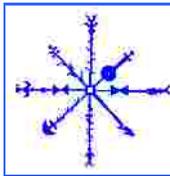




Report of Midden Investigations at Undir Sandmúla,  
Bardardalur, N Iceland

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**Summary:**

On August 3-4 2005 a midden team (Tom McGovern, Seth Brewington, Konrad Smiarowski, Raymond Petit) collaborated with *Fornleifastofnun Islands* in the investigation of an abandoned farm site at Undir Sandmúla (SDM). The site had produced prior surface collections of Viking age artifacts, and has been visited by several scholars over the past century. The site was very heavily eroded, with most of the surface reduced to prehistoric till and boulder surface. Scatters of bone in several areas resting directly upon this terminal erosion surface indicated the presence of very extensive (and probably very rich) midden deposits once existing around the surviving structures (1, 2, 3, see plan 1). Partially turf covered mounds to the NW (4) and NE (5) of the main hall structure (1) also showed associated bone scatters. It was hoped that these structures might cover *in situ* midden deposits as at Hrísheimar and Sveigakot in Mývatnssveit. A systematic coring transect (16 cores all carried to H3 prehistoric tephra) of the larger area 5 unfortunately revealed only sterile, wind deposited banded natural deposits 50-90 cm thick which extended down to either the LNS or the H3 tephra without showing any signs of either *in situ* cultural deposit or the many tephra post dating the LNS. Similar results were provided by straightening of a 18 m long natural erosion face that runs diagonally across the surface of area 5 (trench 1). The LNS could be followed fairly continuously across the trench 1 profile, though in places even this tephra was breached by erosion down to the H3 level. Wind transported deposits visible in the trench 1 profile ranged in size from silt up to 2-3 mm diameter pebbles, suggesting the velocity and intensity of the erosion events that have flayed the site surface down to prehistoric levels over most of its surface. One of the cores near the S end of area 5 showed ca 5 cm of cultural material, and a second test trench (4 x 4 m, trench 2) was opened around this core. A small deposit of mottled grey ash with a heavy concentration of calcined bone was found *in situ* in an area extending ca 2 m x 0.75 m, with a depth of deposit ranging from 2-5 cm. This *in situ* midden material rested directly upon the upper surface of the Landnám Tephra Sequence with no more than a few millimeters separating the two layers. This small surviving deposit was collected as a total bulk sample for flotation. While the middens once surrounding this highland site seem to have been almost completely destroyed by erosion, the small remaining deposit does serve to suggest some very early occupation of this site.

**Site Description**

The site of Undir Sandmúla (SDM) is located at approximately 412 meters above sea level with a GPS reading (+/- 5 m) on the SW corner of midden area 5 of N 65.20246 degrees and W 017.3414. The site is at the base of a steep hill now entirely eroded to gravel/boulder scree, and most of the site area is now stripped of vegetation and soil. Stone alignments indicate three main structures (1,2,3) of which the probable hall (1) is the largest. Bone scatters extend over much of the (see plan 1 for site layout). Four soil pH readings on exposed cultural layers produced consistent readings of 6.5-6.75. These readings are closely comparable to the soil pH (very slightly acid to neutral) prevalent in Mývatnssveit

and certainly have contributed to the exceptional bone preservation evident on site.

### Illustrations & Commentary



**Figure 1** *Overview of site area from SE looking towards the main valley. Landrover is just beyond the midden area 5.*



**Figure 2** *Scatters of animal bone and fire cracked stones resting upon deflated glacial tills and upon patches of the prehistoric cream white H3 tephra.*



Figure 3 Dense scatter of calcined (white burnt) and unburnt but bleached bone and concentrations of fire cracked rocks in the southwest of area 5. This proved to be the eroding [002] context after trench 2 was opened in this area.



Figure 4 A cattle metatarsal bone showing bleaching and exfoliation caused by prolonged weathering. Moss and lichen communities had established themselves on many bone fragments, suggesting prolonged exposure. Bones in the erosion scatter included many cattle and caprine (sheep or goat) bones as well as bird and fox. Perhaps significantly, the bone elements represented tended to be the densest in the skeleton. Concentrations of fire cracked stones also suggest the presence of an early medieval-Viking age midden deposit in these deflated areas.



Figure 5 View of midden area 5 from the south, showing the band of white-cream H 3 tephra appearing around the base and work beginning on the clearing of the erosion face profile (arrow, trench 1).

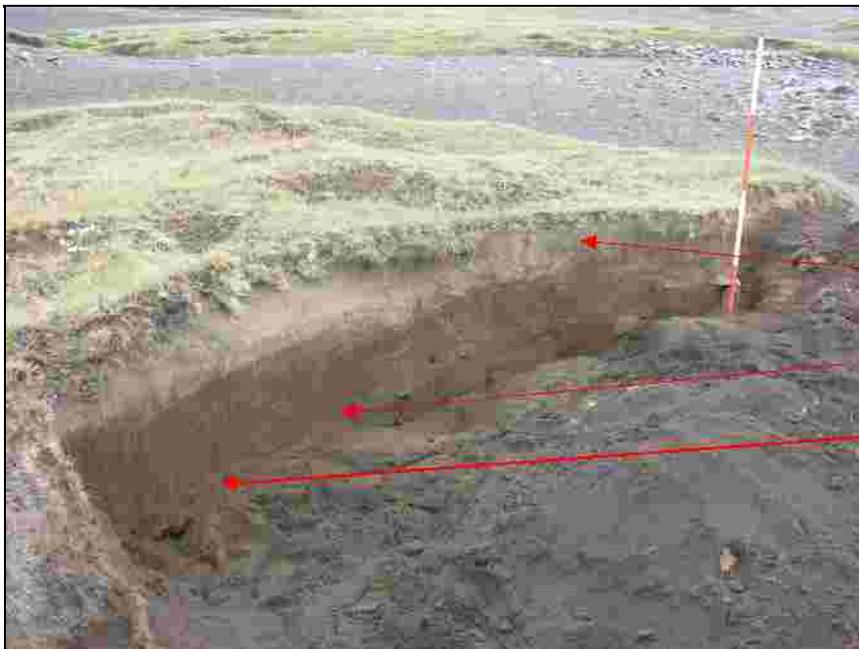


Figure 6. Cleared profile of erosion face running E-W across most of the area 5 mound.

Sterile layers of wind blown silt and gravel with fossil turf surfaces.

LNS tephra

Sterile subsoil



Figure 7 Trench 2 in area 5 Under excavation, 100% dry sieved (4mm) and all in situ midden was bulk sampled for later flotation. From NW

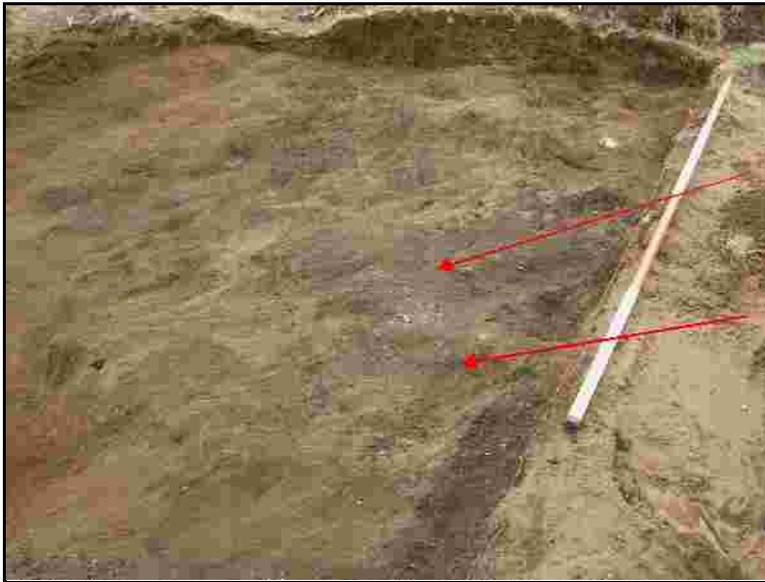


Figure 8 Trench 2 in area 5 showing SE corner of the 4 x 4 m unit with the [002] midden context visible surviving in low patches in the edge of an eroded slope.

*The bands of the local LNS are visible beneath the midden deposit.*



**Figure 9**

*Ashy midden deposit [002] with fire cracked stones, burnt bone, charcoal, and wood ash and two artifacts (SDM 05 finds 2 and 3). Note that midden, apparently in situ, rests upon the LNS*

### **AREA 5 Investigations**

Investigations in the sod covered area 5 began with surface collection in three zones, west (A), south (B) and east (C), corresponding to major concentrations of bone on the surface. Coring (carried out with an Oakfield tube type soil corer) was carried out along a 53 m long transect that ran roughly N-S along the long axis of the mound of area 5. Sixteen cores were taken at approximate 2-3 m intervals, reaching the H3 prehistoric tephra consistently at 90-100 cm from surface. Only one core (near the S end of the mound) produced any potential cultural material (2-5 cm thick). The 18 m long erosion face of trench 1 was cut back slightly and cleaned, providing a long E-W profile at approximate right angles to the coring transect. As figure 6 above indicates, the trench 1 profile confirmed the findings of the coring transect, showing widespread erosion down to the level of the LNS, and occasionally below. Bedded windblown sediments ranged in size from silt to 1-3 mm diameter gravel, with accumulation angles suggesting major winds from the SE. Wind transport of such comparatively large gravel fragments suggests a fairly powerful gale. Trench 2 (4 x 4 m) was opened over the core showing potentially in situ cultural deposits and also showing a substantial concentration of small fragments of calcined bone. The calcined bone proved to be associated with the ash deposit, strengthening the observation that this layer [002] is in fact a last in situ layer now undergoing deflation. The [002] ash layer covered an area approximately 2 m x 75 cm fitting the bottom of pockets and dips in the soil surface, and nowhere reaching depths greater than 5 cm. As illustrated by Figure 9, the [002] context appears to rest upon the upper portion of the distinctive local LNS.

## Area 4 Investigations

A small cultural layer was visible in an exposed erosion profile in the side of a stabilized dune in area 4 (E of area 5). The profile was cleared and drawn (SDM profile 1) revealing a small cultural layer between the LNS and the V 950 tephra.



Figure 10 *Location of profile 1 on the edge of a sand dune to the E of the main ruins..*



Figure 11

A closer view of the profile 1 showing the double black lines of the local LNS, the grey V950 tephra above, and a small amount of cultural material above the V950 grey tephra band. (1 m scale)

## Finds



**Find SDM 05- 1** A non-artefactual natural bit of endurated tephra, which resembles simple pottery on first inspection. This look-alike probably accounts for early reports of pottery finds on the site. Found 15 m SE of structure 1



**Find SDM 05-2** Iron nail and clinch plate (rove) found in situ in area 5, trench 2, layer [002]



**Find SDM 05-3  
Convex side.** This is a copper-bronze object with an iron nail or pin through the middle. This small object could be a decorative stud or something similar. In situ find in area 5 trench 2 layer [002]



**Find SDM 05-3  
Concave side.**

Same object from other side.

## Discussion and Recommendations

The Undir Sandmúla site represents an important early high altitude site in the now-remote interior of one of Iceland's great northern valleys. The presence of abundant cattle and horse bones (including some newborn calves) indicates that this was not simply a small sheep station, and the scale of the structures and the apparent extent of the now deflated middens also suggest that this was a substantial farm. While none of the finds are particularly diagnostic, the absence of actual pottery, glass, or other early modern materials and the presence of large volumes of fire cracked stones (typical of Viking age to early medieval middens in Iceland) point to an early date. The soil pH has clearly provided good conditions for organic preservation, as indeed is indicated by the survival of so much long exposed bone in otherwise hostile conditions. If intact cultural deposits (especially stratified middens) were present on the site it would certainly be a very important potential subject for further investigation and excavation. While it is still possible that something like a sunken featured building holding a midden may be hidden somewhere beneath the dune system to the NE of the site, the depth and apparent force of the aeolian erosion events that stripped the centre of the site area down to the LNL and H3 tephra or to glacial till suggest that this may be unlikely. While it would be advisable for a trained observer to periodically visit the site to check for fresh exposure of *in situ* middens, at present the recommendation must be against committing resource to further excavation of Undir Sandmúli.