing it for generations.

Despite all of this, the local population usually did not wander too far into the caves, so this left plenty of virgin passage

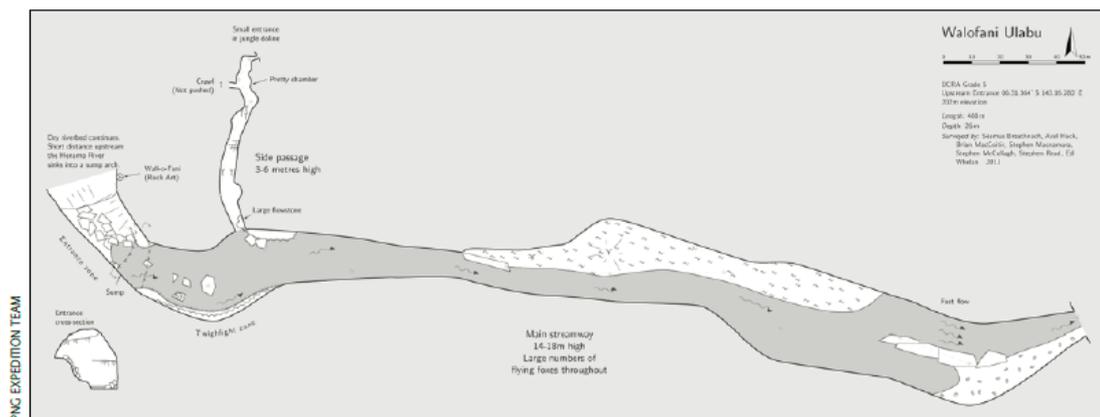
for us to explore. Most caves were quite active and some carried larger rivers through them, such as the impressive Walofani with its 20 m high entrance archway and stone art that had ancestral myths and legends associated with it.

Surveying in deep water or while swimming was not unusual but the water was usually bearable for extended periods of time and was often a welcome reprieve from the heat and humidity of the jungle.

We quickly found our 'jungle feet' and became used to the hours hiking through the steep, muddy terrain. Time has little bearing on day-to-day life and estimating travel times and distance proved interesting at first—a walk described by our guides as only 15 minutes away could actually be an hour. And an hour's walk could end up being 20 minutes. It didn't ultimately matter, however, as we adopted the local routine of rising at sunrise and going to bed shortly after sunset. The first job in the mornings was to light the fire to boil water for coffee and porridge. Daily we ate vegetables—sweet potatoes, greens—and fruit—pineapple, bananas—from the forest prepared by local families, which of course we paid for.

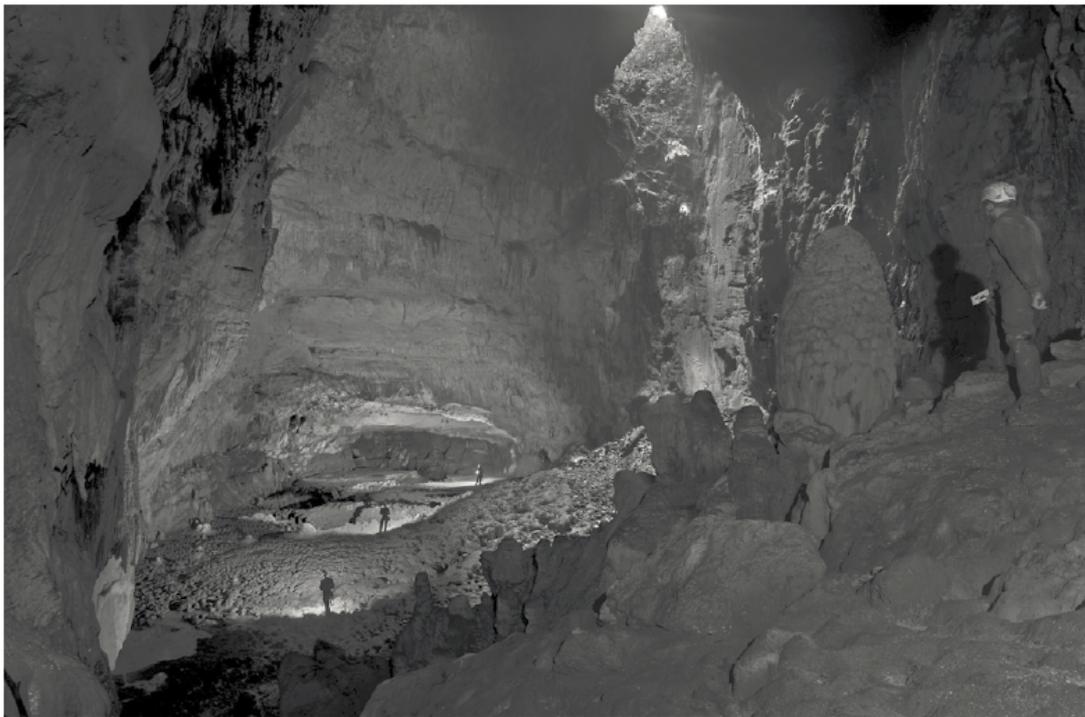
We complemented this with our own food which we brought with us from Mount Hagen. One of our staple foods from the forest was sago (called 'saksak' in the local language), a starchy carbohydrate derived from the pith of the sago palm and cooked inside bamboo shoots to form a white rubbery substance.

This, and some of the regular vegetables, ended up being a bit tasteless after eating them every day for a few weeks so the addition of flavoring from curry power, soups, chili or tomato paste became a winning formula. We occasionally got some meat locally but relied on our tinned meats as a source of protein. Some of the foods we brought that worked out best included: porridge/oats—a consistent source of energy to start a



IRISH CAVING EXPEDITION TO PAPUA NEW GUINEA

EXPLORATION



AXEL HACK

The team inside the entrance of Pokabi cave

day; tinned meats and fruits—jungle-proof and complemented the local food supply; bags of rice, spaghetti and noodles—can be mixed with everything and bulked up local food offerings; and flavouring—curry powder, salt, soups, tomato paste, honey; all essential, and help to cheer up bland taste after the few weeks eating the same food

BUSH CAVING

After another few successful days' caving near the village, we arranged a three-day trip into the bush to visit the lands of a tribal elder named Willie, which bordered

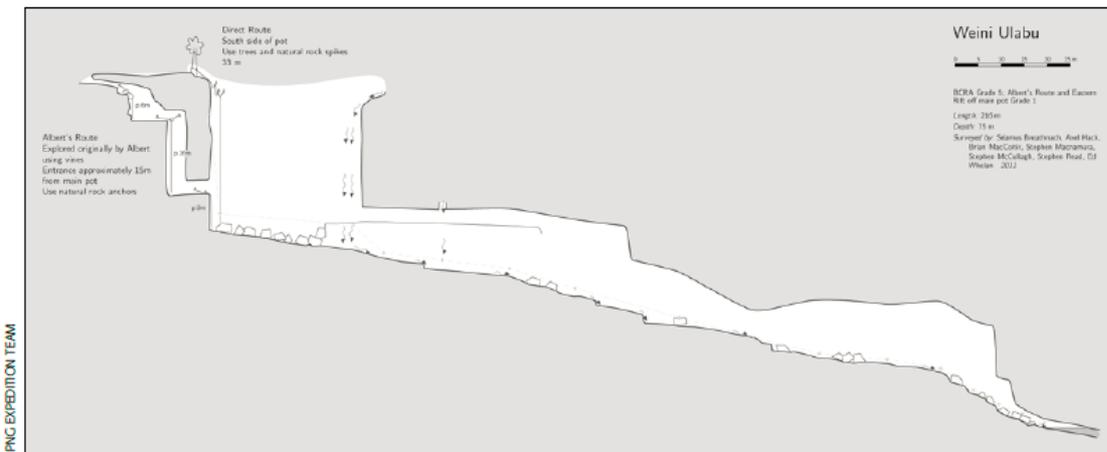
the land of Chief Waikatu from the neighbouring village of Talisu.

The lands were about 8 km to the south-west and a few hours trek from the village. We packed our rucksacks with enough equipment for the trip, leaving non-essentials behind at Captain Jack's house.

Willie promised that he had some big caves to see on his land but they could not be explored in a single day's trip. Willie and Chief Waikatu's families prepared a camp for us by clearing trees and vegetation in an idyllic setting on a tributary of the Henamo River.

The camp was on an island on the river which divided the lands, a nearby waterfall provided fresh water and we had a sheltered area built by Willie's family where we could hang our wet clothes and prepare food. We also had enough space to hang our hammocks on trees close to the camp.

It was at this point that we realised we weren't going to win the battle to keep our feet dry. The first thing we had to do every morning when leaving this island camp was to wade across a river and get our feet and boots wet. Regardless, the caving was good and we managed to explore three caves in



IRISH CAVING EXPEDITION TO PAPUA NEW GUINEA

EXPLORATION

the area named Sayamelegi Ulabu, Mefon Keresine and Natila Ulabu with a surveyed passage length of over 1500 m.

We returned to Fogomai'yu village to relax, gather our thoughts and celebrate Christmas. The southern highlands is a dry province. Years of alcohol-initiated tribal feuding has brought a law prohibiting alcohol in the province—not good if you're an Irishman over Christmas time. However, a bottle of Jamesons and one of Bushmills somehow managed to sneak their way into our luggage and made it across the highlands border, so we were happy to crack them open in the spirit of Christmas.

Christmas is celebrated in a Christian manner by some of the Fogomai'yu community, influenced by missionary visits over the years.

After Christmas we embarked on a more ambitious seven-day trip into the bush, higher up into the foothills of Mount Bosavi. Again, camps were prepared for us en route by each of the landowners, each seemingly better than the last. When we reached Albert's camp, we were given another ceremonial welcome, this time because we were the first white people ever to visit Albert's land. Again, food and gifts were provided as we were welcomed into the camp.

For this longer excursion into the bush, we had a dedicated cook called Nick to source and prepare our food. He had served as a cook for the BBC crew when they were in the area.

This allowed us to venture out for longer during the day and not have to worry about carrying as much food with us. It was on this trip we started to hit the larger vertical caves requiring more acrobatic expedition rigging, thorough gardening of pitch heads and a little snake charming.

We continued as before by surveying as we went, bottoming where possible and documenting any leads for return visits. GPS coordinates were marked at every entrance but were sometimes awkward to get because of the canopy cover. Navigation through the jungle without local guides would be quite difficult, even with GPS coordinates.

Periodically, when at base camp, survey data from the preceding trips would be transcribed from the waterproof survey notebooks and collated into a central log-book while the information was fresh in our heads.

The battle with wet feet started to take its toll midway through the seven-day trip as we couldn't dry our boots every evening. We were still wading through several rivers every day and all the time caving in the same boots.



Ally in the streamway of Itaki Cave

Most people participated in the evening and morning rituals of disinfecting feet, applying foot rot medication, bandaging if required, putting on dry socks and then just getting on with it. Cuts and scratches had to be tended to every evening to avoid infection and we were also regularly treating local people for any ailments that we could assist with.

We surveyed another ten caves on this excursion and returned to base camp to prepare for departure on 3 January.

In total the team explored over 25 caves and surveyed just over 6 km of cave passage. We were happy with this result from such a small team on physically demanding terrain and it certainly demonstrates the untapped potential of the area for further discoveries. We hope that this will be the first of several expeditions to the area as we really only scratched the surface.

ACKNOWLEDGMENTS

Being a member of the VSA was very helpful with planning for the expedition and there are a few Australian friends of

the expedition who helped make this trip possible and deserve a few words of thanks:

■ Joe Sydney (NSW Cave Rescue Squad) for detailed maps of our destination, assisting with insurance, assisting with international rescue support options and just generally being very helpful.

■ The VSA committee for the loan of surveying equipment and help finding contacts in PNG.

■ Elery Hamilton-Smith of the VSA for the words of advice and stories of experiences in remote parts of the country which helped us prepare for the trip.

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2. Anthony Williamson and Graeme Hancock eds., *The Geology and Mineral Potential of Papua New Guinea*, Papua New Guinea Department of Mining
3. Environmental Impact Statement PNG LNG Project

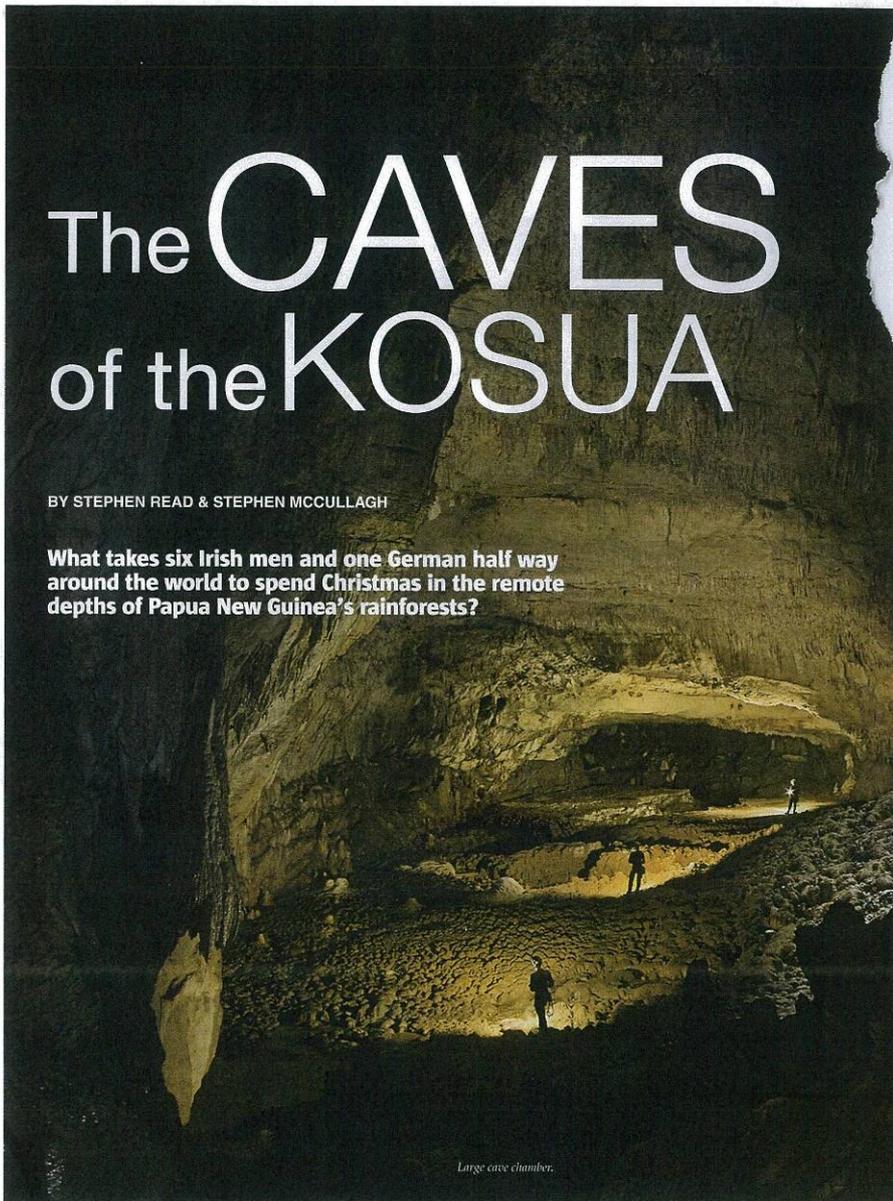
“Paradise” Air Niugini In-Flight Magazine, August 2012

LOCAL DESTINATIONS

The CAVES of the KOSUA

BY STEPHEN READ & STEPHEN MCCULLAGH

**What takes six Irish men and one German half way
around the world to spend Christmas in the remote
depths of Papua New Guinea’s rainforests?**



Large cave chamber.

1

THE LOCATION

Our base camp was in the village of Fogomaiyu. This is a small community located on the eastern slopes of the enigmatic Mount Bosavi. It is surrounded by the rainforests of the Upper Kikori in the Southern Highlands. The Darai Plateau and the limestone landscape surrounding it is a honeycomb of unexplored cave systems. The only viable access from Port Moresby is by air. The village has a small, grass airstrip suitable for light aircraft including Twin Otters.

2

THE LOCAL PEOPLE

The region is the homeland of the Kosua people who have lived in complete isolation from the outside world until relatively recently. They retain a great deal of their traditional ways and the famous PNG hospitality is on full show.

3

THE EXPEDITION TEAM

The cavers or speleologists were six Irish men and one German - none of whom had visited Papua New Guinea before but all of whom are amongst the world's most experienced cavers. An expedition coordinator from Australia helped manage access and interactions with the tribe and a photographer/documentarian from Israel also accompanied the team into the area.

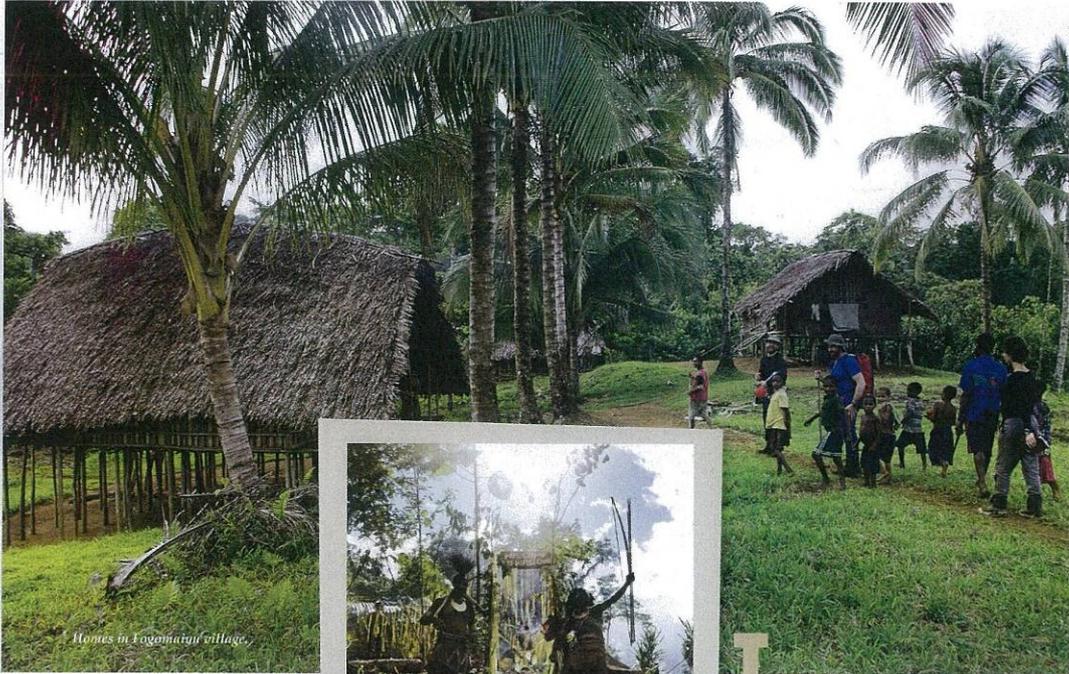
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THE GOAL

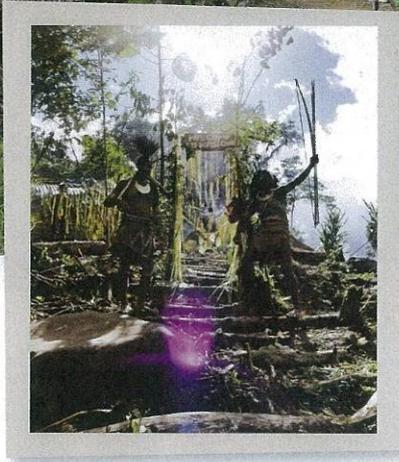
To be the first people to record, map, explore and discover the caves and underground rivers that riddle the landscape to the east of Mount Bosavi and into the Darai Plateau.

Traditional welcome at Fogomaiyu.

LOCAL DESTINATIONS



Homes in Fayamatagi village.



Traditional welcome at Kosua bushcamp.

Ireland is a country that is not particularly renowned for warm weather, large forests or exotic wildlife, however it does have caves. This is something it has in common with Papua New Guinea. Caves mainly form in limestone rock and cavers are always on the lookout for new areas to explore.

Papua New Guinea has a lot of limestone and to the best of our knowledge quite a lot of it is unexplored. This is enough to pique any caver's interest and in 2010 after a few drinks, we sketched out a plan.

Eighteen months of planning came to fruition as the team boarded the first of many flights on a cold windswept December evening in Dublin.

Many hours and five flights later (including two Air Niugini transfers) and the team was assembled on our small Twin Otter aircraft, cruising over the foothills of the spectacular Mount Bosavi.

Living in the bush for four weeks and exploring for caves in pristine tropical jungle in the heart of Papua New Guinea could prove to be a huge challenge for the group.

Just getting to the location had to be a precision operation with the gear we were humping. So many connections, so much gear and so little time!

Air Niugini was very helpful in our preparations





Full team at Walofani cave entrance.
Below: Walofani cave stone art carving.

by accommodating the large amounts of expedition equipment that we had to carry. However, all the stress, nerves and anticipation melted into the smooth rhythmic beat of the Kundu drums as we clambered out of the plane to a spectacular warm welcome from the villagers of Fogomaiyu.

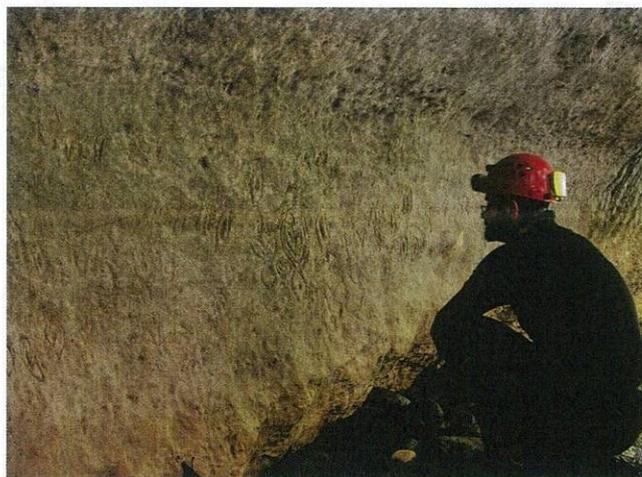
Fogomaiyu is a small village nestling on the lower slopes of Mt Bosavi, a few hundred metres from the southern bank of the Hegigio River in the Southern Highlands. It is the home of the Kosua tribe.

These proud, welcoming people became our guides, hosts and friends. And for the duration of the expedition, we relied heavily on their expert bush skills and local geographical knowledge to find our way through the dense jungle vegetation.

During the first week, we chose to visit caves in close proximity to our base camp. This gave us the opportunity to acclimatise and find our 'Jungle' feet. During the first week, many fine caves were explored and mapped, including the impressive and enigmatic Walofani with its mysterious stone art, and Semetesa which, surprisingly, was found within the boundaries of the village.

As we grew more accustomed to the humidity, the bug life and the often difficult terrain, plans were made for a number of challenging forays into the bush in order to hunt for even more remote caves deeper into the jungle and hopefully, to the steppes of the Darai Plateau.

During the first week, many fine caves were explored and mapped, including the impressive and enigmatic Walofani with its mysterious stone art, and Semetesa which, surprisingly, was found within the boundaries of the village.



LOCAL DESTINATIONS



Well decorated underground chamber.

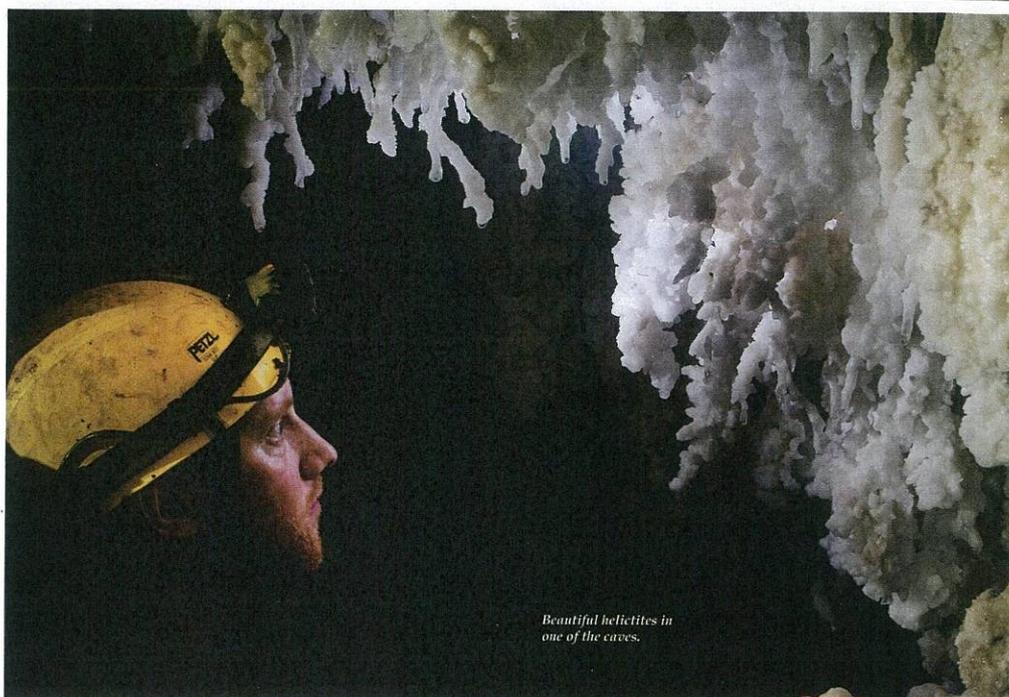
In total, the team explored over 25 caves and mapped approximately six kilometres of cave passage. This was a significant achievement and certainly demonstrates the untapped potential of the area for further discoveries. We hope this will be the first of several expeditions to the area.



Cave crab.



Jungle wildlife.



Beautiful helictites in one of the caves.

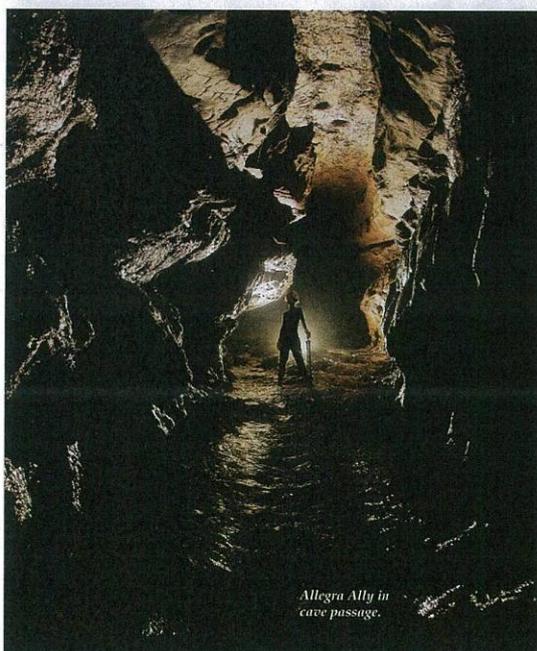
Finding caves in such a difficult, unmapped environment would have been virtually impossible without the help and support of our local guides.

Our hosts at Fogomaiyu prepared a number of bush camps and helped us carry food supplies and caving equipment into seldom visited regions, many days trek from Fogomaiyu village. This allowed the team to cover a lot of ground and explore as many caves as possible over the course of our visit. The Kosua knowledge of the landscape and their willingness to share their cultural heritage with us was overwhelming.

Some of the caves we mapped were well-known to the Kosua people who naturally regaled us with fascinating stories, ancestral myths and legends associated with the sites. Other caves were technically challenging, involving long swims in fast flowing rivers and deep abseils into the shafts of large potholes.

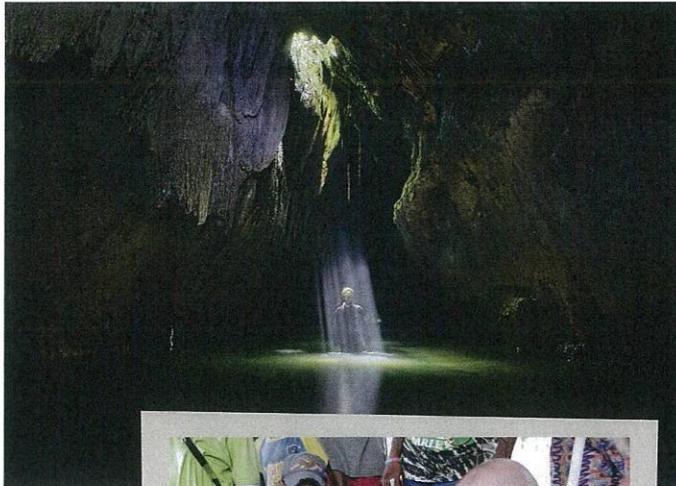
In total, the team explored over 25 caves and mapped approximately six kilometres of cave passage. This was a significant achievement and certainly demonstrates the untapped potential of the area for further discoveries. We hope this will be the first of several expeditions to the area.

The Kosua people recognised the benefits of attracting tourists to their incredible landscape. They are in the process of setting up trails and bush accommodation which will include some of the camps that were established to support us and others which were used by the BBC for their recent documentary about the region.

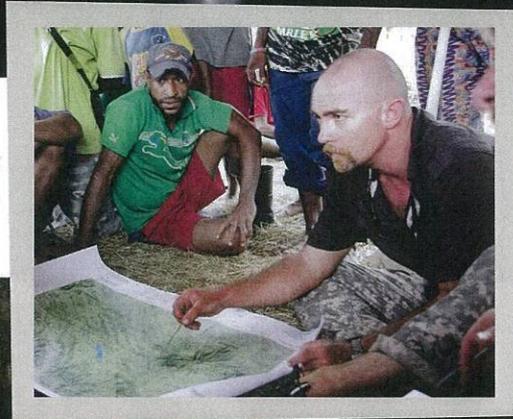


Allegra Ally in cave passage.

LOCAL DESTINATIONS



Top: Team leader Steve MacNamara in cave passage.



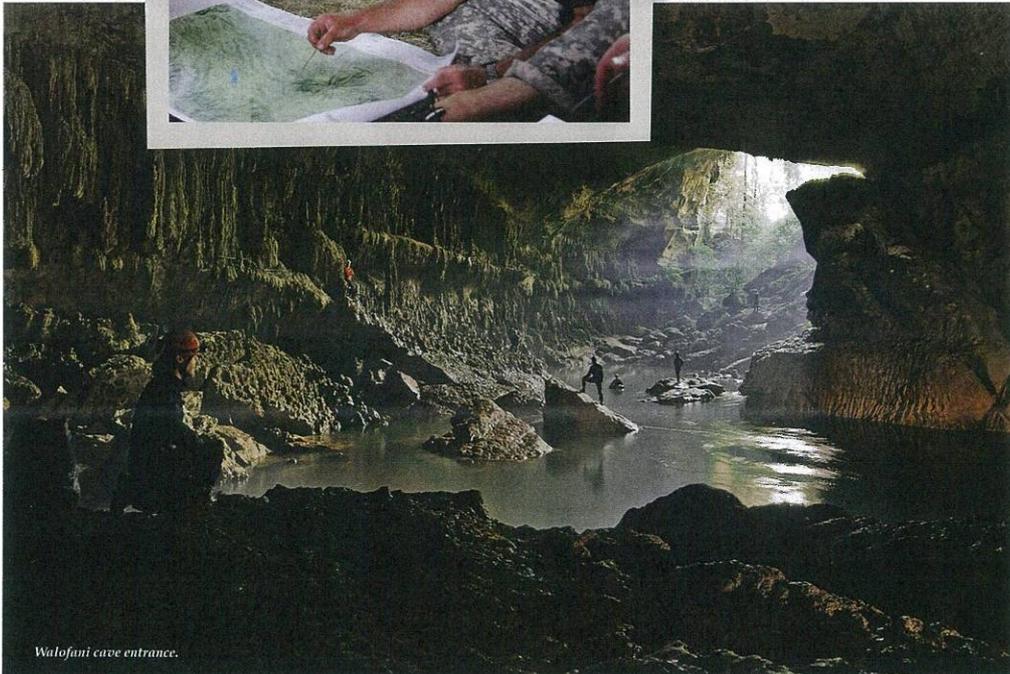
Right: Expedition coordinator Paul O'Dowd maps out cave discoveries and land access.

The Bosavi region boasts more than the honeycomb we had come to explore. The slopes of Mount Bosavi are within a few days walk from Fogomaiyu and passes through the beautiful villages of Talisu and Sionne Falls. At Sionne Falls, you may be treated to the most spine-tingling traditional sing-sing our seasoned expedition coordinator has ever seen in one of the most spectacular ceremonial houses you will find anywhere.

The more adventurous traveller can access the summit of Bosavi from Sionne, or even venture into the kilometre deep, and five-kilometre wide, virgin jungle-clad crater of this most spectacular of extinct volcanoes.

Travellers interested in visiting this stunning and remote heartland of Papua New Guinea are recommended to watch the excellent BBC documentary series 'Lost Land of the Volcano' which was filmed in the area back in 2008.

Our expedition coordinator, Paul O Dowd, was the BBC's man on the ground and has more recent experience in the area than almost anyone who's not a Kosua tribe's person. He can be reached at panvorax@gmail.com and he'll answer as soon as he gets back from whatever expedition he's on. You can also contact the expedition team at cavePNG@gmail.com



Walofani cave entrance.

Appendix 3



GEAR LIST

Campstuff	Comment	Where
Tarp, 6x4m (x2)		Australia
Collapsible water container	Ed (1), SteveMuh (1)	Ireland
Washing liquid (conc.) x2	Sea-to-summit citronella wilderness wash, does clothes, dishes	Australia
Recharger for AA & AAA	2 chargers, 8 slots each	Germany
Generator	Several in Fogo, Paul getting parts & tools	Fogo
Petrol	to confirm delivery	Fogo
Solar charger	backup power source	Ireland
Cord, 3mm x 20m (x3)		Ireland
Cord, 6mm x 20m (x1)	hammock extension	Ireland
Bull clips(x10)		Ireland
Duct tape (x1 rolls)		Ireland
Scotch tape (x4 rolls)		Ireland
Sisal cord x1 roll		Ireland
Citronella candles		PM/MtHag
Citronella concentrate	for adding to candle	Australia
Multifuel stove	inc. fuel bottle, gas adaptor repair kit	Ireland
Multifuel stove (2nd)	inc. fuel bottle, gas adaptor repair kit	Ireland
Coffee pot x1		Ireland
Sewing kit for clothes		Ireland
Sewing kit for gear		Ireland
Water filter for Camp	filter got, need to order replacement part	Ireland
Chemical drops/tablets for water	Katdyn Micropure Forte drops for 1000 L ordered	Ireland
Gauze for filtering water		Ireland
Midge netting, 20m		Ireland
Dry bags x5	water storage camp SteveMu (3), Jock (2)?	Ireland
Group first aid kit	NB people need personal kits too	Ireland
Pots (2x large with lids for open fire)	with lids and handle for hanging	PM/MtHag
Pots (2x small)		PM/MtHag
Wide mouth basin/container	for filtering water	PM/MtHag
Chopping board x1		PM/MtHag
Ladle		PM/MtHag
Wooden spoon		PM/MtHag
Veg knives x 2		PM/MtHag
Tin opener x 1	decent one	PM/MtHag
Water bottles selection	inc. 1 large 5 litre	PM/MtHag
Scrubber x 2		PM/MtHag
Plastic basin x2		PM/MtHag
Bog Roll (3x8) 24 rolls		PM/MtHag
Trowel or foldable spade (x1)		PM/MtHag

Bin bags		PM/MtHag
Hatchet		PM/MtHag
Machete x2		PM/MtHag
Cable Ties		Ireland
Tools / Hardware		
Plug for generator x2	Confirmed that generators take Aussie 3 pin plugs. SB bringing leads, individuals to bring their own power adaptors.	Australia
Adaptors Aus to fit Irish plug board		Australia
Light bulbs x4	got 2	Australia
Light bulb sockets x2	got 1 only	Australia
Extension lead with plug board x 2		Ireland
Fold-away saw		Ireland
Multitool		Germany
Pliers (incl. wire cutter)		PM/MtHag
Screwdrivers (various sizes)		PM/MtHag
Tool/Socket set for generator		PM/MtHag
WD-40 oil		PM/MtHag
Multimeter		Ireland
Food		
Protein supplement		Australia
Fruit, veg	sourced in village	Fogo
Coffee (250g)		Ireland
Green Tea 80		PM/MtHag
Honey (1l)		PM/MtHag
Tea bags (x160-200), 1 box		PM/MtHag
Rice (100g x9 x20) =15 kg rice + 5kg pasta		PM/MtHag
Tinned fruit (x8?) or dried fruit, nuts		PM/MtHag
Porridge (3-6 kg 60 servings?)		PM/MtHag
Salt and chili and curry powder stock cubes		PM/MtHag
Mixed Herbs and pepper		PM/MtHag
Chopped tomatoes (x16) and tomato conc		PM/MtHag
Beans (x8)		PM/MtHag
Packet soups (8x4x3) = 96		PM/MtHag
Custard (x8) bag of sugar		PM/MtHag
dried milk (x2?)		PM/MtHag
30 packs of biscuits		PM/MtHag

Chocolate/energy bars		PM/MtHag
Entertainment		
deck of cards		Ireland
chess board		Ireland
disco light		Ireland
jungle camp craft and knotts		Ireland
frisbie		Ireland
soccer ball		Ireland
Juggling balls		Ireland
Bottle spirits	Team - 1 bottle each?? Duty free	PM/MtHag
Caving Gear		
Rope 60m static		Ireland
Rope 60m static		Australia
Rope 84m x 9mil static floating		Ireland
Rope 40m x 8mm	for emergency, to be divided among group	Germany
2 hand drill kits	from Shannon Group/ICRO	Ireland
20 krabs	SteveMuh 10, SteveBus 10	Ireland
15 hangers		Ireland
15 slings	Ed(3), Jock x3, SG x 5	Ireland
50 spits & cones	Ordered from Starless River 13 Nov	Ireland
Pullies x2	Ed (1), SteveMuh (1)	Ireland
Jumars x2	SteveMuh (1)	Ireland
Mini traxions x2	SteveBus (1), SteveMuh (1)	Ireland
Adjustable spanner x2	Ed (1)	Ireland
2 crowbars	in Mt Hagen	PM/MtHag
5x pitons		Ireland
Facemasks	paper	Ireland
Rope protectors x3		Ireland
Comms		
Radios/walkie talkie (x4) wit AA batteries	from ICRO	Ireland
Satellite phone	Rental from Australia	Australia
Mobile x 2 donation	donation Digicell	PM/MtHag
Wind-up mobile phone charger		Ireland
Surveying, etc.		
Photographic equipment		Germany
Video camera		Ireland
Notebooks x2		Ireland
Pencil/pens x5		Ireland

Laptop	small	Ireland
Field tape 30m		Ireland
Compass/Clinometer x2	SteveMuh 1, Seamus 1	Ireland
Disto & spare batteries		Ireland
Waterproof paper		Ireland
1x external hard drive		Australia
GPS Germany & spare batteries	Model?	Germany
GPS Australia & spare batteries	Garmin gpsmap 60 csx. Loaded with PNG worldmap	Australia
GPS Ireland & spare batteries	Garmin eTrex	Ireland

END

Appendix 4



ACCOUNTS

Budget, Papua New Guinea 2011	£	Total £
<u>A. Camping Equipment</u>		444
First Aid	215	
Misc (Pots, pans, petrol, midge netting phone credit etc)	229	
<u>B. Food</u>		1144
Mendi Food	136	
Food for Fogo	468	
Food in Fogo (to 25th)	107	
Misc Other food	433	
<u>C. Group Logistics & Travel</u>		9769
Satphone hire	411	
Charter return Mendi-Fogo	5291	
Port Moresby Accom	260	
Mt Hagen Accommodation	91	
Mendi Accommodation	199	
Accomm in Fogo	528	
Security	1681	
PMV from Mendi - Hagan	241	
Accomm - PM	407	
Mt Hagen Accommodation	362	
Misc other logistics (taxis etc)	298	
<u>D. Caving Costs</u>		1304
Local Guide Costs total	905	
Donation	211	
Misc Caving costs (ropes, equipment etc)	188	
<u>E. Australian Guide's Costs</u>		1913
Flight Cairns - PM	422	
Flight PM - MH	411	
Australian Expenses	1080	
Total Cost		14575
Less funding already received		3275
SUI	2062	
Quiz	243	
Lecture	470	
Tim & Pam	500	
Net Cost		11300
Splitting of Costs		
Contribution by non caver		1010
Cost to 7 cavers (each)		1470

Appendix 5

FIRST AID EQUIPMENT LIST

Personal 1st Aid Gear Brought to Papua New Guinea

ITEM	USE
Wound Wipes	Clean wound
Baby Wipes	Clean wound/hands
Hand Cleaning gel	Clean hands
Various Plasters	Cover open wound
Blister Plasters	Cover blisters
Steristrips	Close wound
Triangular Bandages	Protect wound
Roller Bandages	Protect wound
Ambulance Dressings	Cover & protect wound
Pen Knife	Multiuse
Tape-Duct/insulating	Cover & protect wound
Condoms	Cover & protect wound
Iodine/Betadine	Prevent infection
Vaseline	Protect skin cracking
Moisturiser	Protect dry skin
Pain relief	As says on the box
Dioralyte	Electrolyte balance
Antibiotic	Against infection.
Constipation	Obvious
Insect Repellant	Prevent bites.
Bite Cream	Sooth & heal bites.
Glucose Tablets	Low blood sugar
Antihistamine	Stop itching / allergy
Daktarin	Foot & crotch rot.
Own Medication	Whatever.
Anti-Malaria	Anti-Malaria
Multivitamins	Keep going

Group 1st Aid Gear Brought to Papua New Guinea

ITEM	USE
3.5Ltr Darren Drums	Storage
2-Drybags	Storage
10-Ziplock bags	Storage
100-Wound Wipes	Clean wound
50-Baby Wipes	Clean wound/hands
100ml Hand gel	Clean hands
100-Plasters	Cover open wound
50 Blister Plasters	Cover blisters
25-Steristrips	Close wound
8-Triangle Bandages	Protect wound
8-Roller Bandages	Protect wound
10-Ambulance Dressings	Cover/protect wound
Pen Knife	Multiuse
Tape-Duct/insulating	Cover/protect wound
10-Condoms	Cover/protect wound
Iodine/betadine	Prevent infection
vasiline	Protect skin cracks
moisturiser	Protect dry skin
30-prs gloves	hygiene
10-bio hazard bags	hygiene
Medications	Separate List.
2-Field Guides	Info
1-notebook & pen	Info
1-Face mask	CPR
1-21g needle	Puncture
1-Shears	Cut the bits!
1-Tweezers	Pull the bits!
1-Locking Clamp	Hold the flap!
2-Scalpel	Cut off the bits!
1-stethoscope	Hear the rumble!
1-50ml Syringe	Flush the bits!
2-sutures	Big cut
1-sam splint	Break
1-neck collar	Break
1-arm air splint	Break
1-leg air splint	Break
4-foil blankets	Hot point
2-candles	Hot point
1-matches	Hot point
1-lighter	Hot point
1-e-light	Hot point
5-ration packs	Hot point

Medications Brought to Papua New Guinea

Class	Name	Availability	Use	Notes
Analgesic	Paracetamol	Over the counter	Mild, controls fever.	Use as on box.
Antipyretic	Indocid	Prescription	Anti-inflammatory,	At night only.
	Tramapine		non-narcotic.	
NSAID	Tylenol	Over the counter	Muscle pain.	Use as on box.
	Aspirin		Mild, anti-inflammatory.	
	Alka-Seltzer		The dreaded drink!!!!	
	Ibuprofen		Mod. Anti-inflammatory.	
Buprex	Neurofen		Use as on box.	
Antimotility	Lomotil	Prescription	Antidiarrhoeal	2 X 3times daily
Electrolyte	Diocalm	Over the counter	Antidiarrhoeal	2 X 2 to 4 hrs.
	Arret	Over the counter	Antidiarrhoeal	1-2 after every loose motion.
	Motillium	Over the counter	Stomach Upset	
	Dioralyte	Over the counter	Dehydration - Lost water & body salts.	
	Over the counter			
Local Anaesthetics	Wasp-eze	Over the counter	Insect bites	Spray.
	Oil of Cloves	Over the counter	Tooth aches	Liquid.
Antihistamine	Zirtek	Over the counter	Upper airway congestion.	One every 12 Hrs.
			May reduce rash.	
Anti-Allergy	Neoclarityn	Prescription	Allergy treatment	
Steroids	Deltacordril	Prescription	Severe allergy	2 X 3times daily.
Decongestant	Sudafed	Over the counter	Nasal – cold or allergy.	
			May relieve ear pain	
Anti Nausea	Nautamine	Over the counter	Motion sickness,	Take early
	Buccastem	Prescription	Antinausea & Vomiting.	
H2 Blocker	Cimeldrine	Prescription	Reduces gastric acids	
Constipation	Senokot	Over the Counter	Gets things working!	
Antibiotics	Ciproxin	Prescription	Broad spectrum including travellers	Don't know the dosage.
	Bactrum	Prescription	Tum.	2 X 2times daily
	Cicatrion	Prescription	UTI's, Travellers	Topical use.
	Augmentin	Prescription	Tum.	1 X 3times
	Amoxil	Prescription	Skin lacerations	

Class	Name	Availability	Use	Notes
Antimicrobials	Erythrocin Metronide	Prescription Prescription	Skin infections, UTI's, ear infections, diarrhoea. Giardia	daily Ditto.
Ear Drops	Otosporin	Prescription	Ear Infections	3 drops X 4 daily
Eye Cream	Broline	Over the Counter	Eye infection/irritation	Apply 2 daily
Topical Agents	Betadine Lamisil	Over the Counter Prescription	Skin lacerations Fungal Infections	Apply & dress. Apply as required
Hypogly- caemia	Glucose Gel Dextrose Tablets	Over the Counter Over the Counter	Blood Sugar boost / Diabetes	Oral – Absorbed, Chewed /in liquid.
Malaria	Doxacycline	Prescription	By-Mycin	One per day & for 4 weeks after.