



MOUNT EVEREST FOUNDATION



BRITISH MOUNTAINEERING COUNCIL

SUMMARY REPORT FORM

from an MEF and/or BMC SUPPORTED EXPEDITION

Support for an expedition is offered on condition that you submit detailed reports to the MEF and/or BMC. To assist in fulfilling this commitment, it is requested that you fill in this form and return (preferably by E-mail) to the secretary (ies) of the organisation(s) within four weeks of return from the expedition. Please expand/contract the spaces in this form as required. Include or attach at least one good digital photo of your main route, with the line of your route marked.

- 1 - Name of Expedition: **Mulu Caves 2022**
- 2 - Expedition Leader/Organiser: **Andrew Eavis**
Address: **Tides Reach, Redcliff Road, Hessle, HU13 0HA**
- Preferred telephone number(s):
Home: **01482 648658** Work: **01482 64858** Mobile: **07860 513790**
e-mail address: **andy@andyeavis.com**
- 3 - MEF reference: **22-10** BMC reference:
- 4 - Country/Region: **Malaysia**
- 5 - Names of all expedition members, indicating leader, climbing members, and support:

Eavis, Andrew James – Leader
Yu Pearson, William Daowei
Radmall, Antony Thomas
Blakeley, Christopher
Boothroyd, Colin Paul
Nixon, David Andrew
Davies, Gareth
Namaghi, Rostam Ali
Walters, Richard
Rambli, Rida Ayuda Binti
Calford, Judith
Holroyd, Martin
Howes, Christopher John
Munn, Kevin
Kem, Zarris Bin Hymeir
Farrant, Andrew Roger
Gregg, Ashley Mark
Hall, Peter

Kent, Timothy Michael
McLeod, Andrew David
White, Joanne
Smith, Andrew Christopher
Eavis, Robert Edward Charles
Lauritzen, Stein-Erik
Pennos, Christos
Barton, Hazel Alicia
Koether, James 'Max'
Bristol, Derek Cooper
Beavan, Jonathan Jeffrey
Williams, Maya Beartrice

6 - Original objective(s) of expedition – mountaineering / caving, include location of objective with indication of special points of interest (e.g., ‘first ascent of NW Ridge’ or new cave systems opened) heights of peaks / depth/length of the cave system reached.

The original objectives of the expedition were three-fold:

1. **Exploration and Resurveying**
2. **Laser Scanning**
3. **Science Programme**

7 - Overall dates of expedition (e.g., ‘March-June 2022’) showing time spent on approach, climbing, and return:

29th October 2022 to 5th December 2022.

8 – For Mountaineering/climbing trips. give the details for each route climbed or attempted:

Name of mountain/crag, altitude, estimated route length, dates, grade, style (e.g., alpine, fixed rope), whether first ascent, successful or not, high point reached, reason for retreat (if applicable), weather conditions, and names of climbers:

9. - For caving expeditions, give the results against the original objectives set out in six above.

1. **Exploration and Resurveying**

Several teams worked in different areas of the southern part of the Clearwater cave system. A total of over 200 man nights were spent camping in the caves and 6.5 km of enormous new cave passage explored. This was of course photographed and surveyed using the latest conventional surveying techniques.

In addition, nearly 5 km of previously discovered cave passage was resurveyed using the latest techniques giving a 3D digital plan of the cave.

A diving connection was made between the existing Clearwater Cave and a neighbouring cave called Racer Cave. This increased the length of the Clearwater Cave system by over 10 km, lifting it to the 8th longest cave in the world. Unfortunately attempts connecting it to another cave Lagans didn’t actually happen on this trip but maybe this is for the next time. The caves are 3D networks with currently no connection, but they are overlapping in several places, so there must ultimately be a connection. This would add another 10 km to the cave system, moving it up at least one more place in the longest caves of the world.

2. Laser Scanning

A traverse was made through a huge passage of one of the largest caves in the world using a state-of-the-art laser scanning machine, this gives a fantastic 3D image of the cave but is an enormous amount of work. The proposed 4.5 km traverse was completed, the results look spectacular, and we will be able to sit at home and fly through one of the largest caves passages in the world from our armchairs.

We haven't processed all the digital information yet, but this will almost certainly cement Clearwater Cave as the largest cave by volume in the world.

There is a plan to continue this work in the autumn of 2023. There is another 3 km which could quite easily be added on to this laser scanning survey, which is equally spectacular, in fact could be even more spectacular.

3. Science Programme

There are a number of minor scientific projects which are continuing. Work dating and the geological history of the caves and I suppose of the surface when the caves were being formed.

Two new major projects were 1.) investigating the corrosive nature of tropical cave air and also 2.) the effect that the caves have on artificial fibre, of course reference to our ropes and equipment.

It appears that spectacular results are in both these areas. The caves are certainly modified by corrosive air after the water has formed the initial cave passage. It was always assumed that once the cave became high and dry no more erosion would take place, that now appears not to be true., and many cave roofs and walls show erosion features which are now being explained by the condensation corrosion of the cave atmosphere.

Similarly, there have been a number of alarming equipment failures from ropes and other gear made from artificial fibres. This again is down to the corrosive nature of the cave air which probably stems from the guano produced by bats and cave swifts. These are clearly very important topics; the scientists will be a while analysing the results and coming up with the details and categorical proof but stunning science.

10 - Any other relevant comments (permits, liaison officer, etc):

The caves of Mulu are extraordinarily large, long and complex, vast knowledge of the area and experience of these caves is required before anybody can sensibly attempt more exploration.

There is at probably at least double the amount of caves already explored left to go at in future. Of course, there is the law of diminishing returns because the caves are getting more difficult to get to, and the most obvious, gigantic passages have probably already been explored, although there is room for some fantastic discoveries in the future. The high levels in particular which require aid climbing inside the mountain are yielding wonderful results.

Political permission as in many other parts of the world becomes more difficult and bureaucratic. Our basic permit amounted to over 60 pages and the fact that covid delayed the trip twice meant we had to do a whole permit application on two occasions. The authorities were however in the end very helpful, they do blame British bureaucracy which has been handed down from a time when it was a British colony.

Finally, the expedition was extremely enjoyable, an awful lot of hard work was done, many man/lady days and nights were spent in long huge caves. Mulu is at least the cavers equivalent of climbers Himalayas, the longest, largest but unfortunately will never be the deepest caves, a joy to explore.

11 - Expected date of submission of Final Report:

The main expedition report is already being worked on. The script and surveys should be completed by the end of January. It is hoped that this spring the report will be completed.

When completed return to mef.secretary@mef.org.uk

MEF-Z (2022)