PART IV: APPENDICES

APPENDIX 1: SEVERE TERRAIN ARCHAEOLOGICAL CAMPAIGN (STAC), PROJECT DESIGN 2005

1.1 Summary

The Severe Terrain Archaeological Campaign (STAC) was established as a pilot project in 2003 to overcome the risks of accessing otherwise dangerous archaeological sites around Lewis. The project uses rope access systems in accordance with IRATA (Industrial Rope Access Trade Association) and British Standard safety guidelines, approved by the HSE.

After a pilot season in 2003 in which a range of different sites were visited, a specific project design was settled upon (Barrowman, C S et al 2004) which led to a list of 11 suitable sites. To date, eight sites from this project definition have been surveyed and assessed, which leaves three remaining for the coming season: Dun Othail near Tolsta, Stac mor Garrabost in Point and Stac na Chuibhig near Dalmore. It is also proposed to excavate a small exploratory trench in Dunasbroc, one of the sites surveyed last year, in order to more fully explore and understand it and the wider type of site we are dealing with.

1.2 Introduction and previous work

Recent coastal erosion assessments commissioned by Historic Scotland in the Western Isles (eg Burgess & Church 1997) have highlighted the presence of classes of coastal site about which very little is known, in particular, stack and promontory settlements. These sites often overlap with areas exhibiting rapid coastal erosion. In the proceedings of a Historic Scotland seminar on coastal erosion, the threat to such sites was emphasised, concluding that, 'erosion of sites such as promontory forts on incised cliffs . . . (is) of main concern' (Ashmore, 2003, 209).

Stack sites in the Northern and Western Isles have commonly been attributed to the Iron Age, and interpreted as either fortifications or monastic settlements (Lamb 1980). Recent work, however, such as excavations at Brei Holm, Papa Stour, Shetland (Brady 2002), Dun Eistean, Ness, Isle of Lewis (Barrowman & Driscoll 2000; Barrowman, C S 2002) and Gob Eirer, Uig, Isle of Lewis (Burgess et al 1996), as well as coastal surveys of Barra and nearby islands (Branigan & Foster 2000), suggest that these sites have a broad chronological range from the Neolithic to the sixteenth century, with a correspondingly large range of structural, and perhaps functional, variety.

The STAC project is now entering its third year of investigation of such sites, having achieved archaeological and topographical surveys of eight sites to date.

1.3 Management of the sea stack sites

The majority of stack sites in Lewis suitable for the attention of STAC have now been surveyed, and having witnessed the nature of erosion at each site the team is now also inclined to consider the management issues involved.

1.3.1 The nature of erosion

The stack sites surveyed so far are subject to two main forms of erosion, which are described here as 'gradual' and 'episodic'.

Gradual erosion occurs at three of the sites studied to date: Creag Dubh, Dunasbroc and Dun Arnistean. All are low-lying and have a thin covering of topsoil. Erosion of these stacks is taking place through open scars where vegetation cover has been lost and/or the remaining sediments are slipping down slope. In all cases studied to date the underlying geology is stable.

It is difficult to estimate at what speed this erosion will continue, with little evidence from previous years with which to make an estimate. However, Dun Arnistean has received previous study (see Barrowman & McHardy 2005), and would appear to have been in a similar state in the 1970s, with open erosion scars yielding large quantities of pottery. However, in the absence of photographs or more detailed description, this does not actually help gauge the speed of erosion in the intervening period. In the observed state, Dunasbroc has the most advanced erosion of this type, with much less sediment left overall and a greater ratio of open sediment area to vegetation cover. However, whatever the speed, it is clear that archaeological deposits are being lost at all of these sites due to this erosion.

The other form of erosion is 'episodic'. This occurs at three sites; Stac a' Chaisteal, Stac Domhnuill Chaim and Dun Eòradail, and seriously affects Eilean nan Luchruban. Here, dramatic episodes of sudden rockfall are evident, affecting the underlying geology and access to the stack as well as the archaeology, whilst sediments and vegetation cover are generally perfectly healthy due to the heights of the stacks. What is most alarming is the great swathes of rock and archaeology that can disappear overnight, in a very different dynamic from that described above.

The speed of this erosion can be estimated from

previous surveys and local anecdotes. It is clear that at both Stac Domhnuill Chaim and Stac a' Chaisteal, access by foot was straightforward as little as 30 years ago (Barrowman, McHardy & McLeod 2004 and Barrowman & McHardy 2005), and is now impossible without climbing near vertical cliffs. At Dun Eòradail access was also significantly easier before rock falls in living memory. Archaeological parallels (see Lamb 1980) suggest that Stac a' Chaisteal was a promontory-type fort in antiquity and has only become a stack more recently due to this type of erosion.

Episodic erosion is also destroying archaeology at many sites, as well as access routes. It seems safe to assume it will continue to cause a significant loss of archaeology each winter.

1.3.2 Further work

There are no strategies available to slow either type of erosion in such places, and neither is consolidation of the archaeology a possibility. It appears that archaeological investigation and further recording of the sites before they disappear is the only way to save knowledge of them. It is therefore proposed that the project this year follows the following format:

- Firstly, topographic and archaeological surveys will be carried out for the remaining three sites in our project definition as discussed above.
- Secondly, a small-scale exploratory excavation will be carried out at a suitable stack over the remaining project time.

Dunasbroc is considered the most suitable candidate for this, with archaeological deposits actively being lost from a clearly important and interesting site, but without the practical difficulties and time required for excavating sites such as Stac a' Chaisteal or Stac Domhnuill Chaim. These sites will be considered in due course.

1.4 Fieldwork

1.4.1 Lessons from previous sea stack excavations

The author and project manager have previously been involved with the excavation of two sea stacks, namely Brei Holm near Papa Stour in Shetland (Brady 2000) and Dun Eistean in Ness, Isle of Lewis (Barrowman & Driscoll 2000, Barrowman, C S 2001, Barrowman, C S 2002). Various lessons have been learnt during the course of these projects:

- Access systems must be efficient and easy to use. At Brei Holm, horizontal tensioned ropes provided access across the high-tide channel, but were positioned too low down. This meant that the team, and more importantly the equipment, had first to descend to the traverse, cross it, then ascend back up the cliff face of the stack. When it came to transporting heavy essentials such as water and food across to the stack it was clear that this system required a great deal of needless effort and time. At Dun Eistean the tensioned rope traverse was created from on top of the landward cliff to the top of the stack, cutting out all the extra ascent and descent. This was incomparably more practical.
- However, the amount of anchorage required to make safe this type of traverse for team members as well as equipment is large and may not suit every site. Anchorage on the tops of cliffs is usually difficult due to the lack of outcropping rock, so large metal stakes were designed to overcome this at Dun Eistean. Obviously these can not be used in areas thought to have archaeology, or where the position of the archaeology is not known. A tensioned rope solely for the transportation of equipment requires less anchorage and will often be a more practical option. In this case team members can access the stack via the conventional route.
- The depth and preservation of deposits at both these sites exceeded expectations. Trench size is then of critical importance.

1.4.2 Purpose and aims of fieldwork

In the broadest sense the aim of trial excavation at Dunasbroc will be to characterise the nature and extent of the deposits as far as is possible. More specifically, we hypothesise that Dunasbroc sustained occupation within a building, possibly during prehistoric times (cf diagnostic pottery discovered last year (Barrowman & McHardy 2005) pending specialist opinion) for an unknown period, and we wish to establish firstly whether this is true and secondly, if it is, to refine our understanding of it.

There are two specific questions which follow from these aims which we hope to answer, relating to features observed at the site. The first relates to the summit plateau, where the diagnostic pottery was discovered. This plateau could consist entirely of cultural deposits, and may be the remains of a building. We wish to find out if this is the case. The second relates to the largest extant wall, which is rather insubstantial and in an odd position for the structural wall of a building. There are three other such walls, which appear to be even more puzzling, surrounded on all sides by bedrock. We think that these may be outworks relating to the original access route up to the suggested building, but could alternatively be from a different and separate phase of activity altogether. Therefore we wish to find out if the main wall has any stratigraphic relationship with either the hypothesised structure(s) immediately above or possible unknown features immediately below.

1.4.3 Fieldwork methodology

1.4.3.1 Survey

The survey methodology for Dun Othail, Stac Mor Garrabost and Stac na Chuibhig will follow those laid out in previous reports (Barrowman & McHardy 2005)

1.4.3.2 Excavation

Excavations will be carried out in general accordance with procedures laid down by the Museum of London Archaeology Service Site Manual, excavating and recording one context at a time, although our plans may incorporate more than one context if we see fit. All contexts will be drawn at 1:20 in plan and 1:10 in section. Pre- and post-excavation plans will be made. A photographic record using colour and black and white slide film, as well as in digital media, will also be kept of all archaeologically significant features and contexts. Each context will be described using a pro-forma record sheet, and two bulk samples (*c* 10 litres) of every undisturbed archaeological context saved for environmental analysis. The position of trenches and any finds recovered will be three-dimensionally recorded using a Total Station, and embedded into the existing topographic survey.

All contexts, samples and finds will have separate numbers and be cross-referenced in pro-forma log sheets and a site notebook.

Emergency on-site conservation for finds will be provided by Mark Elliott, Conservator for the Museum Nan Eilean Siar and STAC team member. If further conservation is required then it will be through the Historic Scotland Conservation Call-out Contract.

Further techniques such as soil thin section analysis have been considered but are not thought practical at this stage. Carbonised material will be collected for dating if possible.

At the end of excavation the site will be backfilled onto Terram sheeting and the turf replaced. We will endeavour to return the site as far as possible to its original appearance.

1.4.3.3 Trench position

It would seem sensible to excavate across a 'slice' of the plateau and steeply sloping area, including but not removing the extant walling. This would both explore the plateau and gain a section across all the areas of interest. This central position is also most assured of gaining relevant environmental evidence, carbonised deposits for dating and diagnostic artefacts. This trench will measure 10 × 1.5m, a figure derived from previous sea stack excavation experience, stretching roughly N/S, perpendicular to the contour. This will be termed Trench 1.

1.4.4 Outcomes and future work

The immediate outcomes of the 2005 project will be a Data Structure Report to Historic Scotland standards, a costed post-excavation design, and a summary of work for inclusion in *Discovery & Excavation in Scotland*.

The 2005 season will also allow a more accurate assessment of the difficulties and possibilities involved in excavating stacks and provide invaluable experience for any future excavations upon more challenging sites.

It is hoped that further excavation will be carried out in the coming years on the other threatened sites in Lewis, culminating in a full report for publication. Local involvement will be sought wherever possible and it is hoped to create a travelling exhibition to disseminate information to the network of local historical societies.