

YUCPC Durmitor 2013 Report



The
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Mornflake

JA&RE REACT Confined Space Stretcher Systems





York University Cave and Pothole Club Durmitor 2013 Expedition

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Cover photos:

Main – Chateau de la Shock © Mike Rippon

Small – L: Camp at night © Mike Rippon; R: 2013 team © Catherine Moody

Report largely written by Catherine Moody, Toby Buxton, Mark Sims and Laura Bennett.



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Introduction

The Durmitor National Park is a beautiful karst landscape, with vast potential for cave systems within its large limestone plateau. The southern side of the massif has been well explored by caving groups in the past, including YUCPC, resulting in several major caving discoveries. However, until recently the more remote northern side of the mountains had been relatively untouched.



Panorama of Donja Ališnica and beyond in the northern side of Durmitor © Catherine Moody

A three-man reconnaissance expedition by YUCPC in 2011 identified a suitable yet small and remote campsite for further expeditions, close to snow plugs which could be used as a water supply. Initial prospecting found numerous entrances, including several promising leads. In 2012, a team of ten returned to the mountain. Still very much a lightweight expedition due to distance from the nearest road, logistics were tricky but thanks to rigorous planning were successfully overcome. The caving went well, with a number of significant finds being surveyed and the best lead, YF1 (JVC Pot), being pushed to -133 m before running out of rope. Prospecting was also fruitful: a large number of new entrances were found, several of which looked very promising.

Due to this success, interest for the 2013 expedition was high, resulting in a team of seventeen people. This increase in numbers posed a number of logistical considerations, in terms of both caving and living. A much larger amount of rope and rigging gear was (ambitiously) taken, all of which was ultimately used, though not in the cave we initially expected! An extremely successful trip left us very excited for 2014...

Aims

The aims of the 2013 expedition were fairly evident based on what was achieved in the previous year:

- Take enough rope to be able to push JVC to a potential depth of ~500 m
- Extend communal space and modify logistics to create a functional campsite for 17 people
- Push previously identified leads in Kobilji Do and other areas
- Bolt, survey and photograph any significant finds
- Continue thorough prospecting of the northern areas of the national park
- Continue making careful plans and records of food in order to aid further expeditions
- Encourage personal development of club members



York University Cave and Pothole Club Durmitor 2013 Expedition

Personnel

Adam Walmsley (AW)
Andrew Gilmartin (AG)
Andrew Vick (AJV)
Catherine Moody (CLM)
Evan Cooper (EC)
Joanna Burden (JMB)
Jonathan Booth (JJB)
Laura Bennett (LDB)
Lieke Oosterkamp (LO)
Mandy Fu (MF)
Mark Sims (MTS)
Matthijs Bouwman (MB)
Matthew Chubb (MC)
Michael Rippon (MJR)
Ruud van der Aa (RvdA)
Toby Buxton (TFB)
Tony Seddon (TS)



L-R standing: JJB, AG, AW, MJR, TS, LO, RvdA, JMB, AJV, CLM, MB, LDB, EC
L-R sitting: MC, MF, TFB, JMB, MTS



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Sponsorship

The Ghar Parau Foundation do sterling work in raising money to fund cave exploration. This year we were kindly granted £500 by Ghar Parau to assist in buying some of the gear we required. In addition, two Alex Pitcher awards were granted to our undergraduates, at £75 each.

YUCPC have always been lucky enough to receive generous sponsorship from Morning Foods. For the previous two years this has been, as requested, in the form of Mornflake granola (25 kg in 2012, 40 kg in 2013), a vital part of our expedition breakfasts.

We also were given loan of a Slix 50 stretcher from JA&RE React, which was a very reassuring piece of kit to have with us. Thankfully, the use of this was not required!

Thanks also to the Durmitor National Park and to Stosic Predrag (Peca, ASAK) for arranging permission for our stay. We are also grateful to Vojkan Gajović (Voja, ASAK) for assistance with mapping all our previous entrances onto maps and satellite imagery; this came in useful during the expedition.





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Travel

Out

For all previous expeditions to Durmitor, travel had been *via* Belgrade (flights from Luton) followed by an overnight bus to Žabljak. A full re-evaluation of travel options was conducted for the 2013 expedition. It was found that flights into Dubrovnik arrived at a sensible enough time to allow travel from the UK to Žabljak within a day. Furthermore, flights were available from Manchester, far more convenient for most expedition members. This was chosen as the route of preference, despite flights being slightly more expensive than the Belgrade route. Taking into consideration cheaper transport within the UK, the overall cost was in fact fairly similar.

Most people flew from Manchester with Jet2 apart from Toby who flew from East Midlands with Jet2 and Matt C who flew from Gatwick with Monarch; others flew from outside the UK. Jet2 have a baggage allowance of 22 kg which, once added to the 10 kg for hand luggage, was adequate for most people, even if it required a bit of creative packing. An extra bag was booked for the outward flight for the stretcher and some of the food being taken from the UK (£20).

Team A (AG, CLM, EC, JMB, JJB, MTS, MR) convened at Mike's house in Cheadle on the evening of 24/07/13 and spent the night there before getting a taxi to Manchester Airport in the early hours of the morning. Mandy joined at Dubrovnik Airport and all got a pre-booked taxi to Žabljak (approx. 3 and a half hours) where they met Lieke and Ruud who had already done the shopping for the first few days. Lieke and Ruud drove from the Netherlands and left their car at the Ivan Do Autocamp (along with a tent and some other personal supplies). Team B: AJV, AW and LDB flew from Manchester on 28/07/13, meeting MB, MC and TB at Dubrovnik Airport before taking the taxi to Žabljak. Tony travelled to Žabljak alone, arriving on the mountain on the evening of 31/07/13.



Bags in Žabljak © Catherine Moody



A rest before the steep section; Donja Ališnica © Catherine Moody



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As with the previous year, taxis were taken from Žabljak to the road between Bosača and Barno Jezero (ask for Zminje Jezero and the driver will go to where the tarmac stops). The walk to camp passes through the woods close to Zminje Jezero, then up into the mountains, through Donja Ališnica and up to where Gornja Ališnica is joined.



Walking map of Durmitor showing the walk up; taxi drop off and camp are marked. Full maps are available at <http://www.durmitor-autocamp.com/maps.html>

Return

Lieke and Ruud left before the rest of the group on the final Thursday. Everyone else decamped on the Friday evening and set off down the mountain early Saturday morning to allow time for a swim in the Black Lake (Crno Jezero) on the way to Žabljak and lunch at the cafe before getting the minibus (originally booked as separate taxis but a minibus and trailer were provided for the return) in the afternoon. We then spent the night in Dubrovnik airport, where we did a bit more prospecting *via* Google Earth and managed to get a few decent(ish) hours sleep, free from security announcements, before our respective flights the following morning.



The post-expo wash at Crno Jezero; Bed time at the airport © Toby Buxton



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Main costs

- Flight from Manchester to Dubrovnik ~ £280
- Taxi from Cilipi (Dubrovnik Airport) to Žabljak booked through taxido.net - €540 return for an 8 seater - €77 each between 14
- UK transport - minimal (<£20 for most people)

Schedule for team A

- Overnight sleep in Cheadle (24/07/2013)
- Taxi to Manchester airport (05:00)
- Jet2 flight. (Thurs 25/7/2013)
 - Manchester (06:55) to Dubrovnik (11:00).
- Taxi from airport
 - Cilipi (12:00) to Žabljak (15:30)
- Taxi from Žabljak to the road nearest Zminje Jezero (€5-10)
- The walk up to camp is about 6 km with approximately 600 m of ascent. In 2013 this took about 5 hours, with everyone carrying over 30 kg on average

Total time from Cheadle to Gornje Ališnica: <16 hours.

Return journey:

- Walk off mountain (leaving at 08:00) to Žabljak
- Taxi (Sat, 10/8/2013)
 - Žabljak (16:00) to Cilipi (19:30)
- Overnight sleep in the airport
- Jet2 flight (Sun, 11/8/2013)
 - Dubrovnik (12:00) to Manchester (14:15) for most people
- Return home *via* train or car



Camp

Given that there was potential for double the number of people in 2013 compared to the previous year (a few Serbians were planning to join us on the mountain but they backed out shortly before the expo due to an injury), we had to reconsider logistics of communal space. In 2012, we used a large tarp and an A-frame strung between rocks as a communal shelter with a couple of small tarps as doors, along with a small thick tarp on the ground to keep caving gear covered. We could not rely on the large tarp from 2012 being in a serviceable condition after being stashed on the mountain, so we bought a new, identical one to use as the communal shelter along with the A-frame from last year. The old one (which it turned out had been used as a snack for the local mice, resulting in several small holes but nothing that couldn't be solved with a bit of gaffa tape) was then rigged from the other side of the camp boulder and used as a large store for both caving gear and personal rucksacks. An A-frame for the gear tarp was constructed from a pair of steel Vango poles and another connector made by the ever-inventive Steve Gilbert. These poles were not as strong as the other set, and so the middle section of each was removed and used as a splint for the remaining two sections. Luckily, there were plenty of rocks around to give enough height for the truncated frame. We also had the addition of a few tarp clips which turned out to be very useful.



The gear tarp © Catherine Moody



Inside the mess tarp © Mark Sims

The tarp for the communal shelter was rigged in a subtly different place to the previous year, being located slightly further east and away from the large depression on the other side. However, added to the fact that it was positioned further away from the main boulder, these small changes resulted in a much larger usable space inside, which could seat all 17 of us in relative comfort.



2013 camp © Catherine Moody



Gear

2012 and 2013 were both considered lightweight expeditions due to the location of our camp and its distance from the nearest road. Given the long walk and not wanting to eat into expedition time by doing multiple gear runs, we were limited to what individuals could carry on a single walk up - approximately 35 kg each. As in 2012, a mammoth spreadsheet was compiled with every communal item we would be taking, how much it weighed and who would be taking it (see Appendix I).

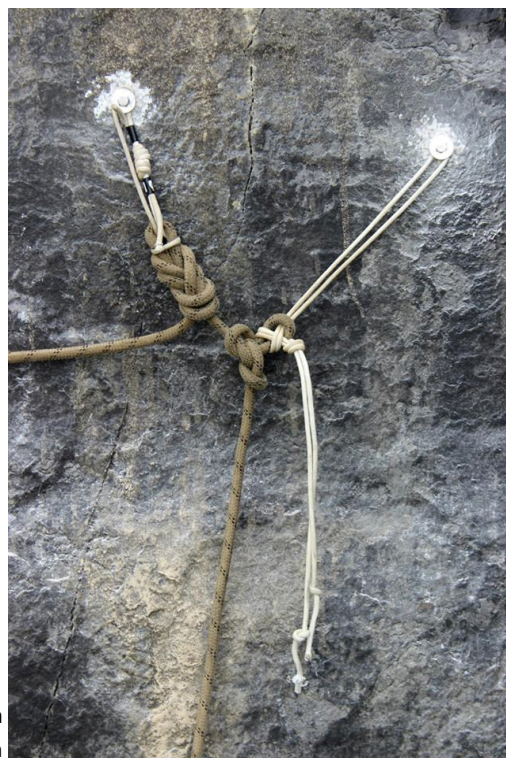
Rigging gear

In 2012 the amount of rope and rigging gear to take was slight guesswork, but we were fortunate this year to have a little more knowledge of what we might encounter. We decided early on that we wanted to take enough rope to be able to push JVC to around -500 m (it was left at -133 m in 2012). We had left most of our 2012 rope stashed on the mountain. With the extra carrying capacity provided by extra manpower we were able to take 449 m of our standard 10.5 mm (including the same 55 m rescue rope from 2012) and a 90 m length of 9 mm rope provided by Mike. It might surprise some that most of our rope was relatively thick, but the rock in Durmitor can be unpleasantly sharp. In 2011, Toby had an unnerving experience with a half-severed 9 mm rope while exploring JVC. The 9 mm rope this year was a concession to the fact that with deeper caves comes cleaner rigging (one must hope!) and therefore it could be used in a place where it would encounter no rub. It was eventually put to good use on the Express Way in Bunda Jama (see later).

In terms of rigging gear, we took 100 spits and an appropriate number of hangers (estimated average of one per 7 m of rope). Once again, all bolting was done by hand; not a drill in sight. One big effort to reduce weight involved the use of Dyneema Anchors (or Amarrage Souples) which negate the requirement for a carabiner to belay the rope to a spit. We are grateful to Tony and Lieke/Ruud for providing these. Much of our training time was spent learning their proper use and they proved an invaluable asset. They were generally referred to as Soufflés or, towards the end of expo, AS(S) hangers.



Rigging gear © Mandy Fu;



AS hangers in (not necessarily ideal) action at a training weekend © Mike Rippon



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Personal caving gear

Once again, we did not take personal gear for every individual due to the extra weight, but were able to take more than last year; the numbers were scaled up from 2012 to give 9 SRT kits, 10 helmets, 8 oversuits and 6 undersuits. This could be justified by looking at potential team sizes and activities over the expo. The plan was to push JVC straight away either until we ran out of rope or reached a termination, then the rope could be put into service elsewhere. Some shaftbashing would be possible at the early rigging/late de-rigging stages. As there were 15 initially signed up, we predicted the most “gear-heavy” days might look something like this:

- 1 at camp (1 SRT kit and 1 helmet for rescue)
- 2 x 2 pushing JVC (4 SRT kits, 4 undersuits, 4 oversuits, 4 helmets)
- 4 prospecting (1 helmet)
- 2 teams of 3 shaftbashing (4 SRT kits, 2 undersuits, 4 oversuits, 4 helmets)

The arrival of Tony later in the expo also brought another full set of caving gear. Having communal caving gear did pose some problems, especially when it came to undersuits and oversuits. We tried to take a variety of sizes but the difference in height between our smallest and largest member was considerable, and we had a range of sizes in between. This resulted in a lot of faff when it came to dishing out gear in the mornings but it generally (eventually) worked out ok. The gear was surprisingly more problematic this year than in 2012 despite the marginally larger number of suits per person, this is largely due to the fact that more “proper” caving was being done so the suits were more in demand. Pretty much every piece of gear was used each day, which was not so much the case in 2012 so suits were never really a problem. The amount of personal caving gear taken is something which will need re-evaluating for next year.

Some of the SRT kits were impressively lightweight, using thin rope, new lightweight Petzl jammers and Superavanti harnesses. Some were not so good, with at least two found with steel components! In the main though, as with the previous year, all SRT kits were fairly standardised, especially in that all descenders are Stops. This is not because expo members prefer them (quite the opposite, in most cases!) but because they are versatile in terms of rescue and able to be used as part of a Z-rig, as well as being a lighter option than a rack. Stops are also, as far as we know, the only descender that can be used on a loaded rope, something that could prove crucial in certain situations. In future years it is likely that expo members will continue having to put up with them. We also strived to make the kits as versatile as possible by using adjustable footloops and harnesses. Each kit also included a pulley and spare jammer (usually a Tibloc or Ropeman) for use in rescues, and each expo member carried a knife and a survival blanket. Efforts were made to take lightweight helmets and only lights running off AA batteries were taken (no rechargeable Li ion batteries). A small number of lithium AAs were taken as some were found going cheap.



Gear © Mike Rippon



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Miscellaneous

The biggest change to our 2012 gear was the addition of a full caving stretcher, loaned to us by JA&RE REACT. We also spent a long time learning how to properly operate this in the event of a rescue. Thankfully, it remained safely in its bag under the gear tarp throughout expo! In both years we have had a comprehensive communal first aid kit, though expo members carry personal ones for everyday cuts and scrapes. Each team also carried an emergency bothy, big enough to provide shelter and warmth for the whole team, in case of sudden heavy storms (not uncommon in Durmitor) or navigational difficulties. One of these was a loaned 2 man bothy which, after Bunda Jama reached a considerable depth, was taken down the cave where it was used to keep cavers warm whilst waiting to ascend the big pitch.

Numbers of GPS units, prospecting kits, bog kits, radios, bothys, etc. were all based on having a maximum of five teams per day. It is worthy of note that red nail varnish is known to fade quickly, and it has been shown in the past that this can happen even in the shade; blue/purple are therefore considered the best colours for marking entrances. GPS devices used WGS-84 datum.

As with the previous year, a significant amount of gear, such as that required for the communal tarp, was stored on the mountain to avoid carrying it up next year. Whereas last year, things were left double-bagged in Bernies bags on the floor of a cave, this method was shown to be not entirely ideal due to the local rodents gaining access and using it as a snack. This time we put some bolts in the cave and strung a rope between the walls, which the bags were then suspended from. Whilst this might not keep away unwanted guests completely, it should at least make life more difficult for them!



Stretcher practice © Catherine Moody



Gear storage © Catherine Moody



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Food

Food for 2013 worked in a similar way to the previous year. Once again thanks to sponsorship from Mornflake we were able to make up enough breakfast bags (weetabix, granola, raisins and milk powder; just add water) in the UK to feed everyone for the duration of the expedition. Lunches were based on bread along with fillings of cheese, salami and pate. One of the benefits of the high snow levels was that we were able to construct a walk-in fridge by digging in a snow plug next to camp. This allowed cheese to be bought in larger quantities than the previous year and allowed veg and other items to be kept cool to avoid perishing. We were also able to bury the bread here rather than having to go to YF10.



Rather a lot of breakfast bags © Catherine Moody



A typical Durmitor lunch © Mark Sims; Camp fridge © Mike Rippon



Cooking dinner © Mark Sims

As in 2012, a cooking area was constructed at the end of the communal tarp. This year the tarp was rigged slightly further away from the boulder to allow more space for this, and the gap was covered with removable small blue tarps in case of rain. All cooking was done on two MSR Whisperlite stoves and one Primus Omnifuel stove, once again running off petrol. We again took the large expo saucepan, as well as two (identical) pressure cookers and two Trangia pans (one large, one medium). Utensils comprised of two ladles (one with draining holes drilled in for dishing out pasta), two wooden spoons and a controversial garlic crusher.



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Recipes

Recipes for evening meals were much the same as for 2012, with the omission of TVP spaghetti bolognese as this was the least popular meal in 2012. The most popular meals were cooked more often. Laura and Cat produced some laminated recipe cards so that these could be followed by whoever was at camp and also to aid making shopping lists (see Appendix II). For the first 3 days we had 10 people, the same as in 2012, so the recipes were based on notes from the previous year. From then on we had 16-17 people and the same recipes were scaled up by approximately 50 %.

Careful recording of appetites in 2012 had given the “ideal” quantities of food required for evening meals. However, despite the recipes not being scaled up fully for 2013 and even then, not always using the full quantities on the recipe cards, there were frequently leftovers. This could be due to people eating more at lunch, but suggests that the average appetite in 2013 was less than that of the previous year. When on a mountain with no easy rubbish disposal, wastage is best avoided where possible. Perhaps for 2014 an intermediate level should be adopted when planning recipes; notes have been added to the recipe cards to reflect this.

Consideration was given to the sequence in which meals were served, by preparing a menu plan, in order to provide a variety of carbohydrates and protein sources. This also helped to utilise any leftovers to the fullest extent. For example, the Moroccan TVP stew was served the day prior to the pesto pasta as the stew leftovers complemented the pasta and could be served instead of the Smash, which being non-perishable could in turn be utilised at a later date. We had one vegetarian who couldn't eat the chorizo stew (all other meals were meat-free) so instead had re-heated leftovers from the previous night. The first TVP meal was left until day 3 in order to delay its unsavoury effects on the digestive system. In other words, Cat, who drew up the meal plan, had Jonny sharing her tent until Team B arrived with his 1-man tent and she didn't want to be unnecessarily subjected to his excessive TVP-induced flatulence.

The meals planned this year were intended to be eaten fresh in a single serving. The extended pushing trips carried out in Bunda Jama resulted in a requirement for reheating leftovers. This was possible for most dishes, with the exception of the risotto and pesto pasta, although the latter could be eaten cold. Dependent on the logistics of the base camp and any satellite camps in 2014, a different approach may be required. One consideration is that instant carbohydrate sources, such as couscous, may be useful for hungry, tired cavers returning late at night.



The cooking area, reheating leftovers © Catherine Moody



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Buying food

The online shop used for food in 2012 was no longer trading so a new source had to be found. As much of the dried food as possible was ordered from HealthySupplies.co.uk since they would deliver to Holland, allowing Lieke and Ruud to drive it down in their car for a much lower cost than taking from the UK as excess baggage (See Appendix III). They also offer discounts for buying in bulk. The remainder was bought from britsuperstore.com as this was the site that sold all the other required bulk items at the lowest cost. Unfortunately this was slightly more expensive than the previous year but it was still deemed the best option. Risotto rice and custard powder were brought from the supermarket (over the last two years it has become traditional to have custard on Mike's birthday).

Surplus food such as breakfast bags were stored in Lieke and Ruud's car until required at a later date. These were collected on one of the regular food runs, which worked in much the same fashion as in 2012 with food being taken up the mountain for approximately three days at a time.

The TRS milk powder we bought turned out to be rubbish as it didn't dissolve. Luckily we had also taken an unopened pot of a different powder which was left over from the previous year. It also turned out after a bit of searching, that the supermarket in Žabljak did sell milk powder which worked perfectly well. We could maybe have done with taking more teabags, though this is a luxury rather than an essential.

A lesson on sausages: there are many different types of cured salami-type sausages available in Žabljak, such that a visit to the deli counter can be a bit overwhelming (though perhaps not so much as it is for the person serving when you ask for 6 giant sausages – you can see the relief in their eyes when you say it's ok, you don't want them sliced). Čajna kobasica is a tea-smoked sausage. Budimska is similar in flavour to this, and tended to be what we used for sandwiches. On one of the shopping trips we got Kulen instead; this turned out to be rather spicy (made with hot paprika and garlic); ideal for the chorizo stew but not necessarily so great for sandwiches. Sremska kobasica is also a paprika flavoured sausage though we didn't try this one.

Foods now available in Žabljak:

- beef stock cubes
- powdered milk
- something that looks like risotto rice (branded risotto rice is also available but is very expensive)

Still unavailable:

- Dried fruits
- teabags
- custard powder
- lentils



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Water

Our process of water purification had evolved from 2012; we had abandoned the idea of a carbon filter and opted for a coarse filter and chlorine tablets in an attempt to keep things simple and efficient. Details are outlined below.

A water station was set up on the slope above the breakfast rock using the following equipment:

3 x 20–25 L polypins

2 Bernies bags + pipes + taps + coarse filter (tights)

8 x Bernies bags (5 in use at a time)

20 + plastic bottles (0.5–2 L) in addition to personal hydration systems

Oasis water purification tablets (100 x 20–25 L (167 mg) tablets + 300 x 1 L (17 mg) tablets, purchased *via* Amazon), active ingredient NADCC (sodium dichloroisocyanurate) releases chlorine at 5 ppm (167 mg tablets) or 10 ppm (17 mg tablets)

Spare Bernies bags

Spare pipes and taps

Spare tights/gaffer tape to replace coarse filters

Five Bernies bags were filled $\frac{1}{3}$ – $\frac{1}{2}$ full of snow and left to melt. The contents were then transferred to the two Bernies bags with taps and coarse filters, which were used to fill the three polypins and cooking water bottles. Chlorination was carried out in the polypins.



The tap and coarse filter; filling polypins © Adam Walmsley

Each morning before breakfast, water duties and maintenance were carried out in order to maintain an adequate supply of water for the day. Firstly, all water bottles were refilled. This then enabled all polypins to be filled and chlorinated. The tapped bags were then refilled a final time to leave the Bernies bags empty and available for snow collection. The person remaining at camp was responsible for ensuring the Bernies bags were refilled in the morning. In the evening any melted snow was decanted to enable a second snow run where possible.



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The three polypins were kept filled up. Two were kept in reserve under a damaged Bernies bag to protect against UV. The in-use polypin was kept on a rock to signal that it was ready for use.

Coarse filtered, non-chlorinated water was used for cooking as this was boiled. This was kept in clearly labelled bottles. The amount of water purification taken would have been sufficient to chlorinate all water but an additional polypin would have been required.

For the first twelve days, snow was collected from the snow plug at the camp dig and the Bernies bags carried directly to the water station. Once this supply became insufficient, due to melting and depletion of the “clean” snow, snow was collected from YF10 as in 2012. Although not far, these trips required large rucksacks, and walking poles were advisable. Snow was dug using a Black Diamond Transfer 3 snow shovel.

Chlorinated water is an acquired taste, although the 20 L Oasis tablets were not as bad as some previously tested. Some members took personal rehydration tablets/sachets including High 5 Zero Hydration/Extreme, DripDrop and Dioralyte. These served the dual purpose of providing a welcome alternative tasting drink and replacing some of the salts lost through sweating. In addition, available in Žabljak is flavoured (lemon or orange) multivitamin drink powder, which was popular and bought as a communal drink.

Over the whole 2013 expedition, 50 x 20–25 L Oasis tablets and 22 x 1 L Oasis tablets were used, which equates to approximately 1000 L of purified water. 50 x 20–25 L tablets and 248 x 1 L tablets were stored in a plastic container and left on the mountain. Twenty Bernies bags were taken in total to allow for redundancy, but only twelve or so were used. With the lack of alternatives once there, lots of redundancy for the future is still a good idea!



Transferring water between Bernies bags, and subsequent filling of polypins © Toby Buxton



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The following points were noted during the water collection and purification process.

- Snow takes ~ 24 hours to melt so sufficient water should be taken up to camp to last until the first snow collected has had time to melt
- The melting time varied dependent on the location from which the snow was collected. Compact, icy snow collected from near the surface took much longer to melt than the fluffier snow collected from around 1 m below the surface. It was therefore worth digging down to collect snow.
- The coarse filters need replacing every one to two days.
- Oasis water purification tablets take 30 minutes to work. It was important that polypins were only filled to approximately 20 L capacity to enable mixing to give even chlorination.
- Expedition members generally drank between three and six litres of water per day.

Prospecting areas

Kobilji Do (K-Do)

Kobilji Do is an area with great potential; it has lots of solid rock (a rarity in Durmitor) and a high density of entrances. A large area of K-Do was prospected in 2012. The first prospecting trip to K-Do in 2013 had to be aborted after Lieke unfortunately had a fall, cutting her head. The injury was mostly superficial, but she had a couple of rest days at camp, then her and Ruud headed down the mountain to stay in Žabljak for a couple of days. Another four prospecting trips headed to K-Do over the expedition and this area has now been more-or-less completed.

Once trips into Bunda Jama started becoming longer, resulting in a call-out past dark, a considerable amount of effort was put into making sure the route over the ridge between K-Do and camp was well marked. A couple of cairns had already been built last year to aid route-finding, but a significant amount more were erected, along with some tin foil as make-shift reflective markers (subsequently removed) so that cavers exiting in the dark and/or fog should be able to find their way home again. Next year we will take proper reflective tape as the tin foil was not always visible. A bivvy camp in K-Do near the Bunda Jama entrance will also be considered.

Korita

Korita is the area down the valley from K-Do. In fact some of what has previously been referred to as K-Do may well be part of Korita; the borders are not clear from the maps.

Towards the end of expo, Cat and Mandy headed to the lower parts of Korita in order to prospect for a potential new camp site which would be closer to Bunda Jama and the other K-Do caves, as well as the



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areas around “Half-Bunda Hill” (directly east of Obla Glava, unmarked on the map) which are yet to be prospected but look promising.

Requirements for a camp/satellite camp are: enough flat(ish) grassy ground for a few tents; boulders from which a tarp can be strung; within easy distance of a permanent snow plug. This is not an easy task in Durmitor as much of the ground is covered in rocks and/or bunda (a name given to the ubiquitous pine shrub found in Durmitor) and there is very little ground which is flat. Also a camp wants to be easily accessible from a path to allow gear to get there, but not too close that strangers are likely to wander in.

The aim was to head down the gully on the northern side of K-Do to a small hill (1976) in Korita; at the base of this hill, close to the footpath leading to Ledena pećina (Ice cave), the contours levelled out and there was a green area on the map which we hoped would be free of bunda. There was indeed a small amount of flat grassy ground here where 4 or 5 tents could be pitched and several large boulders. Although very close to the path, which can be quite busy, the area is only visible from one small section when walking uphill. There is potential for this to be used as a small satellite camp. The afternoon was spent looking for a water source.



Potential new campsite (MC in the distance) © Mark Sims

There was a lot of snow around in various gullies but this could not be relied on for following years. A couple of caves were found with snow plugs in, though the snow is not easily accessible (i.e. down a small climb/pitch. Bunda Jama is a few hundred metres up the valley and it is possible that a semi-permanent water station could be set up there if necessary.



New entrance © Mandy Fu

During the day, around half a dozen entrances were marked, a couple of which may warrant a return. It is worth noting though that only a couple of small areas have been systematically prospected and it is easy to get stuck in a bit of a bunda maze.

Another team returned the following day for a second opinion (and with a tape measure) and concluded that there were 4 good pitch sites, 2 of which could take a 3 metre long tent (Mountain Equipment



Measuring tent spaces © Mark Sims

Dragonfly 2XT); the other 2 are smaller. There is a potential 5th site which is currently a bit rocky but could be improved. In addition there are 2 spaces for Ridge Raider size bivvy bags/1-man tents, though the Summit Superlite may be too wide. There is plenty of space for tarps although not much grassy ground for pegging out so spits and hangers would be required.



Biljegov Do (B-Do)

B-Do lies to the south-east of Obla Glava. On the west side it consists of a high level area at the base of Obla Glava and further east there is a valley bowl that is surrounded on three sides by varying amounts of limestone. Areas of bunda are found at the higher levels on the west and south sides of the bowl. A tourist path runs from the Ice Cave (Ledena Pećina) at the base of Obla Glava south-south-west along the ridge and then a path runs east down into the bowl and out the far side. A second tourist path breaks off from this path at the end and skirts around the north side of the bowl providing an alternative route back to the Ice Cave.



B-Do from near the Whoppa, looking north-west towards Obla Glava (right) © Mandy Fu

B-Do can be accessed *via* K-Do, skirting round the base of Obla Glava and picking up the tourist path at the Ice Cave. For future reference this is probably the most preferable route. An alternative route approaching from the south-west *via* Valoviti Do is also possible.



Hello Apple © Adam Walmsley

Following initial prospecting of the western area of B-Do in 2012, two prospecting trips were carried out in 2013. The first prospecting trip by AW, MF and AG concentrated on the higher western area at the base of Obla Glava bordering Valoviti Do and traversed part way south-east along the ridge on the south side of the valley bowl. Several potential entrances were identified including the Whoppa (YL3) and Hello Apple (YL1). The Whoppa is a very large entrance visible from far away. It consists of an S-shaped rift that was filled with a snow plug. The edge of the snow plug was descended but appeared choked with snow in 2013. A return would be recommended in a lower snow year.

The second prospecting trip, carried out by JJB, LDB and MF systematically covered the area further east encompassing the valley bowl and the areas part way up above the path on all sides. This valley bowl does not contain much limestone and no entrances were identified there. On the north-east side, the area up to the base of the limestone face was prospected. A single triangular-shaped entrance (YL8) was marked. This led through a very short crawl to a small chamber with no easy way on. The south side was prospected from the west to approximately the line of the Whoppa. A gully on the south side was climbed approximately a third of the way up and was found to be extremely loose. A return trip is not to be advised. Multiple inviting dark holes (YL4, YL5 and YL6) that looked like potential entrances were marked in the gully, however none of these showed any potential and do not merit a revisit. Further east, a small



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entrance (YL7) on the south side of the path approximately 30 - 40 m away was found to have been previously marked by WRCG. It entered a 5 m long crawling tunnel blocked by a squeeze and continuing beyond. A slightly higher entrance was unmarked.



YL7 © Mandy Fu

The entrances marked on the second trip were typically of horizontal nature, typically only entering the hillside for a couple of meters. The area on the south side above the Whoppa and further east at the same level remains to be prospected; however, accessibility appears to be an issue due to the bunda and vertical nature of the rock. The high level on the north (K-Do) side also remains to be prospected and looks more accessible.

Škrapa

Over the ridge at the north of Gornja Ališnica is Valoviti Do (North); Škrapa is located at the northern end of this valley. It is itself a ridge, running roughly east-west. Whilst the western side is dense in bunda, it has a rocky summit at its eastern end. A total of 2 trips were made to Škrapa in 2013. The first trip consisted of MJR, JJB and MC. A bit of a false start saw the team having to turn back after getting to the base of the ridge due to forgetting to bring a prospecting kit. Despite the time lost, a rather successful afternoon ensued with 10 large entrances being found while covering a lot of ground from the tip of the ridge all the way to a large patch of bunda. A return visit with some rope is advisable, as this area appears promising.



Škrapa, as seen from V. Prevljica © Mark Sims

A second trip by MC, MB, JMB picked up where the last trip left off, and attempted to navigate through the maze of bunda in the hope of discovering more entrances. Unfortunately this trip did not yield as many entrances as the last, but did find 2 that were deemed worth returning to at some point. If this is to be attempted next year, it would probably be advisable to bring a copy of the maps from the prospecting sheets as they will hopefully assist in navigating the bunda.

The ridge has now been covered up to the end of the bunda patch, where the slope gets a little steeper and may require a little scrambling to progress. If a suitable viewpoint can be found higher up, it might also be possible to direct people for some more extensive surveying in the bunda maze.



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Areas for 2014

Korita

Although Korita has been visited, only a couple of very small areas have been systematically prospected. The area is more bunda-dense than neighbouring K-Do but still holds a reasonable amount of promise.

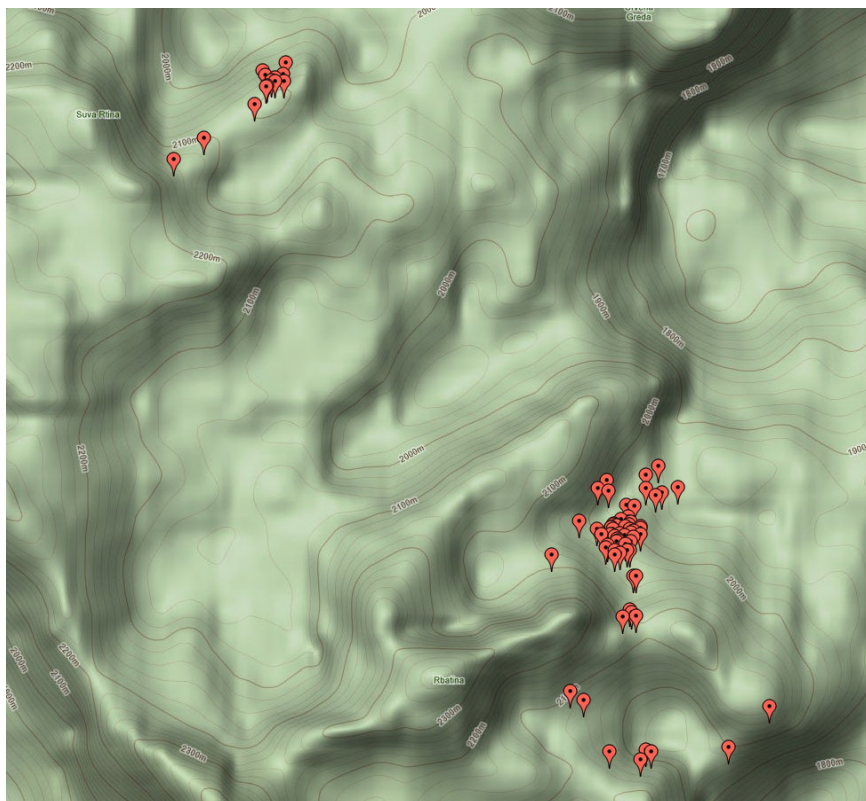
M. Rutulja, Kotac

These areas were highlighted in the 2012 report but were not visited this year due to time constraints. They lie north of Škrapa, just outside the current prospecting limits.

Gologlav

This is north of Crvena Greda. The area is dense with bunda but satellite imagery suggests there are a number of large depressions/entrances in the vicinity. This area is also the closest to the Tara Canyon, (approximately 1,500 m height difference) so offers a lot of potential. However, it is a long way from camp, so a small satellite camp may be required. Satellite images will likely be crucial for navigation.

Overview

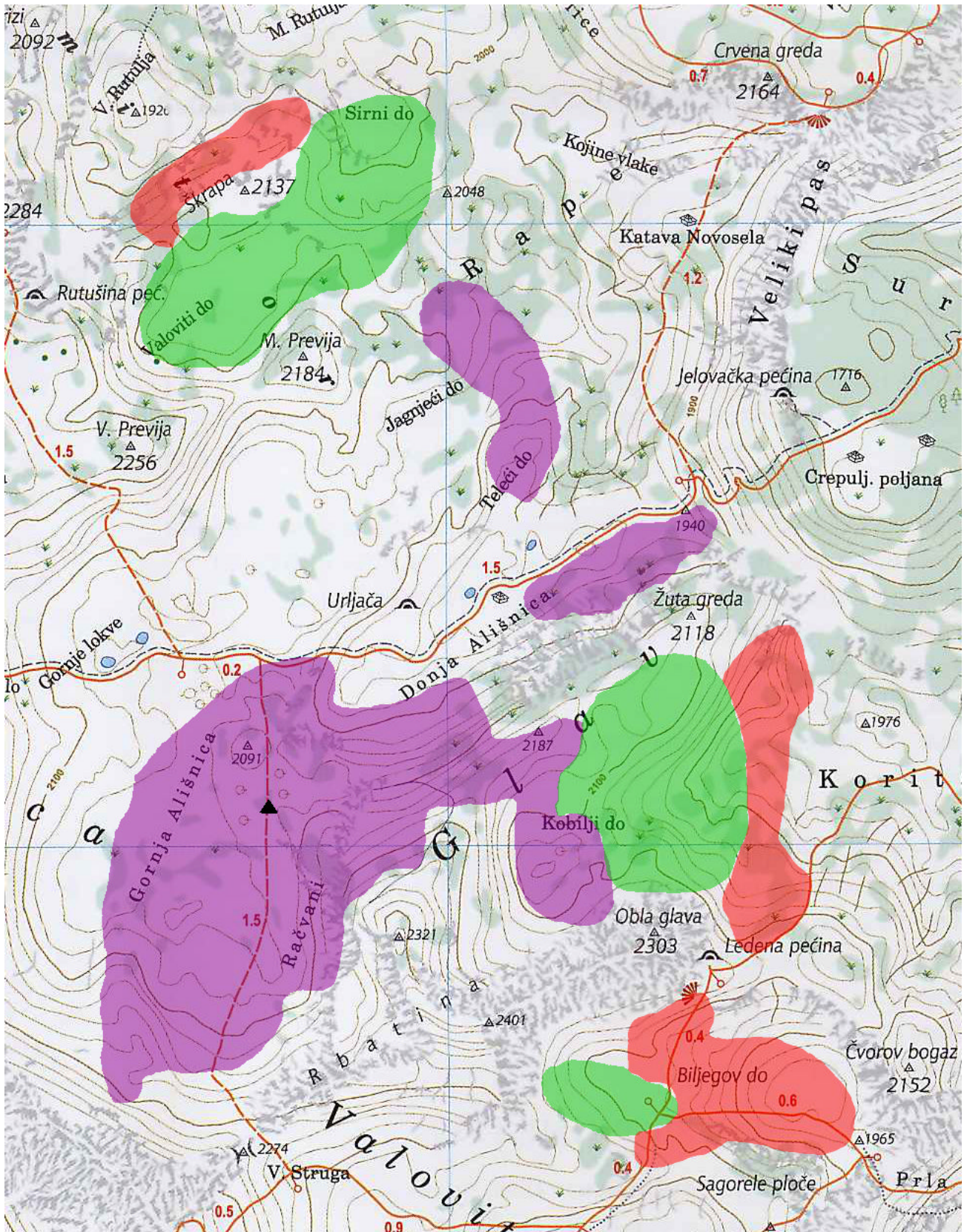


Despite a greater focus on caving in 2013, a large number of entrances were still found, mainly lying within the 3 main areas of Škrapa, K-Do/Korita and B-Do. Several of these have potential and are worth a return; these are detailed in the prospecting data (see Appendix VI).

Entrances discovered in 2013



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Map detailing areas which have been systemically prospected. Red depicts the areas covered in 2013.



Significant finds

JVC Pot

The snow levels all across Durmitor were much higher this year than in previous years. On arrival, the JVC shakehole was almost completely full of snow.



YF1 on day 1 © Catherine Moody

Nevertheless, a crack team of Mark, Mike, Jonny, Lieke and Ruud headed off on the first evening to try to find a way in, but efforts to gain access to the cave between the snow plug and the walls were thwarted. Access *via* the original belay points was blocked and no other way in could be found. The most promising route was between the snow plug and the northern wall, where good progress could be made down a “rift”. This went past survey marker 4, the previous level of the snow plug; from this we could estimate that the snow was around 20 m higher than in 2012. The rift continued down for another few metres to reach a termination at a

snow floor. The following day, Mark and Cat returned to this point, armed with measuring devices and the shovel. It was established that the floor was around the previous depth of the snow tunnel. A fair amount of futile digging failed to yield any results. Unfortunately, the tunnel appeared to no longer exist, at least not at this level.

JVC was revisited by Cat and Adam a week later after the snow had melted somewhat but still no route in could be found. The snow below the survey marker seemed identical to the previous week. A final visit by Lieke and Ruud another week later also yielded no results. Who knows if the cave will be accessible or not next year



JVC on day 8; JVC on day 15 © Catherine Moody



Bunda Jama

Located just below the Whale, the large outcrop of rock that protrudes from the bottom of Obla Glava, Bunda Jama was our most promising, most visited and best-loved lead on the 2013 expo. The entrance is not as impressive, obvious, nor awe-inspiring as caves such as JVC or The Whoppa, though this belies what lies beneath. A sizeable snow plug occupies an elongated, steep sided shake hole surrounded by bunda, hence the name. The cave is marked as YG20 at the north-western end of the snow plug. However, the entrance proper is located on the opposite side, where the steep walls rise to meet a small grassy area, and is marked by an enormous, memorable chockstone.



The Bunda Jama shakehole © Catherine Moody (2012)

Entrance to The Balcony

The original descent of the entrance pitch made use of a natural on the western wall, and a bolt in the chockstone. This has now been re-rigged with bolts along the eastern wall due to fears about the stability of the chockstone. The entrance pitch is around 8 m deep and lands above the snow plug, which tails off into the darkness towards Obla Glava.

There follows a short traverse on snow, leading to a window overlooking a small rubble-floored chamber. A hand line descent of 1.5 m accesses the floor, where a roughly 6 m pitch lands on The Balcony, a large shelf near the top of a high aven chamber. From here two routes lead off.



Bolting the entrance pitch © Catherine Moody



Looking up the rift © Catherine Moody



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Look Harder Route to Arbitrary Meet

Look Harder route was the original line of descent, and leaves the balcony as soon as it reaches it, down a roughly 12 m pitch to a small patch of ice, and past a natural rebelay to another ledge. From here a broken 20 m pitch, requiring a rope protector, lands in a tall chamber. During the original exploration of the route this was thought to be a termination by one Jonny Booth, but a small crawl was discovered by Cat in the true left wall, giving rise to the name 'Look Harder'. This short, sharp crawl opens to a rift with a protruding nose of rock overlooking a very large rubble floored chamber. Natural belays and a final hang from the nose provide an impressive, airy, 20 m descent to the floor. This chamber is now known as Arbitrary Meet (see below), or the Main Chamber for the traditionalist.



Cat about to make the first descent into Arbitrary Meet © Toby Buxton; Toby descending into AM © Catherine Moody

The Express Way to Arbitrary Meet

The second route leading from the balcony came to be known, following its discovery and bolting, as The Express Way, and is the way of choice for pushing teams wanting to descend the earlier stages of the cave as quickly as possible. A traverse across the balcony protected by naturals leads to a large, impressive shaft of roughly 40 m. The pitch is split by two bolt rebelay and a deviation. About two thirds of the way down the shaft begins to slope, and from here a rebelay leads down to a large ledge around 5 m above the floor of Arbitrary Meet. A further double rebelay descends the final few metres.

Arbitrary Meet is named after the mysterious meat pate that the Durmitor caver traditionally eats, and the fact that it is this chamber where The Express Way and Look Harder routes join. After the discovery of The Express Way, Look Harder was de-rigged as it requires a fair amount of gear and is the (slightly) longer route of the two.



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Dig 1: "Half-an-hour-with-a-crowbar"

A single, drafting passage leads on from Arbitrary Meet. A climb down soon encounters a 10 m pitch broken by ledges. Below, a large rubble slope bends to the left and then (steeply and hazardously) to the right. Roughly 30 m along this passage there is a small chamber with a waterfall, a very unusual feature in Durmitor though not entirely surprising as this part of the cave is around 100 m below the surface. The water immediately sinks into the rubble and no continuation can be made (though it may be possible to climb up the waterfall). Survey data suggests this chamber is almost directly below the snow plug in the entrance; almost certainly the source of the water.

Where the passage bends to the right, a tiny, narrow rift was discovered in the left wall. Stones fell a fair way after being thrown through, but the gap downwards was only a few inches across, and a couple of feet into the rift. The pushing team at this point (Cat and Toby) spent some time digging, pulling out lots of small rocks, pebbles and mud by hand, in an effort to extend this gap in the rift back towards the main passage where they thought it might be wide enough to get through. Getting close to call-out, they left when the gap was close to the main passage and returned to camp with the suggestion that a couple of people with a crowbar would break through in around half an hour. As if to punish such hubris, the next team (Mark and Matt B) were forced to spend 4 hours at the dig site, and moved at least a tonne of rubble, before a person could feasibly fit through. The gap in the rift in fact narrowed before the main passage, and entry had to be sought by digging forwards underneath the constriction. The passage here is a small crawl, sloping steeply down at the start and steeply up on the far side, which emerges on a large rock bridge overlooking yet another aven chamber.



The tiny gap © Catherine Moody



Toby digging in the rift; The dig after completion © Catherine Moody



Dig 2: "Another-half-an-hour-with-a-crowbar"

A protected traverse leads across this bridge to a split pitch which descends the deeper part of the chamber. At the bottom the water from the waterfall (presumably) is met. The upstream passage soon becomes too tight. Downstream, there is a widening of the passage before a small hole, the view through which showed large space beyond, leading onto another pitch. This hole required enlargement, and the digger here (Mike) used again the ill-fated phrase 'half an hour with a crowbar'. It was the unlucky Mark who once again spent the inevitable several hours



Enlarging the pitch head © Mark Sims

enlarging this hole, and along with Tony bolted the pitch. It is around 10 m deep and the pitch-head is the only place in the cave so far where one risks getting wet. The chamber is of a moderate size, smooth-walled, and leads into a rift which quickly drops away. A long way.



Tantalising view down the pitch beyond the second dig; The start of the rift traverse © Mike Rippon



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Jungle is Massive & Chateau de la Shock

This rift lies at the top of a truly enormous shaft, and an ascending bolt traverse leads up to a rubble bridge above its deepest part. Much time was spent by the first teams here throwing down rocks, which often make an unsettling whirring noise in the air before slamming into the ground. Timing these rocks and doing some maths led to an estimate of the pitch depth at around 70 m, an impressive size even in the UK. It has since been measured more accurately to 68 m. Many names for the pitch were discussed, but as its discoverer, Mark had the final word and elected to call it Jungle is Massive, for reasons unknown. The pitch is rigged as a tri-hang from three bolts, and had a knot pass about 35 m down as the expo had already used the only rope of sufficient length on the Express Way.



AG at the top of Jungle is Massive © Mike Rippon



Ascending the bottom part of J.I.M. © Catherine Moody

Jungle is Massive (J.I.M.) lands on a very large boulder pile, where one must scramble up to a sort of col made of scree and the occasional unpleasantly large boulder. This is a very dangerous area as the loose rock at the top of the pitch roars down with the slightest provocation and has left extraordinary scars on its unsuspecting brethren. Two 'bunkers' are to be found at each end of the col where one can shelter while a companion passes the pitch-head and traverse, and unusual calls such as 'take cover!' are required to let teammates know when they should shelter and when they are safe. Because of this, the chamber was named Chateau de la Shock by Toby.

From the col, two routes lead down the enormous scree slopes and over pitches both of around 10 m. It was originally thought that these were two ways around a pillar and would join. It was soon discovered, however, that they do not. The left hand route leads to a high shaft where water falls down a similar height to J.I.M. pitch. The streamway here becomes too tight quickly, and gets one wet anyway. A small upstream passage is also very tight but might warrant some further exploration.



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Chateau de la Shock and the traverse along the right-hand route © Mike Rippon

The right hand route does not, surprisingly, lead to the streamway. A loose pitch leads down to a dry chamber, where stray rocks from J.I.M. are still much in evidence. A tall, narrow rift passage leads off from the bottom of the chamber. Following it at floor level soon becomes impassable, but the rift was climbed by Ruud and a small pitch rigged down into the chamber. Beyond this, a sizeable, dusty roof passage is found. This can be followed for quite some way to a junction. Right leads to a passage which contains real formations, previously unheard of in YUCPC's exploration of Durmitor. At the end of this passage is a small dig, which will presumably take only half an hour with a crowbar.



Formations in the side passage © Catherine Moody



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Enigma Rift and beyond

Following the left route, the passage soon turns back into a multi level rift. The caver enters at a high level and must descend. This was originally achieved by climbing enthusiasts Andy Gilmartin and Adam Walmslers, but there is now a small hand line climb (more to show the way on than actually protect anything), followed by a quick sojourn in the mid level of the passage, to a short pitch rigged from a bolt and one or two large naturals. This leads down to the lower level, where the rift drops away into a roughly 25 m pitch rigged from a natural and bolt at the pitch head, with a back up bolt a little way up the passage.

The pitch at the end of the high level phreatic led to a junction of sorts. There appeared to be some sort of high level continuation part-way down the 30 m shaft (which is in need of a name!) and at the bottom, landing on a choss boulder floor, there was an obvious passage heading downhill, upstream. No, that's not a typo - it's probably worth setting the scene. The rift we'd emerged in and that this shaft was a part of suggests that the dip of the limestone at this point is roughly the opposite of the gradient of the streamway. This meant that any horizontal enlargements of the rift tended to run uphill in the downstream direction and downhill in the upstream direction.

Adam and Andy G spent a trip pushing this obvious passage where they met the level of the streamway before following it downstream just above the water along what sounds to be a pretty brutal, committing route. Needless to say, the final pushing trip down was keen to look for a continuation elsewhere.

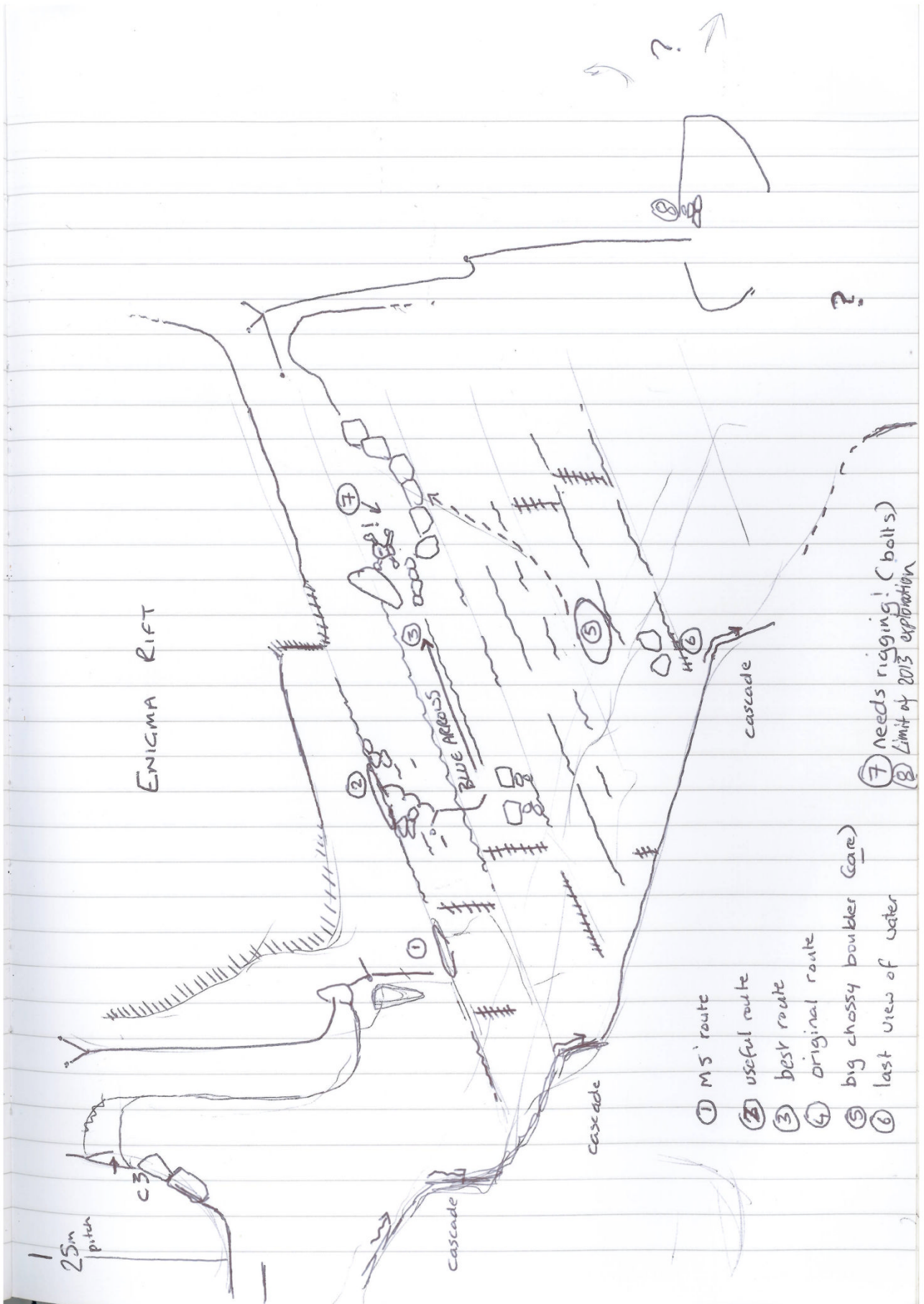
Thankfully, this approach worked and, after a climb over some boulders in the downstream direction at the base of the previous pitch, led to another short pitch into Enigma Rift proper. During initial exploration this area proved to be a real nightmare, with numerous navigable levels following the dip described above, separated by narrowings impassable at most points. Some routes led right up into the roof, whilst others led right down to the water, and numerous precariously stacked rocks certainly added a fair bit of 'excitement' to the exploration. The height of the rift was hard to gauge, but it must have exceeded 20 m in parts.

One of the more promising wider sections lead high into the roof, before meeting an unnervingly loose area of roof. This was initially unanimously vetoed and a route lower down pushed which excitingly yielded, after a fair bit of perseverance, a further widening and another drafting pitch! It was at this point that it became apparent that by far the most direct route would be to go through the loose section and drop down a couple of metres, rather than dropping down to the (much narrower) lower route, only to climb back up again...but this wasn't actually done this year...

The next pitch proved to be much larger than assumed during the bolting, and drops approximately 15 m onto a huge boulder, with enticing black spaces above and below. The obvious route is along and down the continuation of the now much wider rift with the sound of water below, but it's certainly not definitively the only continuation. A cairn on the boulder marks the limit of the 2013 exploration which we're pretty confident lies at over 300 m below the entrance. A sketch was drawn up showing the various ways through Enigma Rift (see following page).



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Trips into Bunda Jama

28/07/2013	MF, AG	Pushing to top of pitch above Look Harder crawl
29/07/2013	JJB, CLM, TFB	Pushing to end of LH crawl
30/07/2013	TFB, CLM	Pushing to Dig 1
	AG, MF	Bolting the Express Way
31/07/2013	MTS, MB	Digging/pushing
	TFB, MC	Finishing bolting the Express Way
01/08/2013	MJR, AJV	Pushing to Dig 2
	LDB, JMB, CLM	Surveying entrance and Look Harder route
02/08/2013	MTS, EC, TS	Digging/pushing
	JJB, LDB, MF	Re-rigging and surveying Express Way
03/08/2013	AW, TFB	Bolting rift traverse
	TS	Re-rigging balcony area
	MTS, MF	Surveying
	CLM, AJV	Bolting and descending J.I.M.
04/08/2013	AW, MTS	Bolting both gullies (descended left)
	TS, RvdA	Pushing right gully
05/08/2013	AG, AW	Pushing
	CLM, TFB	Surveying left gully and re-rigging
06/08/2013	MTS, TS	Pushing to current limit
	MF, AJV	Surveying
07/08/2013	MJR, AG	De-rigging to Arbitrary Meet
	JJB, MB	De-rigging to entrance
08/08/2013	TS, JMB, LDB	Re-bolting entrance pitch

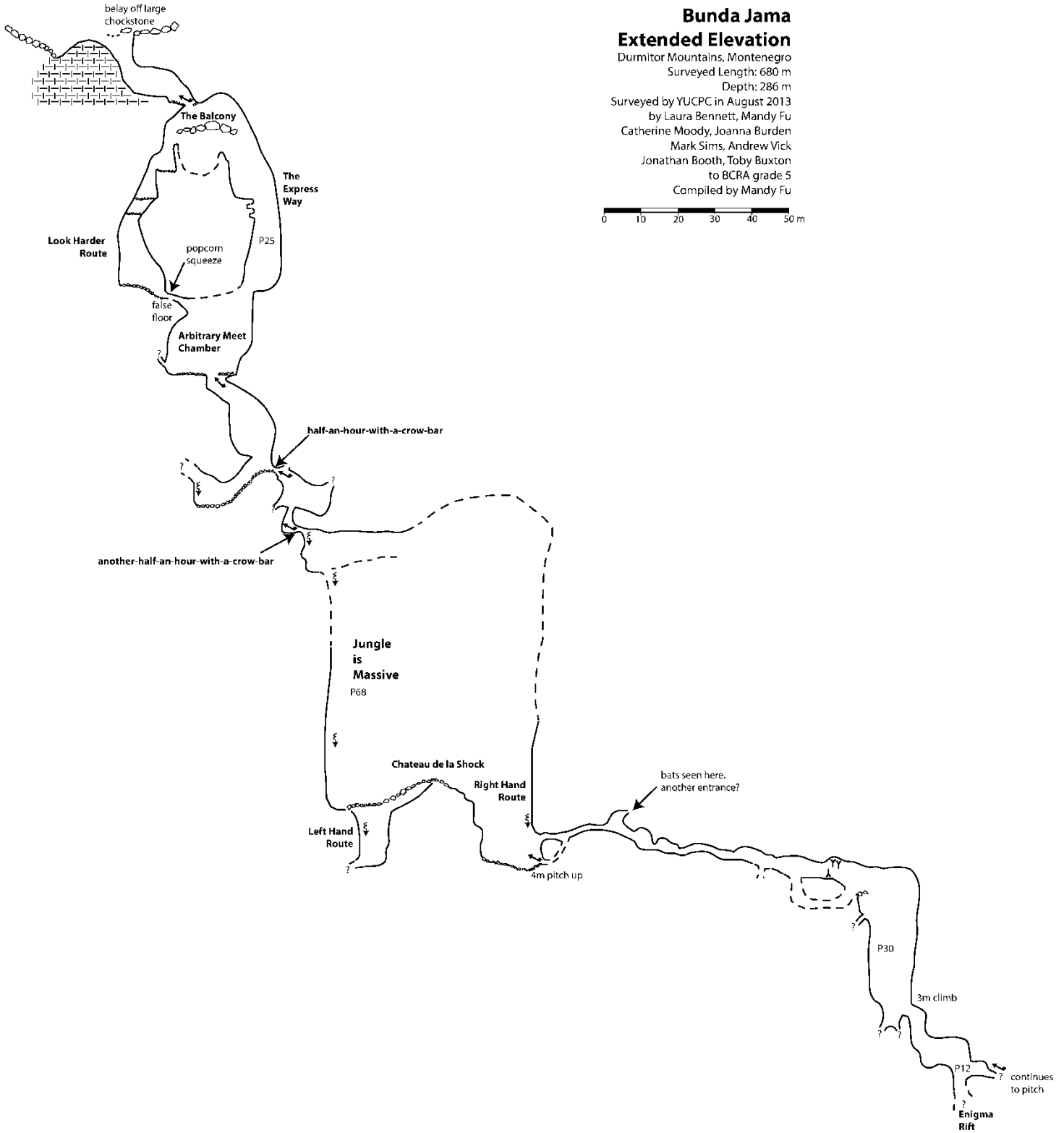
Gear left *in situ*

A number of ropes and anchors were left in Bunda Jama (not rigged). Most was left intentionally to save time next year; some was left by mistake (in this case, money was reimbursed to individuals). Details below:

- Beyond Arbitrary Meet – 19 m 2007
- Beyond half an hour with a crowbar dig – 54 m 2005
- Top of Jungle is Massive pitch – 51 m 2005, 44 m 2008, 1 x bend
- Alcove in Chateau de la Shock – 20 m 2004, 42 m 2007, 1 x screwgate, 1 x bend, 1 x twist
- Climb up from base of Chateau de la Shock – approx 5 m tat, 2 x slings, pitch rigged.
- Far End of abandoned high level rift – 15 m 2005 and a tat handline still rigged
- Near end of Andy G tight rift, close to waterfall – Mandy's tacklesack, Dyneema (sling and AS)
- Popcorn pitch decent in to Enigma rift, after climb up – 29 m 2005, 27 m 2006
- Head of final pitch – 28 m 2007, 32 m 2007, 1 x bend.



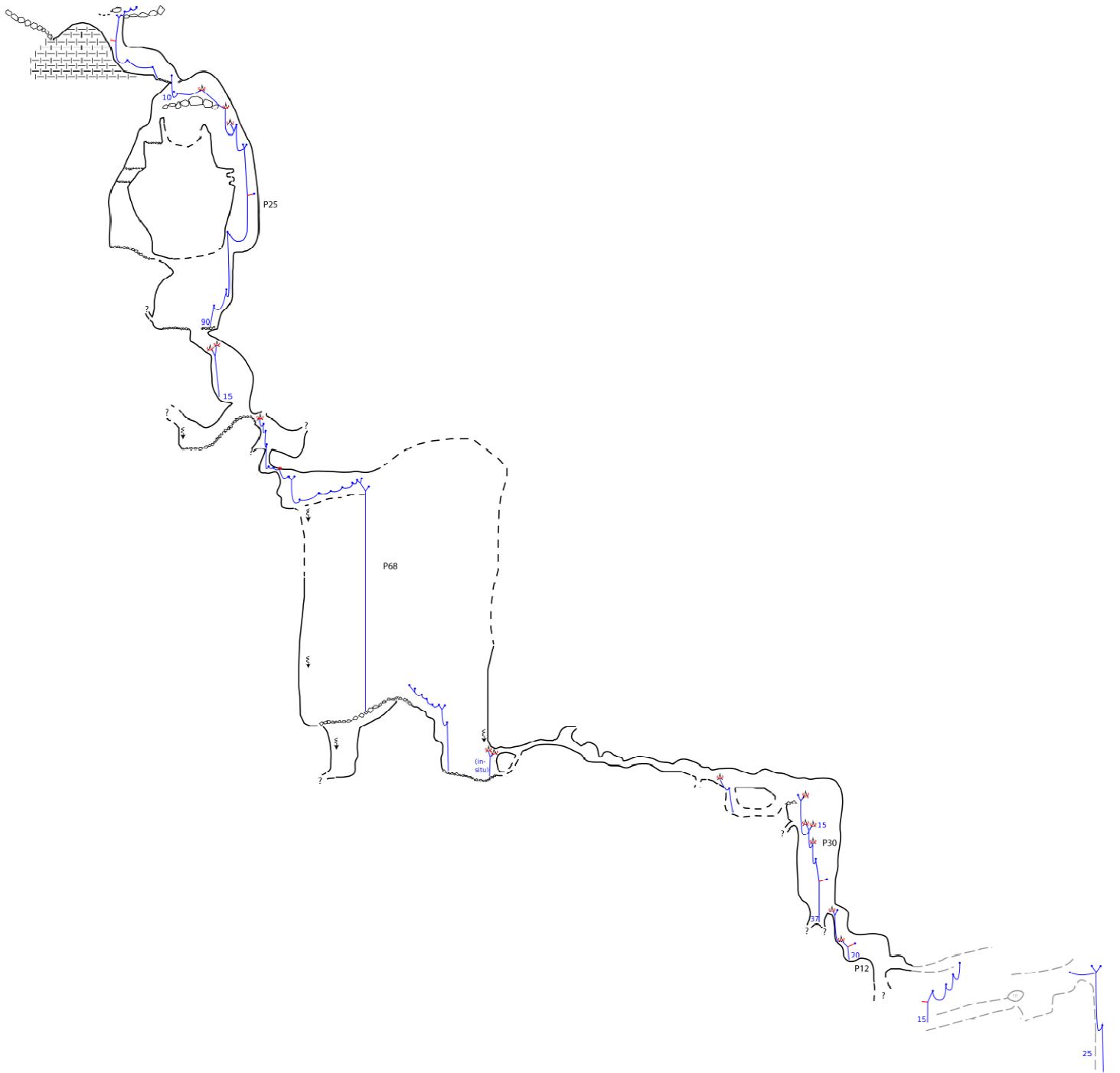
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Rigging guide

Bunda Jama



NB. Partially based on memory; errors in belay placements and rope lengths are possible/probable. Extensions to the survey are not to scale.



Subway

Subway is a cave discovered in 2012 in the higher levels of Korita (the valley below K-Do). It is several hundred metres down the valley from Bunda Jama and about 50 m lower. The entrance is found in a large, flat area of solid limestone and is a small hole at the end of mostly choked rift. Contrary to logic, Subway gets its name from the gourmet sandwich preparation that was occurring on the day of its naming.

The entrance pitch is rigged from a natural above the rift and a bolt at the pitch head. It is tight, awkward and around 12 m deep, with a small snow plug at the bottom. The rope is then rebelayed to a natural, and a descending traverse leads to the head of the first underground pitch. This was originally rigged in an inventive manner by one Mike Rippon, using bits of dyneema to protect naturals and such. It has since been re-bolted as a Y hang with an almost immediate deviation to give a clear 15 m hang down into a large canyon-like chamber. Immediately on the right at the foot of the pitch a large inlet is met coming



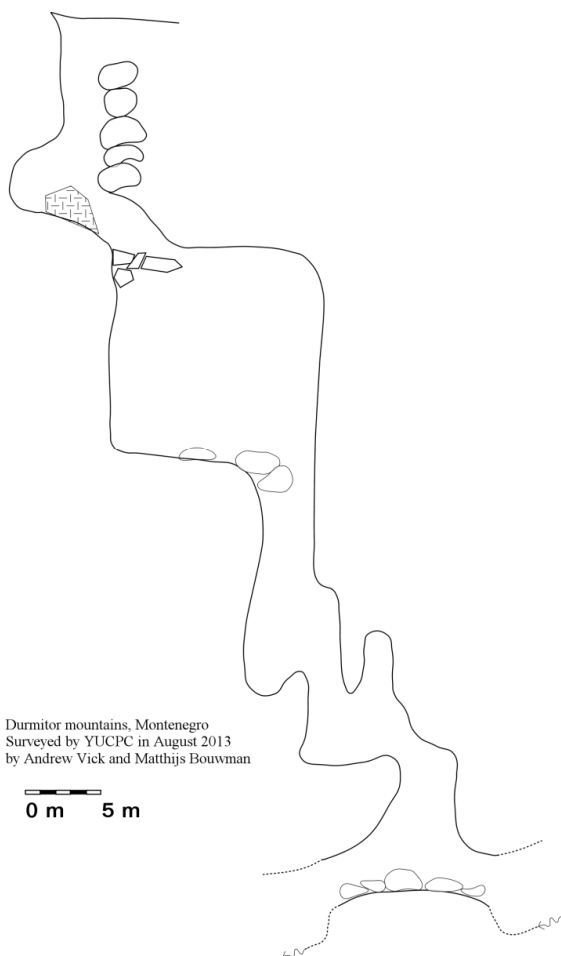
Subway entrance ©Toby Buxton

down the wall, which under our extremely dry conditions carried a trickle of water. Beyond this point, flood debris is found throughout the cave, sometimes impressively high up.

At the end of the chamber the third pitch is reached. This pitch was again given the Mike Rippon treatment and involved several obscure threads using dyneema. A rebelay is found about 3 m down with gives an 18 m hang, past two rock bridges, to a large rubble-strewn shelf. A final descent of about 5 m completes the third pitch.

The cave is by now a large and impressive series of water-worn shafts, and there is potential for exploration of the higher levels of these, though it would probably be arduous and gear-heavy. The third pitch gives way, *via* a short section of passage, to the fourth pitch, which can be rigged from two conveniently-placed naturals and is around 8 m deep. A small pool is found at the bottom, and a very narrow, tall stream passage enters on the true right wall and almost immediately heads off again.

YH48 - SUBWAY
Elevation
(Facing west)



Durmitor mountains, Montenegro
Surveyed by YUCPC in August 2013
by Andrew Vick and Matthijs Bouwman

0 m 5 m

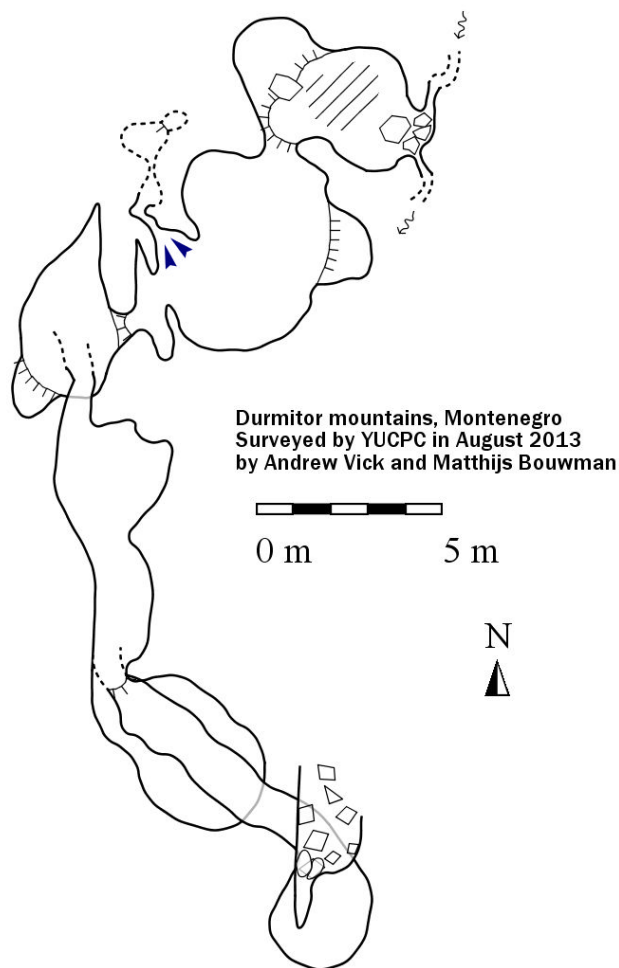


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This passage was explored by two of the expo's smallest cavers, Evan and Toby. The upstream end was found to become impassable rather quickly, while the downstream way gave a little more fun. This was pushed for some distance by Toby Buxton, being enlarged at several points with the aid of a bolting hammer before the way on became too tortuous. The good draft and sizeable streamway had, unfortunately, eluded us.

But all was not yet lost. At the foot of the third pitch is a small crawl leading into the true left wall. This was explored by Evan, who passed the first of its two memorable squeezes with ease. The second, however, proved prohibitively small and Toby was begrudgingly persuaded to give it a go. With the removal of a large, annoying rock the squeeze was passed, and round a tight corner was found a short, though slightly unnerving, climb down into a small chamber. Beyond this, a ramp-like descending passage over a rift led to the head of yet another pitch. Resolving that the purpose of the expo was not to find interesting solo trips for Toby, this was left for another year. It is quite possible that the second squeeze could be enlarged, as a shelf of rock provides the main obstacle. It is likely this would succumb to a concerted effort with a hammer and chisel (or possibly half an hour with a crowbar). This small passage contains both a steady draft and a small amount of water, so it is unlikely that this will be the end of the story.

YH48 - Subway Plan

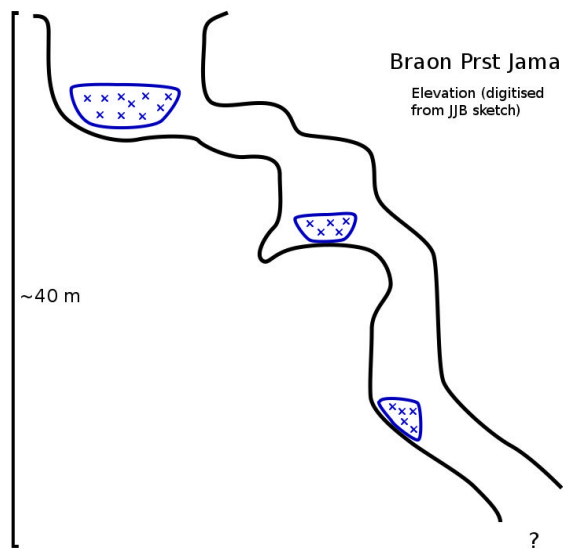




Braon Prst Jama

On August 5th Jonny, Laura, Matt C and Matt B set off for K-do with the aim of quickly exploring several entrances noted down in 2012. YH43 was one such entrance and was descended by Jonny. A small pitch into a large open shakehole landed on snow. A downwards traverse over the snow to an enticing window in the north wall led to another pitch down into a small chamber with a choss floor and a small window in the floor. So far this was reminiscent of Bunda Jama in that a series of traverses and small pitches leads away from the snow into cave. JJB decided not to go straight down this next pitch as there was a large scree slope perched unnervingly above the pitch head and a solo caver in a T shirt would be particularly isolated below it.

Mike was prospecting nearby and came down to help with the rigging and preparation of the pitch. Mike spent some time gardening and rigging before descending another 15 m where he ran out of rope, some 10 m above the floor. Mike reported that the pitch takes the form of a strange curving shaft, the floor of which is approximately 45 m below the entrance and has some snow. A large gap is present between snow and rock and awaits a descent. The cave was named Braon Prst Jama (BPJ) which roughly translates to Brown Finger Pot.



The entrance to BPJ © Adam Walmsley; Rigging pitch one of BPJ © Matthijs Bouwman



The Blowhole

Located fairly central to the top of the Whale (hence the name), the Blowhole (YG31) is the middle of three holes within a large prominent rift running NNW-SSE. It was discovered in 2012 but not returned to until 2013.

The entrance is rigged from a spit directly above the hole in the bottom of the rift and backed up to naturals on the rock slope, with a rope protector where the rope passes over the top of the boulder beside the pitch. A deviation from an unobvious but excellent natural halfway down the rift leads to a rebelay just inside the hole, and a pitch sloping slightly towards Obla Glava. A rebelay and Y-hang from spits just above a small ledge lead to a freehang terminated by a rubble and mud floor.



Mike descending the Blowhole © Catherine Moody



A tall narrow gap at the top of the rubble slope leads to an aven with connections back to the main shaft above but no way on visible, and an awkward crawl (which could be enlarged quite easily) at the bottom of the rubble slope leads to another aven. Any continuation would require digging, and though there is at times a strong draft in the crawl it is intermittent and its source is unknown.



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Expedition diary

Date	Personnel	Activity
25/07/2013	CLM, MTS, JJB, JMB, EC, MJR, AG, MF LO, RvdA	Travel to Žabljak <i>via</i> Dubrovnik. Walk up to camp. Meet others and walk to camp
26/07/2013	CLM, MTS, JJB, JMB, EC, MJR, AG, MF, LO, RvdA JJB, MJR, EC, MTS, LO, RvdA	Set up camp Scout out JVC
27/07/2013	CLM, MTS JMB, JJB, AG LO, RvdA, MF, EC MJR	Digging in JVC Shaftbashing K-Do Prospecting K-Do (aborted) Camp
28/07/2013	MF, AG JJB, MJR CLM, MTS, EC, JMB AV, AW, LDB, TFB, MC, MB LO, RvdA	Bunda Jama pushing Shaftbashing the whale (K-Do) Food run to Žabljak Travel and walk up to camp Camp
29/07/2013	JJB, CLM, TFB MJR, MB, EC MTS, LO, RvdA, MC AG, MF, AW AV, LDB, JMB	Bunda Jama pushing Shaftbashing K-Do Prospecting K-Do Prospecting B-Do Camp
30/07/2013	MJR, JJB, MC TFB, CLM, AG, MF AJV, EC, LDB AW, JMB, MTS LO, RvdA MB	Prospecting Škrapa Bunda Jama pushing Shaftbashing the Whale Shaftbashing B-Do Return to Žabljak Camp
31/07/2013	MJR, EC, AG MTS, MB, MC, TFB AJV, CLM, JMB JJB, MF, LDB AW TS	The Blowhole Bunda Jama Shaftbashing the Whale Prospecting B-Do Camp Arrived at camp
01/08/2013	JJB, AW, MB, MC, TS MJR, AJV LDB, JMB, CLM MTS, AG, MF, EC TFB	Food run to Žabljak Bunda Jama pushing Bunda Jama surveying Shaftbashing K-Do Camp
02/08/2013	EC, MTS, TS JJB, MF, LDB AW, CLM TFB, AJV, MJR MC, MB, JMB AG	Bunda Jama pushing Bunda Jama surveying JVC attempt Subway Prospecting Škrapa Camp
03/08/2013	AW, TFB, TS, CLM, AJV MTS, MF MJR, MC, JMB JJB, AG, MB, EC LDB	Bunda Jama pushing/re-rigging Bunda Jama surveying Subway Cairn building to K-Do Camp



York University Cave and Pothole Club Durmitor 2013 Expedition

04/08/2013 (Mike's Birthday)	LDB, AG, MF AW, MTS, RvdA, TS TFB, EC, AJV, MB MJR, JJB, JMB, CLM LO, MC	Food run to Žabljak Bunda Jama pushing Subway Team chillout in K-Do Camp
05/08/2013	AG, AW, CLM, TFB MJR, JMB, EC MC, MB, LDB, JJB TS, RvdA, LO, MF, MTS, AJV	Bunda Jama Prospecting K-Do Shaftbashing K-Do Camp
06/08/2013	MTS, TS MF, AJV LDB, RvdA, LO, JMB MC, MJR, EC, MB, AW, AG TFB, CLM, JJB	Bunda Jama pushing Bunda Jama surveying Shaftbashing K-Do (YH42 area) Prospecting K-Do (YK30 area) Camp
07/08/2013	TFB, EC MJR, AG, JJB, MB MC, LO, AW JMB, LDB, RvdA, CLM MTS, TS, MF, AJV	Food run to Žabljak Bunda Jama de-rigging Shaftbashing B-Do Prospecting K-Do Camp
08/08/2013	TS, JMB, LDB CLM, MF AG, AV, MC, MTS JJB, MJR, AW, EC, TFB LO, RvdA MB	Bunda Jama entrance bolting Prospecting Korita for new camp Shaftbashing K-Do Walking – Bezimini Vrh ridge JVC; Left for home Camp
09/08/2013	JJB, TFB, MJR, AW, CLM EC, TS MF, AG MTS, MC, AJV LDB, JMB, MB	Bolting cave for gear store; ridge walking The Blowhole YF11 Korita new camp visiting Camp dismantling
10/08/2013	Everyone	Home time



York University Cave and Pothole Club Durmitor 2013 Expedition

Expedition costs

As always, being a student club, we strived to keep the expedition as cost-effective as possible. Total communal costs for 2013 are as follows (see appendices for individual costs):

Item	Total cost	Cost per person
Gear	£777.51	£45.74
Food from the UK	£258.08	£15.18
Shopping in Montenegro	£579.70	£34.10
Total	£1615.29	£95.02

In light of the fact we know we will need a large amount of new equipment next year, £150 was kept as a contingency fund for 2014. Taking this into account, along with the generous grant from the Ghar Parau Foundation (£500) from which we were able to buy a large proportion of this year's gear, the expedition fee for communal costs came out at just under £75 per person.

The main costs come from travel; for those flying from Manchester, this was approximately £360 per person (see Transport section for the breakdown of this). As in previous years, most members obtained travel insurance through Dogtag to cover expedition caving; this was around £40 pp for 17 days.

This comes to a total main cost of around £475 each for the 14–17 day expedition. Evan was lucky to be awarded a York Travel Bursary by the university which covered all of his expedition costs.

Most members also had additional costs for personal camping and caving equipment bought for the expedition. Jo and Evan were both given an Alex Pitcher award of £75 each which helped towards their individual costs.

Conclusions

The objectives of the expedition evolved over the duration, particularly due to the inaccessibility of JVC which negated our initial primary aim. As the potential of Bunda Jama became evident, attention turned there and the pushing and surveying of this cave became the new main objective. We had just about enough capable manpower to be able to push to the point of running out of rigging gear just before the end of the expedition. To be able to push significantly further next year will require more time, manpower, gear and logistical consideration.

Other aims of the expedition were successfully met in terms of camp, prospecting, pushing and surveying. A total of 76 new entrances were logged, over three main areas. 18 entrances from 2012 were revisited as well as a couple of the 2013 entrances. Logistics at camp worked well though with more people, these will need to be reconsidered for next year.



York University Cave and Pothole Club Durmitor 2013 Expedition

2014...

Planning is already underway for a return in 2014. Given the shift in focus of the expo, with a much higher proportion of caving anticipated, we will require a considerable change in logistics. Along with a lot more rope and rigging gear, we will likely want a set of personal caving gear each (undersuit, oversuit, SRT kit, helmet and light). Depending on numbers, logistics for cooking and communal space may also need re-considering. It may be worth having a communal tent at the Autocamp for excess equipment, and doing additional gear runs up the mountain. With a lot more caving going on, it might also be nice to have this as a base for R&R in Žabljak.

Thorough risk assessments will be put in place for any caving in Bunda Jama. This will include accident prevention by training of individuals as well as provisions for any rescue scenarios. We will aim to have at least 3 training/planning weekends, and make clear the expectations for any expo members.

Additional gear suggestions

- Additional large saucepan if numbers increase
- Spare pressure cooker gaskets
- Lots more rope; all 600+ metres of rope taken on expedition in 2013, besides rescue reserve, were used to explore Bunda Jama to its current limit. A substantial increase in rope length will be required to continue explorations in both JVC and Bunda Jama, probably at least 1000 m
- Spits (supplies leftover from the Lyon Equipment grant in 2010 were completely exhausted in 2013)
- More plates (to rig both JVC and Bunda Jama to its current limits and for continued deeper exploration)
- AS hangers
- Dyneema
- Full caving gear for each expedition member
- 2 man bothy to be bought by expo (for underground)
- Large group bothy for underground (in case of rescue)
- Thermos flasks
- Reflective tape for marking footpaths
- Equipment for a potential underground camp in Bunda Jama (sleeping bags, tent, roll mats, stove)
- Dehydrated meals for extended underground trips
- Disto to aid cave surveying
- Peli-cases or similar for home-built über-long-lasting batteries?
- Flash guns/triggers and small tripod for photography
- Casualty bag (genuine or home-made)
- Full body harness for self-rescue

General other suggestions

- Make sure GPS coordinates are uploaded to all GPS devices

Appendix I: Gear spreadsheet

Item	Quantity	Each (kg)	Total (kg)
Prospecting Kit			
Compass/Clino +paper + peli case	2	1.3	2.6
GPS	4	0.5	2
Tape measure (30 m)	2	0.4	0.8
Radios	8	0.2	1.6
Nail Polish	12	0.05	0.6
Maps/Logbooks etc	1	0.8	0.8
Mapcase	6	0.072	0.432
Pens Pencils	15	0.02	0.3
AA batteries	150	0.03	4.5
AAA batteries	100	0.015	1.5
Personal Tents			
Jonny (1m)	1	1.5	1.5
Mark & Mike	1	3	3
Andy V & Cat	1	2.75	2.75
Laura & Walmslers	1	3	3
Evan & Jo	1	2.5	2.5
Lieke & Ruud	1	2.95	2.95
Mandy & Andy G	1	2.4	2.4
Matt & Matt	1	2	2
Toby	1	0.835	0.835
Mess Tarp			
Tarp pole	2	0.62	1.24
Large tarp	1	2.43	2.43
Small tarp	2	0.5	1
Tarp clips	1	0.02	0.02
Repair Stuff (* see right)	1	1.3	1.3
Pegs for tarp	1	1	1
Living			
Stove (Wisperlite)	4	0.55	2.2
... stove spares kit	2	0.1	0.2
... extra to upgrade fuel bottle size	1	0.03	0.03
Expo Pan	1	1.9	1.9
Cooking Utensils (all)	1	0.5	0.5
Garlic crusher	1	0.175	0.175
Food	35	1	35
Brekkie bags	249	0.25	62.25
Petrol can and petrol	1	4.4	4.4
Coarse Water Filter	1	0.06	0.06
Bernies bags	20	0.14	2.8
Funnel	1	0.2	0.2
Toilet kit (bogroll, alcoholgel, lighter)	6	0.13	0.78
Extra lighters	6	0.05	0.3

Camp hand sanitizer	1	0.25	0.25
Dishcloth	2	0.007	0.014
Chlorine/Iodine tablets	1	0.2	0.2
Snow Shovel	1	0.6	0.6
Polypin	3	0.22	0.66
Pressure Cooker	2	2.1	4.2
Extra Trangia pan	2	0.15	0.3

Caving/Shaftbashing

Bothy	5	0.55	2.75
Rope 10.5 mm (inc 55 m rescue)	449	0.08	35.92
Rope 9 mm	90	0.062	5.58
Sling (60 cm, 1")	4	0.06	0.24
Sling (80 cm, 1")	6	0.08	0.48
Sling (120 cm, 1")	10	0.12	1.2
Rope Protector	8	0.2	1.6
Screwgates	70	0.07	4.9
Dyneema anchors	30	0.05	1.5
Hangers + bolts	50	0.035	1.75
Spits (some will be as rescue)	100	0.02	2
Bolting Kit (one will be as rescue)	3	1.5	4.5
Communal First Aid Kit	1	0.6	0.6
Stretcher	1	9.2	9.2
Tacklesacks	3	0.6	1.8
Cord	200	0.01	2
Gaffa tape	1	0.15	0.15
Stop + 2 krabs	9	0.44	3.96
Omni	9	0.086	0.774
Croll	9	0.135	1.215
Cowstails + 2 krabs	9	0.3	2.7
Safety link + footloop	9	0.281	2.529
Hand jammer + krab	9	0.26	2.34
Chest tape	9	0.12	1.08
Harness	9	0.54	4.86
Pulley + oval	9	0.16	1.44
Tibloc	9	0.038	0.342
Spanner	9	0.058	0.522
Extra pulleys for rescue	2	0.056	0.112
Oversuit	8	1.4	11.2
Undersuit	6	0.8	4.8
Helmet + light	10	0.62	6.2
Knee pads	5	0.4	2
Crowbar	1	0.75	0.75

Entertainment

Jungle Speed	1	0.358	0.358
Munchkin	1	0.271	0.271

Total = 283.7 kg

Appendix II: Recipe cards

Notes

Abbreviations

- (UK) = items brought from UK/Holland. Stored in car or at camp.
- (Z) = items to be bought in Žabljak.

Pressure cookers

- Limits for filling pressure cooker:
 - Beans/lentils: 1/3 full including water – 1 kg is about right
 - Rice/pasta: 1/2 full including water – 1 kg is about right
 - TVP: 1/3 – 1/2 full including water
- Minutes to cook for once the pressure cooker has got up to pressure:
 - Butter beans: 20 minutes
 - Red kidney beans: 15 minutes
 - Lentils: 2 minutes
 - Rice: 2 – 3 minutes
 - Pasta: 2 minutes
- Adding oil to lentils when cooking helps to stop scum blocking the valve.
- See pressure cooker instructions for further details of pressure cooker usage.

General

- If sauces do not fit in the expo pan (quite likely when cooking for 17), transfer some to a spare Trangia pan.

Suggested menu

- First 3 days: Risotto, Chorizo, Thai
- Second 3 days: Lentil stew, Moroccan, Pesto
- Third 3 days: Chilli, Thai, Chorizo
- Final 6 days: Risotto, Lentil stew, Moroccan, Pesto, Thai, Chorizo

Mushroom risotto

Ingredients	10 people (1 X)	17 people (1 X)
Risotto rice (UK)	2 kg (4 bags)	3 (6 bags)
Onions, diced (Z)	4	6
Garlic, chopped/crushed (Z)	1 bulb	2 bulbs
Stock cubes (chicken or veg) (Z)	8	12
Dried mushrooms broken up (UK)	¾ tub (300 g)	1 ¼ tubs (500 g)
Peas or sweetcorn (Z)	1 bag	1 bag

Preparation (at start of day)

Put mushrooms in a pressure cooker.
Cover with water.
Leave to soak.

Preparation (prior to dinner)

Use the expo pan when cooking for 10. Use the expo pan (approx. 2/3 of ingredients) and a pressure cooker (approx. 1/3 of ingredients) when cooking for 17.

Fry onions and garlic in oil in the expo pan for 5 minutes.
Add risotto rice and fry for 2 minutes.
Add mushrooms and soaking water.
Crumble in stock cubes
Gradually add water bit by bit as it is absorbed. Stir regularly.
Add peas/sweetcorn. Cook until heated through and rice is cooked.

NB. These quantities produced too much for 17 people in 2013. Also, more stock cubes and salt are required.

“Chorizo” and butter bean stew

“Chorizo” and butter bean stew		
Ingredients	10 people (1 X)	16 people (2 X)
Butter beans (UK)	500 g (1 bag)	1 kg (2 bags)
Onions, diced (Z)	6	9
Garlic, chopped/crushed (Z)	1 bulb	1 ½ bulbs
Peppers, diced (Z)	6	9
Thin salami sausages, cut into chunks (Z)	5 thin or 2 thick	8 thin or 3 thick
Passata (Z)	3 packs	5 packs
Tomato purée (Z)	1 tube	1 ½
Paprika (UK)	2 tsp	3 tsp
Chilli flakes (UK)	2 tsp	3 tsp
Salt (Z)	To taste	To taste
To serve		
Pasta (Z)	1 kg	2 kg
Salt (Z)	½ tsp	1 tsp
Smash (UK)	400 g (make up with 2 L water)	600 g (make up with 3 L water)
Preparation (at start of day)		
Put butter beans in a pressure cooker. Cover with water. Soak during the day.		
Preparation (prior to dinner)		
Drain beans and just cover with fresh water. Bring pressure cooker up to pressure. Cook for 20 minutes. Turn off heat and wait for pressure to reduce so that lid can be opened.		
Fry the onions and garlic in the expo pan for 5 minutes. Add sausages, peppers, passata, tomato purée, chilli flakes, paprika and salt. Bring up to the boil. Simmer for 10 minutes. Add more paprika and chilli flakes to taste if required.		
Cook pasta in batches using the 2 pressure cookers. Place 1 kg pasta and ½ tsp salt in pressure cooker. Just cover with water. Bring up to pressure and cook for 2 minutes.		
Use leftover pasta water to make up some of the Smash. Boil extra water to make up the rest of the Smash.		
NB. Initially a non-spicy sausage was used (Budimska) so extra spices were added for flavour. Later we discovered that Kulen is already very spicy and so reduces/negates the need for spices/garlic.		

Thai green TVP curry		
Ingredients	10 people (1 X)	16 - 17 people (2 X)
TVP chunks (UK)	750 g (1 ½ bags)	1.125 kg (2 ¼ bags)
Thai curry paste, for soaking (UK)	6 tsp	9 tsp
Stock cubes (chicken or veg) (Z)	2	3
Thai curry paste (UK)	Rest of 200 g (½ pack)	Rest of 300 g (¾ pack)
Coconut milk powder (UK)	300 g (2 packs)	450 g (3 packs)
Aubergines (or courgettes – require 50% more), diced (Z)	4	7
Water	As required	As required
To serve		
Rice (Z)	1.5 kg	2.5 kg
Salt (Z)	¾ tsp	1 ¼ tsp
Preparation (at start of day)		
Put TVP in expo pan. Crumble in the stock cubes. Add the thai curry paste (for soaking). Cover the TVP with plenty of water.		
Preparation (prior to dinner)		
Transfer TVP and stock to the pressure cookers and cook in batches. Do not fill more than $\frac{1}{3}$ – $\frac{1}{2}$ full. Bring pressure cooker up to pressure. Cook for 2 minutes. Turn off heat and wait for pressure to reduce so that lid can be opened.		
Fry remaining thai curry paste with some oil in expo pan ($\frac{3}{4}$) and trangia pan ($\frac{1}{4}$) for 2 minutes. Add aubergines/courgettes and cooked TVP. Use hot TVP cooking water to make up the coconut milk and add. Simmer until vegetables are cooked.		
Cook rice in batches using the 2 pressure cookers. Place 1 kg rice and $\frac{1}{2}$ tsp salt in pressure cooker. Cover with water (approx $1\frac{3}{4}$ times volume of rice). Bring up to pressure and cook for 2 minutes. Turn off heat and wait for pressure to reduce so that lid can be opened.		
NB. Not all of the curry paste was used as it was very hot. Either the same amount of curry paste and more coconut milk or extra spices and stock required to give more flavour.		

Lentil and vegetable stew	
Ingredients	16 - 17 people (2 X)
Red lentils (UK)	1.5 kg (3 bags)
Veg stock cubes (Z)	12
Onions, sliced (Z)	6
Garlic, chopped (Z)	2 bulbs
Passata (Z)	4
Cumin (UK)	6 tsp
Chilli flakes (UK)	4 tsp
Garam masala (UK)	9 tsp
Peppers, sliced (Z)	6
Courgettes, sliced (Z)	6
Salt (Z)	To taste
Oil	6 tsp
Sugar	6 tsp
To serve	
Rice (Z)	2 kg
Salt (Z)	1 tsp
Preparation (at start of day)	
None.	
Preparation (prior to dinner)	
<p>Put 0.75 kg lentils in each pressure cooker. Cover with water to 1/3 full. Crumble in stock cubes. Add 3 tsp oil. Bring pressure cooker up to pressure. Cook for 2 minutes. Turn off heat and wait for pressure to reduce so that lid can be opened.</p> <p>Transfer to expo pan. Add the vegetables, spices and sugar. Bring to the boil and simmer until the veg is cooked (~ 15 minutes). If waiting for the lentils to cook, the vegetables can be pre-boiled in a little water. Add salt to taste.</p> <p>Cook rice in batches using the 2 pressure cookers. Place 1 kg rice and ½ tsp salt in pressure cooker. Cover with water (approx 1 ¾ times volume of rice). Bring up to pressure and cook for 2 minutes.</p>	

Moroccan TVP stew

Ingredients	17 people (2 X)
TVP chunks (UK)	1 kg (2 bags)
Onions, diced (Z)	8
Garlic, chopped/crushed (Z)	1 bulb
Ground ginger (UK)	3 tsp (to soak) + 4 tsp (to cook)
Cinnamon (UK)	3 tsp (to soak) + 4 tsp (to cook)
Honey (Z)	6 tsp (to soak) + 6 tsp (to cook)
Tomato purée (Z)	6 tsp (to soak) + 9 tsp (to cook)
Ground coriander	2 tsp
Cumin	2 tsp
Aubergines (Z)	3
Salt (Z)	To taste
Passata (Z)	2
Dried apricots (UK), chopped	1 kg (2 bags)
Oil (Z)	
To serve	
Pasta (Z)	2 kg
Salt (Z)	1 tsp
Smash (UK)	600 g (make up with 3 L water)

Preparation (at start of day)

Put TVP in expo pan.
Add ginger, cinnamon, honey and tomato purée.
Add ~ 5 L water.
Leave to soak.

Preparation (prior to dinner)

Transfer TVP and stock to the pressure cookers and cook in 3 batches. Do not fill more than $\frac{1}{3}$ – $\frac{1}{2}$ full.

Bring pressure cooker up to pressure.
Cook for 2 minutes.
Turn off heat and wait for pressure to reduce so that lid can be opened.

Fry onion and garlic in oil in the expo pan for 5 minutes.
Add aubergines and fry for 5 minutes.
Add TVP, passata, water, apricots, honey, ginger, coriander, cumin, salt and water.
Bring up to the boil.
Simmer for 10 minutes.
Add more spices to taste if required.

Cook pasta in batches using the 2 pressure cookers.
Place 1 kg pasta and $\frac{1}{2}$ tsp salt in pressure cooker.
Just cover with water.
Bring up to pressure and cook for 2 minutes.

Use leftover pasta water to make up some of the Smash.
Boil extra water to make up the rest of the Smash.

NB. These quantities produced too much for 17 people in 2013. It may also be worth taking couscous in future to have instead of pasta for ease and variety.

Pesto pasta

Ingredients	17 people (2 X)
Butter beans (UK)	750 g (1 ½ bags)
Pasta (Z)	3 kg
Salt (Z)	1 ½ tsp
Pesto (Z)	1 ½ pots
To serve	
Smash (UK)	600 g (make up with 3 L water)

Preparation (at start of day)

Put butter beans in a pressure cooker.
Cover with water.
Soak during the day.

Preparation (prior to dinner)

Drain beans and just cover with fresh water.
Bring pressure cooker up to pressure.
Cook for 17 minutes.
Turn off heat and wait for pressure to reduce so that lid can be opened.

Boil water and salt in expo pan and other pressure cooker.
Add pasta and simmer until cooked.

Drain pasta and use water to make up Smash.
Add beans and pesto.
Mix.

Boil more water to make up the remaining Smash.

TVP chilli	
Ingredients	16 - 17 people (1 X)
TVP mince (UK)	900 g (3 bags)
Onions, diced (Z)	8
Garlic, chopped/crushed (Z)	1 bulb
Peppers, diced (Z)	8
Passata (Z)	5
Tomato purée (Z)	1 ½ tubes
Chilli flakes (Z)	3 tsp
Cumin	4 tsp
Stock cubes (beef or veg) (UK)	8
Kidney beans (UK)	1 kg (2 bags)
To serve	
Rice (Z)	3 kg
Salt (Z)	1 ½ tsp
Preparation (at start of day)	
Put kidney beans in a pressure cooker. Cover with water. Soak during the day.	
Preparation (prior to dinner)	
Put TVP mince in the other pressure cooker and trangia pan. Crumble in the stock cubes. Add water until it just covers the TVP. Leave to soak while preparing everything else.	
Drain beans and just cover with fresh water. Bring pressure cooker up to pressure. Cook for 15 minutes. Turn off heat and wait for pressure to reduce so that lid can be opened.	
Fry onion, garlic and chilli flakes in oil in the expo pan for 5 minutes. Add peppers, TVP mince, beans, passata, tomato purée, chilli flakes, cumin and water. Divide between the expo pan and a trangia pan if required. Bring up to the boil. Simmer for 20 minutes. Add more spices to taste	
Cook rice in batches using the 2 pressure cookers. Place 1 kg rice and ½ tsp salt in pressure cooker. Cover with water (approx 1 ½ times volume of rice). Bring up to pressure and cook for 2 – 3 minutes. Turn off heat and wait for pressure to reduce so that lid can be opened.	
NB. These quantities produced too much for 17 people in 2013.	

Appendix III: Food bought in the UK

Item	Quantity	Source	Cost
Coconut milk powder (Cocomi)	150 g x 8	Healthy Supplies	£15.12
Dried apricots (Infinity)	500 g x 5	Healthy Supplies	£14.84
Milk powder (TRS)	400 g x 2	Healthy Supplies	£6.18
Butter beans (TRS)	500 g x 8	Healthy Supplies	£11.76
Kidney beans (TRS)	500 g x 2	Healthy Supplies	£2.10
Red lentils (TRS)	500 g x 6	Healthy Supplies	£5.64
Soya chunks (Tree of life)	500 g x 10	Healthy Supplies	£17.40
Soya mince (Hampshire)	300 g x 3	Healthy Supplies	£3.99
Delivery		Healthy Supplies	£15
Pesto (Chef's larder)	800 g x 3	Britsuperstore	£29.97
Dried mixed mushrooms (Merchant Gourmet)	400 g x 2	Britsuperstore	£27.98
Smash	2 kg x 2	Britsuperstore	£16.30
Delivery		Britsuperstore	£6.88
Thai green curry paste (Mae Ploy)	400 g x 2	Rafi's (York)	£4.50
Risotto rice	3.5 kg	Tesco	£7.70
Instant custard powder	9 sachets	Tesco	£4.05
Teabags	80 bags	Tesco	£2.35
Spices	Double the amount required according to recipe cards	Various (taken from club/personal supplies)	-

Appendix IV: Personal expenses

Date	Item	Cost	Category	Person	Comments
29/05/2013	TarP	£34.77	gear	Cat	
14/06/2013	dyneema	£6.00	gear	Cat	
24/06/2013	pressure cooker	£35.99	gear	Cat	
24/06/2013	lighters	£3.80	gear	Cat	
25/06/2013	mornflake	£4.00	food	Laura	
27/05/2013	water purification	£9.95	gear	Laura	
29/06/2013	dried food to holland	£87.41	food	Cat	
29/06/2013	britstore order	£81.74	food	Cat	
29/06/2013	thai paste	£4.50	food	Cat	
29/06/2013	hand sanitiser for bog kits	£6.09	gear	Cat	
01/07/2013	tent poles	£9.94	gear	Cat	
01/07/2013	msr repair kit	£19.89	gear	Cat	
01/07/2013	fuel bottle	£13.00	gear	Cat	
02/07/2013	small tarps	£6.98	gear	Mark	
02/07/2013	tarp cord	£19.86	gear	Mark	
02/07/2013	Compass	£91.99	gear	Mark	
02/07/2013	Tape measure	£8.51	gear	Mark	
05/07/2013	risotto rice and custard powder	£15.75	food	Cat	
10/07/2013	Batteries	£62.72	gear	Andy V	
16/07/2013	Breakfast bag stuff	£58.00	food	Laura	
16/07/2013	food bags etc	£3.90	food	Andy V	
08/07/2013	spices	£2.78	food	Cat	
19/07/2013	Extra Bag	£20.00	gear	Andy V	
20/07/2013	taps/pipe etc	£33.20	gear	Mark	
12/07/2013	Communal medical stuff + hand gel	£13.80	gear	Mark	
20/07/2013	Euros for taxi 1080 Euro	£947.37		Andy V	
14/08/2013	survey tape	£7.83	gear	Toby	
14/08/2013	Li batteries and nail varnish	£24.80	gear	Toby	
14/08/2013	radios	£23.95	gear	Toby	
14/08/2013	bulldog clips	£2.45	gear	Toby	
14/08/2013	funnel	£1.79	gear	Toby	
14/08/2013	compass	£135.00	gear	Laura	
15/08/2013	t-shirts	£147.29	gear	Jo	
	Repair Kit	£35.00	gear	Jonny	
19/09/2013	Compass refund	-£91.99	gear	Mark	
	wellies 15 E	£13.16	shopping	Mandy	
	wellies 15 E	-£13.16	shopping	Mark	
29/05/2013	food for first training weekend	£55.00	wfood	Cat	AG, AW, CLM, EC, JJB, JMB, LDB, MC, MF, MJR, MTS (£5 pp)
14/06/2013	food for second training weekend	£36.61	wfood	Andy V	AJV, AW, CLM, EC, JJB, JMB, LDB, MJR, MTS, TFB

14/06/2013	food for second training weekend	£4.00	wfood	Andy V	Total for 2nd weekend is £40.61 (£4.06 pp) AW, CLM, EC, LDB, MC, MJR, TFB Total for Wales weekend is £45.65 (£6.52 pp)
14/07/2013	food for wales weekend away	£28.52	wfood	Andy V	
14/07/2013	food for wales weekend away	£9.59	wfood	Toby	
14/07/2013	food for wales weekend away	£7.53	wfood	Mike	
25/07/2013	taxi to airport	£19.60		Mike	CLM, MTS, MJR, AG, JMB, EC, JJB CLM, MTS, MJR, AJV
11/08/2013	taxi from airport	£17.52		Cat	
Expo:	lunch 161 Kuna/20E	£17.54	Shopping	Mandy	Provided by Ruud
	Inital food 50 E	£43.86	Shopping	Lieke	
	Inital food 50 E	£43.86	Shopping	Ruud	
	Inital food bin bags/powder	£4.47	Shopping	Cat	
	Taxi 7E	£6.14	Shopping	Cat	
	Taxi 7E	£6.14	Shopping	Mike	
	1st food 50 E	£43.86	Shopping	Jo	
	1st food 41.90 E	£36.75	Shopping	Mark	
	1st food 11 E	£9.65	Shopping	Cat	
	Taxi 8E	£7.02	Shopping	Jo	
	Taxi 8 E	£7.02	Shopping	Walmsl ers	
	Taxi 8 E	£7.02	Shopping	Cat	
	2nd food 86.32 E	£75.72	Shopping	Matt C	
	2nd food 77.71 E	£68.17	Shopping	Matt B	
	2nd food 50.33 E	£44.15	Shopping	Tony	
	Taxi				
	3rd food 9 E	£7.89	Shopping	Mandy	
	3rd food 39 E	£34.21	Shopping	Laura	
	taxi 7 E	£6.14	Shopping	Laura	
	4th Food 105 E	£92.11	Shopping	Toby	
Taxi 12 E	£10.53	Shopping	Toby		
initial petrol 8.5 E	£7.46	shopping	lieke		
DEAD	Sling	£7	gear	Jonny	LOST IN SERVICE devoured by Bunda Jama 2 slings 1 krab
	tackle sack, beast uncle	£55	gear	mandy	
	YUCPC replacement	£9	gear	tony	
	yucpc replacement dyneema (4 m), 2 x AS	£6 £17.9	gear gear	cat ruud	

Appendix V: Total expenses

Person	Total Expenses	Payment	Gear	wfood	Airport taxi	food	Shopping	Total	TOTAL TO PAY CPC EXPO	
Laura	£247.30	£30.00	£45.74	£15.58	£67.67	£15.18	£34.10	£178.27	-£119.62	
Mark	£105.95		£45.74	£9.06	£74.85	£15.18	£34.10	£178.93	£52.39	
Jo	£198.17		£45.74	£9.06	£70.47	£15.18	£34.10	£174.55	-£44.21	
Evan	£0.00		£45.74	£15.58	£70.47	£15.18	£34.10	£181.07	£160.48	
Cat	£427.46	£30.00	£45.74	£15.58	£74.85	£15.18	£34.10	£185.45	-£292.60	
Andy V	£1,103.12	£30.00	£45.74	£4.05	£72.05	£15.18	£34.10	£171.12	-£982.59	
Andy G	£0.00		£45.74	£5.00	£70.47	£15.18	£34.10	£170.49	£149.90	
Walmslers	£7.02	£30.00	£45.74	£15.58	£67.67	£15.18	£34.10	£178.27	£120.66	
Mandy	£93.60	£30.00	£45.74	£5.00	£67.67	£15.18	£34.10	£167.69	£23.50	
Mike	£33.27	£30.00	£45.74	£15.58	£74.85	£15.18	£34.10	£185.45	£101.59	
Matt B	£68.17		£45.74		£67.67	£15.18	£34.10	£162.69	£73.93	
Matt C	£75.72	£30.00	£45.74	£11.52	£67.67	£15.18	£34.10	£174.21	£47.90	
Lieke	£51.32		£45.74			£15.18	£34.10	£95.02	£23.11	
Ruud	£61.76		£45.74			£15.18	£34.10	£95.02	£12.67	
Toby	£173.04		£45.74	£10.58	£67.67	£15.18	£34.10	£173.27	-£20.36	
Tony	£53.15		£45.74			£15.18	£34.10	£95.02	£21.28	
Jonny	£42.00	£35.00	£45.74	£9.06	£70.47	£15.18	£34.10	£174.55	£76.96	
TOTAL	17	£2,741.03	£245.00	£777.51	£141.25	£984.49	£258.08	£579.70	£2,741.03	-£95.00

Ghar Parau: £500.00

Net expo profit: £150.00

Appendix VI: Prospecting data

Name	Alternative name	Date found	Personnel	Lat.	Long.	Elevation / m	Accuracy / m	Length / m	Depth / m	Marking	Directions to entrance	Description of potential	Draft	Revisiting grade
YJ1		27/07/13	JMB, AG, JJB	43.14204	19.05017	2033	10	12	7	YJ1 OX	60 degrees from Obla Glava. Leads to sloping rift. Small oval shaped hole.	Chossy termination.	ND	0
YJ2		27/07/13	JMB, AG, JJB	43.14181	19.0509	2045	6	3	25	YJ2	~200 m and 30 degrees S of N Cave is straight down opening slightly face of Obla Glava, ~350 m, 90 from narrow entrance. Sharp edged degrees from summit of Whale. flakes but smooth surfaces. Slight lip Area of broken rock with about 5 m from bottom. Rubble floor. 2 several deep pits surrounded by possible but not very likely ways on. bunda on 3 sides. Uphill boundary of area towards OG in small (8 m) high slab. Facing slab on left is an ova		ND	2
YK1		29/07/13	MTS, MC, RvdA	43.13929	19.05162	2113	5	3	3	YK1	Adjacent to YK2 at top of large snow patch S of Obla Glava cliff goes into black space. Looks like a face.	Narrow slot surrounded by loose stuff S choked rift.		2
YK2		29/07/13	MTS, MC, RvdA	43.13939	19.05154	2109	4	8	12	YK2	Top of snow field ~S of Obla Glava cliff face	~12 m shaft with snow in the bottom at top of large snow field. Cannot tell way on without gear.	ND	2
YK3		29/07/13	MTS	43.13912	19.07179	2112	5	3	7		Just NE of main path from Zabljak to B. Kuk. S of Obla Glava cliff. Rift in limestone pavement. Chockstones block top.	Rocks fall ~8 m. Do not sound like they continue further.	ND	1
YK4		29/07/13	RvdA, MC, LO, MTS	43.13913	19.05118	2131	6	2	6	YK4	N side of Zabljak-B. Kuk path, S of Obla Glava cliff face.	Narrow rift descends vertically. Rocks sound like they hit rubble floor. Needs gear to check properly.	ND	1
YK5		29/07/13	MTS, MC, RvdA	43.14252	19.04909	2032	6	2	6	YK5	Possible duplicate. Base of whale on N side. Smallish slot at base of cliff.	Stones rattle for ~6 m. Would probably need kit to get down. UPDATE [2013 MS, AG, MC, AV] Needs balls of steel. Loose rock at entrance could be removed to make squeeze safe.	ND	1
YK6		05/08/13	JMB, EC, MJR	43.14189	19.05094	2037	7	2	5	YK6	Small slot just west of below limestone pavement below Obla Glava. Small slot/shaft.	Needs rope to descend.	ND	1
YK7		05/08/13	JMB, EC, MJR	43.14183	19.05098	2032	5	8	5	YK7	2 large holes in pavement below OG next to separated by an arch.	Climbed down. Looked choked. Possible dig.	ND	1

Name	Alternative name	Date found	Personnel	Lat.	Long.	Elevation / m	Accuracy m	Length / m	Depth / m	Marking	Directions to entrance	Description of potential	Draft	Revisiting grade
YK8		05/08/13	JMB, EC, MJR	43.14198	19.05082	2031	5	15	10	YK8	Below YK6/7 on limestone pavement. To west of little bowl.	2 Holes joined by slot below 2 large boulders. Some waterworn areas. Needs rope to descend.	ND	1
YK9		05/08/13	JMB, EC, MJR	43.14207	19.05108	2020	5	5	5	YK9	W-side of small bowl below limestone pavement/Obla Glava. Hole with snow plug and scree.	Choked.	ND	0
YK10		05/08/13	JMB, EC, MJR	43.14202	19.05126	2019	4	15	5	YK10 OX	N side of small bowl below Obla Glava and limestone pavement. Large rift with smaller one perpendicular west end.	2 possible ways on. Small digs.	ND	0
YK11		05/08/13	JMB, EC, MJR	43.14171	19.05131	2029	5	20	8	YK11	In gully between small & large bowls NE of Obla Glava. Shakehole and meandering surface rift. Mostly choked. Looks like an ancient vadose trench.	Choked along entire length.	ND	0
YK12		05/08/13	JMB, EC, MJR	43.14147	19.05139	2028	4	6	6	YK12	In gully between big & small bowls down hill from path to B-Do. Rift with snow at bottom.	Might be possible to get past snow, but not this year. Mau be way on at south end going under rock towards bunda. Needs rope to drop to floor of rift.	ND	1
YK13		05/08/13	JMB, EC, MJR	43.14138	19.05107	2041	5	5	10	YK13	In minor gully at N side of big bowl NE of Obla Glava. Interesting rift that looks like vadose trench. Possibly related to YK11?	Sounds and looks choked, but requires rope to confirm what happens around corner.	ND	1
YK14		05/08/13	JMB, EC, MJR	43.14133	19.05082	2050	4	3	3	YK14 OX	Limestone pavement above YH43 towards Obla Glava. And up hill from small bowl. Small rift in pavement heading down under rubble.	Terminates,	ND	0
YK15		05/08/13	JMB, EC, MJR	43.14149	19.05079	2047	5	15	5	YK15	May be YH42! Large rift in limestone pavement above YH43 and up hill from YK13 and small bowl.	4 dip sections. Southern-most terminate quickly, Northern 2 drop lower. Possible continuation in northernmost dip. Needs rope to descend.	ND	1
YK16		06/08/13	AW, MC, MJR	43.14058	19.05173	2034	6	3	5	YK16	Rift/hole on edge of scree on E side of large bowl with snow plug.	Descend with rope. Large amount of scree in area does not inspire confidence.	ND	1

Name	Alternative name	Date found	Personnel	Lat.	Long.	Elevation / m	Accuracy / m	Length / m	Depth / m	Marking	Directions to entrance	Description of potential	Draft	Revisiting grade	
YK17		06/08/13	AQ, MC	MJR,	43.14058	19.05183	2046	4	4	4	YK17	On rocky shoulder in area below Obla Glava and down from "AW1". Hole in fault in rock. Snow and rubble in bottom.	Probable termination.	ND	0
YK18		06/08/13	AW, MC	MR,	43.14195	19.05169	2022		7	20	YK18	Bunda! K-Do. East-ish of Obla Glava. Big dark hole in large rift.	~2 s stone drop. Bottom muddy. Definitely worth a look.	ND	2
YK19		06/08/10	MC, AW	MJR,	43.14206	19.05205	2000	6	8	5	YK19	In bunda E of Obla Glava. Large shakehole with snow plug.	Choked.	ND	0
YK20		06/08/10	MJR, MC	AW,	43.14211	19.05159	2015	7	6	15	YK20	In large patch of bunda next to YK18. Surrounded by bunda with obvious route to entrance. Snow plug in bottom and rocks do not go much further	Seems unlikely but worth a look in conjunction with YK18.	ND	1
YK21		06/08/13	MJR, MC	AW,	43.14224	19.05154	2020	5	15	10	YK21	In Bunda E of Obla Glava. In rift-style window in one corner to a small choked chamber.	95% sure it is choked. Requires rope for confirmation.	ND	1
YK22		06/08/13	MJR, MC	AW,	43.14216	19.05169	2017	4	5	10	YK22	In bunda east of Obla Glava	Hole in rift with snow plug(s). Needs rope.	ND	2
YK23		06/08/13	AW, MJR	MC,	43.14228	19.05206	2005	7	10	8	YK23	At bottom of limestone area in middle of Bunda E of Obla Glava. Rift with prominent V shaped rock and snow plug	Looks choked. Needs rope to confirm	ND	1
YK24		06/08/13	AW, MC	MJR,	43.14233	19.05206	2008	5	5	2	YK24	Near limestone area in bunda E of Obla Glava. Overgrown shakehole.	Small rift chamber. Choked.	ND	0
YK25		06/08/13	AW, MJR		43.14232	19.05134	2013	5	4	20	YK25	Amongst the bunda maze in K-Do. Very difficult to describe it. Sharp, small hole in limestone escarpment. Amongst a veritable swiss cheese of other, similar looking holes. Rocks rattle around for a few seconds, suggesting greater	We stopped being lazy and went down and to get to. Use the force. filled with stone.	ND	0
YK26		06/08/13	AW, MJR	MC,	43.14239	19.05149	2012	4	2	10	YK26	Small hidden hole under overhanging slab in area of choked shakeholes E of Obla Glava. Small with decent rattle.	Currently blocked by boulder. Could easily be removed with a sling. Requires rope.	ND	1

Name	Alternative name	Date found	Personnel	Lat.	Long.	Elevation / m	Accuracy / m	Length / m	Depth / m	Marking	Directions to entrance	Description of potential	Draft	Revisiting grade
YK27		06/08/13	MJR, AW, MC	43.14249	19.05156	2014	5	20	15	YK27	At bottom of area of shattered rock and choked shakeholes east of Obla Glava	Nice entrance with very solid roof. Climb down (3 m) leads to ledge with very prominent "U" shaped hole. Continues as a rift around to the left with snow. Requires rope. Two pitches?	ND	2
YK28		06/08/13	AW, MJR, MC	43.14269	19.05146	2008	4	2	12	YK28	N end of bunda maze in limestone slab. Hole is 10 m down to floor which slopes northwards. Rocks fall for a little bit.	Possible way on - needs rope. Can probably be rigged off naturals.	ND	1
YK29		06/08/13	AW, MC, MJR	43.14257	19.05112	2013	3	15	10	YK29 OX	At bottom of prominent triangular cliff. Rift with descending rubble and skylight.	Choked.	ND	0
YK30		06/08/13	AW, MR, MC	43.14236	19.0509	2008	8	12	20	YK30	Near end of bunda patch in a line between Obla Glava and the cliffs at N edge of K-Do	Entrance in slanting rift running ~N-S. Snow plug is passable into slanting-roofed chamber with scree floor. At the lower end of this is a pitch, maybe 10+ m.	ND	3
YK31		07/08/13	CLM, LDB, RvdA, JMB	43.14206	19.05061	2016	5	6	4	YK31	200 degree bearing from entrance to Obla Glava. ~5 m on/ east of YH36. Rift points down the valley.	Snow plug at bottom of rift. No way on.	ND	0
YK32		07/08/13	CLM, LDB, RvdA, JMB	43.14224	19.05073	2013	4	12	4	YK32 OX	Down valley from YK31. Rift with 3 "sections". Runs SW to NE.	No way on.	ND	0
YK33		07/08/13	CLM, LDB, RvdA, JMB	43.14229	19.05065	2011	4	4	6	YK33 OX	Plateau near YK30. Close to YK32 in K-Do	Small rift with overhanging NW wall. No way on.	ND	0
YK34		07/08/13	CLM, LDB, RvdA, JMB	43.1423	19.05065	2010	5	10	6	YK34	Large open shakehole, snow plug at bottom. Passage ~1.5x1.5 m leads S under boulders.	Can freeclimb shakehole/rig off S naturals. Passage gets too tight - blocked with rocks that could be removed. Can see perpendicular rift beyond.	S	1
YK35		07/08/13	CLM, LDB, RvdA, JMB	43.14239	19.05071	2016	5	10	5	YK35	N of Obla Glava down the gully next to YK35[?] on N side. Wideish rift that runs ~W-E.	Looks like it may connect to YK34. Has 2 entrances. Snow plug at bottom. Can descend at E end to snow plug. Needs rope.	ND	1
YK36		07/08/13	CLM, LDB, RvdA, JMB	43.14244	19.05077	2012	5	5	20	YK36	Just down valley from YK34/35. N of Obla Glava.	Fissure between largeish sloping slabs of rock. Small chossy rock bridge at bottom of slabs. Freeclimb steeply down ~12 m to meet false rubble floor with pitch below. Rocks rattle for a	S	2

Name	Alternative name	Date found	Personnel	Lat.	Long.	Elevation / m	Accuracy / m	Length / m	Depth / m	Marking	Directions to entrance	Description of potential	Draft	Revisiting grade	
												couple of seconds. Needs a lot of gardening to descend. Take care - loose!			
YK37		08/08/13	MF, CLM	43.14447	19.05289	1935	5	4	2	YK37	In middle of valley running down K-Do in large karstic area. Due west of grassy hill at bottom of K-Do.	Walk in entrance, short scramble into little chamber with water-worn walls. Possible way down through boulders.	ND	1	
YK38		08/08/13	MF, CLM	43.14353	19.05309	1947			2	15	YK38	30 degrees from Obla Glava. Slit in bottom of shakehole. Up valley from potential K-Do camp in large area of pitted limestone & grass. Rift-like shakehole.	Rocks rattle down for several seconds.	ND	2
YK39		08/08/13	MF, CLM	43.14344	19.05279	1955	4	6	10	YK39	In a shallow gully largely filled with boulders. Entrance is at the uphill end of the gully.	5 m diameter hole. Snow in floor. Possibly free-climbable, looks like maybe a way on through a window part way down. Requires further look with lower snow levels.	ND	2	
YK40		08/08/13	MF, CLM	43.14371	19.05384	1949	9	30	7	YK40	N of Obla Glava, S of big grassy hill at bottom of K-Do. Long rifty shakehole.	Snow at bottom. Rubble floor. Large jammed boulder near middle. Free-climbable to snow plug. No obvious way on, but could not confirm termination.	ND	1	
YK41		08/08/13	MF, CLM	43.14367	19.05233	1970	5	3	10	YK41	On an area of limestone pavement in K-Do.	Crack in rift. Solid roof & boulder floor. Needs rope and determined small person to investigate. Rocks rattle for 4-5 s.	ND	2	
YK42		08/08/13	MF, CLM	43.14415	19.05232	1948	5	15	7	YK42	Near YK41 in a hidden gully.	Open shakehole with rubble floor & snow at bottom. Choss bridge at S end. Potential continuation around a corner under choss bridge.	ND	2	
YL0		01/01/70		43.15535	19.03351	2068									
YL1	Hello Apple	29/07/13	AW, MF, AG,	43.13652	19.04867	2088	3	10	40	YL1	On western slopes of B-Do bowl on a small limestone hill not too far from the walking path.	A rifty slot with a couple of ledges and floor not visible. Needs rope. UPDATE [30/07/13 JMB, MTS, AQ] Rigged on LHS standing at lower end of entrance. Deviated off RHS ~2 m down. Reelayed on same wall (small spike) at ~20 m. Landed on snow plug with routes down both sides. Needs more rope! And probably some creative rigging. 34 m reached the snow plug.	ND	2	

Name	Alternative name	Date found	Personnel	Lat.	Long.	Elevation / m	Accuracy / m	Length / m	Depth / m	Marking	Directions to entrance	Description of potential	Draft	Revisiting grade
YL2		29/07/13	AW, AG, MF	43.13618	19.04929	2061	5	3	3	YL2	Small dx1 m hole hidden under bunda.	Can see about 15 m further down each side. 3 m climb down into small hole. Termination in boulders.	ND	0
YL3	Whoppa	29/07/13	AW	43.13437	19.05055	2260	4	12	20	YL3	East side of B-Do in a big rifty feature visible from miles around.	A whopping great hole in the ground. S-shaped rift in solid rock with vertical drop - parallel sides to precipitous snow plug. Gaps down side of snow plug hint at great depth potential. A beckoning darkness.	ND	2
YL4		31/07/13	LDB, MF	43.13439	19.05257	1952	14	1	0	YL4	In B-Do. Bottom entrance in cleft running up slope on S side of path that runs along valley bottom. East of Whoppa Pot.	Not a cave! Marked since it looks like a horizontal entrance from a distance! No potential.	ND	0
YL5		31/07/13	JJB, LDB	43.13444	19.05233	2090	17	4	0	YL5	Rift in gully further up from YL4	Tight rift continues for ~4 m but gets too tight.	S	0
YL6		31/07/13	JJB, LDB	43.1341	19.05207	2090	15	1	1	YL6	Left wall of Gully above YL5	Tiny rift. Goes nowhere.	ND	0
YL7	WRCG PBB05	31/07/13	JJB, LDB, MF	43.13596	19.05827	2059	18	8	0	WRCG PBB05	S side of path running along bottom-middle of bowl of B-Do. ~30-40 m up from path.	Tunnel (crawling height) for ~5 m, then a squeeze and continues beyond. There is also a hole ~5 m up from WRCGPBB05 that does not go anywhere. Carries on beyond squeeze.	ND	0
YL8		31/07/13	LDB	43.13453	19.05631	2035	16	3	0	YL8	At far end of B-Do bowl on E side of path about 100 m away. Triangle entrance.	~1 m crawl, squeeze through to small chamber. Hole in roof on LHS too small for person. Can see through hole in RHS but a small block stops person fitting through. Can see through to another chamber. Would need to move block. Small person would fit through.	ND	1
YL9		02/08/13	JMB, MC, MNB	43.15724	19.03342	2103	4	10	5	YL9	In dip between rocky lump and middle hump on N side of way on past Skrapa. 20 m from large overhanging rock face. Bearing of 30 degrees to overhang from rift. Narrow vertical rift ~1 m wide.	Snow at bottom. Slight possibility of snow on past snow or at bottom, but unlikely. Needs rope.	ND	1
YL10		02/08/13	JMB, MC, MNB	43.15603	19.03096	2133	5	7	10	YL10	Approach the large boulder field next to Skrapa from the SW side. Follow the gap around to the right to a small flat clearing. Cave is on the left.	Rift in ground, about 2.5 m wide. Snow plug at bottom. Needs rope to descend.	ND	2

Name	Alternative name	Date found	Personnel	Lat.	Long.	Elevation / m	Accuracy / m	Length / m	Depth / m	Marking	Directions to entrance	Description of potential	Draft	Revisiting grade	
YL11		02/08/13	JMB, MC, MB	43.1553	19.02953	2143	4	1	2		On far side of 2nd bowl up if you turn L towards mountainside instead of right to gap on bunda-covered hump. Small vaguely triangular entrance about 1 m high and wide.	Leads to hole ~1 m deep with upwards slope to termination.	ND	0	
YL12		01/01/13		43.1415	19.05153	2036									
YL13		01/01/13		43.14181	19.05159	2031									
YL14		06/08/13	AG, MB	EC,	43.14308	19.05138	1995	5	2	4	YL14	Shake hole amongst bunda, centre of K-Do	Shaft in bottom of shakehole. Requires rope to gain access to stony/mud floored chamber.	ND	2
YL15		06/08/13	AG, MB	EC,	43.14304	19.05177	1989	0	20	20	YL15	Large open rift in fractured limestone plateau, central Do.	Large hole with rift entering from one corner, possibly passing under choked floor. 4 possible ways on: large rift, small alcove in corner, large alcove that appears choked, small ole in floor. Large rift promising due to size but requires rope. This might be YH42.	ND	2
YM1		30/07/13	MR, MC	JJB,	43.15805	19.03486	2128	6	10	15	YM1	In rift between to prominent peaks on east end of Skrapa	Rift system with a couple of minor entrances. Snow plug ~15 m down. Looks good!	ND	2
YM2		30/07/13	MJR, MC	JJB,	43.1583	19.03479	2126	4	5	10	YM2	Rift to N of YM1 near peak of Skrapa.	Rift goes down approx. 10 m?	ND	1
YM3		30/07/13	MJR, MC	JJB,	43.1587	19.03494	2087	5	5	15	YM3	From N end of Skrapa ridge, head down on chossy slope to shoulder over valley. Head round L (facing out) to very prominent narrow surface rift in clidd. Entrance is below small hole in rift. Rocks sound very good when dropped.	Go down Nend down	ND	2
YM4		30/07/13	MJR, MC	JJB,	43.15804	19.0344	2104	4	5	12	YM4	Half way down W gully from Skrapa amongst rocks. 2 entrances 5 m apart.	Each go down to a floor ~12 m down. Looks like they connect but need rope to go down and be sure.	ND	1
YM5		30/07/13	MJR, MC	JJB,	43.15818	19.0344	2102	4	5	5	YM5 OX	At bottom of gully on W side of Skrapa, hidden round corner above a big drop. Large entrance sloping into hill.	Choked.	ND	0

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YM6		30/07/13	MJR, JJB, MC	43.15808	19.03425	2109	4	3	5	YM6	Half way down second-most northerly gully on W side of Skrapa ridge. Hole going into side of hill.	Go down. Floor looks like solid dirt.	ND	1
YM7		30/07/13	MC, JJB, MR	43.15826	19.03393	2093	4	2	8	YM7	Near bottom of 3rd gully from N summit of Skrapa	Well hidden oval shaft. Heads to rift which may continue horizontally.	ND	2
YM8		30/07/13	MC, JJB, MR	43.15841	19.03382	2086	4	8	10	YM8	Near bottom of 4th gully from N summit of Skrapa, under visible. Rift looks to continue. downhill facing arch.	Shaft to roomy rift with another pitch ND	3	
YM9		30/07/13	MC, JJB, MR	43.15787	19.03399	2112	4	4	10	YM9	At top of 3rd gully from N summit. Narrow long rift close to YM10.	Go down.	ND	1
YM10		30/07/13	MR, JJB, MC	43.1579	19.03402	2115	4	2	17	YM10	Skrapa. Top of 3rd gully, next to YM9.	Long dark shaft, inclined slightly. Too dark to see bottom. Needs rope.	ND	2
YM11		13/07/13	AJV, CLM, JMB	43.14133	19.04775	2112	4	8	40	YM11 O/	Just below penis rock on K-Do Whale (30m?). Hole between large boulders.	Shaft under large boulders on whale. S Vertical shaft about 20. Ledge part way down with tight continuation, probably no way on. At bottom of shaft, continuation of a tight hole or step over into chamber with climb down chossy slope to way on. Steeply descending rift to a ~10 m undescended shaft.	ND	2
YM12		01/08/13	EC, MF, MTS, AG	43.14397	19.05043	2069	11	3	3	YM12	High ledge that drops down scree slope to undercut cliff. Scree slope with narrow passage above.	Slopes downwards at 45 degrees. Very narrow passage. Possible dig.	ND	0
YM13		01/08/13	EC, MF, MTS, AG	43.14357	19.05052	1967	11	8	6		Centre of gully, central K-Do. Corkscrew descent of 3 m leads to Near big arch. Hole under 2 snow floored termination. May be way chocked boulders next to snow on with less snow. plug.		ND	1
YM14		06/08/13	LDB, JMB, RvdA, LO	43.14225	19.04996	2018	5	20	4	YM14	Possible duplicate for YH44	Large rift full of snow. Checked sides but no way on found. May be way on past snow another year.	ND	1
YM15		06/08/13	JMB, LO, LDB, RvdA	43.14158	19.05036	2037	6	4	6		Large shakehole between YH38 and YH41 on rocky slope below obla glava, E of whale. Large shakehole with some snow at bottom and slight arch in W side.	Scrambled to bottom. No way on.	ND	0
YM16		06/08/13	JMB, LO, LDB, RvdA	43.14167	19.05046	2039	6	6	3		Between YH41 and YH38, Scrambled to bottom. No way on. YM16OX below YM15. On rocky slope		ND	0

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YM17		08/08/13	AJV, AG, MC, MTS	43.14367	19.04998	1992	6			YM17	below Obla Glava W of whale. Rift with choss separating it in two next to 2 small sink holes. Small rock bridge in S end, K-Do valley down from Bunda Jama. Entrance shaft in lands on snow plug, gaining small boulders.	4 m descent through entrance crack in boulder floor. Dig potential. Constriction between loose rocky crack in east corner reveals another small chamber. The crack is kind of like a window, some blocks will need moving. Probably not worth the effort though.	ND	1

Key:

<i>Entrance marking</i>	<i>Draft</i>	<i>Revisiting Grade</i>
O = not descended	ND = Not detected	0 = Termination; don't bother
O/ = descended, still has potential	S = slight	1 = Slight potential
OX = terminated	G = good	2 = Good potential
	H = hoolie	3 = Get me back there with some gear, right now

