

# **SMOO AND BORALLIE CAVES, DURNESS**

**Report 1.1 – an update to “A short report on current issues”**



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## **1.0 Introduction**

Smoo cave, Durness, Sutherland (NGR 29/419672 is a large coastal cavern system formed within the local Ordovician dolostone in the Late Tertiary Period (Lawson, 2002; Gleed-Owen 1992). Due principally to a large multi period shell midden dating from the Mesolithic through to the Iron Age (Pollard, 1992) on its eastern wall, it was awarded Scheduled Ancient Monument status in 1992. The cave is owned by the Highland Council. It sees an annual visitor count of c.45,000 people (Donald Mitchell, NW Highland Council Ranger, pers. comm.)

The writer was first contacted by Mr Colin Coventry, “Occupier” of Smoo cave, Durness with a request for archaeological work in March 2012. This was undertaken and a short report was produced and disseminated to Highland council and HS in April 2012. The present report represents an update of activity at the cave for all interested parties as of November 2012.

Mr Coventry originally enlisted my services as an archaeologist for three separate and quite disparate reasons –

1. to have me verify that an area out with the Scheduled Ancient Monument had no archaeology within it and was therefore available for investigation;
2. to show me the erosion of the Neolithic midden in Smoo and propose remedial action; and
3. to investigate a further cave called Borrallie where he has found bones of human, lynx and wolf.

The present report details subsequent developments with each of these areas in turn.

### **1.0 Exploration of a new chamber**

- 1.1 Consent was granted by the Highland Regional Council for the exploration of a new chamber which branches off from the main chamber of Smoo cave – see photo 4 – in a letter from Ann Hackett dated 14/05/2012, subject to certain conditions. The chamber is underneath a “cemented debris fan” (Gleed-Owen 1992 p11), or flowstone talus. This triangular shaped deposit fills the base of a large vertical faultline in the Limestone.



Figure 1: entrance to chamber at the base of the triangular flowstone tallus.

- 1.2 It had previously been agreed that the chamber is out with the area of Scheduled Ancient Monument – confirmation of this was first sent in a letter from the council to Mr Coventry dated 29/06/11. However the council also required a “detailed written proposal including a plan, method statement and risk assessment, together with confirmation of the archaeologist to be present and evidence of public liability insurance” which was provided by Mr. Coventry in April 2012. The writer is the present archaeologist so required.
- 1.3 Although relatively unexplored, this chamber has long been known about and was included in a detailed study of the paleoenvironmental history of Smoo cave by Gleed-Owen in 1992 (see especially fig 3.1 and fig 4 of that report). This study took samples of the deposits which form the back of the chamber for environmental analysis, and attempted to reconstruct the genesis of the feature as a whole. Although no firm conclusions were drawn, it is clear that the flowstone and underlying material is naturally deposited and covers a significant fault line which has and still does channel fresh water, and is hence is likely to have further chambers up stream.
- 1.4 The writer was requested to evaluate these deposits for any trace of archaeology, both before the dig started and during the excavation. The initial inspection had noted that there was no trace of anthropomorphic activity in the area and that all the visible material was naturally deposited - as Gleed-Owen had previously found by more rigorous means. A second inspection was carried out on Friday 23<sup>rd</sup> of November 2012 after Mr Coventry had excavated roughly half way up inside the Flowstone Tallus - see figure 1 and 2, below:

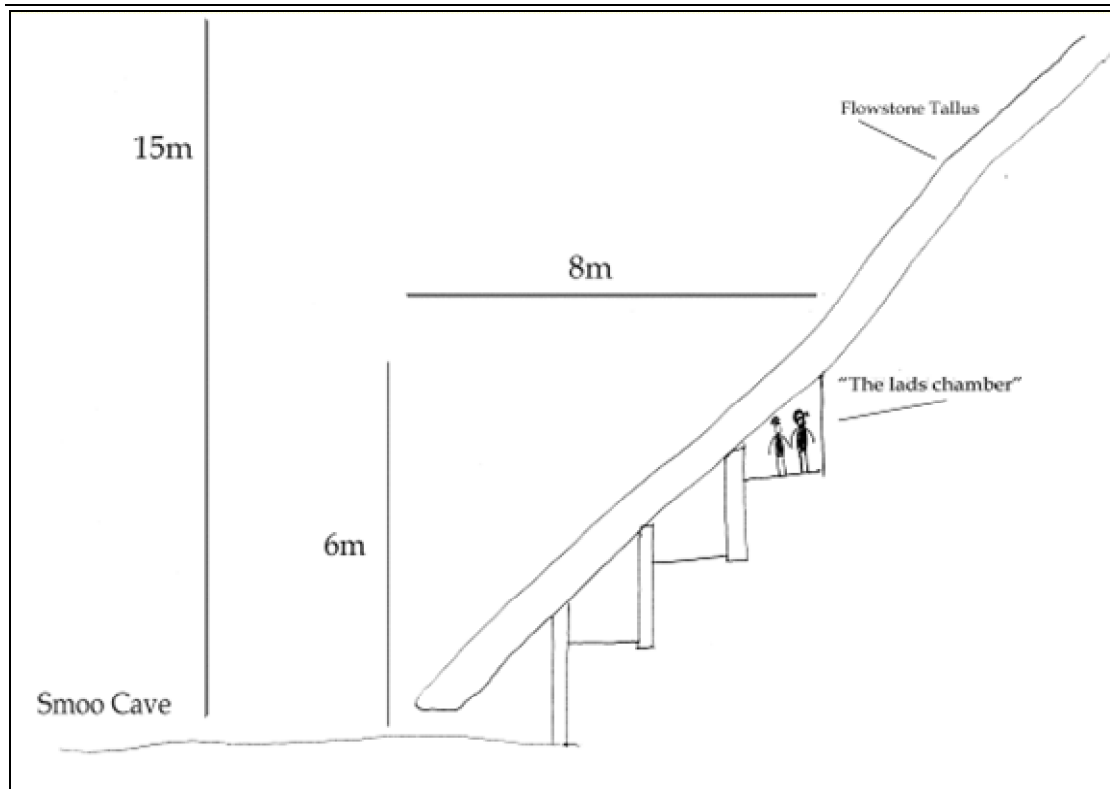


Figure 2: cross section of Flowstone tallus with excavated area, shoring and “the lads chamber” as Colin calls it, or limit of excavation so far (not to scale).



Figure 3: investigating deposits at the limit of excavation.



Figure 4: Deposits found at the limit of excavation.

This inspection also discovered no trace of anthropogenic material from the area of excavation. Unlike the initial inspection area however, there are no longer different layers of water deposited sands within the new section, but rather one homogenous layer of material. The material could be described as a till or boulder clay; a post glacial natural deposit, consisting of an orangey brown silty sandy gravelly clay with chert clasts of up to around fist sized.



Figure 5: Mr Coventry standing next to the spoil taken out of the excavation, which was also checked for any archaeology.

- 1.6 The spoil from the excavation was also examined and consisted of the same material, again without any trace of human activity.
- 1.7 Mr Coventry describes how the alluvial layers were only found in the first 0.5-1m of excavation. After this the deposits changed to the single layer of boulder clays as described above. The alluvial layers probably then represent flooding episodes in recent times, long after the boulder clay and flowstone talus were deposited.
- 1.8 Mr Coventry reports that there seems to be a slightly higher concentration of shattered and unsorted chert nodules the further he digs into the boulder clay. This was discussed with Mr Iain Greig, a geologist and caver, who argues that this is consistent with the idea of material originating from above.
- 1.9 The material excavated from this extension might be used to help cover the exposed midden discussed in the next section of this report. Its clay rich content would form a good seal over the midden deposits which could then be covered in a thinner layer of beach cobbles (the material which the council/HS have requested Mr Coventry use for the repair) for further protection. However we understand this is a matter for SMC and it may not be possible to change the terms of the consent without another long delay. If this is the case then it is obviously more important to get the agreed protection down before the tourist season starts again.

## **2.0 Conservation works**

- 2.1 Remedial conservation works are required for the access path, which has been denuded of the beach material added in 1997 such that midden is once more visible on its surface and is being progressively destroyed by visitors. Mr Coventry first alerted the Highland Council Archaeology department of this issue in a letter sent in October 2011, concerned about the further erosion which would take place in the coming 2012 season. However the council had to apply for Scheduled Monument Consent (SMC) for such works and so some delay was inevitable. Mr Coventry has now received a response from the council in a letter from Drew McClelland dated 19/11/12 confirming SMC (case ID 201201293) and accepting his quote for carrying out the work.
- 2.2 Mr Coventry will carry out this work in January/February working in conjunction with the councils appointed dry stone dyker.

## **3.0 Loch Borrallie Cave**

- 3.1 Loch Borrallie is a cave west of Durness at NGR 385 662 which was first discovered by Mr Coventry in 1992. Since this time he has been slowly excavating it, and so far has unearthed fossilized bones from Wolf and Wildcat, as well as bones from Fox, Wild Boar and Lynx (only the 2<sup>nd</sup> Lynx site in Scotland) and human bone of unknown age (Kitchener, A. NMS, pers. comm. 22.3.99) There is great potential for other fossil bones and for providing a greater understanding of Scotlands ancient past (ibid). The cave is just big enough to crawl or slide down, and reaches around 120 feet into a hillside. After an even narrower “S” bend, a “chamber” is reached, from which most of the bones came from. This ‘chamber’ is almost big enough for two people to crouch uncomfortably. One further, narrower passage leads off from this chamber heading further down. Mr Coventry is in the process of excavating this passage as well but is hampered by rainfall which raises the water table and fills it with water.
- 3.2 The Lynx bone was chosen for dating by Mr Coventry and the local community council, and results are pending. The dating was organized through Andrew Kitchener at the National Museum of Scotland.

Whilst the Lynx is interesting in itself, we should really be aiming to get all of the Borrallie bones dated. As Andrew Kitchener implies, these bones are part of the story of human and animal colonisation of northwestern Europe – a story beyond the reach of conventional above ground archaeology due to intervening glaciation(s), and one which could potentially be of international importance. The co-incidence of human, lynx and wolf bone is especially interesting, as it is possible that this articulates some form of relationship between these animals. Obviously it is inconceivable that three such creatures lived in such a cramped cave at the same time – which leads us to wonder how they ended up together, and if one of them did all the eating. There is even the possibility that the Wolf and Human acted together – early domesticated Wolf bones being virtually impossible to distinguish from ‘Dog’. Equally the bones may all have been brought into the cave by a third animal which is not represented, or perhaps lived in the cave consecutively over a short period of time.

However we can not be entirely certain that they all came from the same period. Although Mr Coventry reports that the bones were all from the same level within a few inches of each other in a single deposit (Mr Coventry has been on an archaeological excavation and understands the principle of distinct deposits or contexts) on the cave floor, they might have been originally deposited elsewhere at different times but then washed in to the cave at around the same time. Carbon dating of all the bones would help to clarify this issue. A second avenue for research would be to have environmental analysis carried out of the remaining cave deposits – to tell us the kind of vegetation present in the area at the time, and a micro-morphological study (analyzing thin sections of deposit under the microscope) could probably tell us if the deposits were water born or perhaps suggest alternatives. This would add a great deal to the overall picture.

#### **4.0 Conclusions**

- 4.1 Efforts should be made to see if more funding can be found to date the rest of the bones and carry out the further research suggested.
- 4.2 These are exciting times for cave research in Durness and the current works will not only help preserve what is already known but also provide fascinating new information for future generations to enjoy.



## **Bibliography**

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