SKAFTÁRTUNGA:

ARCHAEOLOGICAL INVESTIGATIONS IN 2014

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REYKJAVÍK 2015

FS559-13023

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Front page picture: Backfilling trench C at Stekkjarholt in Gröf.

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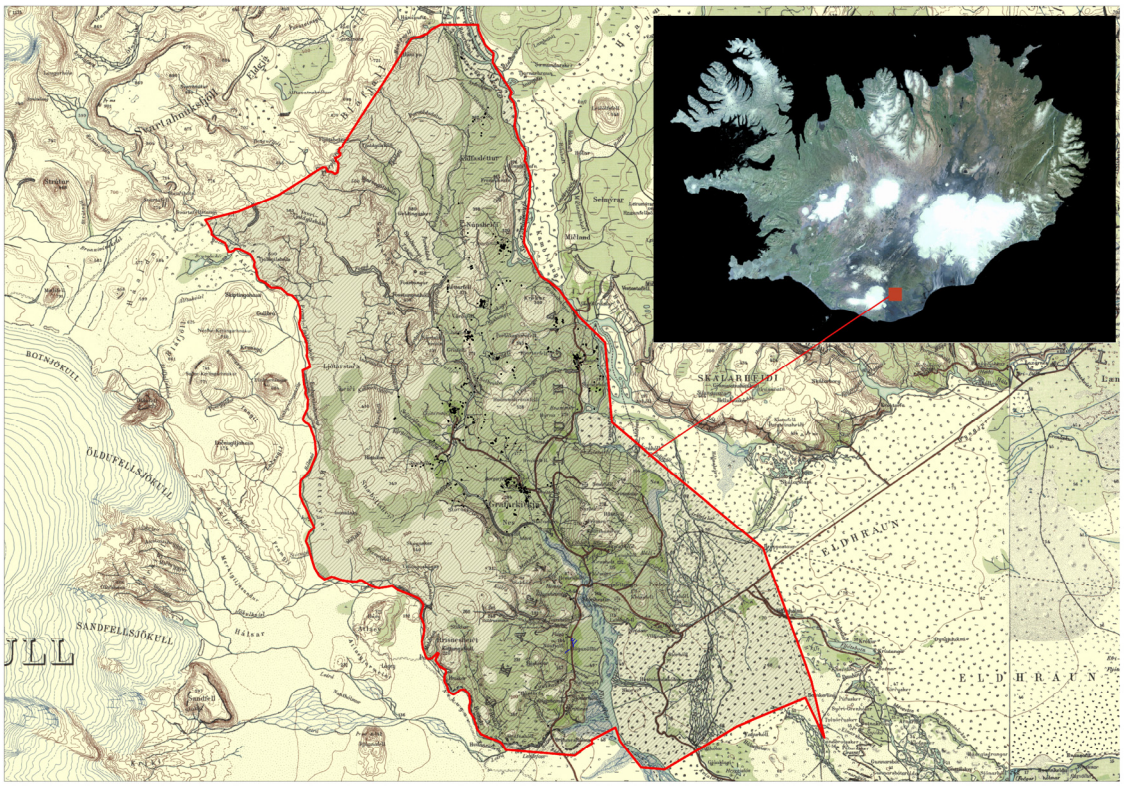
1. Introduction

This report is a summary of the archaeological and environmental research that took place in the summer of 2014 in Skaftártunga, Vestur-Skaftafellssýsla and formed a part of a pilot study in the area that started in 2013.[1] The aim of the pilot study was to lay the base for a large, cross disciplinary, historical, archaeological and environmental project which the plan is to start in the area in the next few years. The work sprang from the *Tephrochronology and Landscape Change project* conducted in the area in previous years which was led by Dr. Richard Streeter and Dr. Andrew Dugmore. The aim of future research in Skaftártunga will be to improve the understanding of the cultural landscape and environmental history of Skaftártunga.

The research team in Skaftártunga in the summer of 2014 consisted of Dr. George Hambrecht (University of Maryland), Kevin Gibbons (University of Maryland), Sant Mukh Khalsa (City University of New York), Dr. Andrew Dugmore (University of Edinburgh), Dr. Richard Streeter (St. Andrews), Elín Ósk Hreiðarsdóttir and Kristborg Þórsdóttir (The Institute of Archaeology, Iceland). Additionally an American high school student, Rachel Ruben, joined the group as a guest to observe the methods used in the field.



The research area of Skaftártunga

[1] See Hreiðarsdóttir, E., Hambrecht, G. , Streeter, R, Gestsdóttir, H. and Dugmore, A. 2014.

The first part of the research took place in May when a field survey was conducted in the northernmost part of the area. The aim of the field survey was to collect information about archaeology in the area as well as to locate sites suitable for further investigation.

In June Skaftártunga was revisited, now by a full team. The next two weeks were spent on examining tephras in the area, excavating a part of a midden at the old farm mound of Gröf and digging three trenches into clusters of ruins in the area. In this report we will present the main conclusions of the research from 2014 and briefly outline further work in the area.

The work in Skaftártunga in 2014 was enabled by a CIE grant from the NSF (US National Science Foundation – Arctic Social Sciences Grant #1449616). The local authority (Skaftárhreppur) also gave important support including providing housing and contributing to food expenses. The team members would like to thank the landowners of all the farms where their researches took place for their warm welcome.

2. The main aims and result of field survey: Elín Ósk Hreiðarsdóttir

A limited field survey took place in 2014. The survey entailed targeted field walking to sites identified with aerial photographes in search of possible farms/shieling clusters and/or potential middens. The field survey was carried out by Elín Ósk Hreiðarsdóttir and Kristborg Þórsdóttir. The aims of the survey were twofold:

1) To continue a large scale landscape survey of Skaftártunga and on that basis start to deepen the understanding of the settlement history of the area as well as creating a base for further archaeological and environmental historical research in the area

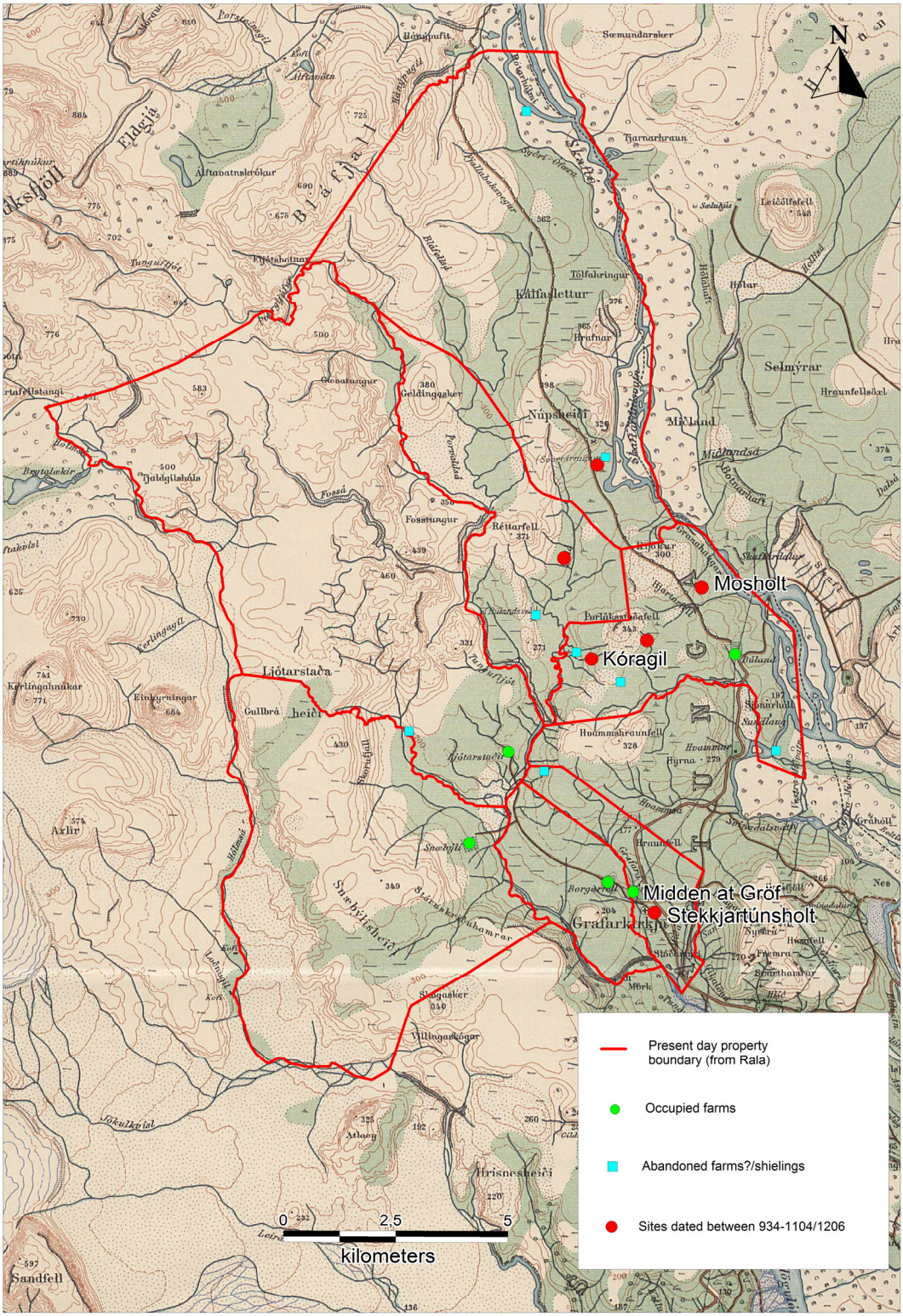
2) To try and locate sites with good research potential for further fieldwork

The targeted field walking was done within the limits of four farms: Ljótarstaðir, Snæbýli, Gröf and Borgarfell. Within the area excamined this year was both the midden at Ljótarstaðir where a section was cleared in the summer of 2013 (SF-184:001, N 63°45.342/W 18°35.897) and the midden Gröf (SF-185:001, N 63°43.549/W 18°32.372) trenched in 2013 and 2014. Several clusters of ruins were observed and will be discussed in more detail in a seperate survey report. Out of the sites surveyed in 2013-2014 three additional sites were choosen for trial trenching:

- An enclosure around a cluster of sunken ruins at Stekkjarholt (SF-185:014, N63°43.312/W 18°32.226) within the property of the farm Gröf.
- A hall-shaped structure at Mosholt (SF-179:027, N 63°47.363 /W 18°30.624) within the property of Búland.
- A hall-shaped structure at Kóragil (SF-179:072, N 63°46.497/W 18°33.648) also within the property of Búland.

Detailed discussion on the result of the trial trenching can be found in the next chapter.

The survey in Skaftártunga has revealed a large number of previously unknown sites, to the extent that where a full survey of a single property has been finished the number of known sites has usually doubled from what had been recoreded in the desk-top survey. In Iceland there is usually about a 30% increase so the Skaftártunga area is unusual. The reasons for this are several, but one contributing factor is no doubt that the accumulation of aeolian sediment is very rapid in the area and a lot of the older ruins found have been burried and are not easily detectable. Therefore they might not have been noticed or mentioned in pre-exsisting records.



Map of the research area in Skaftártunga in 2013-2014 showing identified/possible abandoned farms and shiling and sites that have were established soon after 934. Place names of the four sites excavated in 2014 are marked.

Heavy soil erosion in Skaftártunga influences the vegetation, the cultural landscape and the

condition of the archaeology. Even if many of the sites were in fair condition erosion still threatens about 60% of all known sites in the area.

Within the area that was surveyed in 2013 and 2014 combined 14 sites have been identified as possibly abandoned farmsteads or shielings (additionally five farms are still occupied in the area surveyed). Out of these abandoned sites four were believed to be modern (18th to 20th century - trenches in two of those in 2013 confirmed that the earliest settlement was only in the 18th century). Seven out of the ten sites that were not dated in written sources have now been dated by associated tephras. On six of those cultural layers were identified straight on top of the Eldgjá tephra of c. 934[2] and in all cases but one the sites had been abandoned before 1104/1206.[3] So far no cultural layers have been found below the tephra from Eldgjá. The middens of Ljótarstaðir and Gröf are mostly from the 17th-20th centuries although some earlier human impact can be detected at both sites.

[2] The eruption of Eldgjá is not recorded in documentary sources so there is some uncertainty on its exact date. Evidence based on ice core chronology dates it to AD 934-938 (Zielinski et al., 1995) or AD 933±1 (Vinther et al., 2006) depending on the cores used. In Icelandic literature the eruption has most commonly been refere to as as Eldgjá 934 or Eldgjá 934±2 and in this report that tradition is followed while underlining the uncertainty of the date.
[3] The only exception from this are ruins close to Syðri-Ófæra cored in 2013. The coring gave inconclusive results but it was considered likely that the ruins dated after 1477.

3. The main aims and results of excavation

The aims of the coring and trenching in the summer of 2014 were twofold:

- Firstly to understand the distribution of farms and shielings across the study area, and establish a broad chronology in relation to the the first settlement of Iceland (ca 870-930) and the deposition of the Eldgja tephra (934±2).
- Secondly to identify cultural deposits (middens) with good preservation of bone and collected a quantifiable archaeofauna from Grof.

3.1 Trial trenching at the midden at Gröf: George Hambrecht

The farm of Gröf was probably settled early but the earliest reference to the farm in written

The old location of the farm of Gröf, the farm mound can be detected in the middle of the picture

sources is from 1340 in the register of the monasetry of Þykkvabær.[4] The earliest known location of the farm was on a mound in Lágatún by the western side of Grafará River, just over 100 m above sea level. In the middle of the 19th century the farm was moved from this location, about 100 m uphill close to its present location.[5] A substantial mound has accumulated at the old location and has no obvious signs of disturbance. The site was identified during a survey and the farmer could point out a location on the mound where he had found fish bones while digging for a pipeline at the edge of the farm mound.

[4] *Diplomatarium Islandicum, II,* 737-740
[5] *Gröf: place name description*, unplublished, pp. 1.

Location of excavation into a midden in the old farm mound of Gröf, down by the Grafará River, marked with red.

Survey work and shovel testing in June of 2013 indicated presence of midden with ash, charcoal fragments and animal bones.[6] It was observed that the tephrochronological record was somewhat more complete to the west and upslope while downslope towards the stream the tephra record was less well defined while the midden layers were thick. Given this situation, two

[6] Hreiðarsdóttir, E., Hambrecht, G. , Streeter, R., Gestsdóttir, H. and Dugmore, A. 2014.

3 x 2 meter units were excavated in 2014 between the two areas tested in 2013. Area B (the

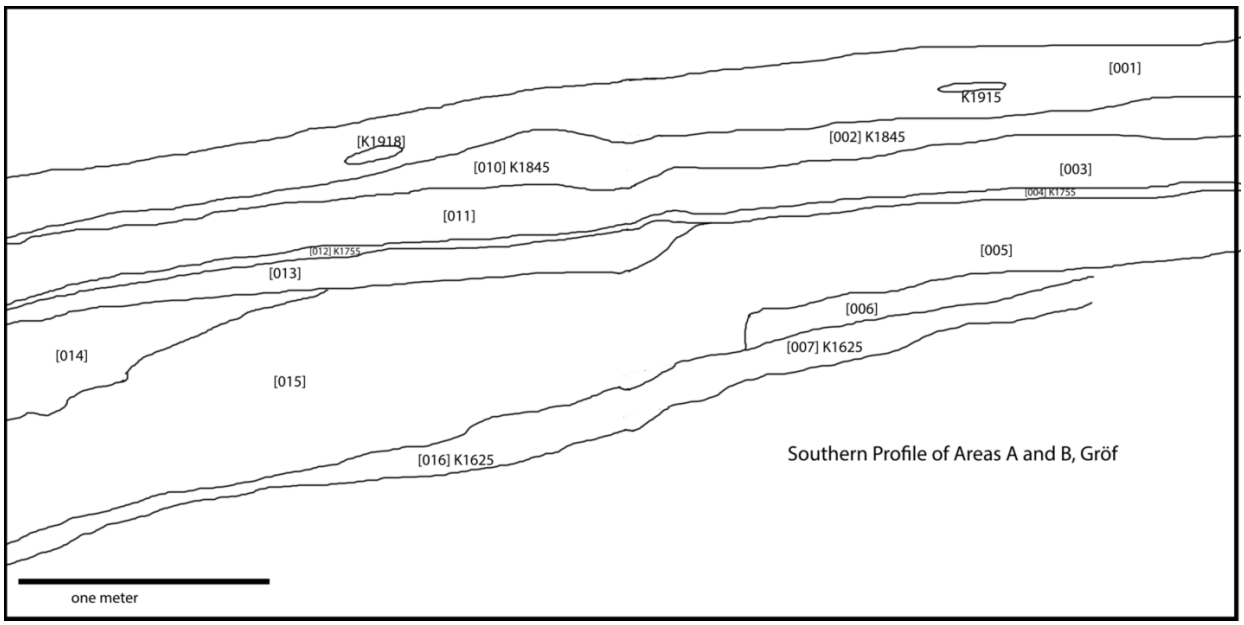
The old home field of Gröf. The edges of the farm mound shown with red line and rough location of the trench with an X. Photo: Gísli Pálsson.

second unit) was an extension off of Area A.

A single-context approach to excavation was aided by clear breaks in the stratigraphy and the tephrochronology. Excavated material was either dry or wet sieved depending on the level of moisture of the layers. Each context had an initial sample of 10 buckets sieved in order to determine whether everything should be sieved. Only contexts that had no cultural material at all in those samples were not completely sieved. Those contexts that showed no cultural material in the initial samples were then partially sieved. A soil sample in a 5 liter sealed bucket was taken from each context for archaeoentomological and archaeobotanical analysis. These analyses will be done by Dr. Mike Church at the University of Durham.

Area A is in the foreground while Area B is the extension towards the back. The thick grey black tephra visible near the top of the trench is Katla 1845 while the black tephra at the bottom of the unit is Katla 1625

Both Area A and Area B removed cultural soils that date from 1625 to the twentieth century. In both areas, excavations went down to and terminated after Katla 1625 was removed.



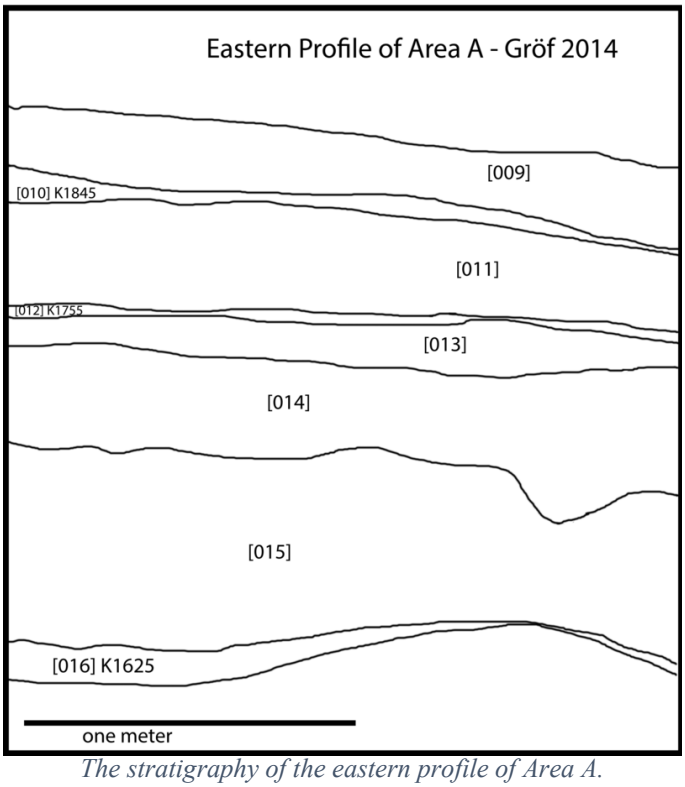
The stratigraphy of the southern profile of Areas A and B at Gröf

There were lenses of Katla 1918 in the topsoil layers. Katla 1845 and Katla 1755 were present as intact stratigraphic layers.

Scattered traces of midden remains were encountered underneath the topsoil in both units, including the presence of small amounts of bone and artifacts. The recovery of both faunal material and artifacts remained low until unit [005]/[015]. This context contained large numbers of burnt bone, smaller amounts of unburnt bone, and small numbers of artifacts. The artifacts were of various types but a high number of iron objects were recovered (for further information about the find assemblage see chapter 5 of this report). Preservation of faunal material was very poor (for a more detailed discussion of the assemblage produced by the Gröf excavation see the zooarchaeology section in chapter 6 of this report).

Soil conditions were wet throughout the unit and became increasingly waterlogged with increasing depth. Soil acidity was neutral to somewhat acidic (pH ranged from 6.7 to 5.6) but moist conditions in each layer were most likely responsible for the poor preservation of the faunal material. The layer below Katla 1625 for example had a fair number of visibly intact animal bones which looked to be in good condition until touched by the tip of a trowel, when the bone would immediately fall apart.

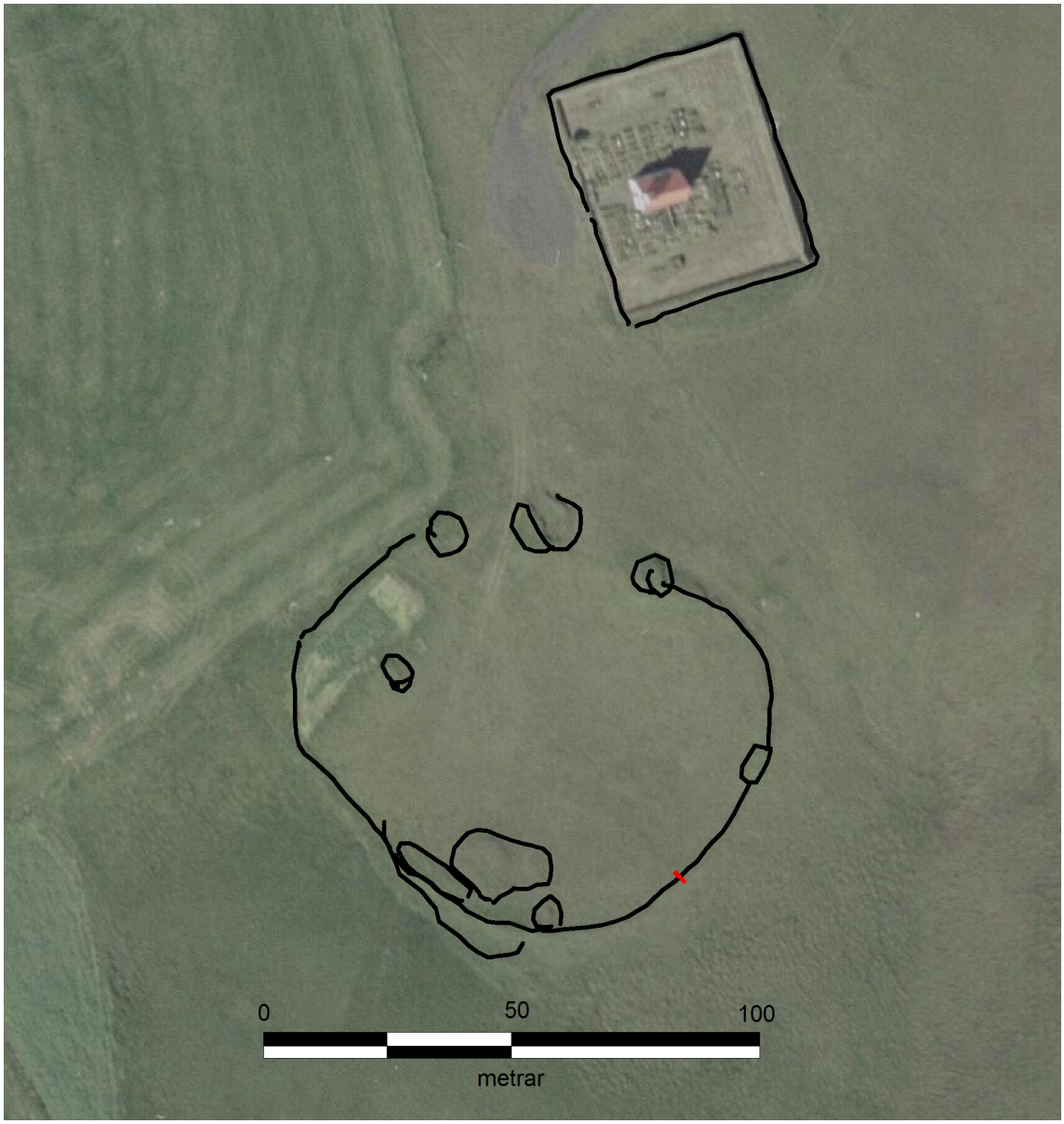
Even if the material from the midden of Gröf showed some promise future excavations in search of preserved midden material in Skaftártunga should likely take place elsewhere. There is midden and clear tephrochronology at Gröf. The preservation, however, is not very good. Though the faunal assemblage recovered in 2014 is an interesting assemblage, other sites such as Ljotarstaðir need to be looked to for the production of better preserved midden material.



The stratigraphy of the eastern profile of Area A.

3.2 Trial trenching at Stekkjarholt: Elín Ósk Hreiðarsdóttir

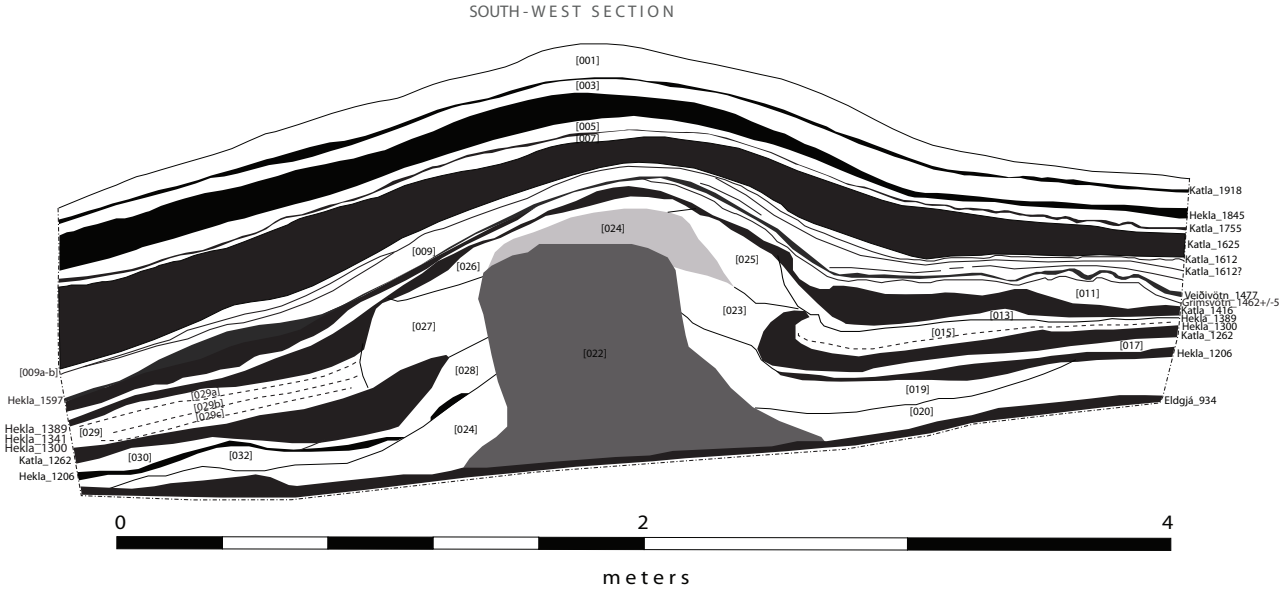
During the field survey 2014 a cluster of ruins and an enclosure was recorded about 400 m south of the old farmstead of Gröf. The site (SF-185:014) is close to a recent parish church built around 1900. The area is called Stekkjartúnsholt but is not (besides the place name itself) mentioned in known written sources. The site consists of sub-circular enclosure that marks an area of 95 by 90 m and eight structures that are built up against and within it. It is obvious that a couple of the ruins have been used longer than the the others and it probably functioned as a



The location of trench C marked with red. Modern church to the north

milking fold (Icelandic *stekkur*) in later centuries. The original function of the site cannot be determined however simply by looking at the structures. Still, given the size and number of ruins one might suggest a small shieling or a small farm but the proximity to the farm of Gröf makes a shieling an unlikely scenario, if the two were contemporary.

In 2014 a trial trench was dug through the boundary around the ruins. The trench was labelled trench C (within Gröf 2014) and was about 4,2 m long and 1,2 wide. It was dug into the southeastern side of the boundary (N63°43.273 W°018 32.195).



Section through enclosure in Stekkjartúnsholt. For details about layers see Appendix A and B

At the bottom of the trench was a very thick tephra layer from Eldgjá 934±2 [021] and the turf wall [022] was built straight on top of the tephra, with no apparent accumulation between. The wall was solely built of turf and was about 80 cm high and 80 cm wide at the basis. In it clear stretches of turf (Icelandic *strengur*) could be seen but the building method was unusual, the turf was vertical in the wall. On both sides of the wall were a couple of windblown layers ([019] and [020] on the northern side and [031] and [032] the south of the wall). The uppermost layer on the northern side contained some turf collapse. All the above mentioned layers were sealed by a light gray (olive) tephra, Hekla 1206 [018/018b]. Above it were further layers of windblown material and turf collapse (on the southern side [028] and [030] and [017] on the northern side) sealed by a thick black tephra from Katla 1262 [016/016b]. On top of this tephra were thick layers of turf collapse from the wall on both sides (layer [027] resting against the southern side of the wall but [023] against the northern side). On the northern side Hekla 1300 [015] could be detected in a windblown layer that had accumulated up against the collapse and on the southern side Hekla 1300, 1341 and 1389 [029a,b and c]. On top of the turf collapse against the original wall a second phase of the wall building could be detected [024] above the previously mentioned tephras. The wall repair/rebuild was from orange turf with gray tephra (Hekla 1206). The rebuild consists of one long turf that was put on top of the older wall and its collapse. The turf in the rebuild is completly different from the rest of the wall. This younger

phase of the wall was sealed by a mixed layers of windblown material and turf collapse on both sides [026] and [025]. These collapse layers were again sealed by a thick, black tephra layer, Katla 1416 [012] that stretched the whole way across the section. Above it were various windblown and tephra layers including Grímsvötn 1462 +/-5, Veiðivötn 1477, Hekla 1597, Katla 1612, Katla 1625, Katla 1755, Hekla 1845 and Katla 1918 just below the turfcap. No clear signs of human activity could be detected in the accumulated layers between the tephra layers. No finds were recovered in trial trench C.

The present day church and cemetery at Gröf. To the northeast of it a vague indication of the enclosure can be seen and the trench excavated is shown by a red box. Photo: Gísli Pálsson.

Conclusion

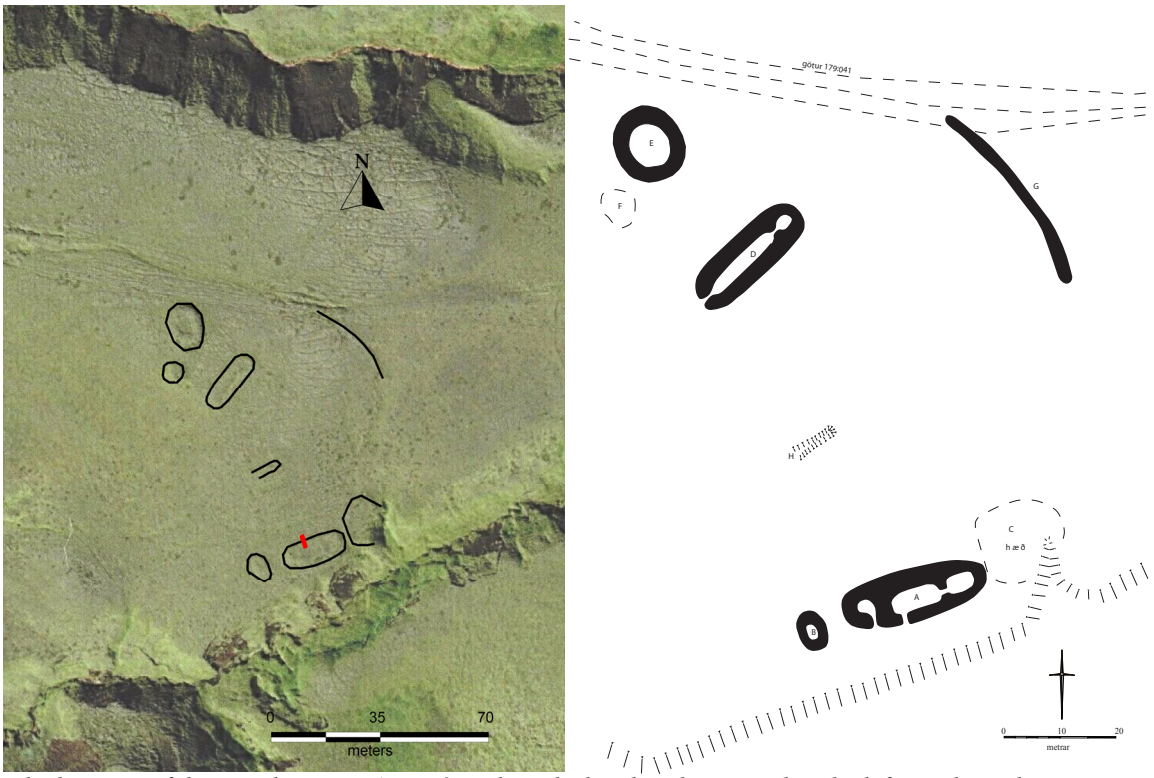
The result of the trenching in the enclosure of Stekkjartúnsholt showed that the boundary was built soon after the Eldgjá eruption in 934±2. In the section wall collapse and accumulation layers could be seen against the wall before the Hekla 1206 eruption took place. Further collapse and accumulation followed after the 1206 eruption and was sealed by other 13th -14th century eruptions. Sometimes before 1416 an attempt to repair or rebuild the enclosure took place. This

Trench C at Stekkjartúnsholt, at the end of excacavation

possible reuse of the enclosure seems to have been shortlived since the collapse from the rebuild is sealed by the tephra from the eruption of Katla in 1416. Also the height of the boundary against accumulation up against will not have been adequate to hold back animals. No human activity was detected in layers above 1416 and it is likely that the enclosure was out of use by that time. It is difficult to say for how much of the period between 934±2 and 1416 the enclosure might have been in use. It is not unlikely that the enclosure was only used for two short periods within these five centuries and that when it was rebuilt before 1416 it had been out of use for a long time. However more research is needed to confirm this and also to shed a light on the possible function of the site.

3.3 Trial trenching of perviously unknown ruins by Kóragil: Elín Ósk Hreiðarsdóttir

During field survey in 2013 a cluster of previously unknown ruins was found between two ravines called Kóragil in the western side of Þorláksstaðafell and about 230 m above sea level.[7] The cluster of ruins consisted of six structures and a possible boundary in an area of 100 x70 m. All the structures were sunken. Structure A had a hall-like shape and structure D was long and



The location of the trench in ruin A at Kóragil marked with red on aerial to the left. To the right a surveying sketch of ruins in the area. Drawing: Elín Ósk Hreiðarsdóttir

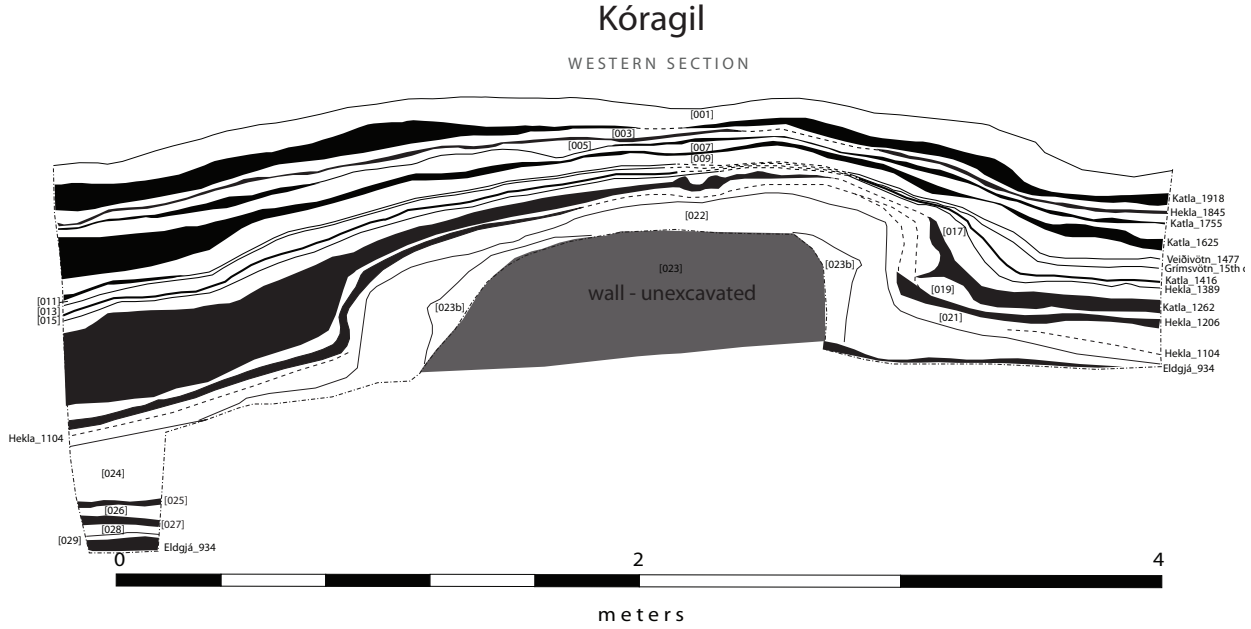
narrow, on a slight slope, and resembled a byre.

In 2014 a trench was taken into the northern long wall of structure A (SF-179:072A, N63 46.497 W18 33.652). Structure A is located on the edge of a ravine and is one of the largest structures in the area being 22 m long and 8 m wide in the middle. It is elongated and has a shape of a hall. It is divided into three compartments and the trench was taken through the northern long wall, in the middle of the structure. The trench was 4,2 m long and 0,9 m wide. Towards the northern edge of the trench (outside the ruin) Eldgjá 934±2 [030] was found at about about 80 cm below the surface. The wall was built straight on top of the Eldgjá tephra and no accumulation could be seen between it and the tephra. On the southern side (inside the structure) no traces of the Eldgjá tephra could be seen straight beneath the wall whereas some occupational layers were gathered up against the wall. It had been decided beforehand that the walls of the

[7] Hreiðarsdóttir, E. 2014.

structure and floor layers would be left unexcavated, but a sondage was dug close to the southern edge of the trench, inside the structure. There the Eldgjá tephra was found at a much deeper level than north of the wall, or about 140 cm below the ground surface. To explain this difference in depth it must be kept in mind that Eldgá 934±2 is a very thick layer in this area or well over a 50 cm thick in many places. It is therefore possible that a large part of the tephra layer was simply removed from inside the building and that the tephra found in the bottom of the sundage was the very bottom of the same layer whereas the top was reached of outside the wall.

The wall of the structure [023] was left unexcavated but was roughly 1,5 m wide and 0,5 cm high. It did not seem carefully constructed. On top of and on both sides of the wall was a thick layer of collapse and windblown material [022]. Most of the layers below layer [022] were not excavated within the building except in the sondage close to the southern edge of the trench (within the building). There a compact surface layer with occasional charcoal towards the bottom of layer [024] was found. Below that were two unidentified black tephras [025 and 027] (líkely



Section through structure A in Kóragil, for details about layers see Appendix A and B

either from Katla or Grímsvötn) sealing and dividing up two windlbown layers [026] and [028] before coming down to another occupational layer [029], which was dark grey, greasy and organic. Below it was the tephra of Eldgjá 934±2.

Above layer [022] was a reddish brown, windblown layer [021] that was divided up by diffused, but well detectable traces of white, coarse tephra from Hekla 1104 in situ. Therefore the building seems to have been out of use before 1104. Above this layer [022] were various other windblown and tephra layers, including Hekla 1206, Katla 1262, Hekla 1389, Katla 1416,

Grímsvötn 15th century, Katla 1625, Katla 1755, Hekla 1845 and Katla 1918. No indication of human occupation could be found in the windblown layers between the tephras. No finds were recovered in the trench.

Conclusion

Structure A at Kóragil seems to have been built during or shortly after or the 934±2 eruption of Eldgjá. The Eldgjá tephra was found about 0,8 m below the surface outside the building but 1,4 m deep inside the building and therefore seems to have been partly removed from the inside of the building since the site is not on a slope. Occupation layers were found within the building, divided by two unidentified black tephras. No finds were recovered from the site. The building and building debris was sealed by the tephra from Hekla in 1104 and no cultural activity could be detected in layers above. The shape of the structure could indicate a human dwelling from the Viking Age but a further excavation of the building is needed to fully understand its function.

Trench into structure A at tha end of excavation

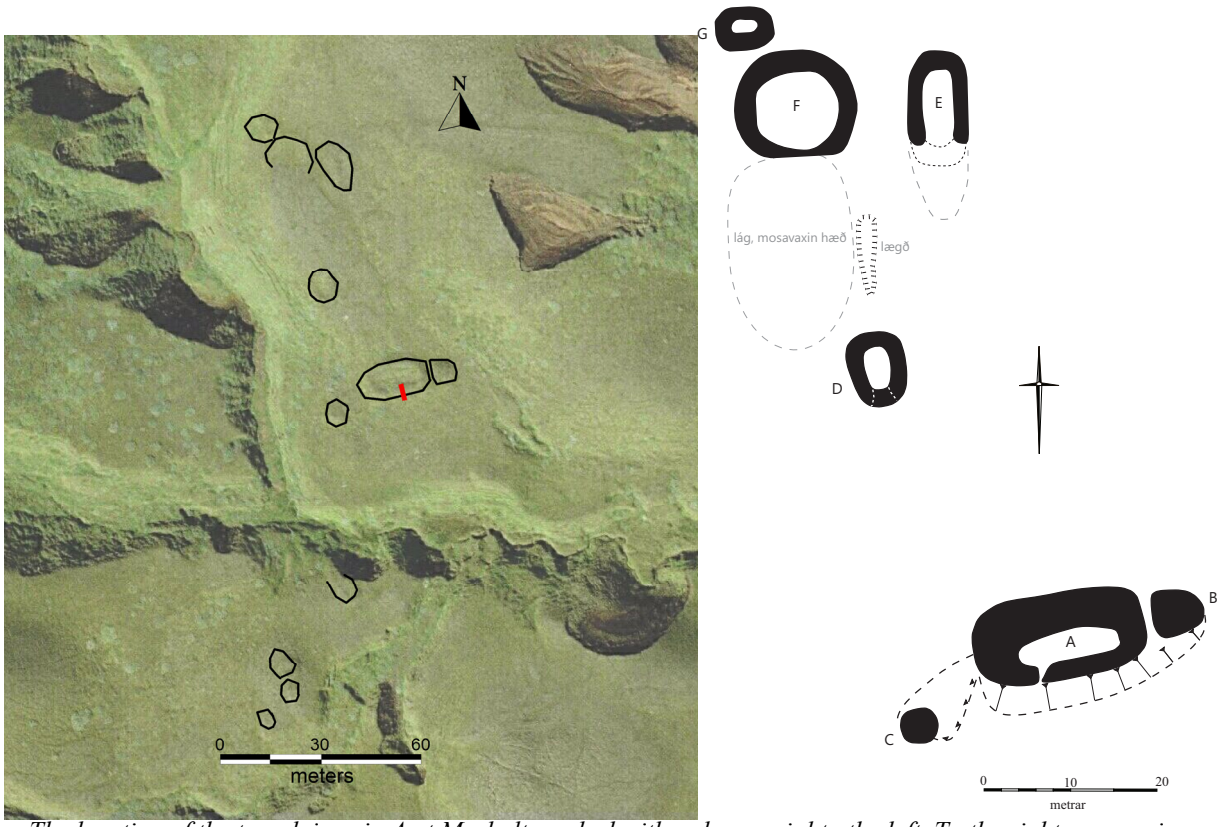
3.4 Trial trenching at Mosholt northwest of Búland: Elín Ósk Hreiðarsdóttir

An interview with a local farmer led the survey team to five sunken ruins and two low mounds NNW of Búland in 2013.[8] The ruins are located on a small plateau called Mosholt. The ruins proximity to a group of a well known heathen burials, Granahaugar, about 400 m to the south, is interesting because until now it has been assumed that the burials belonged to the farm of Búland.

[8] Hreiðarsdóttir, E. 2014.

The discovery of the ruins at Mosholt changes the picture and it is just as likely that the burials are associated with this site.

In Mosholt two to three ruins were surveyed on a plateau itself, four ruins in and on top of a hill behind it and on the other side of a ravine 3-4 unclear ruins or mounds were found. The



The location of the trench in ruin A at Mosholt marked with red on aerial to the left. To the right a surveying sketch of the northernmore ruins in the area. Drawing: Elín Ósk Hreiðarsdóttir and Kristborg Þórsdóttir

appearance of the ruins suggested they could be of a farm with an early date because of the shape of the buildings and how sunken they are. One of the buildings (structure A) has what might be called a hall-like shape but the others are smaller and less distinctive.

In 2014 a 4,5 m long and 1,2 m wide trench was taken through the southern wall of structure A (SF-179:027A, N63 47.360 W18 30.619). Before trenching it was decided that neither wall or floor layers would be excavated. The main aim of the trenching was to date the site and try and find out a possible function of the structure.

The excavation revealed some surprising facts. Soon after the topsoil had been stripped a clear difference in the soil could be seen, exposing a rectangular cut within the trench. Further excavation showed that there was indeed an older trench within the trench of 2014. The old trench was about 3,5 m long and 0,6 m wide. The excavator had removed a few centimetres of the top of the wall but had otherwise left the wall and the floors unexcavated. The old trench was taken after 1845 but before 1918, judging by the deposition of tephras from eruptions in these years. The location and dementions of the older trench are strong evidence for it being taken for an archaeological purpose but no information has been found on who might have taken the trench nor are any records known about this excavation.

The cut of the old trench found within the trench in 2014

Section through structure A in Mosholt, for details about layers see Appendix A and B

The trench taken in 2014 reached over the southern wall, east of a clearly visable entrance to the building. Since the aim was to leave the wall and possible floor material unexcavated a small sondage (about 20 cm deeper than the rest of the trench) was dug inside of the building, close to the northern edge of trench. The bottom of the sondage had the Landnám tephra (871 +/-

2) [046] and above it a thin, windblown layer [045] sealed by the Eldgjá tephra from 934±2 [044]. Straight on top of the Eldgjá tephra (with no apparent accumulation in between) was a thick, mixed layer [043] that consisted of some possible floor material mixed in with the Eldgjá tephra from below. The layer was very disturbed/trampled. This layer most likely extents up against the wall but since it was left unexcavated its relation to the wall is uncertain. The wall [047] seemed well constructed and was made of both turf and stone. Inside the structure the wall was lined with four courses of good building stone but on the outside of the house one to two layers of very large stones had been used to mark the outer edge of the wall. Combined the wall was just over 1,5 m wide and 0,75 cm high. Covering the wall and floorlayer [043] was a mixed layer of wall collapse and windblown material [042]. Within this layer a few fragments of animal bone were recovered. Above it, inside the structure was a mixed layer with stone and turf collapse from the wall mixed with windblown material [040] which was sealed by tephra from Hekla 1104 [038]. In this layer the only object that was found during the excavation was recovered. It was a fragment of an iron object (l. 5,5 x w. 1,7 x th. 0,4 cm) and could possibly be a key or latch lifter (for futher information see chapter 5 about finds). Above layer [044] were three layers of windblown material [033], [035] and [037] divided up by two, unknown tephras [034] and [036] that are most likely from Grímsvötn eruption. Outside the structures a mixed layer of collapse was found up against the wall [041] and above it was another similar layer of windblown material and turf collapse [039]. In the latter mentioned layer a tooth from a cattle/horse was recovered.

The trench through structure A at Mosholt

Sealing all the abovementioned layers, and reaching from one end of the trench to the other was a light grey tephra from Hekla 1206 and above it was amixture of windblown soil and tephras including, Katla 1262, Hekla 1300, Katla 1416, Grímsvötn 1432 +/-5, Grímsvötn 1457+/-2,

Veiðivötn 1477, Katla 1612, Katla 1625, Katla 1755, Laki 1783, Hekla 1845 and Katla 1918. No signs of human presence could be detected in the windblown layers between the tephras.

Conclusion

Structure A at Mosholt seems to have been built shortly after or during the 934±2 eruption of Eldgjá. The occupation might have been shortlived and the building was clearly out of use when the 1104 eruption takes place. Some traces of floor layers were found but they were thin and mostly left unexcavated and only a single object was found within the building. The floor layers could best be seen at the northern edge of the trench and if the trench had been lengthened further to the north more substantial floorlayers would probably have been found. Further excavation of the building is needed to fully understand its function but floorlayers as well as the substantial walls indicate that it was a human dwelling.

4. The main aims and result of tephra work: Richard Streeter

Limited environmental fieldwork took place in Skaftártunga in the summer of 2014. The Principal participants were Andrew Dugmore, University of Edinburgh, Nick Cutler, University of Cambridge and Richard Streeter, University of St. Andrews. The aims of the tephra fieldwork in 2014 were to:

1) Investigate the relationship between tephra thickness and pre-existing vegetation cover at the time of an eruption

2) Search for peat deposits which might be suitable for further palynological analysis and

3) To investigate geomorphic 'edge effects' on rofabard erosion features.

In order to address aim one fieldwork was conducted in areas outside Skaftártunga (see sites 1-3, 5-7 in table). For this aim, sites with recent tephra deposits (from eruptions in the last decade) were required, in this case deposits from the 2011 eruption of Grímsvötn. Since the fallout of this eruption did not reach Skaftártunga no sites in the area were used.

To meet aim two a walking survey of the area to the south of the abandoned farm of Svartinúpur was conducted. The region (between Mýrdalsjökull and Vatnajökull) lacks published pollen diagrams so the nature of vegetation change around Landnám is unclear.[9] To try and find a site for future palynological research short (approx. 1 m) cores were collected in areas of bog and wetland vegetation. The cores were examined for any evidence of organic preservation and any identifiable tephra layers. The team was unable to identify any potential sites with sufficiently high quality preservation to justify further research, although most cores did have some organic preservation. It seems likely that in this area, as in other areas of south Iceland, increased rates of sediment accumulation and high rates of tephra deposition have inhibited or prevented peat accumulation.

In order to address aim three, three sites in southern Iceland were looked at (sites 1, 3, 4 in table). Of these only Búland (site 4) was located in Skaftártunga. To understand spatial differences in geomorphic processes a shallow trench was dug at this site (c 30 cm depth) across from an active rofabarð edge to a relict rofabarð edge. The trench was 11.25 m in length. Within the trench the Katla 1918 and Hekla 1845 tephras were identified, the latter being discontinuous. Measurements were made of; thickness of sediment accumulation from Katla 1918-present, Katla 1918 thickness, sediment accumulation between Hekla 1845-Katla 1918 and thickness of

[9] Streeter et al., 2015

Hekla 1845. Measurements were made at 5 cm intervals. In addition 12 samples of sediment were collected at 1 m intervals for particle-size analysis. Initial results suggest that there is an edge effect - within ~ 2 m of active rofabarð edges sediment accumulation rates are significantly higher.

Date	Site and data relevance	Survey	Vegetation	Tephra **(measurements to 1mm)**	D GPS
June 14th/15th	1: Fossdalur *Relationship of tephra variability to vegetation composition, density and height. Is there an edge effect for the rofabard?*	36 quadrats spaced at 6m on grid of 30mx30m	Quadrat survey Whiteboard photo survey of 25cm deep section	50cm section across quadrat centre to measure G2011 (x5); Five short cores to measure thicknesses of G C20th and K1918; soil (1) 2011 to mid C20th century; (2) mid C20th century to 1918. Five additional Quadrats to rofabarð edge with cores (x3) and X-section.	Locations of quadrats and cores, plus context including erosion scars
June 16th	2: Kálfafell: upland moss *Relationship of tephra variability to vegetation composition, density and height*	40 quadrats spaced at 5m on grid of 35mx20m	Quadrat survey Whiteboard photo survey of 25cm deep section	50cm section across quadrat centre to measure G2011 (x5) *Site encompasses 2013 transect across cryoturbation threshold with strong EWS*	Locations of quadrats and sections, plus context
June 17th	3: Kálfafell: rofabard summit *Relationship of tephra variability to vegetation composition, density and height Is there an edge effect for the rofabard?*	24 quadrats spaced at 5m on grid of 35mx15m	Quadrat survey Whiteboard photo survey of 25cm deep section	50cm section across quadrat centre to measure G2011 (x5); Three short cores to measure thicknesses of K1918 and soil 2011 to 1918. Additional tephra data from two other rofabarðs on sediment accumulation in relation to erosion front	Locations of quadrats and sections, plus context including erosion scars
June 18th	4: Búland, Mosholt (Skali) rofabard *Relationship of tephra variability to vegetation composition, density and height Is there an edge effect for the rofabard?*	11m transect from rofabarð edge to rofabarð edge (healed)	Whiteboard photo survey of 25cm deep section	226 measurements at 5cm intervals along transect to measure thicknesses of K1918 and H1845, plus soils 2014-1918 and 1918 -1845	Locations of transect, plus context including erosion scars
June 19th	5: Blómsturvellir: wetland willow *Relationship of tephra variability to vegetation composition, density and height*	24 quadrats spaced at 6m on grid of 30mx18m, plus one 5m transect	Quadrat survey Whiteboard photo survey of 25cm deep section of both quadrats and transect	50cm section across quadrat centre to measure thicknesses of G2011 and K 1918, plus soils 2011-1918 (x5); 5m transect embedded within grid measured at 5cm intervals for thickness of G2011 and surface height relative to water table.	Locations of quadrats and transect, plus survey of willow patches
June 20th	6: Blómsturvellir: haphazard willow *Relationship of tephra variability to vegetation composition, density and height*	20 quadrats of willow patches, plus two transects	Quadrat survey Whiteboard photo survey of 25cm deep section of both quadrats and transect	50cm section across quadrat centre to measure thicknesses of G2011 and K 1918, plus soils 2011-1918 (x5); two transects measured at 5cm intervals for thickness of G2011, one with surface height relative to horizontal datum	Locations of quadrats and transects
June 21st	7: Heiðarsel: K1918 *Are variations of K1918 consistent with general character of modern vegetation. Is there an edge effect for the rofabard?*	30 cores of grid at 6m intervals 30mx 18m	Species list	Measurements of thickness of K1918 and soil 2014-1918	Locations of cores, plus context including erosion scars

Table 1: Sites and data collected June 2014

5. Finds recovered in 2014: Elín Ósk Hreiðarsdóttir

A total of 140 finds, registered under 40 finds numbers were retrieved from the trenches in Skaftártunga in 2014. The finds work was undertaken by Elín Hreiðarsdóttir but Dr. Gavin Lucas helped identify and date the finds.

All but one of the finds came from the midden excavation at Gröf. The only object recovered from the three trial trenches was a fragment of an unidentified iron object ⟨036⟩. It most looks like a key or latch lifter and might be pegged. The object came from a mixed collapse and floor deposit within structure A at Mosholt and the layer it came from was sealed by the tephra from Hekla

Iron object found in trench of Mosholt, finds number ⟨036⟩

Some of the iron objects found during the excavation of the midden at Gröf in 2014. At the top left are three pieces ⟨021⟩. Furthest to the left is a nail or a pin, in the middle an iron clasp and to the right a nail. To the top right are three iron nails ⟨022⟩. In the bottom row left is a small but more or less complete sickle (L-shaped blade)⟨033⟩. In the middle of lower row is an iron ring, possible for fastening things ⟨033⟩. At the bottom right is an iron eye, complete and in good condition ⟨012⟩

1104.

The largest number of finds from trench A at Gröf came from midden deposits [013] and [015] but both layers accumulated between 1625 and 1755. Most of the finds were metal objects, followed by whetstones and fewer pottery and glass fragments.

Most of the metal objects were of iron. Most common were iron nails but knives, staples, awls, spikes, fixtures, fastenings and a sickle were also found. The iron objects were not easy to date precisely but fit well within the phase defined by the tephra, that is they are common 17th-19th century objects. The nails were found in all the cultural layers excavated. Most of them were forged with T-shaped heads although a few had flatheads.

Twenty six copper alloy objects/fragments of copper were found at Gröf in 2014 (registered under six finds numbers). Just underneath the topsoil a copper alloy object with decoration and lettering on the upper side was found ⟨001⟩. The object is unusual but likely a 19th century button. The bottom side of the button is flat. The piece is thin and flat (less than 1,8 cm in diameter and 0,1 cm thick). The decorated side has a leaf decoration on the outermost circle and on it there have been some letters. Parts of the letters are now difficult to read but on one side the word "GILT" can be made out. Inside this outer circle with 6-7 little stars and an end of a broken stud at the midde. Part of the gilt surface has eroded away.

Copper alloy button ⟨001⟩

In layer [013] which accumulated between 1625 and 1755 a mount was found. The object is a good quality copper plate and was found in the water sieve, in three pieces. At first glance it looks like a buckle but is too thin for it to have been able to function as such on its own. It could have been a

Copper alloy object ⟨009⟩

faux-buckle, purely for decorative purposes, or an escutcheon (keyhole plate), or simply a decorative mount. One side is flat and undecorated and the other decorated with simple incised line decor. The piece has two loops but part of the second one is broken off. On the piece itself at least 6 rivet/attachment holes can be seen and a nail was still in one of them.

The other copper alloy objects found were all small and mostly fragmented. These included small copper nails, copper plates and rivets and a clench bolt.

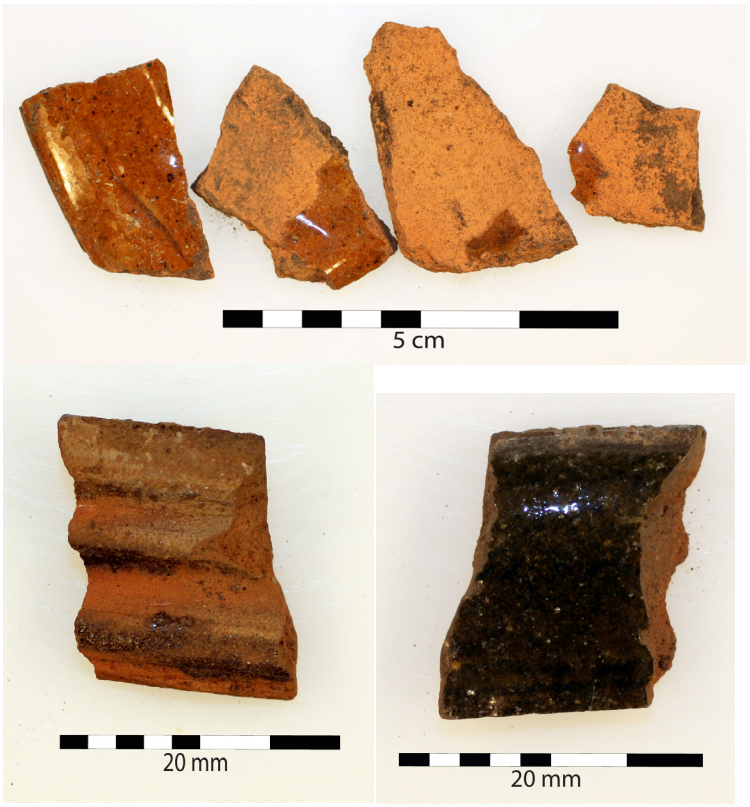
Some of the copper alloy fragments found at Gröf in 2014. To the left are fragments registered together as ⟨017⟩ and to the right ⟨029⟩

Six whetstones were found in the midden of Gröf in 2014. In the year before three whetstones had been found. Combined it is a sizable assemblage of whetstones and they seem a fairly frequent find given the small size of the collection as a whole. The whetstones appear to be from schist and are well worn. Four of the whetstones ⟨010⟩-⟨011⟩ and ⟨014⟩-⟨015⟩ came from layers [013] and [015] that dated between 1625 to 1755 but two of the stones (nr. 005 and 006)

Five of the six whetstones found at Gröf in 2014. Small fragment ⟨014⟩ is missing. The finds number from top left ⟨010⟩ and ⟨006⟩. Lower row from left: ⟨011⟩, ⟨015⟩ and ⟨005⟩.

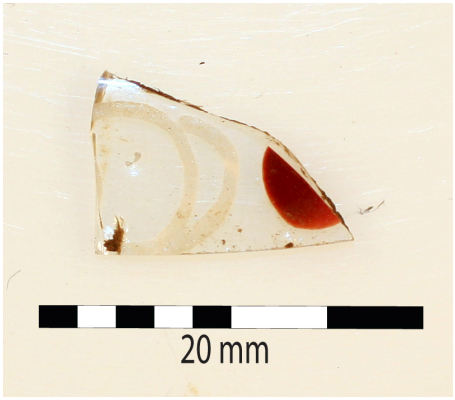
from layer [003] which had accumulated between 1755 and 1845.

Only nine pottery fragments were recovered from Gröf in 2014 (registered under four finds numbers). One fragment ⟨005⟩ was found straight in/on top of Katla tephra from 1625 but all the other fragments were from layers [013] and [015], from the period between 1625 and 1755. Fragment ⟨005⟩ was a small piece of a red earthenware pottery, a rim of a cooking pot with green internal glazing and is probably late 17th or 18th century. Among the other fragments of pottery was a small piece of white slipware, which is probably an intrusive find since it dates to the 19th century (but comes from a layer dated to 1625 to 1755). The piece is probably from a bowl ⟨020⟩. Under the finds number ⟨023⟩ were registered five fragments of red earthenware with brown internal glazing. The pieces are most likely from the same object, probably from a cooking pot. This type of pot was in usage for a long period or from the 16th to the 19th century. Under the number ⟨031⟩ were two small pieces of tin glazed earthenware, from the 17th-18th century.



Some of the pottery found at Gröf in 2014. Above are five pieces of red earthernware ⟨023⟩ and below front and back of another red earthernware ⟨005⟩

One glass fragment ⟨003⟩ was found in Gröf in 2014. It was a small piece of non-coloured, flat glass. The piece is about 1,5 cm x 1 cm and 0,1 cm in thickness. On it there is a decor of white lines (two in a bow) and reddish brown dot. The piece is probably from a square/polygonal flask or a beaker and typically dates to



Find ⟨003⟩ that probably comes from a decorated beaker or flask

the 17th or 18th century.

One of the more interesting objects from Gröf in 2014 was a very small piece of decorated bone ⟨007⟩. The piece is about 1,5 cm long, 1 cm wide and 0,2-0,3 mm thick. On the flat surface are two circles in a row (each about 4 mm in diameter) each with a dot in the middle. Towards the end of the piece there is a worn part where there might have been a small nail. The decor could suggest a much earlier date than the 1625-1755 phase that it came from and one possible interpretation of the piece is that it is a part of a bone comb or comb case. The size of the piece is however too small for it to be possible to determine its origin or function.

Decorated bone fragment ⟨007⟩

Other finds recovered from Gröf included a small wooden object, a possible wooden stopper ⟨039⟩, a few worked stones (including a possible flint ⟨004⟩), slag and a possible slag bottom.

The finds collection from Gröf is still too small and fragmented for it to be used to draw meaningful conclusions about the farm of Gröf in the 17th-19th century. Most of the objects are what could have been a part of an everyday household in Iceland in the period. Not many "high status" finds were recovered although the decorated flask/beaker is one example of such an item as well as the copper alloy buckle.

A flint ⟨004⟩ found underneath the turf cap

6. Animal bones: George Hambrecht

The faunal material recovered from the 2014 excavations at Gröf was very badly preserved. The great majority of the assemblage is highly fragmented and burnt. Identification to species was not possible for most of the assemblage. The assemblage does however, despite its major flaws in terms of preservation, reveal interesting data on two fronts. One, the taphonomy of the assemblage, the highly fragmented and burnt character of the bone material might offer an interpretation of the site, in the period between Katla 1625 and Katla 1755, as being one concerned with the extraction of every calorie out of bone material. Two, the assemblage has a very high percentage of fragments from cetacean species. Cetacean fragments dominate the layers between Katla 1625 and Katla 1755, units [013] [014] and [005/015]. The majority of of the marine mammal elements come from the latter context. Whether the cetacean fragments from context [005/015] come from one whale or many is impossible to tell but what can be said is that the whale elements that made it to the farm where butchered, possibly worked for craft materials, and then burnt.

Species Present

Species	Count
Cattle (Bos taurus)	6
Horse (Equus caballus)	1
Ovicaprines (sheep and goat)	138
Atlantic Cod (Gadus morhua)	6
Saithe (Polachius virens)	2
Gadidae (Cod family)	172
Salmonidae (Salmon/trout/char family)	3
Large Cetacean	10
Small Cetacean	1
Cetacean species	386
Unidentified Marine Mammal	3017
Large Terrestrial Mammal	9
Medium Terrestrial Mammal	386
Unidentified Mammal	4670
Total Number of Fragments	8807

Table 2: Species present all units

Table 2 gives an overview of the species found. The majority of these come from the layers between Katla 1625 and Katla 1755, units [013] [014] and [005/015]. The cattle, horse and sheep are not surprising. There is no possibility of doing age profiles due to the small numbers of bone and their bad condition. The fish are also not surprising in that local fresh water fish are represented as well as marine fish. The marine fish, all gadidae, do however show a somewhat different pattern than the norm for this period in that both cranial and vertebral elements are represented. This could be due to the consumption of dried fish as well as dried fish heads as oppossed to the transport of fresh whole marine fish to the site.

Taphonomy

92% of the ovicaprine (sheep and goat) elements were teeth or teeth fragments. All (100%) of the cattle and horse elements were teeth or teeth fragments. The assemblage is highly fragmented and a high percentage is burnt, some at possibly high temperatures (table 4). All of these characteristics are indicative of very bad preservation. The soil pH's ranged from decent to bad relative to bone survival and all the units were quite wet, and as has been noted, much of the bone material was itself burnt and fragmented. At least some of the fragmentation was the product of human processing; much of the rest could also have been the product of burning and compaction.

	Vígishellir		**Hrísheimar 01, context 003**		**Gröf (013/014/005/015)**	
size range	count	%	count	%	count	%
up to 1 cm max.	4683	63.08	233	5.25	5101	62.11
1-2 cm	2143	28.87	1881	42.4	2481	30.21
2-5 cm	589	7.93	1501	33.84	618	7.52
5-10 cm	6	0.08	388	8.75	14	0.002
>10 cm	3	0.04	433	9.76	0	0

Table 3- Fragment size in comparison

Though the preservation was bad the range of fragment size might suggest something about the level of wealth or at least prosperity of Gröf in the 17th and 18th centuries. Table 2 compares fragment size at Gröf with two Viking Age sites. Though from different periods Hrísheimar and Vígishellir are interesting comparisons as the former was a mid-level farm while the latter was a cave site associated with outlaw activity. The analysis of the Vígishellir assemblage presented a zooarchaeological assemblage produced by a site that was on the periphery of Icelandic society and was argued to be operating at a level of poverty relative to farm sites. The fragmentation size percentages at Gröf and Vígishellir are very similar. If the fragmentation at Gröf is not only the product of post-depositional processes, and there is evidence of butchery on a small percentage of the bones, specifically on the small cetacean and large cetacean elements, then perhaps the fragmentation can be seen as evidence of poverty and high level of calorie extraction from bone material.

Unit	Burn State	Count	Percent Burnt
005/015	Unburnt	533	8%
	Black	2809	43%
	Black/White	1103	17%
	Scorched	310	5%
	White	1755	27%
		6510	
008	Unburnt	426	75%
	Black	14	2%
	White	147	25%
011	White	6	100%
013	Unburnt	111	13%
	Black	341	39%
	Black/White	1	0
	White	430	49%
014	Unburnt	44	6%

	Black	8	1%
	White	778	93%

Table 4- Burn percentages

The relatively high percentages of burnt bone could be a product of differential preservation. The idea that calcined and carbonized bone preserves better than non-burnt bone is still debated. What can be argued with this assemblage is that this bone was deposited directly into a fire, most likely a hearth. A high percentage of the burnt bone is from cetacean species and/or marine mammals. Marine mammal bone has been known to be used as a fuel source, especially in Arctic contexts. The marine mammal bone at Gröf suggests that whale bone was being used in Iceland as fuel during the early modern period. The significant levels of white calcined bone also suggests some fairly high temperatures were achieved. A significant number of the burnt bones also show a pattern of being white calcined on one side and black carbonized on the other. This pattern will be investigated.

Cetaceans

Unit	Species	Count
13	Cetacean species	67
13	Unidentified Marine Mammal	120
14	Unidentified Marine Mammal	6
5	Small cetacean species	1
5	Large cetacean species	10
005/015	Cetacean species	319
005/015	Unidentified Marine Mammal	2891

Table 5- Cetacean and Marine Mammal elements

Table 5 presents the marine mammal and cetacean species data. The small and large cetacean species elements were vertebral fragments though one roughly circular piece might have been the product of craft work. Other examples of similar artifacts are being looked for. The 'unidentified marine mammal' category was used for fragments 2 cm wide at their greatest length and smaller. These fragments were however, identical to those identified as cetacean species. For the purposes of this analysis the assumption is that all these fragments are from cetacean species, not seal species.

Samples have been identified that will be used for aDNA extraction by Cecilia Anderung at the University of Uppsala. This will be done as part of the NSF funded ´Norse Use of Marine Mammals in the Medieval North Atlantic´ project, led by Dr. Vicki Szabo at Western Carolina University and Dr. Cecilia Anderung at the University of Uppsala. This analysis might, depending on the quality of the aDNA, allow us to determine the species of the cetaceans represented at Gröf. This could help us determine how these elements got to the farm.

The cetacean fragments appear within the layers between Katla 1755 and Katla 1625. Gröf is over 30 kilometers from the coast, and much farther from any harbor. One possible origin for these cetacean elements is from whales who stranded on the southern coast of Iceland. Portions of stranded whales could have been transported to Gröf, certainly portions of whale bone. Perhaps whale meat was consumed at Gröf. The bone might have been used for craftwork, but was also likely used for fuel.

Discussion

The most interesting aspect of the Gröf faunal assemblage is the presence of cetacean bone. Data on the use of cetacean bone in Iceland as well as the larger Scandinavian North Atlantic is currently being gathered so that the Gröf material can be put into a larger perspective. The Gröf assemblage, though badly preserved, could, when put into a larger context, be important for understanding the exploitation and utilization of marine mammals in the early modern period.

7. Summary and discussion

The preliminary investigations in Skaftártunga in the summer of 2014 produced very promising results.

The research into the nature of the tephra distribution and accumulation continued to deepen the understanding of eruption impacts on the environment and vegetation in Skaftártunga that has been developed in the area for the last few years by Dugmore and Streeter.[10]

Surveying continued in 2014 and progressed well. During the field survey the number of known sites in the area has doubled. Soil erosion is a great threat to the archaelogy in the area and was considered an immediate threat for to up to 60% of sites. Among the sites surveyed in 2013-2014 were 14 clusters of ruins that are believed to be farmsteads or shielings. It is our hope to continue exploring and dating these sites in the next few years with further survey and trenching. The general aim of the surveying is to deepen the understanding of the settlement history and historic landscape but with a special focus on looking for possible settlement and shieling sites as well as potential middens. The information collected in Skaftártunga is important because it provides and essential test of the models of Icelandic settlement history and economic change that have been build around excavation and extensive regional surveys in Northern Iceland. It is clear that there are some regional difference.[11] To test current models we need to understand settlement patterns in the south and their changes through time coupled with records of the archaeofaunal from Landnám until modern times. The extraordinary detail of tephra preserved and dated in Skaftártunga makes the area ideal for this kind of research. With this data we can make a key contribution both to local history as well as the general history Iceland in relation to wider trends in the North Atlantic, and the response of complex socio-ecological systems to drivers of climate, demographic crisis and economic change.

In the pursuit of these aims the trenching in 2014 produced significant progress. On the one hand a large trench was dug into the midden at Gröf and fair amount of animal bones and objects recovered. The preservation of organic matter was fair in the upper layers but worsened as the excavation continued. The site was therefore not consided suitable for collecting material records pre-dating the 17th century. The most surprising result of the excavation of the 17th to 19th century midden was the amount of whale bone present throughout almost all the midden layers because Gröf is about 32 km from the sea. However some of the higher status farms of

[10] Streeter R.T. and Dugmore A.J. 2013, Streeter, Richard T and Andrew J. Dugmore 2014.

[11] There, for example, good archaeological evidence exists for a switch to wool production in the thirteenth century. In the south, however, a focus on cows, meat and milk production seems to have endured until later and even withstood the demographic shocks delivered by the 15th century plagues, see Streeter, Richard, Andrew J. Dugmore, and Orri Vésteinsson 2012.

Skaftártunga, such as Búland, owned rights to drifted whales found on designated beaches on the south coast. Given the amount of whale bones at Gröf it seems likely that the farm owned such a right somewhere on the south coast. Further documentary research might help support/reject this possibility.

The other half of the trenching in 2014 was directed at dating and trying to determine the function of three sites found during survey in 2013-2014. The result was that all three sites were built straight on top of tephra from Eldgjá 934±2 and had been abandoned before 1104/1206. [12] This is consistent with the result of trenching and section cleaning in 2013, that is, all the six out of seven clusters of ruins dated so far in Skaftártunga have been occupied within the same phase, built straight on top of the Eldgjá 934±2 and abandoned before 1104/1206. No signs have been found anywhere of an occupation phase before the 934 tephra. This could mean one of two things:

- that the area was simply not settled on a large scale until after the eruption in 934.
- that the earliest settlements have yet to be located. It is possible that the eruption in 934 had a drastic impact on the pre exsisting settlement pattern so that many of the previously occupied sites sites were abandoned and sites built up in different locations.

Research elsewhere in Iceland in the last few years has shown that the settlement of even fairly remote areas took place quite early and it has been suggested that the settlement was a speedy proccess that most likely happened in the last quarter of 9th century and the first decades of the 10th century.[13] In the light of evidence from other areas in Iceland it must be considered unlikely that Skaftártunga was not settled in the first 60 years of the settlement period although further research is needed to state this with certainty. Our working theory is therefore that the oldest settlements in Skaftártunga are yet to be discovered. Some of the earliest settlements were undoubtedly where the most prominent farms are still today but it is likely that the Eldgjá eruption caused a serious disruption (because of both the thick deposits of tephra and extensive lava flows) in the settlement pattern causing people to resettle in new areas. The eruption no doubt had a drastic impact on vegetation and land quality in the area. Moreover, the thickness of the Eldgjá tephra combined with high rates of aeolian sedimentation since then makes it unlikely that sites occupied before Eldgjá 934±2 and aboandoned because of the eruption would be easily detected on the surface. To this date the only confirmed occupation in the area before Eldgjá 934±2 are the

[12] With the exception that the enclosure of Stekkjartúnsholt seems to have had a shortlived rebuilt arround 1400.
[13] McGovern, T. and Vésteinsson, O. 2012.

heathen burrials excavated in Hrífunes in the last few decades which were revealed by water erosion from Hólmsá. No signs of the burials could be seen of on the surface.[14]

The question of why the settlements/shielings that we have dated so far were abandoned in the 11th to 12th century or earlier is key and acurrently unanswered question that further research might help to adress. The answer might be related to larger scale social or/and ecological changes that might have taken place in Iceland in the period as such a pattern of abandonment has been found elsewhere in Iceland. Research in Mývatnssveit in northern Iceland has shown that during the same peroid up to half of occupied farms in the area seem to have been abandoned for reasons that are still largely unknown.[15] The research in Skaftártunga could, in the future, help explain extent this took place in the area and hopefully help us begin to further understand why these changes took place.

The research in Skaftártunga in 2014 was a part of a pilot study that had the main aim of gathering data and preparing for a larger scale investigation in the area. The aim for further work is to continue and finish the field survey of Skaftártunga, continue locating and trenching possible middens and possibly conduct a fuller excavation of the midden in Ljótarstaðir as well as to date as many of the farms and shielings in the area as possible. This region is extremely promising in terms of faunal analysis due to the lack of such analysis to date, and the extraordinary temporal resolution that can be achieved with the local tephra record. The opportunities, given the possibility to combine information about historical landscape, faunal analysis, archaeological analysis and the high resolution landscape record are great in terms of continuing work towards understanding human interactions with climatic and environmental variability in the area and beyond.

[14] Eldjárn, K and Friðriksson, A. 2000. and Gestsdóttir, H. et. al. 2015.
[15] McGovern, T. and Vésteinsson, O. 2012, 214.

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Appendices

A. Context register

Site code	Site name	Trench number	Context number	Description
GRÖ14-2014-13	Gröf	Trench A	001	Mottled turf
GRÖ14-2014-13	Gröf	Trench A	002	**Black, coarse tephra - Katla 1845**
GRÖ14-2014-13	Gröf	Trench A	003	Brown, orange soil
GRÖ14-2014-13	Gröf	Trench A	004	**Fine, black tephra, mottled - Katla 1755**
GRÖ14-2014-13	Gröf	Trench A	005	Mixed mottled midden
GRÖ14-2014-13	Gröf	Trench A	006	Darkbrown very light gray ash
GRÖ14-2014-13	Gröf	Trench A	007	**Fine, black tephra, coarse at low level, Katla 1625**
GRÖ14-2014-13	Gröf	Trench A	008	Mottled light brown turf midden
GRÖ14-2014-13	Gröf	Trench A	009	Mottled turf in new 2 x 3 same as 001
GRÖ14-2014-13	Gröf	Trench A	010	**Black coarse tephra, in a new 2 x 3 are (Katla 1845) same as 002**
GRÖ14-2014-13	Gröf	Trench A	011	Brown, orange soil in new 2 x 3 area, same as 003
GRÖ14-2014-13	Gröf	Trench A	012	**Fine, black tephra, in new 2 x 3 m area, same as 004 - Katla 1755**
GRÖ14-2014-13	Gröf	Trench A	013	Mixed, mottled midden in new 2 x 3 area, same as 005
GRÖ14-2014-13	Gröf	Trench A	014	Light gray ash layer
GRÖ14-2014-13	Gröf	Trench A	015	Mixed light brown midden
GRÖ14-2014-13	Gröf	Trench A	016	**Fine, black tephra, Katla 1625**
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	001	Topsoil
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	002	**Fine, black tephra, fades out in couple of places but is more or less complete - Katla 1918**
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	003	Brown, homogenic silt, aeolian
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	004	**Dark gray, very coarse tephra, 1-15 cm thick - Hekla_1845**
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	005	Brown, homogenic silt, aeolian
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	006	**Black/dark gray fine tephra 1-1,5 cm thick - Katla_1755**

GRÖ14-2014-13	Stekkjartúnsholt	Trench C	007	Brown, homogenic silt, aeolian. Same/similar to 005 but the tephra [006] divides it up into two layers
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	008	**Dark gray fine to coarse tephra layer, very thick (10-28 cm) in "layers" fine to coarse - Katla_1625**
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	009	Brown silt aeorlian, with three thin tephras layers in:
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	009a	**Fine, black tephra, The tephra is very thin, almost a trace, but can be seen throughout most of the section - Katla 1612**
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	009b	**Fine, dark gray tephra, 0,5 cm thick to the north but thins out in places, usually 0,5-1 cm below 009a - most likely also Katla 1612**
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	009c	**Very suttle trace of black, unknown tephra against and ontop of the northen side of the wall (inside)**
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	010	**Dark gray, fairly fine tephra, about 1 cm thick, diffused - Hekla 1597**
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	011	Brown silt, aeolian, divided up to two by a tephra layer 0,5-1 cm thick [011b] in northern part. The tephra is black and fine and fades out to the south
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	011A	**Coarse, dark gray tephra - Veiðivötn_1477**
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	011B	**Gray tephra, but at the bottom is a trace of fine black tephra - Grímsvötn likely G1462±5 (dated in Streeter and Dugmore, 2014)**
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	012	**Fine, black tephra. It is piled upagainst turf collapse from the wall (very thick there) but only 2 cm in end section - Katla_1416**
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	013	Brown silt, aeolian
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	014	**Gray tephra, about 0,5 cm thick - Hekla 1389**
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	015	**Brown silt including very fine traces of light gray (almost olive) tephra 0,1-0,2 cm - Hekla 1300**
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	016/016b	**Fine to coarse, black tephra. It is finer towards the top and a little "mixed in" with the layer above - Katla_1262**
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	017	Reddish brown silt, aeolian
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	018/018b	**Turf collapse and windblown silt**
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	019	Windblown silt mixed with turf collapse and faint, unidentified tephra
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	020	Yellow brown silt, aeolian
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	021	**Black, coarse tephra, mostly unexcavated in the bottom of the trench - Eldgjá_934**
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	022	Turf wall that appears made with "strengur". The wall is about 80 cm hight and 80 cm thick although wider at the bottom (1,1-1,2 m wide there). The wall is built from homogenic turf including black, coarse tephra, likely prehistoric
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	023	Wall collapse similair to [027] but the turf is fairly whole

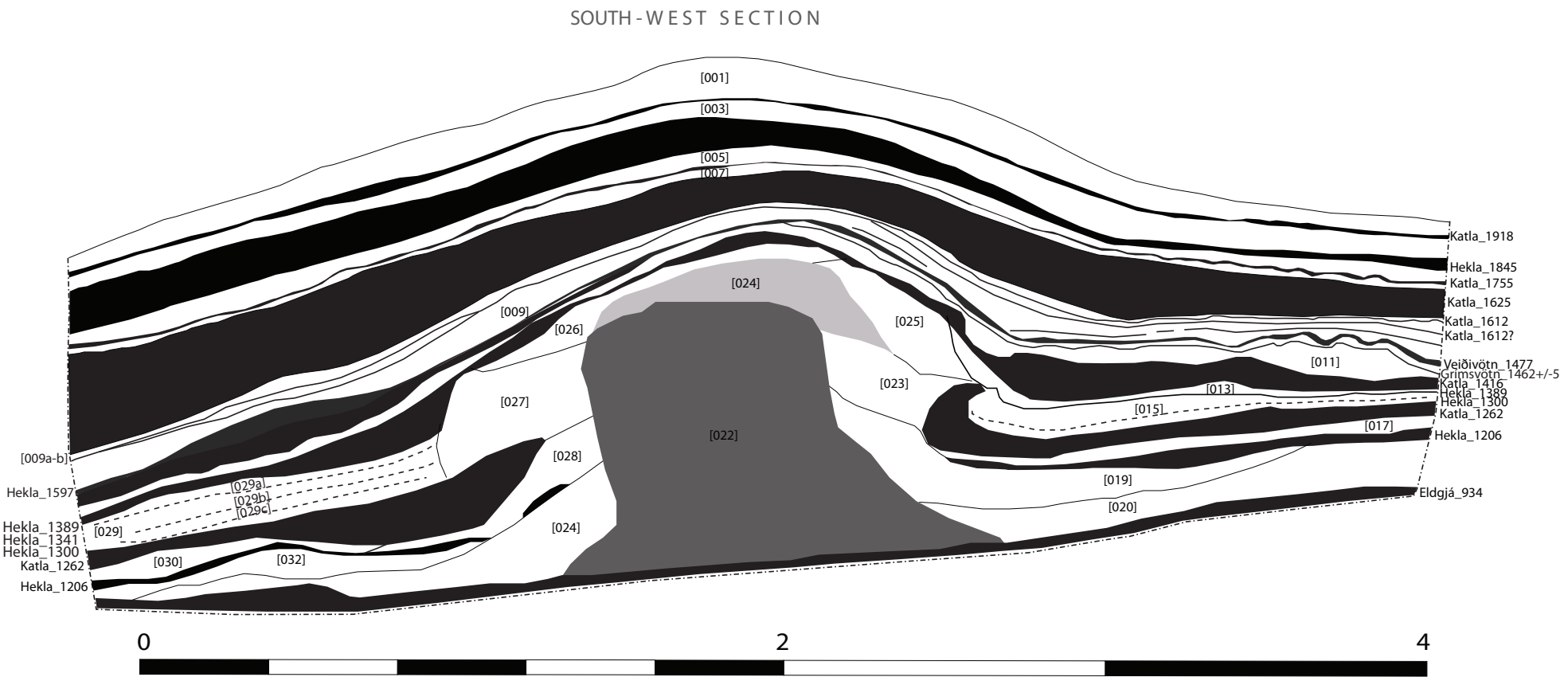
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	024	Rebuilt wall. Orange turf with gray tephra (Hekla_1206). The rebuilt consists of one long turf that was put on top of older wall and collapse from it. The turf in the rebuilt is completly different from the rest of the wall.
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	025	Turf wall collapse
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	026	Brown silt (aeolian) mixed with turf collapse from wall and windblown tephra
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	027	Turf collase from the wall similair to 023
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	028	Similar/same as 027 but divided up by Hekla_1262 (see 016b)
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	029	Mixed layer of brown sandy silt (aeolian)+ turf collapse and traces of three tephras:
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	029A	**Gray, coarse tephra - Hekla 1389**
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	029B	**Dark gray, fine tephra – Hekla 1341**
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	029C	**Dark gray, fine tephra - Hekla 1300**
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	030	Orange brown silt, aeolian
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	031	Mixed layer of brown silt (aeolian) and mottled and coarse unknown black tephra
GRÖ14-2014-13	Stekkjartúnsholt	Trench C	032	Orange brown silt, clean, aeolian
GRÖ14-2014-13	Kóragil	Trench 1	001	Topsoil
GRÖ14-2014-13	Kóragil	Trench 1	002	**Fine, black tephra, fades out in couple of places but is more or less complete - Katla 1918**
GRÖ14-2014-13	Kóragil	Trench 1	003	Brown, homogenic silt, aeolian
GRÖ14-2014-13	Kóragil	Trench 1	004	**Dark gray, very coarse tephra, - Hekla_1845**
GRÖ14-2014-13	Kóragil	Trench 1	005	Brown, homogenic silt, aeolian
GRÖ14-2014-13	Kóragil	Trench 1	006	**Black/dark gray fine tephra, fades into grayer tones where diffused - Katla_1755**
GRÖ14-2014-13	Kóragil	Trench 1	007	Brown, homogenic silt, aeolian
GRÖ14-2014-13	Kóragil	Trench 1	008	**Coarse black and gray tephra - Katla_1625**
GRÖ14-2014-13	Kóragil	Trench 1	009	Brown silt, aeorlian
GRÖ14-2014-13	Kóragil	Trench 1	010	**Coarse, gray tephra, 4-5 cm at the southern end but thins out. It is a bit diffused and might mixed of two tephras a) coarse dark gray tephra at the top and a fine light gray tephra below, between is yellowish gray sandy silt - Veiðivötn_1477**
GRÖ14-2014-13	Kóragil	Trench 1	011	Brown silt, aeolian
GRÖ14-2014-13	Kóragil	Trench 1	012	**Fine, black tephra, 0,5 cm thick - Grímsvötn 15th c.**

GRÖ14-2014-13	Kóragil	Trench 1	013	Brown silt, aeolian
GRÖ14-2014-13	Kóragil	Trench 1	014	**Very fine, black tephra, 1-2 cm thick - Katla_1416**
GRÖ14-2014-13	Kóragil	Trench 1	015	Brown silt, aeolian
GRÖ14-2014-13	Kóragil	Trench 1	016	**Very coarse, 1-2 mm thick dark gray tephra - Hekla_1389**
GRÖ14-2014-13	Kóragil	Trench 1	017	Brown silt, aeolian
GRÖ14-2014-13	Kóragil	Trench 1	018	**Coarse, black tephra - Katla_1262**
GRÖ14-2014-13	Kóragil	Trench 1	019	Yellow brown silt, aeolian
GRÖ14-2014-13	Kóragil	Trench 1	020	**Light gray (olive) tephra - Hekla_1206**
GRÖ14-2014-13	Kóragil	Trench 1	021	Reddish yellow silt, aeolian with few traces of tephra in [021b]
GRÖ14-2014-13	Kóragil	Trench 1	021b	**White, very coarse tephra, trace - Hekla_1104**
GRÖ14-2014-13	Kóragil	Trench 1	022	Wall collapse, windblown mixed layers on top and upagainst wall
GRÖ14-2014-13	Kóragil	Trench 1	023	Wall unexcavated/bottom of trench
GRÖ14-2014-13	Kóragil	Trench 1	023b	Part of wall, excavated
GRÖ14-2014-13	Kóragil	Trench 1	024	Compact surface layer, mixed reddish brown and gray silty clay, occational charcoal towards bottom of layer, possible floor
GRÖ14-2014-13	Kóragil	Trench 1	025	**Black, fine tephra, an undefined Katla or Grímsvötn , gray towards top**
GRÖ14-2014-13	Kóragil	Trench 1	026	Reddish brown silt, aeolian
GRÖ14-2014-13	Kóragil	Trench 1	027	**Black, fine to slightly coarse tephra, an undefined Katla or Grímsvötn**
GRÖ14-2014-13	Kóragil	Trench 1	028	Reddish brown, aeolian
GRÖ14-2014-13	Kóragil	Trench 1	029	Dark gray, slightly organic layer (fatty and moist)
GRÖ14-2014-13	Kóragil	Trench 1	030	**Black, coarse tephra - Eldgjá_934**
GRÖ14-2014-13	Mosholt	Trench 1	001	Topsoil
GRÖ14-2014-13	Mosholt	Trench 1	002	Brown silt, aeolian
GRÖ14-2014-13	Mosholt	Trench 1	003	**Fine, black tephra - Katla_1918**
GRÖ14-2014-13	Mosholt	Trench 1	004-005	**Cut and fill of a cut, not seen in section**
GRÖ14-2014-13	Mosholt	Trench 1	006	Brown, silt, aeolian
GRÖ14-2014-13	Mosholt	Trench 1	007	**Dark gray, very coarse tephra - Hekla_1845**
GRÖ14-2014-13	Mosholt	Trench 1	008	Brown, silt, aeolian
GRÖ14-2014-13	Mosholt	Trench 1	008b	**Gray to dark gray fairly fine and diffused tephra within [008], north of wall. Not seen south of wall - Laki 1783**

GRÖ14-2014-13	Mosholt	Trench 1	009	**Black/dark gray fine tephra - Katla_1755**
GRÖ14-2014-13	Mosholt	Trench 1	010	Brown silt, aeolian
GRÖ14-2014-13	Mosholt	Trench 1	010b	**Black, fairly fine tephra, diffused. Can be seen in layer [010] south of wall, possible mixed in from layer below - Katla 1663**
GRÖ14-2014-13	Mosholt	Trench 1	**011**	**Black, fine to coarse tephra - Katla_1625**
GRÖ14-2014-13	Mosholt	Trench 1	012	Brown silt, aeolian
GRÖ14-2014-13	Mosholt	Trench 1	013	**Black, fine tephra, 1 mm, fades out to south - Katla_1612**
GRÖ14-2014-13	Mosholt	Trench 1	014	Same as [012] except divided up in the south by tephra [013]
GRÖ14-2014-13	Mosholt	Trench 1	015	**Dark gray, rather fine tephra, thick south of wall - Veiðivötn_1477**
GRÖ14-2014-13	Mosholt	Trench 1	016	Brown silt, aeolian
GRÖ14-2014-13	Mosholt	Trench 1	017	**Dark gray/black, rather fine, unknown tephra, thick in places. Mixed in with lighter tephra at the bottom**
GRÖ14-2014-13	Mosholt	Trench 1	018	Brown silt, aeolian
GRÖ14-2014-13	Mosholt	Trench 1	019	**Dark gray, unknown tephra, 0,5-1 cm thick**
GRÖ14-2014-13	Mosholt	Trench 1	020	Mixed collapse and windblown
GRÖ14-2014-13	Mosholt	Trench 1	021	**Fine, black tephra, 1-1,5 cm thick - Grímsvötn 1457 +/-2**
GRÖ14-2014-13	Mosholt	Trench 1	021b	Brown silt aeolian
GRÖ14-2014-13	Mosholt	Trench 1	022	**Black, fairly fine tephra, 1-1,5 cm thick - Grímsvötn 1432 +/-5**
GRÖ14-2014-13	Mosholt	Trench 1	023	Brown silt aeolian
GRÖ14-2014-13	Mosholt	Trench 1	024	**Very coarse, black or dark gray tephra 0,5 cm thick - Katla_1416**
GRÖ14-2014-13	Mosholt	Trench 1	025	Light brown silt, aeolian
GRÖ14-2014-13	Mosholt	Trench 1	026	**Two tephras, very faint. Dark gray, unknown tephra is at the bottom. About 0,4 cm above is gray, almost purple tephra - Hekla_1341.**
GRÖ14-2014-13	Mosholt	Trench 1	027	Brown silt, aeolian
GRÖ14-2014-13	Mosholt	Trench 1	028	**Gray, fine tephra, 0,4 cm thick - Hekla 1300**
GRÖ14-2014-13	Mosholt	Trench 1	029	Brown silt, aeolian
GRÖ14-2014-13	Mosholt	Trench 1	030	**Coarse, black/dark gray tephra - Katla_1262**
GRÖ14-2014-13	Mosholt	Trench 1	031	Reddish brown silt, aeolian
GRÖ14-2014-13	Mosholt	Trench 1	**032**	**Light gray (olive) tephra - Hekla_1206**
GRÖ14-2014-13	Mosholt	Trench 1	033	Brown silt, aeolian 2-3 cm thick
GRÖ14-2014-13	Mosholt	Trench 1	034	**Fine, black, unknown tephra, 1 mm, hard to detect - Probably Grímsvötn**

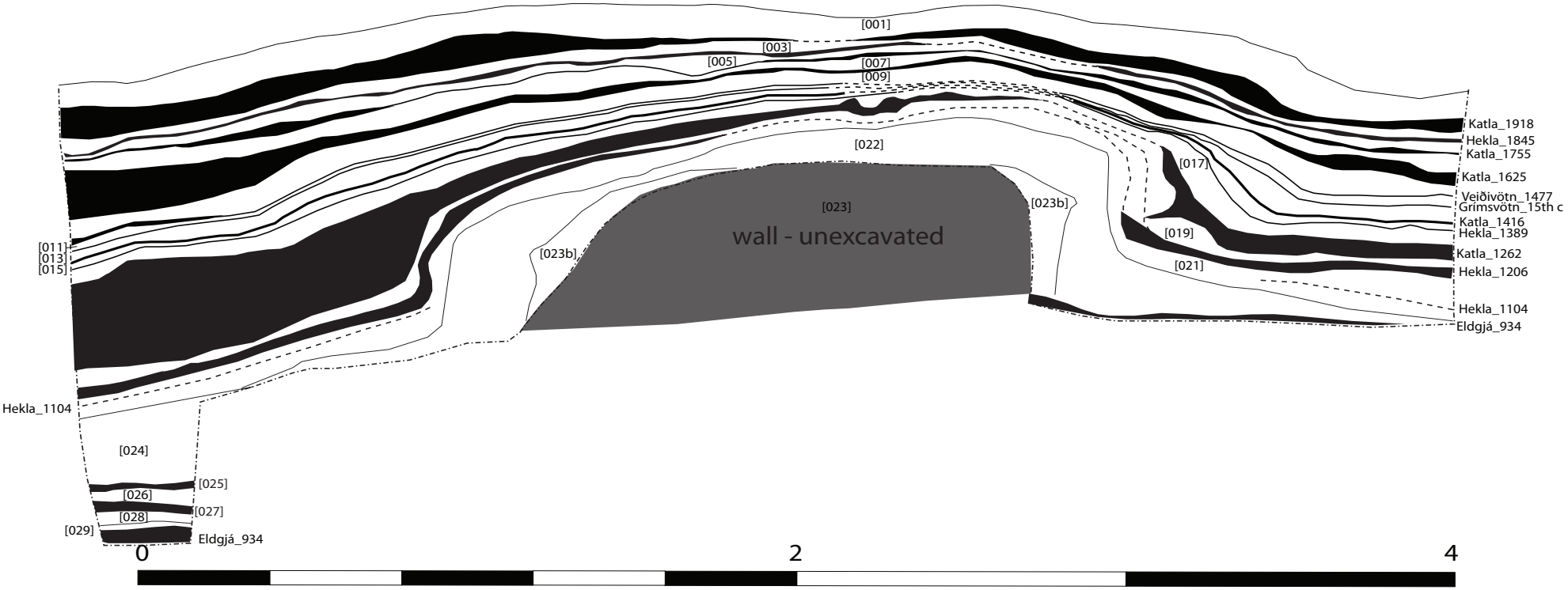
GRÖ14-2014-13	Mosholt	Trench 1	035	Brown silt, aeolian
GRÖ14-2014-13	Mosholt	Trench 1	036	**Gray, fine, unknown tephra, very thin - Probably Grímsvötn**
GRÖ14-2014-13	Mosholt	Trench 1	037	Brown silt, aeolian, 0,8 cm
GRÖ14-2014-13	Mosholt	Trench 1	038	**White, very coarse tephra, can be detected here and there over wall collapse, mostly inside the ruin - Hekla_1104**
GRÖ14-2014-13	Mosholt	Trench 1	039	Turf collapse + windblown material against southern edge of wall
GRÖ14-2014-13	Mosholt	Trench 1	040	Stone collapse (with with turf and windblown)
GRÖ14-2014-13	Mosholt	Trench 1	041	Mixed collapse against southern wall
GRÖ14-2014-13	Mosholt	Trench 1	042	Wall collapse whalkers + windblown material
GRÖ14-2014-13	Mosholt	Trench 1	043	Black tephra (Eldgjá) mixed in with floor material/trampling etc.
GRÖ14-2014-13	Mosholt	Trench 1	**044**	**Black tephra - Eldgjá_934**
GRÖ14-2014-13	Mosholt	Trench 1	045	Brown silt, aeolian
GRÖ14-2014-13	Mosholt	Trench 1	**046**	**Gray tephra - Landnám_871+/-2**
GRÖ14-2014-13	Mosholt	Trench 1	047	Fill beween stone lining of wall. The top 20 cm of this layer were removed in trench taken before 1918. The fill does not have propper turfs but seems to be piled there without much thought to the construction
GRÖ14-2014-13	Mosholt	Trench 1	048-049	Not seen in section, 048 is a floor layer into Eldgjá.

Section drawings

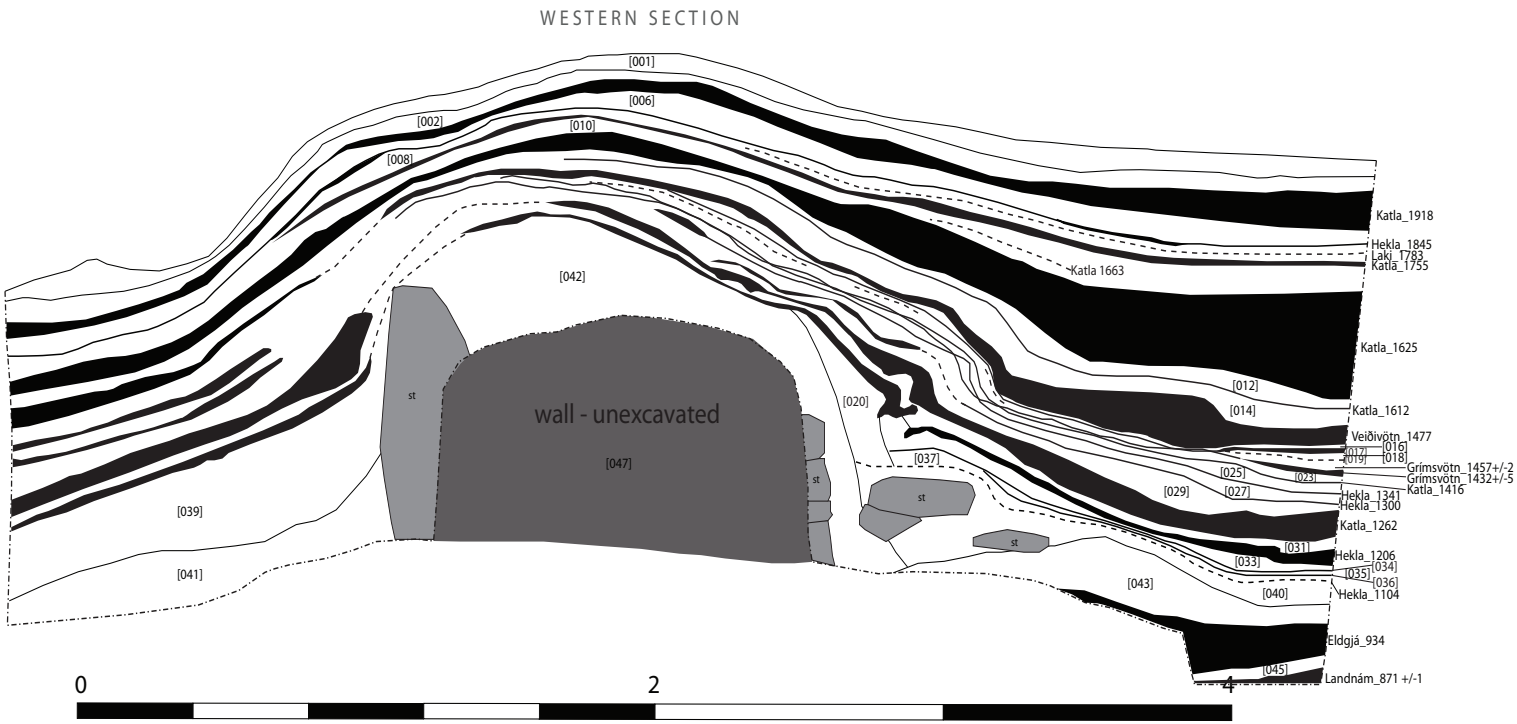


Kóragil

WESTERN SECTION



Kóragil


WESTERN SECTION
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[002]
[006]
[008]
[010]
[042]
wall - unexcavated
[047]
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[020]
[037]
[039]
[041]
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[012]
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[017]
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[029]
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[034]
[035]
[036]
Katla_1918
Hekla_1845
Laki_1783
Katla_1755
Katla 1663
Katla_1625
Katla_1612
Veiðivötn_1477
Grímsvötn_1457+/-2
Grímsvötn_1432+/-5
Katla_1416
Hekla_1341
Hekla_1300
Katla_1262
Hekla_1206
Hekla_1104
Eldgjá_934
Landnám_871 +/-1
0
2
4
meters

Mosholt

B. Finds register

Site name	Trench number	Finds number	Unit No	Object type	Material type	weight (gr.)	Count	Description
Gröf	Trench A	001	topsoil	button	copper alloy	2.42	1	Copper alloy object with decoration and lettering on the upper side. The object is unusual but likely a 19th c. button
Gröf	Trench A	002	topsoil	blade	Iron	9.02	2	Two pieces of iron objects. One is a more or less complete blade of a small iron knife (whittle tang). The second piece is a nail in bad condition.
Gröf	Trench A	003	[001]	painted glass	Glass	0.25	1	Small picece of non-coloured, flat glass from a flask or a beaker probably from 17th or 18th century.
Gröf	Trench A	004	[001]	flint	stone	1.06	1	Small piece of a flint
Gröf	Trench A	005	[003]	wheatstone	whetstone	8.37	1	Fragment of whetstone
Gröf	Trench A	006	[003]		Whetstone	17.23	1	Fragment of wheatstone.
Gröf	Trench A	007	[005]	pottery	Ceramic	2.08	1	Small picece of a red earthenware pottery, probably late 17th or 18th century. A rim of a cooking pot (with green internal glazing.
Gröf	Trench A	008	[005]	combe?	Bone	0.6	1	Small piece of decorated bone, possible from a bone combe or a combe case. On the Flat surface are two circles (each about 4 mm in diameter) with a dot in the middle in a row.
Gröf	Trench A	009	[013]	fastening/buckle	copper alloy	3.64	1	A decorative mount (for keyhole?). On the pices itself at least 6 nail holes can be seen and a nail is in one of them. The decoration is a simple line decoration. A good quality object.
Gröf	Trench A	010	[013]	wheatstone	whetstone	11.57	1	Fragment of a wheatstone

Gröf	Trench A	011	[013]	wheatstone	whetstone	9.36	1	Fragment of a wheatstone. The piece has burnmarks on
Gröf	Trench A	012	[013]	iron eye	Iron	0.65	1	Iron eye, complete and in good condition and only slightly rusted. This piece matches 013.
Gröf	Trench A	013	[013]	clothes fastening/hook	Iron	0.56	1	Iron clothes fastener, complete and in good condition. Matches loop nr. 013.
Gröf	Trench A	014	[013]	wheatstone	whetstone	11.4	1	Fragment of a wheatstone
Gröf	Trench A	015	[015]	wheatstone	whetstone	15.15	1	Fragment of whetstone
Gröf	Trench A	016	[005]	nails, etc.	iron	38.35	6	Six iron nails of various sizes but all with T-shaped top except one that has lost the head. Hand forged.
Gröf	Trench A	017	[005]	rivets and clench bolts	copper alloy	11.48	5	Five pieces. Three are a part of a rivet and a clench bolt (to fasten anything from a stave vessel to a chest). Forth is unidentifiable. Bad condition/fragmented. The fifth piece is a clench bolt, probably from a stave vessel.
Gröf	Trench A	018	[006]	nail	Iron	4.89	1	Iron nail.
Gröf	Trench A	019	[008]	nails, etc.	Iron	22.91	5	Four iron nails. Two of the nails are T-shaped and handmade, one wire cut nail (late 19th-20th c.) and the fourth has a flat long head (mashine cut?) of various sizes and one iron plate.
Gröf	Trench A	020	[009]	pottery sherd	ceramic	1,37	1	Small piece of white slipware, probably from a bowl. Likely 19th century. The piece is white on the inside and white and light blue on the other side.
Gröf	Trench A	021	[009]	nails, etc.	Iron	19.20	3	Three pieces of iron objects. One is a nail, one could be either a nail or pin and the third one is a part of an iron clasp of some sort.
Gröf	Trench A	022	[011]	nails, etc.	Iron	18.55	3	Three T-shaped iron nails, likely

								handmade
Gröf	Trench A	023	[013]	pottery sherd	ceramic	8.23	5	Five fragments of red earthenware (likely from same object), probably from a cooking put. The piece has brown internal glazing. Period (16th-19th c).
Gröf	Trench A	024	[013]	nails, etc.	Iron	35.73	7	Seven iron objects. Six of them are nails of various sizes (at least three T-shaped, a shaft and two other nails). The seventh object is a staple.
Gröf	Trench A	025	[013]	small fasteners, etc.	copper alloy	16.44	9	Nine small copper objects, mostly nails and copper plates and rivets.
Gröf	Trench A	026	[013]	slag	slagbottom?	85.75	1	Slagbottom?
Gröf	Trench A	027	[013]	pebble/gaming stone	stone	6.63	1	Small stone pebble, unworked but might have been carried there from away.
Gröf	Trench A	028	[014]	nails, etc.	Iron	27.62	3	Three iron nails, various sizes. Two are T-shaped and the third one is tang from a long bladed object (scythe or a knife)
Gröf	Trench A	029	[015]	fastening, etc.	copper alloy	7.16	7	Seven copper objects, rivets most likely from a stave vessel, all small fragments.
Gröf	Trench A	030	[015]	nails, spike, awl, etc.	Iron	108.5	18	18 iron object. Most or 15 are nails of various shapes and sizes, mostly T-shaped but with one flathead. One small awl and a large spike is in this collection and one fragment of an iron knife (blade). The spike is large and with part of the shaft still attached.
Gröf	Trench A	031	[015]	pottery sherd	ceramic	0,35	2	Two small pieces of tin glazed earthenware, from 17th-18th c.
Gröf	Trench A	032	[015]	UID stone	stone	0.47	1	Small piece of soft stone, possible worked
Gröf	Trench A	033	[003]	sickle etc.	Iron	28.31	2	Two iron objects. One is a small sickle (L-shaped blade), more or

								less complete and the other unrecognisable iron plate.
Gröf	Trench A	034	[005]	nails	iron, copper alloy	10.43	3	Three T-shape iron nails of various shapes and sizes.
Gröf	Trench A	035	[013]	nails, etc.	iron	117.42	16	16 iron objects. There off seven are nails (mostly T-shaped) of various shapes and sizes, five flat blades or plates (a tip of a knife etc.), three staples and one ring (for fastening things?).
Mosholt	Trench through structure A	036	[040]	iron objects	iron	10.02	1	Fragment of an iron object. Possible key or latch lifter. Possible pegged but unidentified.
Gröf	Trench A	037	[005]	slag	slag	4.69	1	One small piece of slag.
Gröf	Trench A	038	[013]	bolster, rivets etc.	copper alloy	2,43	3	Three copper objects. Two small rivets and a small copper plate, possible a bolster.
Gröf	Trench A	039	[005]	stopper?	wood	0.42	1	Small wooden object, possible a stopper
Gröf	Trench A	040	[013]	slag	slag	66.72	19	Slag

C. Bone register

No	Weight	Area	Context	Types of bags	Description	Date	ID
001	7	Gröf 14	001	1 small	Bones	10.06.14	GH
002	85,4	Gröf 14	003	1 small	Bones	11.06.14	GH
003	37,7	Gröf 14	003	1 small	Bones	13.06.14	KSG
004	129,5	Gröf 14	005	1 small	Bones	11.06.14	KSG
005	1750	Gröf 14	005	1 big	Bones	12.06.14	KSG
006	223,8	Gröf 14	005	1 small	Bones	12.06.14	KSG/GH
007	71,3	Gröf 14	005	1 small	Bones	12.06.14	GH
008	7,3	Gröf 14	005	1 small	Bones?	12.06.14	GH
009	4,3	Gröf 14	005	1 small	Bones (Actinopt..)	12.06.14	KSG
010	67,5	Gröf 14	005	1 small	Bones	13.06.14	GH
011	17,8	Gröf 14	006	1 small	Bones	13.06.14	KSG/GH
012	6,7	Gröf 14	006	1 small	Bones	13.06.14	KSG/GH
013	122,4	Gröf 14	008	1 small	Bones	14.06.14	KSG
014	23,5	Gröf 14	011	1 small	Bones	16.06.14	KSG
015	13,9	Gröf 14	011	1 small	Bones	17.06.14	GH
016	8,6	Gröf 14	011	1 small	Bones	17.06.14	GH
017	96,5	Gröf 14	013	1 small	Bones	17.06.14	GH
018	286,6	Gröf 14	013	1 small	Bones	18.06.14	KSG
019	51,3	Gröf 14	013	1 small	Bones	19.06.14	GH
020	382,5	Gröf 14	014	1 small	Bones	18.06.14	GH
021	62,8	Gröf 14	014	1 small	Bones (equ mo)	19.06.14	GH
022	13,7	Gröf 14	014	1 small	Bones	19.06.14	RRR
023	610	Gröf 14	015	1 small	Bones	20.06.14	KSG
024	6,3	Gröf 14	015	1 small	Bones (bos tooth)	20.06.14	KSG

025	64,3	Gröf 14	015	1 small	Bones (bos innom)	20.06.14	KSG
026	355	Gröf 14	015	1 small	Bones (cet. bone)	20.06.14	KSG/GH
027	91,8	Gröf 14	015	1 small	Bones	22.06.14	KSG
028	84,5	Gröf 14	015	1 small	Bones (whale?)	22.06.14	GH
029	168,2	Gröf 14	015	1 small	Bones	22.06.14	KSG
030	102,6	Gröf 14	015	1 small	Bones	22.06.14	GH
031	53,8	Gröf 14	015	1 small	Bone	20.06.14	KSG
032	2,8	Mosholt 14	039	1 small	Bone (Tooth)	22.06.14	EH
033	10	Mosholt 14	042		Bones	22.06.14	EH