



MINJASAFNIÐ Á AKUREYRI
AKUREYRI MUSEUM

Excavations at Gásir 2006: An Interim Report/ Framvinduskýrsla



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Kápumyndin: Horft yfir búðasvæðið til norðvesturs.

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Fornleifauppgröftur að Gásum 2006- Framvinduskýrsla.

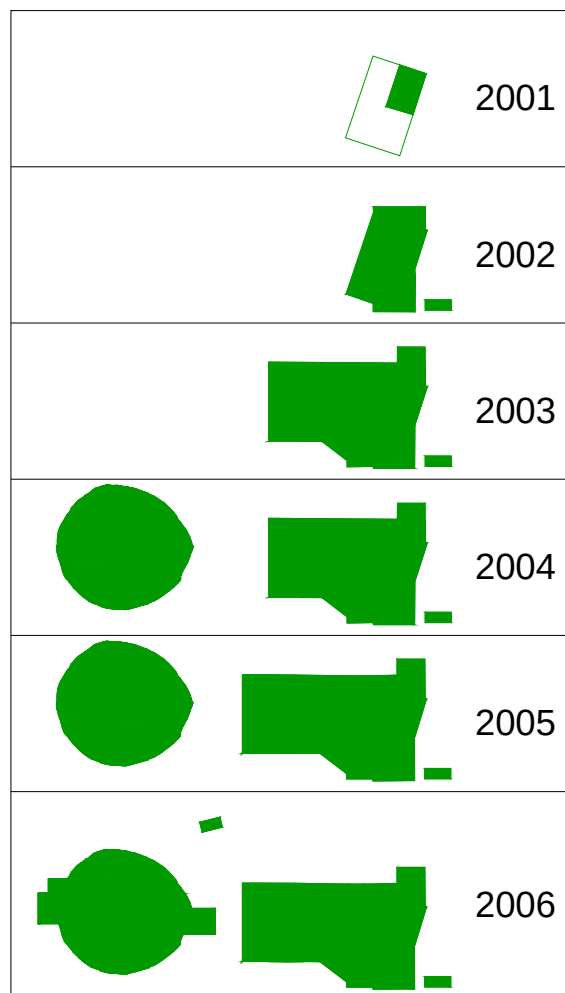
Fornleifastofnun Íslands hélt áfram fornleifarannsókn á miðaldakaupstaðnum Gásum í Eyjafirði í samvinnu við Minjasafnið á Akureyri í 6 vikur frá 3. júlí til 12. ágúst.

Þetta var síðasta árið af sex sem fyrirhuguð voru til rannsóknar á kaupstaðnum. Haldið var áfram á búðasvæðinu (A) en einnig var vinna hafin á ný í kirkjunni (B) en byrjað var að rannsaka hana 2004. Þá var könnunarskurður frá 1986 skoðaður á ný.

Á búðasvæðinu voru nokkrar byggingar sem ekki var lokið við árið 2005 og hélt vinna áfram við þær. Eftir rannsóknir síðustu ára var ljóst að greina má nokkur notkunarskeið í byggingunum þar sem þær hafa gengist undir endurnýtingu og endurnýjun alloft. Í sumum byggingum sést glögg á endurteknum skurðum og viðbótum á veggum hversu oft þær hafa verið notaðar og þær endurbættar.

Þá var einnig haldið áfram að rannsaka gangveginn við uppgräftarmörk að austan frá árinu 2002. Á mynd 1 má sjá hvernig uppgräftarmörk hafa breyst milli ára.

Í gripasafnið bættust við svipaðir gripir og fundist hafa síðustu ár eins og brot úr innfluttum leirkerum, sem eru sjaldgæf á Íslandi, járngripir, brot úr brýnum og bökunarhellum og korkur sem gæti verið tappi auk margra annarra flokka.



Mynd 1: Uppgräftarmörk

Aðferðir

Howell M. Roberts stjórnaði uppgrefti á svæði A og Orri Vésteinsson á svæði B. Þrettán manns unnu við uppgröftinn að þessu sinni og voru átta á búðasvæði A en fimm á kirkjusvæði B.

Uppgraftaraðferðin sem notuð hefur verið við rannsóknina frá upphafi er (e.) Single context planning þar sem hver lageining fær sitt númer og er lýst nákvæmlega auk þess sem svarthvítar og stafrænar ljósmyndir voru teknar. Þá voru tekin sýni úr völdum lageiningum, meðal annars fyrir örformgerðargreiningar.

Gripir fengu númer þeirrar lageiningar sem þeir fundust í auk þess sem fundastaður gripa sem þóttu sérstakir var skrásettur með alstöð (e. total station theodolite).

Úrvinnsla gagnanna fólst meðal annars í hreinsun gripa og skráningu þeirra auk þess sem allar teikningar af lageiningum og sniðum voru færðar á stafrænt form. Þá var greiningu á jarðlagaskipan haldið áfram.

Þakkir

Rannsókn á Gásum var gerð möguleg með veglegum styrk frá Ríkissjóði og Kristnihátíðarsjóði. Þakkir eru færðar þeim mörgu einstaklingum og stofnunum sem gerðu kleift að vinna þessa rannsókn.

Starfsfólk sem vann að uppgreftinum í ár voru á svæði A: Howell Magnus Roberts, James Taylor, Freya Sadarangani, Jen Wooding, Louise Felding, Lilja Björk Pálsdóttir, Marta Dulinicz, Ramona Harrison (CUNY) og á svæði B: Orri Vésteinsson (HÍ), Oddgeir Hansson, Rúnar Leifsson, Elín Bjarnadóttir og Bjarki Borgþórsson.

Ólöf Þorsteinsdóttir á Fornleifastofnun Íslands hafði á hendi stjórnsýslu verkefnisins.

Þá eiga Guðrún Kristinsdóttir og starfsfólk Minjasafnsins á Akureyri þakkir skildar fyrir stuðning og hvatningu.

Einnig viljum við þakka landeigendum, þeim Gylfa Traustasyni og Guðrúnu Björk Pétursdóttur, velvilja og aðstoð í gegnum árin.

English Summary

The 2006 excavation season revealed considerable activity within the booth area (Area A), with many pits and postholes investigated. The pits were of different sizes and shapes, some oval in plan with fairly straight sides whilst others were more square in shape. Some may have been used to store some kind of goods, but others were temporary hearths or firepits. No diagnostic fills were discovered except in the firepits, which were filled with either peat ash or a mix of ash, charcoal and silt.

The rooms excavated in 2006 year seem to have served various functions. Room [2396] had several occupation phases, with many fireplaces and a lot of peat ash accumulated within the room. It is possible that the room was used for smoking meat or fish. Some chunks of biological material which could be dung were found in the room - this could also point to use as a smoke house.

Room [2400] was much larger, and unlike [2396] did not appear to adjoin a larger space. However, no entrance was discovered within the excavated portion of the room – which extends beyond northern limit of the excavation area. This room had several phases of use, as evidenced by the many additions and repairs recorded in 2005. Two further episodes of re-use were noted in 2006. There were not many clues as to the function of the room, but stone floors could indicate some sort of storage or sales facility as the stones would keep merchandise above the humid earthen floor.

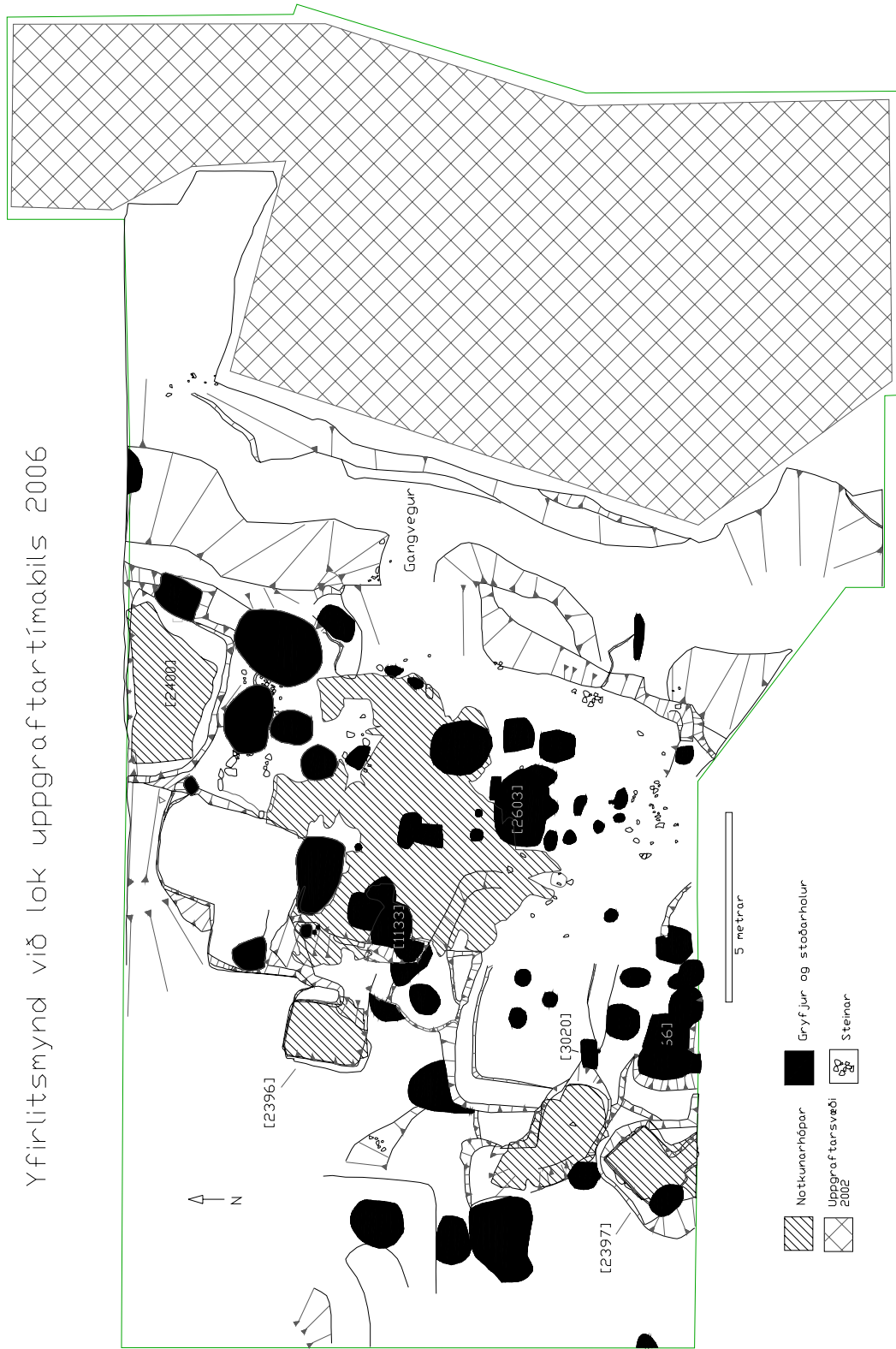
At the southern limit of excavation were two more sunken featured buildings with several occupation phases. These were of different character though, with many deep pits side by side at the western and southern sides of the rooms. Only one of the buildings could be excavated fully as only a small part of the other was within the excavation area. Most of the pits were very deep and today their bases reach below the water table, and are therefore wet at the base as groundwater seeps into them. It is unlikely to have been so when the rooms were in use.

Much of the western part of Area A was shown to be sealed beneath the Hekla~1300AD tephra horizon, and therefore somewhat earlier in date than the excavated features and deposits.

Work also continued on the pathway dividing the 2002 excavation area and the 2003-6 area. There was also a clearly an opening into the western group of sunken rooms. A rather more vague but yet conceivable path into the same open area could be found further to the south. Although undisturbed natural deposits could be observed occasionally beneath buildings or cut features, there remains a long way to go to reach undisturbed soil within Area A.

A test trench from 1986, excavated by Margrét Hermanns-Auðardóttir was re-opened and expanded (from 3 x 1m to 5 x 2m). It revealed the shallow and partial remains of a building of unknown function, dating to after 1300AD.

Yfirlitsmynd við lok uppgráftartímabils 2006



Niðurstöður

Hópur 2400

Þetta herbergi kom í ljós 2005. Það reyndist mun stærra en herbergi [1761] sem hafði verið byggt eftir að notkun herbergis [2400] var hætt. Alls komu í ljós fjögur notkunarskeið á þessu nýja herbergi en því miður gafst ekki tími til að rannsaka þetta rými að fullu.

Herbergið kom í ljós eftir að allt að fimmtíu hrun- og foklög voru fjarlægð árið 2005. Lítið var um eiginleg gólfög, en steinlagnir í gólfum voru nokkrar: [2485] sem tilheyrði öðru notkunarskeiði herbergisins [2317] og [2373] sem er frá fyrsta notkunarskeiðinu. Greinilegt er að herbergi [2400] hefur verið grafið niður í eldri mannvistarleifar. Þá kom í ljós að með tímanum hafði herbergið verið bæði stytgt og mjökkað, eða sá hluti þess sem er sýnilegur, en vænta má að mikill hluti herbergisins nái út fyrir uppgraftermörk til norðurs.



Mynd 2: Herbergi [2392], horft til austurs

Hópur 2392

Í ár var haldið áfram þar sem frá var horfið árið 2005 við herbergi [2392].¹

Á þessu notkunarskeiði hafði verið grafinn skurður [2455] í eldri torfvegg með lageiningunum [2453] og [2461], sem tilheyra veggjahópnum [2399] til suðurs en í upphlaðin mannvistarlög til austurs og vesturs.

Þetta notkunarskeið, sem er annað í röðinni sem rannsakað er í þessu herbergi, virðist ekki hafa verið langt, í það minnsta voru ekki í því nein eiginleg gólfög eða önnur lög sem safnast hefðu þar fyrir. Hinsvegar var dálítið um járngrípi, svo sem nagla, og einnig gjall.

¹ Lilja B. Pálsdóttir og Roberts, H.M.: *Excavation at Gásir 2005. An Interim Report/Framvinduskýrsla*. Fornleifastofnun Íslands, FS312-01078. Bls. 13. Reykjavík 2006.

Skurður [2527] fyrir þriðja notkunarkeiðið, sem kom í ljós í þessu herbergi, hefur skorið eldri mannvistarlög til suðurs, vesturs og austurs. Þannig myndar þetta notkunarkeið torfblokk sem markaði suðausturenda herbergisins en hún hafði verið skorin af [2527]. Einnig tilheyrir hópnum torf [2498], sem hefur verið lagt upp að skurðinum [2527], og steinlög í gólfi [2485].



Mynd 3: Elsta notkunarkeiðið í herbergi [2400] sem var það fjórða í röðinni. Horft til norðurs.

Fjórða notkunarkeiðið, og jafnframt það elsta, kom í ljós en ekkert var fjarlægt sem tilheyrði því nema efsti hluti af vegg [2533] sem hafði verið skorinn af [2527] þegar herbergið var endurgert. Mikið af járn var að finna á yfirborði og kom í ljós við hreinsun. Þessir gripir voru teknir og fengu sitt fundanúmer hver auk þess sem álplata með fundanúmeri og rannsóknarári var sett á staðinn sem gripurinn var fundinn á. Þá komu í ljós timburleifar sem virtust ganga inn í eða undir torfvegg á suðurhlið herbergisins. Stórt eldstæði kom í ljós með mikilli móösku og er jarðvegurinn sviðinn í kring. Einnig virðist sem náttúrulegur leir hafi verið settur undir eldstæðið því að í hann sést sumsstaðar undir móöskunni. Þetta notkunarkeið herbergisins reyndist mun eldra í jarðlagaskipaninni en það svæði sem verið var að vinna á og því var látið staðar numið hér.

Hópur 2401

Síðasta sumar var á þessu svæði mikill jarðlagabálkur [2401] sem hefur myndast við síendurtekna notkun á svæðinu. Bálkurinn var skorinn á þrjár hliðar sem sneru að opnu svæði til austurs og jarðhýsum bæði til norðurs og suðurs. Ljóst varð að um gríðarlega flókið og margendurnýtt svæði var að ræða. Stærð þessara rýma var mismunandi og voru þau mikið skorin, bæði hvert af öðru en einnig af gryfjum sennilega bæði til eldunar og geymslu auk stoðarhola.

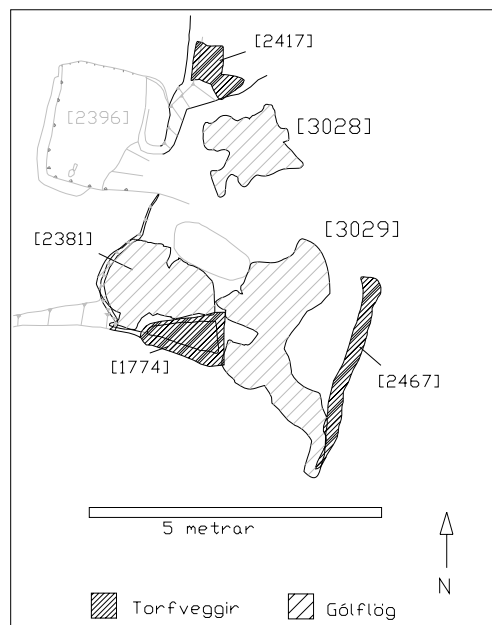
Árið 2005 voru rannsökuð a.m.k. tvö herbergi á þessu svæði og við lok uppgráftartímabils voru eftir þónokkur gólfög sem biðu næsta árs (2006). Nú voru þessi gólfög rannsökuð auk margra annarra en í heild virðast hafa verið tvö notkunarskeið á bálknum sjálfum og er líklegt að þau séu tengd hóp [2140] sem rannsakaður var 2005².

Hópur 3029

Þetta notkunarskeið er sennilega samtíða hópi [3028]. Það samanstendur af torfvegg [2467] og gólfögum fyrir vestan vegginn en þau eru líklega hluti af gólfögum sem komu í ljós árið 2005. Torfveggurinn hafði verið endurhlaðinn síðar því að fyrir 2006 höfðu þegar verið fjarlægðar um ellefu lageiningar sem tilheyrðu veggnum og voru þar á meðal nokkrar endurbætur.

Hópur 3028

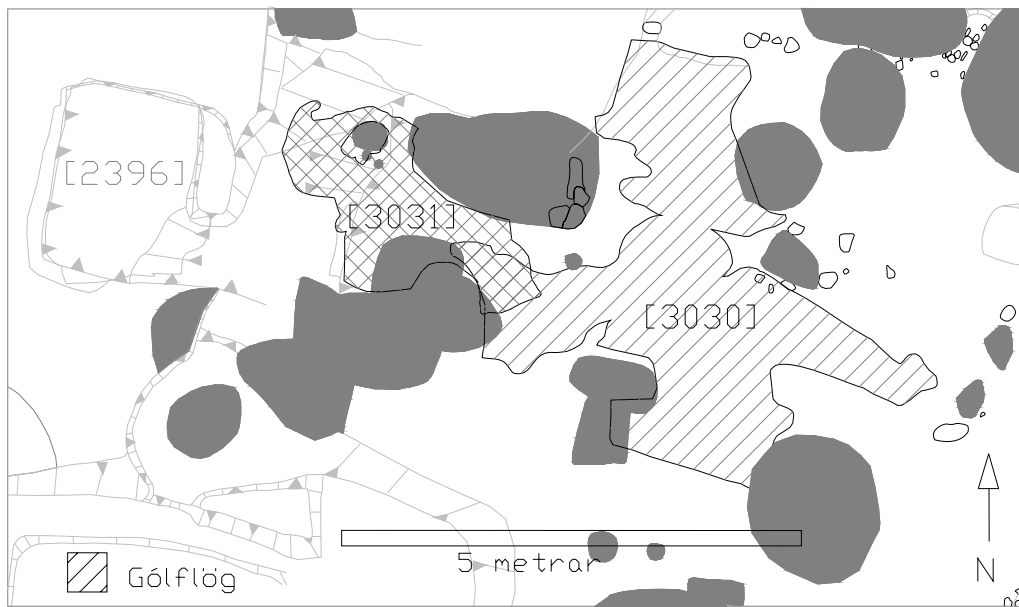
Þennan hóp mynda gólfög og torfveggur [2318] sem fyrst var kannaður 2005. Skeiðið hefst með því að torfveggur [2417] er byggður. Efri hluti hans var fjarlægður í þrennu lagi [2318, 2329, 2341] árið 2005³. Í ár voru fjarlægð tvö gólfög sem tilheyra þessu skeiði: [2415] og [2422].



Mynd 4: Notkunarlög [3029 og 3028]

² Lilja B. Pálsdóttir og Roberts, H.M.: *Excavation at Gásir 2005. An Interim Report/Framvinduskýrsla*. Fornleifastofnun Íslands, FS312-01078. Bls. 14. Reykjavík 2006.

³ Lilja B. Pálsdóttir og Roberts, H.M.: *Excavation at Gásir 2005. An Interim Report/Framvinduskýrsla*. Fornleifastofnun Íslands, FS312-01078. Bls. 20. Reykjavík 2006.



Mynd 5: Hópar [3030] og [3031].

Hópur 3030

Þetta notkunar skeið er sennilega samtíða hópi [3031] sem liggur vestar. Nánari staðsetningu hópanna og afstöðu hvors til annars má sjá á mynd 5.

Hópur 3031

Þessi hópur er fyrir norðan bálkinn og á þessu svæði voru gríðarmörg gólflog fjarlægð 2005. Hópurinn samanstendur af stóru eldstæði [2432] auk gólfлага.



Mynd 6: Eldstæði [2432], horft til suðurs.

Hópur 3032

Þessi hópur myndar eitt notkunar skeið sem er samtíða hópi [3033]. Hópnum tilheyra sex gólflog og eitt eldstæði [2486]. Í eldstæðinu, sem virðist einungis hafa verið notað einu sinni, var að finna brennd bein og hitasprungna steina. Þetta notkunar skeið er samtíða gólflogum í hópi [3033] sem er enn stærri og liggur austan megin við bálkinn. Notkunar skeið [3032] er að öllum líkindum tengt eldra notkunar skeiði með eldstæði [2140] sem var fjarlægð í fyrra⁴.

⁴ Lilja B. Pálsdóttir og Roberts, H.M.: *Excavation at Gásir 2005. An Interim Report/Framvinduskýrsla*. Fornleifastofnun Íslands, FS312-01078. Bls. 14. Reykjavík 2006.



Mynd 7: Notkunarhópar [3032, 3033, 3034 og 3035]

Hópur 3033

Í þessum hóp var einnig eitt eldstæði [2518]. Þó var hópurinn einn sá víðfeðmasti og með einna flestar jarðlagaeiningar. Fyllingin í þessu eina eldstæði var ekki nema um þrír sentimetrar að þykkt.

Hópur 3034

Þetta notkunarsteið er samtíða [3032 og 3033]. Ein stoðarhola tilheyrði þessum hóp: [2574].

Hópur 3035

Þetta notkunarsteið samanstendur af mörgum gólfögum en einnig stoðarholu [3015] og eldstæði [2610]. Skurðurinn fyrir því er fremur rúnnaður í botni, um tíu sentimetrar djúpur en sjötíu sentimetrar langur frá vestri til austurs. Suðvesturhluti hans hefur verið skorinn af fyrir [1133]. Eldstæðið sjálft var aðallega myndað úr móösku og leifum sem gætu verið af taði. Einnig var þónokkuð af viðarkolaleifum. Þetta var elsta notkunarsteiðið sem var rannsakað á þessu svæði.



Mynd 8: Eldstæðið, horft til suðvesturs.

Hópur [2466]

Stór gryfja [2465] sem er ferhyrind og mjög djúp eða sjötíu sentimetrar. Lengd hennar er einn metri og tuttugu sentimetrar en breidd áttatíu sentimetrar. Fyllingin [2464] var blönduð, með linsum af torfhruni sem í var m.a. sandur og óhreyfður jarðvegur. Gryfjan hefur varið grafin í gegnum forsögulegan leir. Hún hefur einnig skorið eldra jarðhýsi [2439] en þetta jarðhýsi hefur verið skert bæði til austurs og suðurs.



Hópur [2431]

Gryfja [2430] sem liggur suður af skurði [2465]. Fyllingin [2429] var blönduð, leirkennd með einstaka sand- linsum og torfi.

Í suðurbrún gryfjunnar voru dældir sem hugsanlega eru eftir pinna grannar stoðir.

Mynd 9: Gryfja [2466] og [2431] lengst til hægri.

Hópur 3018

Þennan hóp skipar gryfja [2823] og fylling hennar [2819] en síðar hefur gryfjan verið skorin af annarri gryfju [3017]. Gryfjan [2823] var um þrjátíu sentimetrar að dýpt og um tveir metrar og tuttugu sentimetrar langsum frá vestri til austurs. Fremur flatur botn, en hækkar til vesturs. Einungis ein fylling virðist augljós, en hún samanstóð af sendnum jarðvegi, einstaka móösku- og viðarkolaflísun.



Mynd 10: Gryfja [3018] og [3017] horft til norðurs.

Hópur 3017

Þessi hópur samanstendur af gryfju [2782] og fyllingum hennar [[2789, 2794, 2806, 2811]. Gryfjan hafði skorið eldri gryfju [3018]. Bæði gryfjan og fyllingarnar voru ógreinilegar á yfirborði.

Hópar 3020, 3021 og 3022

Þetta eru gryfja, holur eftir grannar stoðir og fyllingar sem þeim tengjast.

[3020]: Gryfja [2892] og fyllingar hennar. Hún er ferhyrnd með lóðréttar hliðar og flatan botn og í henni var tvenns konar fylling: Í botni var grófur sandur [2891] og þar ofan á móaska [2887] sem fyllti upp gryfjuna. Sandurinn fyllti einnig stoðarholu **[3021]** en skurðurinn fyrir henni [2897] var í suðausturhorni gryfjunnar. Stoðarholan var tíu sentimetrar í þvermál en tólf sentimetrar á dýpt. **[3022]:** Þá hefur einnig verið skorið í eldri stoðarholu [2896] til suðurs þegar gryfjan var gerð. Fylling [2895] í holunni var sendinn torfblendingur með gjóskuflekkjum. Hún var sex sentimetrar í þvermál en sextán sentimetrar á dýpt. Í botni gryfjunnar sést á ská í horni skurður sem hugsanlega er fyrir eldra jarðhýsi norðan megin við gryfjuna.



Mynd 11: Gryfja [3020] og stoðarholur.

Hópur 3023

Gryfja [2460] sem liggur frá norðri til suðurs. Hún hefur brattar hliðar og fremur flatan botn. Tvær fyllingar voru í gryfjunni [2458] og [2459]. Efri fyllingin [2458] var sendin með einstaka torflefum og steinvölum. Sú neðri [2459] var einnig sendin með þónokkrum viðarkolaleifum, lítilsháttar viðarleifum og brenndum beinum. Gryfjan hefur verið skorin á tvær hliðar tvo vegu af öðrum gryfjum: [1133] til norðausturs og [2145] til suðvesturs.

Hópur 2603

Þetta er stór gryfja [2602] og hún hefur skorið aðrar minni gryfjur og stoðarholur. Óvíst er hvert hlutverk gryfjunnar hefur verið en hún tengist tveimur stoðarholum og einni gryfju. Fyllingin í henni var mikið blönduð en varð sendnari og blautari þegar nær dró botni. Ekkert var í fyllingunni sem varpað gat ljósi á notkun gryfjunnar.

Í botni gryfjunnar kom í ljós steinaröð sem er sennilega hluti af eldra eldstæði. Steinarnir ganga inn í hliðar gryfjunnar að sunnan, en eins og sjá má á mynd 12 er heilmikil mó- og viðaraska innan steinaraðarinnar.



Mynd 12: Gryfja [2602]. Horft til suðurs.

Hópur [2560]

Gryfja/stoðarhola [2559] sem var fimmtíu og þrír sentimetrar á lengd en þrjátíu sentimetrar á breidd og fjörutíu og átta á dýpt. Botninn er ávalur. Í gryfjunni/stoðarholunni var fylling [2558] úr sendnum torfblendingi og torfhruni. Auk þess voru smásteinar um þrjátíu prósent fyllingarinnar.



Myndir 13 og 14: Fyrir ofan: Gryfja [2602] horft til norðurs. Sést í [2560] við norðurbrún gryfjunnar. Til hægri: Sama horft til austurs.

Hópar [2954, 2957 og 2960]

Þetta eru stoðarholur sem liggja saman og fyllingar í þeim. [2953, 2959, 2956]

Holurnar eru misdjúpar, [2953] var fimmtán sentímetra djúp, [2959] var 10-15 sentímetrar og [2956] var átta sentímetrar að dýpt.

Hópur 3036

Í þessari gryfju [2671] var þrenns konar fylling, og mikið af viðakolum í öllum lögunum [2669, 2670 og 2674]. Fylling [2669] var mjög sendin með einstaka móðskulinsum og beinum. [2670] var hinsvegar móaska með einstaka viðarkolaflekkjum. Í [2674] mátti finna lífræna köggla sem ef til vill eru tað. Nokkrir steinar voru í gryfjunni, sá stærsti fyrir miðju gryfjunnar en minni í hliðum. Gryfjan hafði lóðréttar hliðar og var með flötum botni



Mynd 15: Gryfja [3036]. Á innfelldu myndinni má sjá móðskufyllingu [2670].

Hópur 2397

Áfram var haldið að rannsaka þetta jarðhýsi sem byrjað hafði verið á 2005 en í ljós komu gríðarmörg góflög. Grafið hefur verið fyrir jarðhýsinu niður í óhreyfð jarðlög. Inngangur í það hefur verið frá suðri. Einnig virðist hafa komið skeið þar sem jarðhýsið var úr notkun í



einhvern tíma en eins og sjá má á mynd 16 voru góflögin mörg.

Á einu gólfinu var að finna leifar af tunnubotni, en einungis þunnt skæni reyndist vera eftir af viðnum.

Mynd 16: Snið sem sýnir gólf- og foklög.

Hópur 2396

Þetta herbergi kom í ljós 2005. Nokkur notkunarskeið hafa verið í því og á þessu ári var haldið áfram með góflög sem komið var niður á við lok uppgraftartímabils 2005. Nú komu í ljós allt að eitt til tvö notkunarskeið enn með góflögum og eldstæðum. Eins og sjá má á mynd 17 voru í móöskunni lífrænir kögglar sem hugsanlega eru hrossatað. Því er hugsanlegt að herbergið hafi verið notað til að reykja matvæli.



Mynd 17: Eldstæði með taðkögglum í [2396] horft til norðurs.

Samantekt

Þetta uppgraftartímabil leiddi í ljós mikil umsvif á búðasvæðinu. Gryfjur voru áberandi og voru þær misjafnar að lögun og dýpt. Margar voru sívalar og með nokkuð beinum hliðum en aðrar voru ferkantaðri með skörpum brúnum þar sem saman komu hliðar og yfirborð og þar sem hliðar mættu botni. Sumar virðast hafa verið notaðar til að geyma einhvers konar varning eða ílát en aðrar hafa verið eldunargryfjur. Engin sérstök fylling var í gryfjunum nema hvað eldunargryfjurnar voru ýmist fylltar móösku eða blöndu úr viðarkolum, móösku og jarðvegi. Því er erfitt að segja með vissu hvaða hlutverki flestar gryfjurnar hafa gegnt.

Þau herbergi sem lokið var við í ár virðast hafa haft ólík hlutverk. Í herbergi [2396], sem byrjað var að rannsaka 2005, voru mörg eldstæði í nokkrum notkunarskeiðum og hefur mikil móaska safnast fyrir í herberginu. Hugsanlegt er að það hafi verið notað til að reykja kjöt eða fisk því að bæði er það lítið að ummáli og eins eru engin merki um járnvinnslu eða annars konar smíðar sem gætu útheimt svo mikinn mó. Að auki fundust sviðnir kögglar í móösku í herberginu sem gætu verið hrossatað og gæti það einnig bent til reykingar.

Þá var herbergi [2400], sem einnig var byrjað að rannsaka 2005, mjög frábrugðið að stærð auk þess sem það snýr ekki út að opnu svæði eins og [2396]. Inngangur í þetta herbergi hefur ekki komið í ljós á þeim hluta þess sem er innan uppgraftarmarka, en herbergið er upp við uppgraftarmörkin til norðurs. Þetta herbergi hefur verið notað í allnokkur skipti því að margar endur- og viðbætur komu í ljós árið 2005 og þetta sumar bættust við tvær endurgerðir þegar skorið hefur verið tvívegis fyrir herberginu. Ekki voru miklar vísbendingar um hlutverk herbergisins. Steinlagninar gætu bent til geymslu- eða söluaðstöðu þar sem varningi hefur verið haldið frá röku gólfi með steinlögn. Syðst á rannsóknarsvæðinu, alveg við uppgraftarmörk, voru jarðhýsi sem höfðu enn önnur einkenni. Hér sem annarsstaðar á svæðinu var að finna nokkur notkunarskeið. Að minnsta kosti tvö jarðhýsi hafa verið á þessum stað en margar gryfjur hlið við hlið fundust í þeim báðum og voru þær í röð með vestur- og suðurhlið herbergjanna. Einungis annað jarðhýsið var rannsakað í heild þar sem eldri gerð þess náði út fyrir uppgraftarmörkin til suðurs. Gryfjurnar voru flestar alldjúpar og nú nær botn þeirra niður að grunnvatnsyfirborði og vatn safnast því fyrir í þeim. Alls er óvíst að svo hafi verið þegar herbergin voru í notkun. En sjávarstaða hefur breyst og því ekki ólíklegt að neðri hluti mannvistarleifanna komist í snertingu við bæði grunnvatn

og sjó. Ekki reyndist unnt að rannsaka að neinu ráði svæðið sem var opnað til vesturs árið 2005 þar sem það reyndist mun eldra í jarðlagaskipaninni en þau herbergi sem unnið var í austar á svæðinu. Á norðvestursvæðinu reyndist gjóska frá Heklugosi um 1300 vera óhreyfð á yfirborði, en hana var hins vegar að finna víðsvegar í veggjatorfi og eins sást hún í hreyfðum jarðlögum. Þónokkrar breytingar urðu á gangveginum sem er nokkurn veginn fyrir miðju uppgrftarins. Lítið var unnið á honum á síðasta ári en nú kom í ljós að því er virðist skýr gangvegur eftir hryggnum endilöngum frá norðri til suðurs. Þá virðist vera gangleið niður á aðalsvæðið til vesturs. Þá leit út fyrir við lok uppgrftar að önnur gangleið niður af aðalhryggnum til vesturs væri að koma í ljós sunnar á honum.

Þrátt fyrir að á nokkrum stöðum mætti sjá í náttúrulegan jarðveg, er langt því frá að komið hafi verið niður úr mannvist á þessum svæðum heldur hefur víða verið grafið niður í óhreyfðan jarðveg og hann því sýnilegur þegar neðar kemur í herbergjunum.

Þá var skoðaður aftur könnunarskurður frá 1986 sem Margrét Hermanns-Auðardóttir gróf. Niðurstöðurnar urðu þær sömu og 1986, í skurðinum sést í byggingu, en óljóst er um aldur hennar eða hlutverk.



Mynd 18: Könnunarskurður. Horft til Suðausturs.

Finds summary

Guðrún Alda Gísladóttir

1529 finds numbers are currently registered in the excavation database from 2001-2006. This database is still under revision and development, and all values given below should be treated as preliminary, and subject to change. 775 numbers represent artefacts, the rest being large quantities of food waste (animal bones, shell), pieces of sulphur, and industrial residues (metalworking slag, clinker etc).

The preliminary analysis demonstrates that excavation at Gásir between 2001 and 2006 has made an interesting and important contribution to the corpus of material culture in Iceland. The excavated material is held to date chiefly to the C14th. Very few sites from this period have been investigated, and none at this scale. Trade sites at Kolkuós, Gautavík and Maríuhöfn have seen some archaeological investigation, although the remains at Gautavík are somewhat younger, those at Kolkuós seemingly older, and very little diagnostic material was recovered from Maríuhöfn.

The finds assemblage sheds important new light upon the material culture of a trading site in Iceland in this time period. The material categories are diverse, reflecting the rare preservation of several classes of organic material. Conversely, although metals are a large part of assemblage, their preservation is generally poor. This reflects local conditions, and the high salt content of deposits at a coastal location. Many of the metal artefacts are heavily corroded, and all have been submitted for conservation.

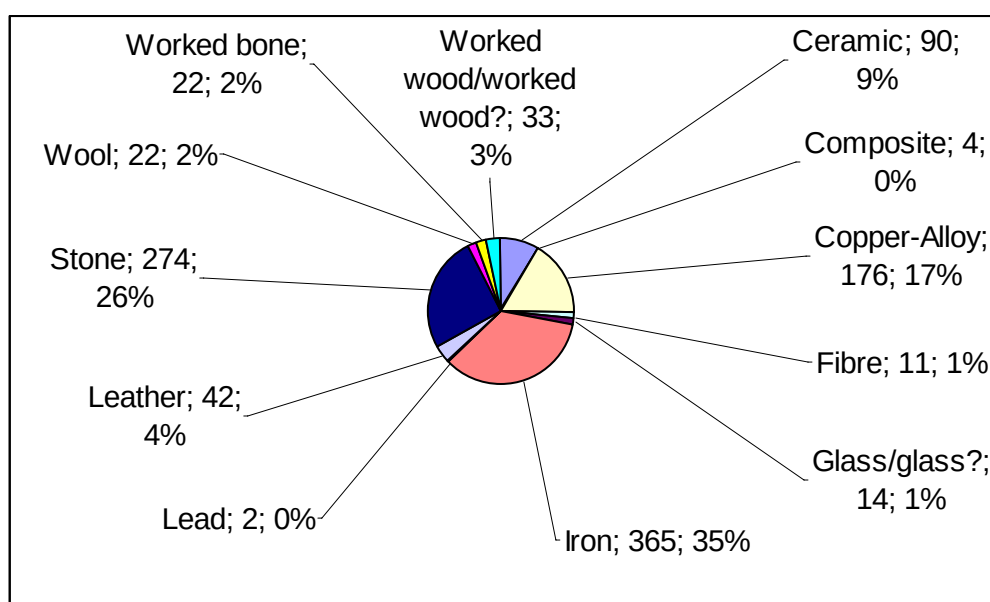


Fig. 1. Preliminary division of material classes from the Gásir excavation finds database 2001-2006. Does not include un-worked animal bones/shell, sulphur, or industrial residues.

Figure 1 (above) shows that the largest material groups are iron, stone and copper alloy. The iron finds are of various types, including nails, structural fittings, tools and knives but many iron artefacts awaits analysis after x-ray and conservation, due to corrosion. The copper-alloys objects are mainly sheets, buttons, small rivets and nails but a large part of this group also awaits further work following conservation. The stone artefacts are of both local and foreign origin. Most of the imported stones are believed to be of Norwegian origin, being schistose whetstones and baking plates. The baking plates are an especially interesting finds group - approximately 110 baking plates have been found in Iceland and of those 58 fragments are from Gásir. The pottery assemblage is exceptionally rich for this period in Iceland, and adds lots of information to this finds group in Icelandic context. Most of the ceramics are German stoneware or English green glazed pottery, dated to 13th-14th (possibly early 15th). The pottery is from many sorts of vessel, including jugs and crucibles. There are also a small number of exceptionally rare early pieces of majolica, likely to be from the Netherlands.

Some artefacts are thought to be more representative for trading sites than others. Interestingly, only two weights have been found at Gásir, one in 2004 and another one

during test excavations at Gásir in 1986.⁵ One possible coin has been found, but awaits further analysis.

Short summary of finds 2006

In the excavation database from season of 2006 at Gásir are recorded 182 finds units (see finds register). All finds were cleaned, dried, repacked and registered in the excavation database. Conservation work is carried out by the National Museum.

Majority of the finds are of metal, chiefly iron. The largest finds category is nails but present are i.e. also staple, possible belt buckle, a U-shaped hinge and two knives with remains of wood handle find no. 116 and 23. The preservation of iron at the site is very poor due to the salty conditions but those two knives are remarkably well preserved. The copper alloy finds are of diverse types, folded sheets, sheeting, lumps of melted copper, fastenings and small fragments. Interesting is pendant no. 06-011, with broken loop. It is heavy, 11,2 g and is probably a weight. 900 g of slag was retrieved, half the amount from last year.

The next largest material is stone: The stone finds are both of local and foreign origins. Local stones are manuport pebbles of quartz, flints for strike a light (one quite large possibly a raw material, no. 06-161), and manuport volcanic pumice. Of imported material are schistose baking plates and schist whetstone of Norwegian origins.

As previous years interesting collection of ceramics was retrieved from many sorts of vessel, including jugs mostly of German origin.

The assemblage as whole from 2001-2006 sheds light upon the site and its function. It indicates what was brought to a seasonal trading site like Gásir. The material remains give important evidence of export, import, and consumption, of international and local trade connections. The assemblage will be further examined in its social, economical and cultural context, used for dating evidence, and compared to other trading sites.

⁵ Steuer, Heiko. "Appendix 6. Das Gewicht aus Gásir.", 48.



Stoneware jug. Joined fragments
GAS06-56, -31, -67



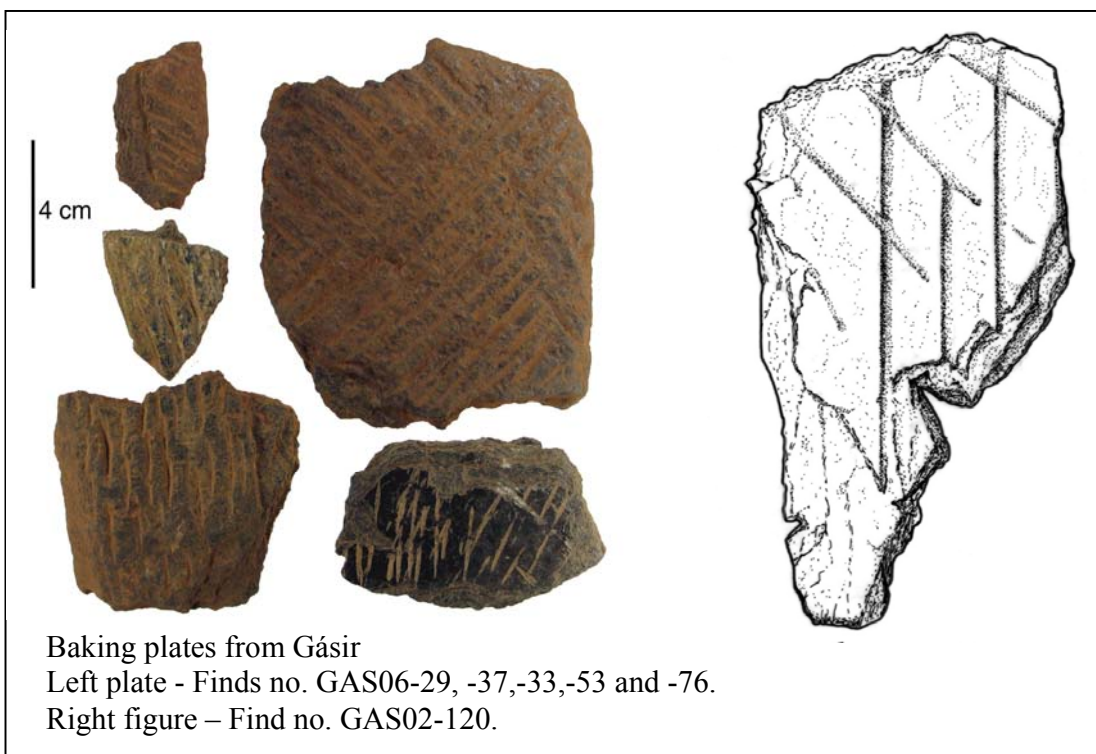
Siegburg stoneware. Joined
fragments GAS02-1 and 4

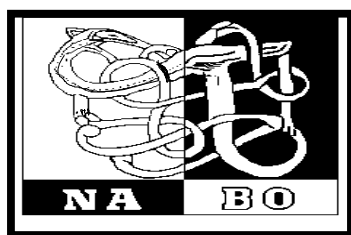


Miniature vessel from South
Scandinavia, Northern Germany or
Netherlands. This find is unique in
Iceland. GAS05-2.



Pear shaped weight with small head
GAS04-13. Two sides of the belly are
flattened and have scored markings or
decoration .





**The medieval trading station at Gásir, Eyjafjörður, N Iceland:
Interim Report of faunal analysis from the 2006 Excavations**

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Archaeological excavations at the site of Gásir near the modern city of Akureyri were started in 2001 and directed by Howell Roberts of *Fornleifastofnun Íslands* (Archaeological Institute Iceland, FSÍ) for *Minjasafnið á Akureyri* (Akureyri Museum). The project, whose excavation phase was concluded in the summer of 2006, has produced a substantial amount of animal bones, which have been continuously analyzed at the CUNY Northern Science & Education Center laboratories as part of the North Atlantic Biocultural Organization cooperative effort, with funding provided by the UK Leverhulme Trust. Analysis of the 2006 zooarchaeological remains was carried out by Ramona Harrison. The Gásir excavations were part of a larger scale, long term project which aims to investigate the remains of the high medieval trading center at Gásir, and to place the site in a regional and historical context. Analysis of the Gásir assemblage is to be continued and this report is thus only a working paper to be updated and replaced as more data is extracted from the faunal materials. The 2006 archaeofauna, albeit smaller in number, continues some of the patterns in mammal bone distribution observed in previous years, and adds some interesting new ones that will be addressed in this report. For more thorough detail on the collections analyzed in the previous years (2002-2005), it is helpful to refer to the earlier NORSEC Zooarchaeology reports and FSÍ excavation reports (see references). Radiocarbon dates and associated Carbon and Nitrogen isotopic assays carried out on mammal bone and marine shell by Dr. Gordon Cook (Scottish Universities Reactor Center) provide both chronology and some indication of differential grazing patterns in stock brought to Gásir. Although this work was presented in 2005 also, the isotopic data was found to have good demonstrative value in placing the site within an occupational timeframe from the 13th through the 15th Centuries, which roughly reflects temporal references extracted from artefacts and documented sources.

Zooarchaeological data from the years 2002 through 2006 have been used for this report, offering a total NISP (Number of Identified Species) of **8,655** out of a TNF (Total Number of Fragments) of **17,633**. A potential indicator for preservation related bone

analysis and trampled or repeatedly accessed site areas could come from the 2006 bone material. In 2006 only 171 (NISP) out of a TNF of 1341 could be grouped to species or family levels. Since there was proportionally high amount of UNIMs (Unitidentified Mammal species), this taphonomic indicator will be discussed further.

The species present include domestic cattle, sheep, goat, horse, and pig as well as **dog**, seal, whale, bird and fish remains. The 2003 collection contained a walrus tooth (context 101), dog bones (contexts 655, 617, 684, 730, 756), and one gyrfalcon bone (context 756). The array of “unusual” bone has been increased with **2004’s gyrfalcon** femur (context 1632) and a very small and extremely curved tibia (1551) most likely belonging to a dog of **lap dog size**. Dog gnawing is visible on bones, and the 2004 excavation added 4 more dog elements (total of 7) as further evidence for the presence of the species (additional 2004 dog elements were found in contexts 1573 and 1476). In 2005, a particularly large amount of fish remains were analyzed, and as Fig. 1 demonstrates, account for more than 70 % of the total archaeofauna. While more analysis is required and likely to increase the number of identified fish species in relationship to domesticates, the analyzed fish elements are of a large enough number to indicate a certain form of gadid management.

The 2006 collection yielded at least two additional (**2812, 2851**) very small dogs. Special attention was given to the individual from (2812) whose remains included most of the calvarium (including the upper jaw, or maxilla), the mandible (both sides, incl. most of the teeth) and further articulated elements that make up a good deal of the upper forelimbs. At the American Museum of Natural History (AMNH), these dog remains were compared to that of an arctic fox and several different races of small dogs. While the Gásir **dog remains** from context (2812) can be speciated to *Canis familiaris* vs. *Alopex lagopus* (arctic fox), it was not possible to match the individual to a specific modern dog race. It is quite clear (size reconstruction will be discussed below), however, that the dog was of lap dog size, whose purpose – beyond that of status symbol (Prilloff 2000) – was possibly to relieve its owner temporarily of his or her parasites. Although dogs have can be used for food purposes (Harcourt 1974), there is no evidence of such at Gásir.

Cattle bone is very abundant, with a caprine/cattle ratio of about 1.97 (2) caprine bone for every cattle bone (vs. ca 20 caprine per cattle bone in contemporary small rural sites). The high percentage of cattle bone is similar to very high status late medieval sites in S Iceland (Viðey and Bessastaðir being most similar), with a majority of the faunal remains butchered at an age suggesting consumption of high quality “prime age” meat. The presence of pig remains should be mentioned, since by late medieval times, Icelandic pigs are in general no longer present in the faunal assemblages. A small amount of skull remains may indicate that some pigs were brought on site alive and then butchered and consumed there. The proportion of meat-bearing bones is higher than that of the less meaty elements (Wigh 2000). These meat-elements could have traveled to Gásir in a processed state; about **90 %** of the elements have chop marks and no articulation of skeletal or butchery remains that would further indicate on-site slaughter have been found.

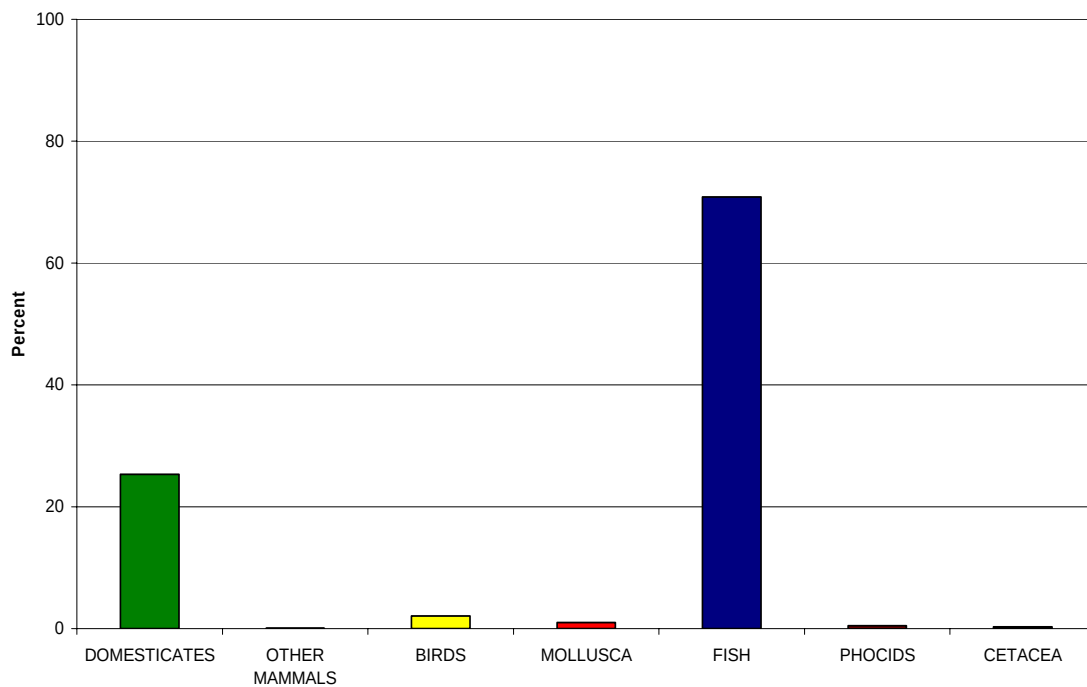
The **fish remains** analyzed in 2003 were almost completely postcranial, with hardly any thoracic vertebrae present. In 2004, the number of skull and thoracic fragments was somewhat increased, but not enough to indicate definite procurement of fresh fish at the site. The pattern of predominantly postcranial minus thoracic elements suggested that the occupants were consuming some form of preserved fish rather than whole fresh fish. In 2005, a particularly large amount of fish remains were analyzed, and as Fig. 1 demonstrates, **fish still account for more than 70 % of the total archaeofauna**. While more analysis is required and likely to increase the number of identified fish species in relationship to domesticates, the analyzed fish elements are of a large enough number to indicate a certain form of on-site gadid management. 2006 yielded a negligible amount of fish remains (22 in total), and the fish story will thus be revisited only briefly.

Salmonids, most speciated as Trout (*Salmo trutta*), were found in a number of contexts (1142, 1188, 1948) excavated in 2004 (Floatation results) and 2005.

Butchery patterns include typical late medieval Icelandic patterns, except for a puzzling shortage of characteristic bi-perforated sheep metapodials, which may indicate the presence of non-Icelandic consumers. Further research questions center on the nature of provisioning of the site, context-specific bone associations and activity areas, bone and

horn craft working, possible indicators of multiethnic foodways, and indicators of social status system. There are a total of 23 cattle corn horn cores (see picture) and many of them exhibit chop marks that indicate horn core working. (Harrison in Roberts, 2006).

**Figure 1. Gásir Major Taxa
% of NISP**



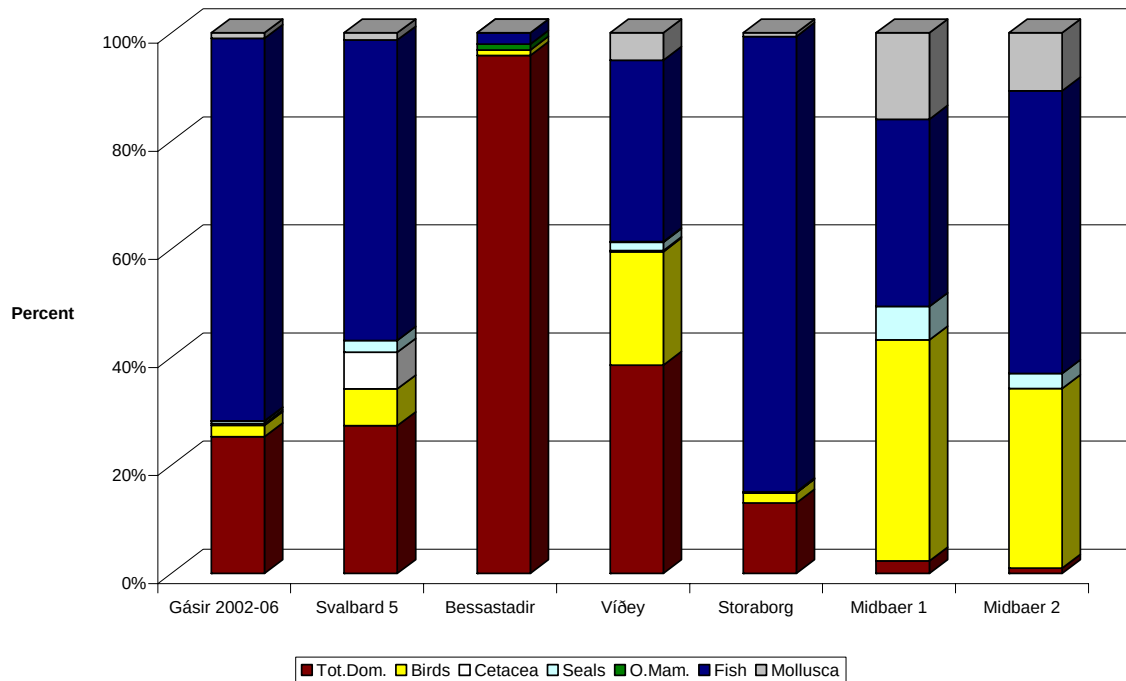
Overview of Species Present

Table 1 presents the 2002-2006 Gásir archaeofauna as a Total Count. **NISP** (number of identified specimens) refers to all fragments that could be identified to a useful level. **TNF** is a count of all bone fragments (identifiable or not), **MTM** is “medium terrestrial mammal” (sheep-dog-pig sized), **LTM** is “large terrestrial mammal” (cattle-horse sized), **UNIM** or unidentified mammal are small fragments that cannot be identified beyond this broad category. Except for in 2002 and 2005, dog bones are present in the collections; this coincides with characteristic canine tooth marks that are present on a number of bone fragments in the collection.

Table 1 Gásir 2002-2006	Aggregated Fragment Count					
Domestic Mammals	2002	2003	2004	2005	2006	total
Cattle (<i>Bos taurus dom L</i>)	255	296	66	61	42	720
Horse (<i>Equus cab. dom L.</i>)	5	5	2	1	1	14
Pig (<i>Sus scrofa dom L.</i>)	2	12	8	2	4	28
Dog (<i>Canis fam. L</i>)	present	3	4	no evid.	4	11
Goat (<i>Capra hircus dom L</i>)	2	9	1	1	3	16
Sheep (<i>Ovis aries dom L</i>)	45	166	13	14	7	245
Caprine	296	487	163	141	65	1152
total Caprine	343	662	177	156	75	1413
total Domestic	605	978	257	220	126	2186
Wild Mammals						
Harp Seal (<i>Phoca groenl.</i>)	0	4	1	0	0	5
Small seal	4	6	0	1	0	11
Seal species	5	2	8	16	3	34
total Seal	9	12	9	17	3	50
Small Cetacean	1	7	2	0	1	11
Large Cetacean	1	1	1	0	0	3
Whale species	0	8	4	1	2	15
total Whale	2	16	7	1	3	29
Arctic fox (<i>Alopex lagopus</i>)	0	4	0	1	0	5
Walrus (<i>Odobenus rosmarus</i>)	0	1	0	0	0	1
Birds						
Gyrfalcon (<i>Falco rusticolus</i>)	0	1	1	0	0	2
Mallard (<i>Anas platyr.</i>)	0	1	0	0	0	1
Eider duck (<i>Somateria moll.</i>)	0	26	3	3	1	33
Guillemot family (<i>Uria sp.</i>)	1	8	5	0	2	16
Puffin (<i>Fratercula arctica</i>)	0	2	3	0	0	5
Fulmar (<i>F. glacialis</i>)	0	0	0	0	0	0
Gull species (<i>Larus sp.</i>)	0	1	0	3	0	4
Razorbill (<i>Alca torda</i>)	0	2	1	2	0	5
Swan (<i>Cygnus olor</i>)	0	1	0	0	1	2
Bird species indeterminate	23	41	7	36	5	112
total Bird species	24	83	20	44	9	180
Fish						

Cod (<i>Gadus morhua</i>)	9	2	75	341	0	427
Haddock (<i>Melanogr. aeglefs</i>)	10	30	36	138	2	216
Pollack (<i>Pollachius virens</i>)	0	2	0	9	0	11
Atl. Halibut (<i>Hippoglossus. hipp</i>)	0	3	0	0	0	3
Gadid sp	14	8	250	792	2	1066
Trout (<i>Salmo trutta</i>)	0	0	3	16	0	19
Pleuronectiformes	0	0	0	1	0	1
Salmonid species	0	0	2	0	0	2
total Fish species identified	33	45	366	1297	4	1745
Fish species indeterminate	278	1010	804	2262	11	4365
Total Fish species	311	1055	1170	3559	15	6110
Mollusca						
Periwinkle (<i>Litt. l.</i>)	0	1	1	0	0	2
Clam (<i>Mya</i> sp.)	0	36	3	0	7	46
Moll. Species	0	0	28	9	1	38
total Moll. Species	0	37	32	9	8	86
total NISP	951	2186	1495	3852	171	8655
Large Terrestr. Mammal	188	354	108	82	38	770
Medium Terrestr. Mammal	493	592	353	282	100	1820
Small Terrestr. Mammal	0	8	4	1	6	19
Unidentified Mammal Frag.	580	185	2199	2379	1026	6369
total TNF	2212	3325	4159	6596	1341	17633

Figure 2. Medieval Icelandic Archaeofauna % of NISP



In figure 2, Gásir is compared to roughly contemporary collections from Svalbarð in the NE (SVB5, medium-high status farm with church), the elite manor at Bessastaðir (BES L) near Reykjavík, the monastery on Víðey in Reykjavík (VID LM), a middle ranking S coastal farm Storaborg (STB E) and two phases of a midden deposit associated with the small farm Miðbaer on the island of Flatey in Breidafjörð in the NW (Amundsen in press). makes uses various medieval Icelandic archaeofauna to discuss the whole faunal collection by regionally comparing wild species and domesticates. From the complete NISP collection, it seems that the middle ranking S coastal farm Storaborg (STB E) offers the most resemblance in total distribution of faunal remains recovered. The Svalbard 5 collection is also very similar to the species distribution at Gásir.

Domestic Mammals

Table 2 presents the relative Percentage of the domestic mammals for 2002-2006 contexts. There is an overall decrease in cattle bone vs. caprine bone. The total ratio emerging from five years of faunal analysis: caprine/cattle = 1.97 (1.82 in 2003) which can be reasonably rounded to a ca. 2:1 ratio of caprine to cattle. The latest sheep/goat

ratio is now 15.31 and was 18.31 the previous year. Clearly, goats were a minor portion of the collective caprine category.

Table 2 Gásir 2002 - 2006 Relative % of Domesticates						
Taxon	2002	2003	2004	2005	2006	total
<i>Bos taurus</i>	42,15	30,27	25,68	32,91	33,33	32,91
<i>Equus caballus</i>	0,83	0,51	0,78	0,63	0,79	0,64
<i>Canis familiaris</i>	0,00	0,31	1,56	0,34	3,17	0,50
<i>Sus scrofa</i>	0,33	1,23	3,11	1,17	3,17	1,28
<i>Ovis aries</i>	7,44	16,97	5,06	11,55	5,56	11,21
<i>Capra hircus</i>	0,33	0,92	0,39	0,63	2,38	0,73
<i>Ovis/Capra</i> sp.	48,93	49,80	63,42	52,77	51,59	52,70

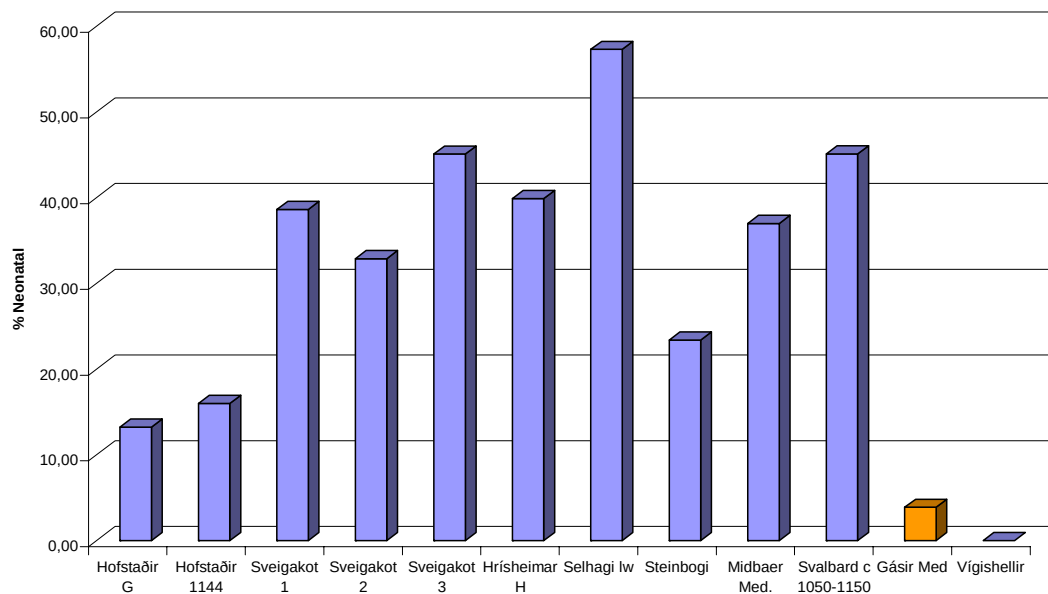
The closest matches with the Gásir domestic mammal pattern in medieval Iceland are in fact with the very high status manor of Bessastaðir in the SW, and the middle ranking S coastal farm Storaborg (STB E) (see Harrison 2006).

Reconstructing Domesticated Mortality Patterns

Cattle

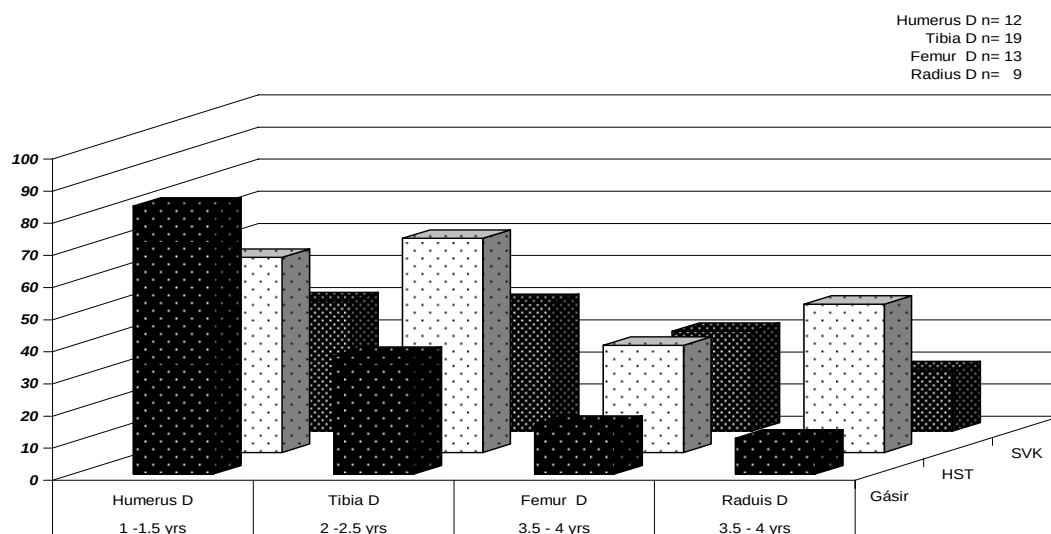
Figure 3 illustrates the relative percentage of neonatal (newborn) calf bones in a range of Viking-Medieval Icelandic sites, illustrating the normal range of variation from ca 15-50% of the total cattle bone count. This is generally interpreted as evidence of dairy herd management, with most milk being reserved for humans (Halstead 1998). The very low percentage of neonatal cattle bones at Gásir (indicated in gold) is thus very uncharacteristic of most Icelandic cattle collections, suggesting a different pattern of management or consumption. The 2006 archaeofauna only generated two neonatal elements which could not be grouped to species. The fusion data below may offer a better age-at-death range in this case.

Figure 3 - Cattle Neonatal % comparison



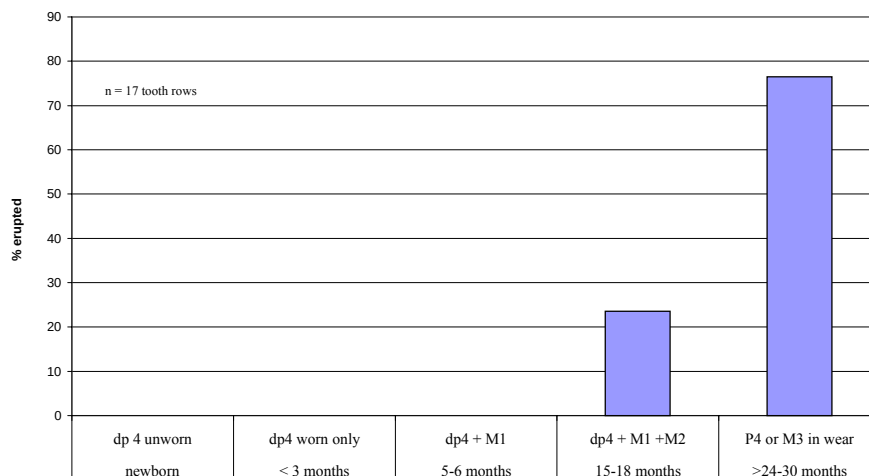
The cattle long bone fusion proportions (figure 4) indicates that at late medieval Gásir, most of the young cattle survived the stage of distal epiphysis fusion of the humerus, which occurs at around 1-1.5 years of age. There would appear to be considerable cattle mortality between 1-1.5 years and 2.5-3 yrs at Gásir, again suggesting kill off of large but not fully mature juvenile cattle as well as the presence of adults (note the different fall-off of survivorship at Hofstaðir and Sveigakot).

Figure 4. Cattle long-bone fusion comparison (%)



The Gásir excavation has produced a total of 17 cattle tooth rows that offer some insight into the site's food provisioning strategy. As can be seen in Figure 5, in the majority of the excavated cattle tooth remains, the animals' death occurred either in the second year of life or as an adult. The shortage of jaws of usually common newborn or less than 3 month old calves is notable, and supports the impression provided by the overall low percentage of neonatal or very young juvenile cattle bones. If these old juvenile or young adult cattle are males, they have been raised at considerable expense in fodder (esp. winter feeding). If they are females, they also have lived long enough to consume much fodder, but are only beginning their potential service as dairy cattle. In either case, in the context of a dairy herd, these are very expensive animals to raise and slaughter at this stage in their lives.

Fig 5. Gásir Cattle Tooth eruption (%)

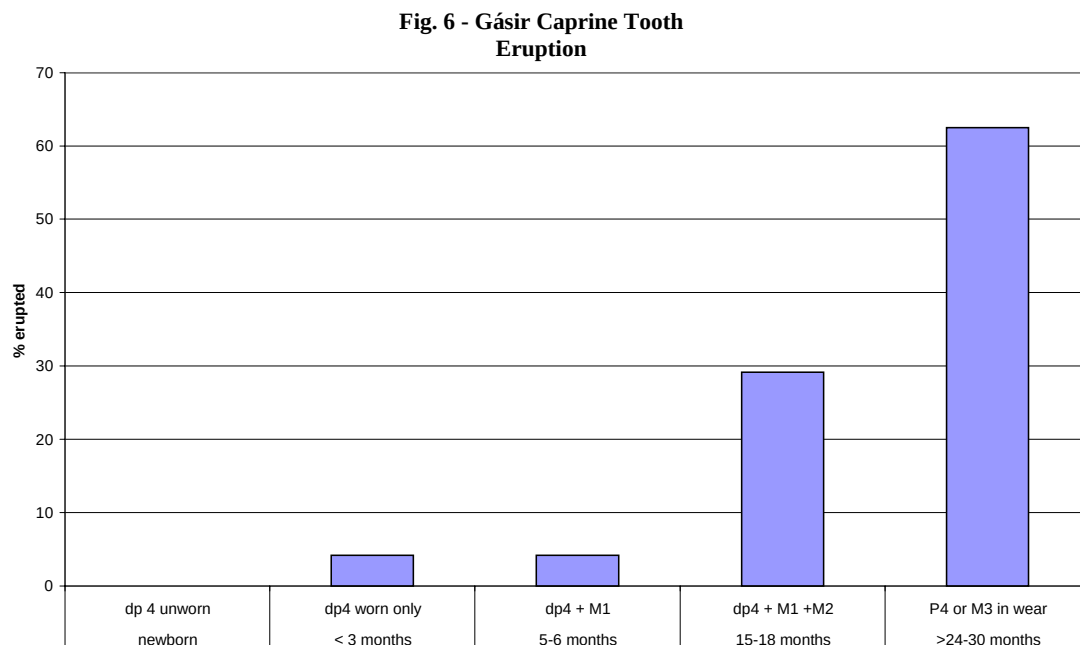


These mortality patterns indicate not only that Gásir was not itself a dairy farm, but that it was not being provisioned with the most readily available surplus age classes generated by a normal Icelandic dairying economy: very young calves and elderly worn out milk cows. The Gásir cattle bone collection indicates that the site was instead provisioned with high quality young adult cattle meat by nearby farms. Since the farms were not sending their cast-offs to Gásir, but instead made major adjustments to their cattle herding strategy necessary to raise surplus animals to adult or near adult meat weight, it seems

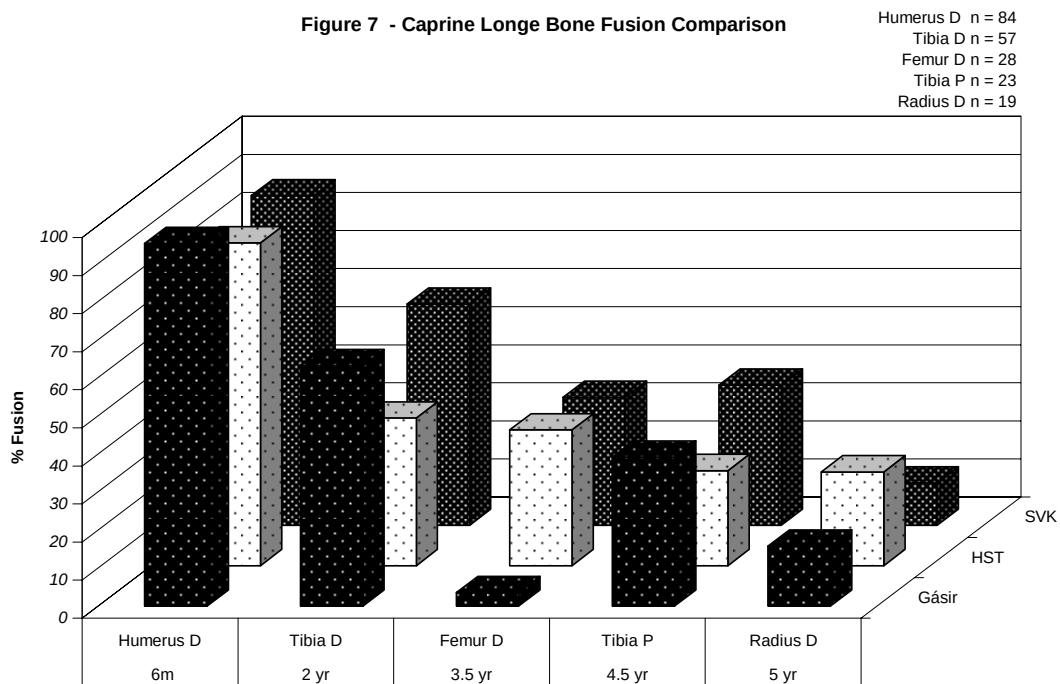
likely that the market at Gásir had a significant impact on agricultural practice in the surrounding district. The nature of this impact and the linkage of Gásir with its sustaining rural hinterland are potential research questions for wider investigation.

Caprines

Figure 6 shows the pattern of tooth eruption in the caprine tooth rows (mandible and maxilla) from the Gásir excavation. Almost 60 % of the caprines were killed at an age of > 34 months, with full adult dentition in wear. Wear rates on caprine third molars suggest that few of these adult sheep were in fact old adults. The current tooth eruption and wear data for the Gásir caprines suggests provisioning with animals ranging from older adolescents to younger adults. Mandibular wear patterns thus far indicate the presence of substantial numbers of young to middle aged adults, without the higher proportion of highly worn teeth characteristic of old ewes or wethers (probably maintained primarily for wool production) characteristic of most larger Icelandic sheep mandible collections. Further analysis of caprine tooth eruption and wear will be carried out as sample size increases. Currently, there are 24 maxillae/mandibles available for study.



The caprine (sheep/goat) long bone fusion comparison (figure 7) shows that the majority of caprines at Gásir were killed between 4.5 and 5 years of age, placing them into a fully adult stage. In comparison, caprines at HST (Hofstaðir) and SVK (Sveigakot) saw a slightly different mortality pattern, with higher culling in the first year and a generally higher proportion of older adults. Tooth eruption and wear and long bone fusion patterns suggest that most animals died as younger adults or mature adults. Gásir was not being provisioned with worn out milking ewes or tough old wethers, but with sheep in their prime. Again, the implications for animal production strategies in nearby farms suggest some sort of specialized production.



Pigs

A considerable number of pig remains are present in the 2002-06 faunal collection. This is very atypical of late medieval Icelandic and also European (Reichstein 2000) sites. By the 14th Century, the pigs had either disappeared from the Icelandic landscape or become very rare (McGovern in Edvardsson 2006). Some of the bone fragments present could

have formed portions of smoked or salted pork shoulder or hams, but some cranial fragments suggest that live pigs (native or imported) were present at Gásir. The Leverhulme Project (?) is involved in a nitrogen isotope project and has yielded so far mostly data that may indicate the areas of origin of the animals. It is possible that some of the individuals were brought from overseas; a number of cranial (see photo 1) remains indicate that they reached the trading site alive.

**Figure 8. Gásir
High medieval Pig elements - NISP**

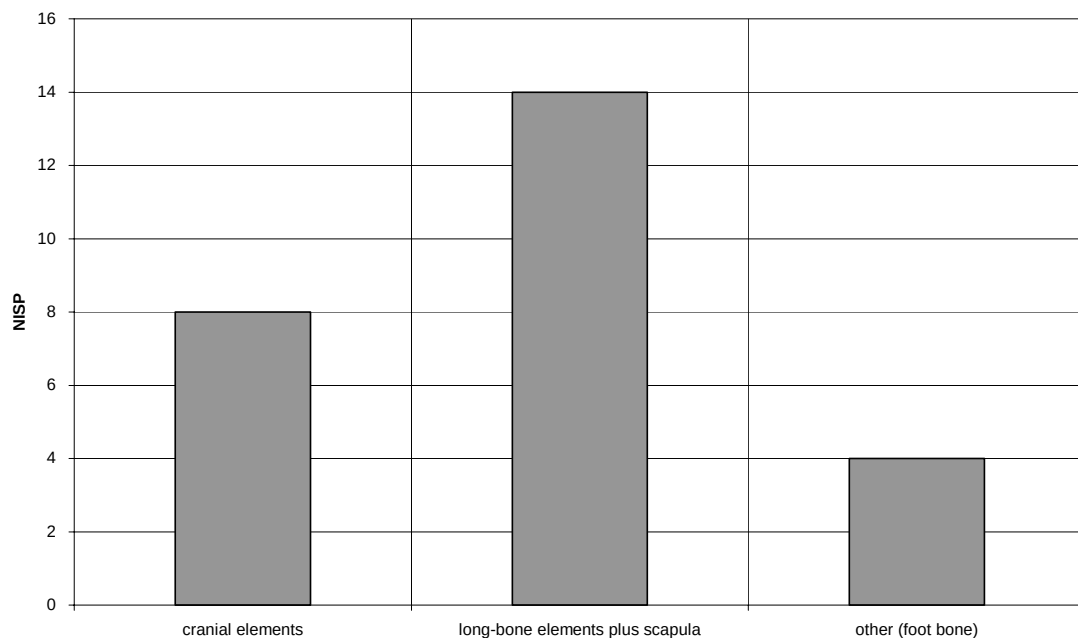


Figure 8 breaks down the meat-bearing elements (Wigh 2002) vs. cranial and other elements that are not very high in meat production. Long bones, and especially femur (75 %) and humerus (80%) elements were found to have chop marks on them. The chop marks together with the lack of articulated elements could mean that some pigs were brought to site already proportioned. There were two elements found in 2783: a chopped femur (have to side it) and the maxilla/calvarium. Potentially, this could be a butchery unit if the pig was split and the femur is also from the left side (for depiction of medieval pig butchery methods see Prilloff 2000).



Photo 1: Context 2783
***Sus scrofa*, adult – maxilla, left side, occlusal view**

Dogs

As already mentioned in the summary, there are a total of 11 dog elements present in the Gásir faunal remains.

Table 3	Estimated shoulder heights of small Gásir dogs						
Species	context	element	GL	Factor (van den Driesch 1971)	reconst. shoulder height	Measurement (Harcourt 1974)	reconst. shoulder height
<i>Canis f.</i>	1551	tibia	90 mm	2,92	26,3cm	(2,92xtl)+9,41	27,2cm
<i>Canis f.</i>	2812	humerus	98 mm	3,37	33 cm	(3,43xtl)-26,54	31cm
<i>Canis f.</i>	2851	humerus	98,55mm	3,37	33,2cm	(3,43xtl)-26,54	31,2cm

The discovery of three very small dogs at Gásir is subject to further investigation, but such small “lap” dogs were status items in high medieval Europe (Prilloff 2000) and have been found elsewhere in late medieval Icelandic archaeofauna (Pálsdóttir 2005). As indicated by table 3, these dogs were of lap dog size, slightly larger than a Pomeranian. The small dog from context 2812 is one articulated individual and it is unclear how it was deposited in a Dump-area. Photo 2 demonstrates the small size of the dog’s skull which is compared to a specimen at AMNH. It was not clear to which dog race that skeleton belonged to, but it was smaller than medium-sized.



Photo 2: *Canis familiaris*, context 2812 (left) compared to Museum specimen (right).

Wild Mammals

Apart from a few additional whale and seal elements that could not further be speciated, the Gásir Wild Mammal story has not changed from the last few years. The NISP table (Table 1) gives a basic idea of the numbers in wild mammals found at Gásir.

As a reminder, there was a worked **Walrus** (*Odobenus rosmarus*) tusk that is most likely a remnant of ivory extraction.

Whale remains of smaller sized individuals such as pilot whales, narwhal, beluga or porpoise were analyzed and may have constituted food debris. Some larger-sized whale remains that were most likely used for artifact working were also present in the collection. Late medieval cook books include many receipts for young porpoise to be served as high-status dishes, but porpoise and small whales have been consumed in most parts of the N Atlantic since prehistory (Harrison et al in Roberts, 2004).

Seals

Five of the six bones that could be identified to species level (contexts 617, 684, 730, 756, 1622 - mandible) came not from the local harbor seals (*Phoca vitulina*) still plentiful

in Eyjafjord but from the ice-riding harp seal (*Phoca groenlandica*). Harp seals are common in Icelandic waters only during periods of heavy drift ice, and have been associated with “little ice age” conditions in the NE (Amorosi 1992, Woollett 2004, Oglivie 1991). While widely consumed in most coastal communities in the N Atlantic, by late medieval times seal meat was usually distained in court cook books as “fit only for sailors”. It is possible that the distribution of seal bones at Gásir may provide some hints at class and ethnicity. The one other element analyzed was part of the auditory system (Petrus Bulla) of an indigenous Harbor seal (context 2187).

Birds

Table 4 presents the total number of birds identified to species, grouped by family. The majority of bones come from eider ducks, common along the shore of Eyjafjord today. Guillemot and Puffin were regularly eaten in Iceland and much of Atlantic Europe. Two swan element (*Cygnus olor*) was analyzed, found in context 674 and 2871. The two gyrfalcon (*Falco rusticolus*) elements from contexts 756 and 1632 have been debated in previous reports, but their presence in the high-medieval archaeofauna at Gásir and impact on trade related issues is significant.

Table 4: Identified Bird Species	Absolute #	%
Raptor	2	2,94
Gyrfalcon (<i>Falco rusticolus</i>)		
Migratory Waterfowl		
Mallard Duck (<i>Anas platyrh.</i>)	1	1,47
Eider Duck (<i>Somateria mollissima</i>)	33	48,53
Mute Swan (<i>Cygnus olor</i>)	2	2,94
Sea birds		
Murre species (<i>Uria species</i>)	16	23,53
Atlantic puffin (<i>Fratercula arctica</i>)	5	7,35
Razorbill (<i>Alca torda</i>)	5	7,35
Gull species (<i>Larus species</i>)	4	5,88
Total	68	100

Fish

As indicated by the high number of indeterminate fish bone elements, a large amount of the Gásir fish remains is fragmented beyond speciation. One possible explanation could be application of stone cod hammers used to tenderize dried fish in medieval times. The coastal Gásir gadid distribution no longer demonstrates a pure “consumer” profile (see Harrison in Roberts, 2005). The total Gásir element distribution and especially the premax vs. cleithra ratio better reflect the site’s location within a coastal inlet and indicate that at least a part of the fish remains stem from locally caught gadids.

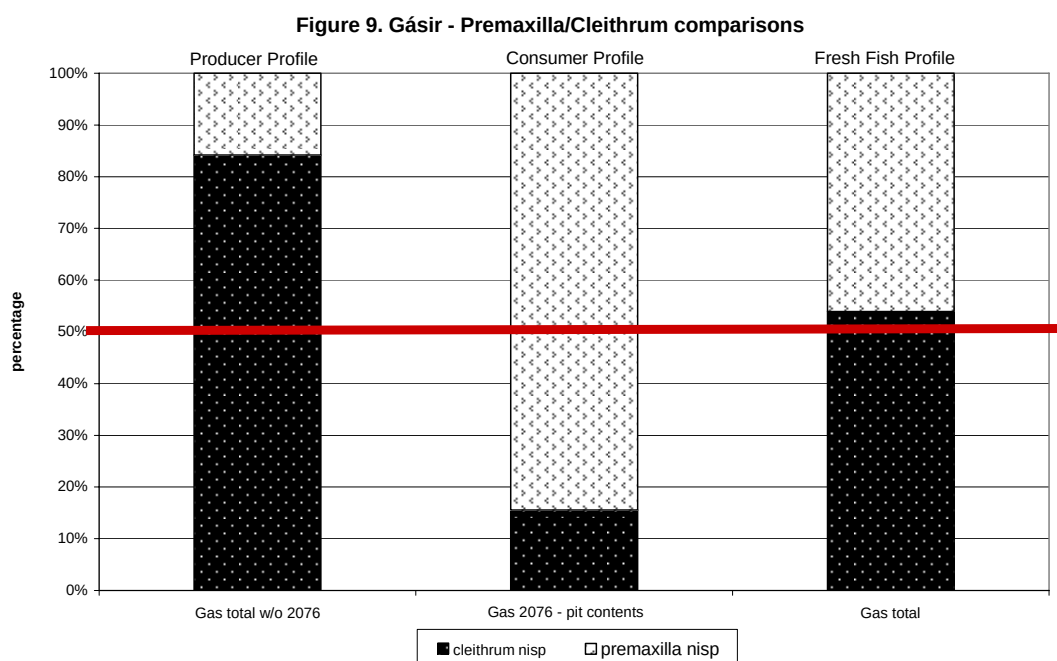


Figure 9 displays the percentages of Premaxillae vs. Cleithra ratios when related to the total amount of analyzed gadid elements. Context 2076¹ can be understood as fish-processing deposit. A fish processing pattern typically reflects a large amount of skull and cranial fragments including the premaxilla, while the axial part of the body, including the cleithrum (pectoral region), is absent. The cleithrum travels with the preserved fish and is found at consumer sites, such as HST, HRH and SVK in the Mývatn region (Perdikaris & McGovern, 2003). The first bar in Figure 9 reflects such a Consumer Profile.

The proportion of Premaxillae vs. Cleithra for the total Gásir site reflects the presence of whole gadid skeletons on site and indicates that fish may have been caught locally and

used for consumption. It may not be too far-fetched to assume that at least some of the fresh fish at Gásir only traveled within the market place. A Haddock/Cod comparison of elements as well as a size/age reconstruction are planned and will refine the pattern.

¹Context 2076 yielded a large amount of fish remains and only a sample of 25 % have been analyzed so far. Further analysis will be done in the Fall of 2007.

Craft working

The horse remains are mostly comprised of loose teeth and foot/lower leg fragments. It should be noted that context 220 and context 101 yielded 70% (7/10) of the horse bone assemblage present at the site. The nature of preserved horse bone fragments indicates craft working activities rather than horse meat consumption, since the elements found were mandibular, maxillary, or lower limbs. Whale bone: except for the porpoise-size whales, the majority of whale bones found at Gásir bear marks that derive from bone working. The one large whale element collected in 2003 represents a particularly good example for craft working, since it has been drilled. In 2006, three large Cattle Horn cores (2812, 2783, 2681) were found, bringing the total number of cattle Horn cores to 25; these rather large cattle horn cores (see photo 3) are possible indication for horn working on site. Photo 4 shows a so-called horse canon bone (Lyman, 1994) that has been modified into an artefact, use to be determined.

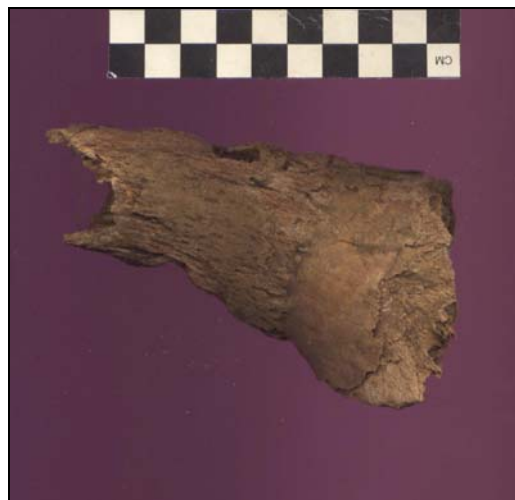


Photo 3. Bos horn core – probably male (context 2684).



**Photo 3. Horse metapodial –
worked (context 2872)**

Unidentified elements and trampled areas

Table 5: % of UNIMs in 2006 contexts with TNF >50					
Unit	TNF	Species	NO of UNIMs	percent of TNF	Context description
2812	64	UNIM	53	82,81	DUMP
2904	67	UNIM	63	94,03	Trampled sandy deposit on trackway
2872	69	UNIM	65	94,20	MIXED TURF DEPOSIT
2856	86	UNIM	73	84,88	Sandy trample on trackway
2452	110	UNIM	100	90,91	PEAT ASH
2783	420	UNIM	321	76,43	TRAMPLED SILTY DEPOSIT WITH PEAT ASH AND CHARCOAL

Table 5 presents the 2006 Gásir contexts that contain the most faunal elements. Every context that has an element number of more than 50 fragments shows at least 75% of fragmentation beyond speciation. From the context descriptions one learns that the deposits high in bones are either in areas of multiple access such as the Trackway, or the

bones and contexts were trampled over and thus the faunal remains were in bad shape (McGovern, personal communication May 2007).

Foodways and Ethnicity

Beginning around AD 1150-1200, a technique for extracting the marrow from the metapodials (lower leg bones) of sheep and goats spread into several N Atlantic communities, including the Shetlands, Faroes and Iceland (but not Greenland). The bi-perforation technique involves opening two circular holes at each end of the long bone and sucking out the rich marrow (Bigelow 1985). This marrow extraction technique avoids bone splinters in the marrow produced by the earlier Viking age pattern of longitudinal splitting, and has the advantage of retaining a very usefully shaped bone nearly intact for tool use. By the later medieval period, nearly all sheep metapodials in all Icelandic archaeofauna were bi-perforated, and split metapodials are exceedingly rare (by early modern times a folk belief held that splitting metapodials at meals would cause live sheep to break legs in the same place). In England and Continental Europe, this technique remained unknown, and late medieval diners continued to split sheep and goat metapodials in the old fashion. Table 4 presents the proportions of split vs. bi-perforated caprine metapodials from the Gásir collection (including drilling to err on the safe side), documenting the overwhelming use of splitting rather than bi-perforation in marrow extraction. In an Icelandic farm site of the 14th-15th century one would expect to see these proportions reversed. Does this low frequency of bi-perforation reflect non-Icelandic ethnic origins of the residents of Gásir?

Table 6: Caprine Metapodials				
	Bi-perforated	Split	Other	total
count	8	36	11	55
%	14,55	65,45	20,00	100

One caprine metatarsal from context 2943 was at least mono-perforated, which was put in the 'other' category rather than the 'bi-perforated' one.

Radiocarbon Dates and Isotopic Analysis

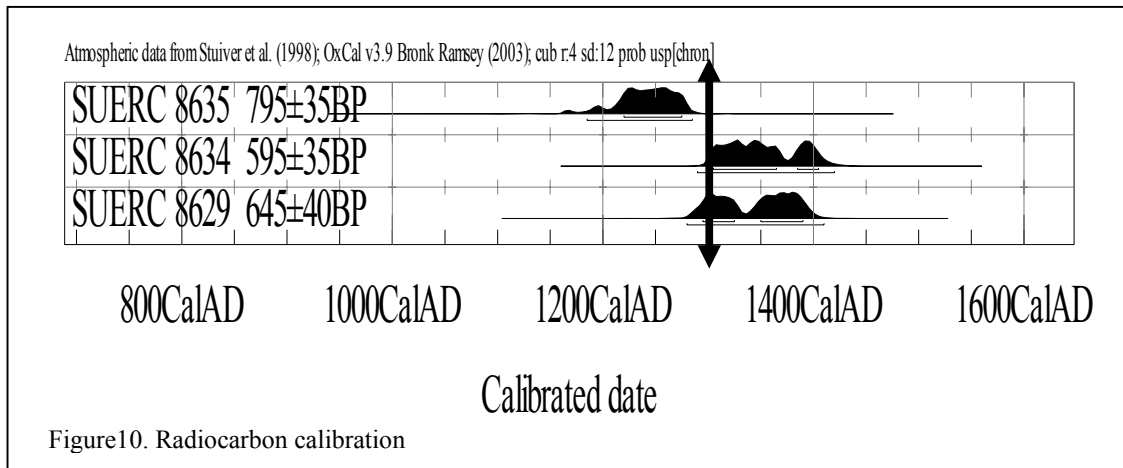
The Gásir project has collaborated with a large scale international geophysical/archaeological project (Ascough et al 2006) aimed at better understanding variations in Marine Reservoir Effect (MRE) which affect age estimates based on organisms wholly or partly within the marine food web (shellfish, sea weed, marine mammals, sea birds, fish). This large scale project is based at the Scottish Universities Reactor Center in East Kilbride Scotland, and is directed by Dr. Gordon Cook, who kindly provided the data and analysis. The MRE project provided 8 radiocarbon assays on cattle bone, seal bone, and clam shell (*Mya* sp) from a single context [528]. C13/C14 assays were also carried out at the same time (delta C13‰) and N15 assay was carried out on the mammal bone.

Table 6 presents these data, presenting the laboratory code, source material, radiocarbon years BP, one standard deviation, and the Carbon and Nitrogen isotopic assay results.

Table 7: Gásir Radiocarbon Results March 7 2006 (courtesy Gordon Cook)						
SUERC						
#	Context	material	Radiocarbon years BP	sd	delta C13	delta N15
8635	Context 528	cattle bone	795	35	-22,5	2,8
8634	Context 528	cattle bone	595	35	-22,1	2,2
8629	Context 528	cattle bone	645	40	-21,8	7,3
8633	Context 528	seal bone	1145	35	-12,7	14,4
8638	Context 528	clam shell	1165	35	0,5	
8639	Context 528	clam shell	1305	35	1,9	
8637	Context 528	clam shell	1175	35	2,5	
8636	Context 528	clam shell	1200	35	2,8	

As expected, the marine shell fish and the seal bone show high delta C13 values (values above -15/-16‰ indicate marine food web participation) and radiocarbon dates far too old

for the medieval site. The three cattle bones (SUERC 8635, 8634, and 8629) produce fully terrestrial delta C13 values, and radiocarbon dates that are plausible given the documentary and artefactual dating evidence. Figure 10 graphs the calibration curves for these three cattle bone samples (OxCal v. 3.9).



Two dates (SUERC 8634 and 8629) group nicely within the 14th c, which probably accurately reflects the period of deposition of the [528] context and agrees with the current tephra evidence (AD 1300 tephra indicated by arrow). The outlier (SUERC 8635) appears to be a residual bone fragment probably redeposited in later layers from an earlier context. This earlier 13th c date does provide some confirmation of an earlier occupation at Gásir below the 1300 tephra horizon suggested by some of the documentary sources.

The N15 values for the three cattle bones indicate the animals had somewhat different grazing histories in the years prior to their slaughter and consumption. The very low N15 values are similar to the values produced from nearby Mývatnssveit sites with highland low-arctic grazing, while the higher N15 value suggests habitual grazing on richer lowland vegetation. While more assays are clearly desirable, these diverse values suggest that Gásir may have drawn upon a wide catchment area for its provisions.

Figure 11. Delta C13

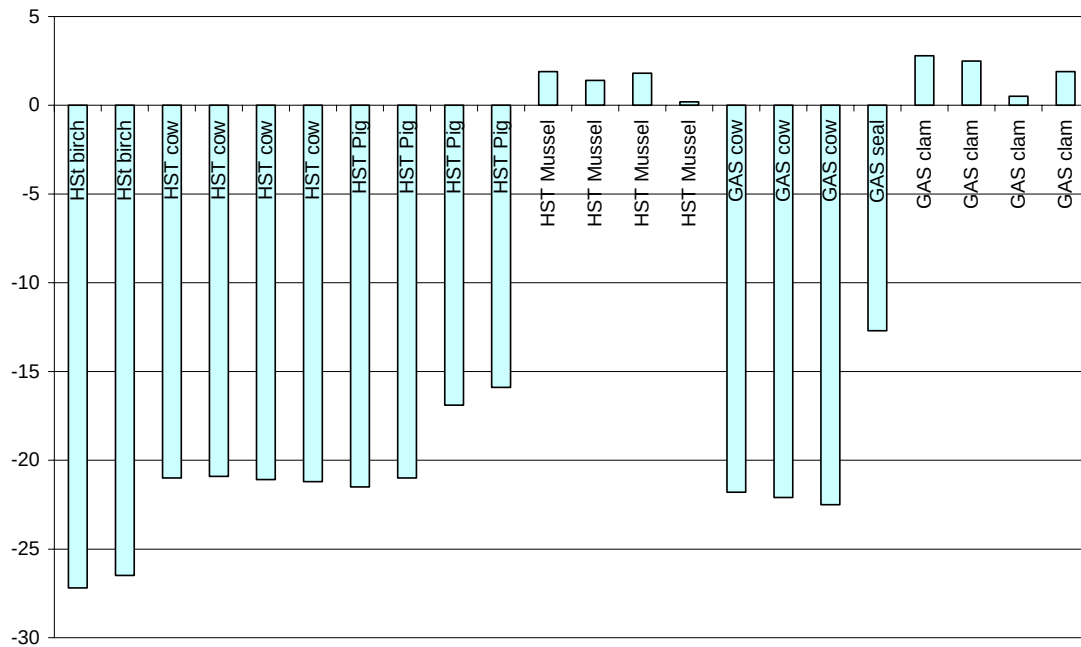


Figure 11 graphs the Gásir Delta C13 values and provides a comparison to a similar set of isotopic assays from Hofstaðir in Mývatnssveit. Note the strongest terrestrial signal (lowest delta C13 values) from birch twigs, with cattle and most (but not all) pig bones showing a terrestrial herbivore signature. The higher values for two of the Hofstaðir pigs may reflect their consumption of some marine carbon, or possibly large amounts of freshwater fish offal. The Gásir seal falls predictably within the marine food web values.

Conclusions and Further Work

The compiled archaeofauna from Gásir serves to demonstrate its considerable potential for zooarchaeological research in Iceland, and suggests a number of areas where zooarchaeology may usefully contribute to a better understanding of this complex site. While the current sample is but a beginning, we are already able to lay out some areas for productive further collaboration and to propose some broader questions for general consideration.

As noted above, close integration of the animal bone data (element representation, species present, taphonomic signatures) with the excavation program can aid in the interpretation of specific features and in some cases may aid in establishing sequences of use and abandonment. Fortunately modern software makes such contextual integration straightforward, and this will certainly increase as the project moves ahead.

Beyond the basic archaeological issues associated with individual contexts and phases, Zooarchaeology can contribute to some of the larger questions concerning the role of Gásir in Iceland's history.

- **Provisioning:** How was the settlement at Gásir provided with food? As the site was definitely not primarily a farm or fishing station, it needed to be supplied from outside sources. From historical data we can hypothesize many sources of supply, but the current bone sample suggests that dried fish, cattle and sheep meat played a major role in provisioning the settlement. While it is unclear at the moment if cuts of meat were imported to Gásir, it is now certain that at least some animals were brought to the site whole and probably slaughtered nearby. The current lack of calf and lamb bones suggests that the settlement did not in fact constitute a normal dairy-oriented, wool producing late medieval Icelandic farm.
- **Integration with Rural Economy:** What impact did the specialized settlement at Gásir have on the rural economy of the surrounding area? How did the presence of relatively wealthy consumers affect the economic decision making of local farmers of different wealth and rank? Thus far the archaeofauna does not suggest that the site was being entirely provisioned with cast off by-products of the normal farming economy (very young animals and very old ones) but with older juvenile and young adult cattle and sheep. Further investigation of age profiles of animals brought to Gásir will be important, and the sampling of a contemporary farm midden in the same district would provide important comparative information. The isotope data mentioned above (figures 10 and 11, Table 6) confirm the fact that a region wide survey of midden materials may be needed to trace origins of domesticates consumed at the trading site.

- **Ethnicity and Foodways:** In many respects the Gásir archaeofauna is very atypical for late medieval Iceland: cattle consumption comparable to rich manors in the SW but without the clear dairying profile characteristic of these elite farms. In the details of butchery and consumption of animals there are messages about foodways and ethnicity: does the butchery pattern of sheep at Gásir reflect the dining habits of native Icelandic or foreign consumers?
- **Seasonality:** If enough different seasonal indicators can be collected, it should be possible to contribute to discussions of seasonal vs. year round occupation. While the current sample is small, we may wonder if the shortage of new born calves and lambs (almost exclusively born in May) reflects an arrival of most of the occupants later in the summer?
- **Fish processing & Fish Consumption:**
- **Status:** Hopefully, future excavation work will produce more indicators of status and hierarchy systems present at the site. The gyrfalcon and seals provide an initial idea of the socially diversified group of people present at late medieval Gásir.

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Literature

Ascough, P.L.; Cook, G.T.; Church, M.J.; Dugmore, A.J.; Arge, S.V.; McGovern, T.H.. [Variability in North Atlantic marine radiocarbon reservoir effects at c. AD 1000](#). In *Holocene*, Jan2006, Vol. 16 Issue 1, p131-136.

Amundsen, Colin 2004, An Archaeofauna from Miðbaer on Flatey in Breiðafjörð in NW Iceland, *Environmental Archaeology* 9, in press.

Arge, S. V. 1995. Mergsogin bein - ein aldargamal matsður. *Fróðskaparrit* 43: 59-65.

Bigelow G.F. 1985 Sandwich Unst and the Late Norse Shetlandic Economy, in B. Smith (ed) *Shetland Archaeology, New Work in Shetland in the 1970's*, Shetland Times Press, Lerwick, pp 95-127.

Crabtree, P. J. 1990. Zooarchaeology and Complex Societies: some uses of faunal analysis for the study of trade, social status and ethnicity. In *Archaeological Method and Theory*, Vol 2, University of Arizona Press, Tuscon

Driesch, A von den. 1976. *A Guide to the Measurement of Animal Bones from Archaeological Sites*. Peabody Museum Bulletin 1, Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge, Massachusetts

Edvardsson et al, 2006 HRH FSÍ report

Engelhoff, I. B. 2003. Hunting, fishing, and animal husbandry at the Farm Beneath the Sand, Western Greenland: an archaeozoological analysis of a Norse farm in the Western Settlement, *Meddelelser om Grønland Man & Society* 28. Copenhagen

Grant, Annie 1982. The use of tooth wear as a guide to the age of domestic ungulates, in B. Wilson, C. Grigson, and S. Payne (eds.) *Ageing and Sexing Animal Bones from Archaeological Sites*, BAR British Series 109 pp 91-108. Oxford.

Grayson, D. K. 1984. *Quantitative Zooarchaeology*. Academic press, Orlando

Halstead, Paul, 1998. Mortality Models and Milking: problems of uniformitarianism, optimality, and equifinality reconsidered, *Anthropozoologica* 27: 3-20.

Harcourt, R. A. The dog in Prehistoric and Early Historic Britain In *Journal of Archaeological Science* 1, pp 151-175.

Hillson, Simon , *Teeth*, 1986 Cambridge Manuals in Archaeology, Cambridge U Press.

Krivogorskaya, Yekaterina, Sophia Perdikaris, Thomas H McGovern. 2005. *Fish Bones and Fishermen: the potential of zooarchaeology in Westfjords*. *Archaeologica islandica* 4.

Lyman , R.L. 1996, *Taphonomy*, Cambridge U.P.

McGovern, T.H. 1985. The arctic frontier of Norse Greenland, in: S. Green & S. Perlman (eds.) *The Archaeology of Frontiers and Boundaries*, Academic Press, New York, pp. 275-323.

McGovern T.H., Amorosi T., Perdikaris S. & Woollett J.W. 1996 Zooarchaeology of Sandnes V51: Economic Change at a Chieftain's Farm in West Greenland, *Arctic Anthropology* 33(2)94-122.

McGovern T.H., Sophia Perdikaris, Clayton Tinsley, 2001 Economy of Landnam: the Evidence of Zooarchaeology, in Andrew Wawn & Thorunn Sigurðardóttir (eds.) *Approaches to Vinland*, Nordahl Inst. Studies 4, Reykjavik. Pp 154-166.

McGovern, T.H. & Sophia Perdikaris (2002) *Preliminary Report of Animal Bones from Hrísheimar N Iceland*, report on file Fornleifastofnun Íslands and National Museum of Iceland.

McGovern, T.H. 1999. Preliminary Report of Animal Bones from Hofstadir, and Area G excavations 1996-97, *Archaeologica Islandica* 1.

North Atlantic Biocultural Organization Zooarchaeology Working Group 2003. *NABONE Zooarchaeological Recording Package 8th edition*, CUNY, NY.

Ogilvie, A. 1991, Climate Changes in Iceland AD 865 to 1598. In Bigelow, G. (ed.) *The Norse of the North Atlantic*, *Acta Archaeologica*, Vol. 61.

OxCal v.3.9 Bronk Ramsey (2003)

Pálsdóttir, Albína Hulda. 2005. Archaeofauna from Skriðuklaustur, East-Iceland: *Preliminary report, 2002 excavation season*. CUNY Northern Science and Education Center.

Perdikaris, Sophia. 1999. From chiefly positioning to commercial fishery: Long-term economic change in Arctic Norway. In *World Archaeology*, Feb99, Vol. 30 Issue 3, p388, 15p.

Perdikaris, S., Colin Amundsen, T. H. McGovern 2002 *Report of Animal Bones from Tjarnargata 3C, Reykjavík, Iceland*, Report on file Archaeological Inst. Iceland, Reykjavik.

Perdikaris S & T.H.McGovern in press 2003, Walrus, cod fish and chieftains: patterns of intensification in the Western North Atlantic. In T. Thurston (ed) *New Perspectives on Intensification*, Plenum Press.

Elizabeth J. Reitz and Elizabeth S. Wing. 1999. *Zooarchaeology*. Publisher: Cambridge, UK ; New York : Cambridge University Press.

Roberts H. M. 2002b *Archaeological Investigations at Gásir 2002, a preliminary report*. Fornleifastofnun Íslands FS180-01072, Reykjavík.

Roberts H.M. 2005. *Gásir 2004, an Interim Report*, Fornleifastofnun Íslands FS194-01073. Reykjavík.

Roberts H. M. 2006. *Excavations at Gásir 2001-2006, A Preliminary Report*, Fornleifastofnun Íslands FS335-01079. Reykjavík.

Roberts H. M. & Pálsdóttir, L.B. 2006. Excavations at Gásir 2005 – An Interim Report/Framvindskýrsla. Fornleifastofnun Íslands FS312-01078 Reykjavík.

Roberts H.M. 2005. *Gásir 2004, an Interim Report*, Fornleifastofnun Íslands FS194-01073. Reykjavík.

von den Driesch, Angela. & Joachim Boessneck. 1974. *Kritische anmerkungen zur Wiederristhöhenberechnung aus Längenmaßen vor- und frühgeschichtlicher Tierknochen*. Säugetierkundliche Mitteilungen 22, 328-348, München'.

Vésteinsson, Orri, 2001, *Archaeological investigations at Sveigakot 1998-2000*, Reykjavik, FSÍ.

Vésteinsson, O., T. H. McGovern, and C. Keller, 2003, Enduring Impacts: Social and Environmental Aspects of Viking Age Settlement in Iceland and Greenland. *Archaeologica Islandica*. 2 Reykjavik.

<http://users.cybercity.dk/~ccc12787/hist/dk1.html>: *The History of Falconry in Denmark, Norway and Iceland*. Adaptation of a text by C. F. Tillisch by Jakob E. Borch.

Appendix 1-Lageiningalisti

Unit	Type	Description
2414	Deposit	Turf wall. (Belonging to gr. [2392] from 2005)
2415	Deposit	Hearth
2416	Deposit	Turf collapse
2417	Deposit	Turf wall.
2418	Deposit	Turf blob, corner of former wall?
2419	Deposit	Floor layer, pink and black mix/deposit.
2420	Deposit	Peat ash
2421	Deposit	Fill of cut
2422	Deposit	Occupation surface
2423	Deposit	Mixed turf debris+peat ash
2424	Deposit	Occupation surface
2425	Group	Groupnumber for turf wall w/stone facing.
2426	Deposit	Stone facing gr. [2425].
2427	Deposit	Turf wall gr. [2425].
2428	Deposit	Mixed trampled deposit.
2429	Fill	Fill of [2430].
2430	Cut	Small, steep sub-square pit.
2431	Group	Group of [2429] + [2430].
2432	Deposit	Hearth.
2433	Deposit	Hearth.
2434	Deposit	Floor.
2435	Deposit	Turf/ wall collapse.
2436	Deposit	Mixed turf, collapse etc.
2437	Fill	Mixed T/C fill.
2438	Cut	Large truncated cut.
2439	Group	Group of [2437] + [2438].
2440	Deposit	Mixed turf debris.
2441	Deposit	Probable floor surface.
2442	Deposit	Turf lining, goes w/ gr. [2392]
2443	Deposit	Mixed turf with peat ash.
2444	Deposit	Floor.
2445	Deposit	Hearth.
2446	Deposit	Sandy deposit.
2447	Deposit	Hearth.
2448	Deposit	Scorched hearth deposit.
2449	Cut	Cut for hearth [2445].
2450	Deposit	Sand/turf mix.
2451	Deposit	Peat ash.
2452	Deposit	Peat ash.
2453	Deposit	Turf wall.
2454	Deposit	Mixed turfy deposit.
2455	Cut	Cut for room.
2456	Deposit	Trampled mixed deposit.
2457	Deposit	Floor?
2458	Fill	Upper fill in pit/cut [2460].
2459	Fill	Lower fill in pit/cut [2460].

2460	Cut	Pit.
2461	Deposit	Turf wall (gr. [2399].)
2462	Deposit	Peat ash deposit.
2463	Deposit	Crunchy floor deposit.
2464	Fill	Pit fill.
2465	Cut	Pit cut.
2466	Group	Group of [2464] + [2465].
2467	Deposit	Turf wall.
2468	Deposit	Mixed turf - silt deposit.
2469	Deposit	Peat ash /charcoal rich occ. Deposit.
2470	Deposit	Dark brown "greasy" occ. Deposit.
2471	Deposit	Sheet of peat ash + mixed deposit.
2472	Deposit	Temporary hearth.
2473	Deposit	Turf collapse.
2474	Deposit	Yellow T/C etc.
2475	Deposit	Yellowish brown mixed deposit.
2476	Deposit	Peat ash + slag.
2477	Deposit	Clay rich floor deposit.
2478	Deposit	Sandy silty surface.
2479	Fill	Mixed turfey back.
2480	Cut	Large square pit.
2481	Group	Group containing [2474], [2476], [2480], [2479].
2482	Deposit	Dark yellow mixed deposit.
2483		VOID
2484	Deposit	Turf block (levelling/bench)
2485	Deposit	Stones in floor in [2483].-void number
2486	Deposit	Temporary hearth.
2487	Deposit	Occupation surface
2488	Deposit	Trampled surface
2489	Deposit	Compacted debris.
2490	Deposit	Compacted deposit.
2491	Deposit	Mixed upcast etc.
2492	Deposit	Dark compacted dep.
2493	Deposit	Scorched sand dep.
2494	Deposit	Mixed charcoal rich layer.
2495	Deposit	Mixed sandy dump.
2496	Deposit	Charcoal rich layer
2497	Deposit	Scorched turf layer.
2498	Deposit	Turf- forming E-side of room.
2499	Group	Groupnr. For new room after [2400].
2500	Deposit	Peat ash
2501	Deposit	Mixed yellow turf debris.
2502	Deposit	Occupation surface.
2503	Deposit	Turf debris.
2504	Deposit	Trampled turf deposit.
2505	Cut	P/hole
2506	Fill	Fill of [2506].
2507	Group	Group inc. [2505] + [2506].

2508	Cut	P/hole
2509	Fill	Fill of [2508].
2510	Group	Group inc. [2508] + [2509].
2511	Cut	Posthole.
2512	Fill	Fill of [2511].
2513	Group	Group for [2511] + [2512].
2514	Deposit	Yellow orange turf debris.
2515	Deposit	Burnt wood.
2516	Deposit	Mixed silty sand.
2517	Deposit	Hearth.
2518	Deposit	In situ burning.
2519	Deposit	Brown mixed deposit.
2520	Deposit	Peat ash dump
2521	Deposit	Mixed black occupation dep.
2522	Deposit	Sandy mix deposit
2523	Deposit	Deposit surrounding wood [2515]
2524	Deposit	Mixed yellowish tuf deposit
2525	Deposit	Light brown occ. Surface
2526	Deposit	Dark soft occ. Deposit
2527	Deposit	Cut of NE-room (Fourth phase?)
2528	Deposit	Hearth deposit, XXX dung.
2529	Deposit	Occupation surface
2530	Deposit	Peat ash mix
2531	Deposit	Mixed orange brown debris
2532	Deposit	Mixed w/peat ash
2533	Deposit	Top part of wall
2534	Deposit	Floor
2535	Deposit	Mixed layer of turf debris
2536	Deposit	Yellow brown floor
2537	Fill	Fill of [2538]
2538	Cut	Shallow pit
2539	Group	Of [2537] + [2538]
2540	Deposit	Hearth- Cut by pit
2541	Fill	Fill of [2542]
2542	Cut	P / H
2543	Group	[2541] + [2542]
2544	Deposit	Floor/ occupation surface
2545	Deposit	Greasy peat ash dump XX hearth.
2546	Deposit	Turf collapse.
2547	Deposit	Peat ash
2548	Deposit	Mixed compact deposit
2549	Deposit	Mixed brown turf debris
2550	Deposit	Mixed occ.dep.
2551	Deposit	Mixed mottled peat ash dep.
2552	Deposit	Mixed occ.debris
2553	Deposit	Mixed deposit, probably trampled layer
2554	Deposit	Occ. Surface
2555	Deposit	Hearth

2556	Deposit	Sandy silt
2557	Deposit	Peat ash (Sat in cut)
2558	Fill	Fill of [2559]
2559	Cut	Sub-rect. Pit
2560	Group	[2558] + [2559]
2561	Deposit	Dark occ. deposit
2562	Deposit	Mixed collapse (turfy)
2563	Deposit	Turf deposit
2564	Deposit	Yellowish sandy deposit
2565	Fill	Fill of [2566]
2566	Cut	P/H - small circular
2567	Group	Group of [2565] + [2566]
2568	Fill	Fill of [2569]
2569	Cut	P/H - Large circular
2570	Group	Group of [2568] + [2569]
2571	Deposit	Dark occup. Debris
2572	Deposit	Mixed peat ash layer
2573	Deposit	Turf collapse.
2574	Cut	Cut for fill [2556] (postholes)
2575	Deposit	Dark occupation surface
2576	Deposit	Turf collapse.
2577	Deposit	Poss. Occupation surface
2578	Deposit	Peat ash dump
2579	Deposit	Turf tumble
2580	Deposit	Mixed compact fill
2581	Cut	Fill of cut [2582]
2582	Cut	Cut
2583	Deposit	Mixed sandy silt layer
2584	Deposit	Pit fill?
2585	Deposit	Turf deposit
2586	Deposit	Dark occ.debris
2587	Deposit	Dark mixed debris
2588	Deposit	Mixed dep. W/ peat ash
2589	Deposit	Mixed debris w/peat ash
2590	Deposit	Turf- part of wall or collapse.
2591	Deposit	Turf collapse.
2592	Deposit	Mixed turf collapse
2593	Deposit	Sandy silt- windblown
2594	Deposit	Floor
2595	Deposit	Windblown sand w/turf- possibly surface
2596	Deposit	Mixed collapse + upcast
2597		VOID
2598	Deposit	Mixed XXX post-abandonment interface
2599	Deposit	Sandy silt- windblown
2600	Deposit	Hearth
2601	Fill	Mixed fill of [2602]
2602	Cut	V. Large sub-rect. Pit
2603	Group	Group of [2601] + [2602] etc.

2604	Deposit	Sandy layer
2605	Deposit	Turf collapse.
2606	Deposit	Post-abandonment, upcast + collapse
2607	Deposit	Peat ash
2608	Deposit	Red sandy mix
2609	Deposit	Sandy deposit.
2610	Cut	Hearth cut
2611	Deposit	Turf mix
2612	Fill	Fill of [2613]
2613	Cut	P/H in the edge of [2602]
2614	Group	[2612] + [2613]
2615	Fill	Fill of [2616]
2616	Cut	P/H in S-edge of [2602]
2617	Group	[2615] + [2616]
2618	Fill	Fill of [2619] - sand
2619	Cut	Small pit at E of [2602]
2620	Group	[2618] + [2619]
2621	Deposit	Grey sand layer - mixed
2622	Deposit	Grey sand filling cut
2623	Deposit	Dark grey brown silt deposit
2624	Deposit	Turf mix
2625	Deposit	Turf deposit
2626	Deposit	Turf deposit
2627	Deposit	Turf debris - mix
2628	Deposit	Turf deposit
2629	Deposit	Collapse/upcast
2630	Deposit	Mixed mottled turf debris
2631	Deposit	Peat ash dump
2632	Deposit	Mixed turf debris
2633	Deposit	Mixed collapse
2634	Deposit	Mixed brown dep. On trackway
2635	Deposit	Peat ash dump
2636	Deposit	Sandy deposit- windblown
2637	Deposit	Sand - aeolean- lens
2638	Deposit	Mixed turf debris
2639	Deposit	Mixed turfy collapse
2640	Group	Group for wall (grid: 8250/7700)
2641	Deposit	Peat ash dump
2642	Deposit	Mixed turfy dump
2643	Deposit	Collapse in poss. Entrance
2644	Deposit	Peat ash layer
2645	Deposit	Turf deposit
2646	Deposit	Turf block
2647	Deposit	Aeolean sand
2648	Deposit	Turf block of collapse
2649	Deposit	Sandy turfy stuff
2650	Deposit	Turf collapse.
2651	Deposit	Mixed turf debris

2652	Deposit	Mixed turf debris
2653	Deposit	Turfy dump
2654	Deposit	Peat ash deposit.
2655	Deposit	Sandy silt
2656	Deposit	Mixed deposit on trackway
2657	Deposit	Grey brown surface/XXX
2658	Deposit	Peat ash dump
2659	Deposit	Turf deposit
2660	Deposit	Peat ash dump
2661	Deposit	Silty deposit
2662	Deposit	Mixed turf deposit
2663	Deposit	Turf dep.
2664	Deposit	Brown flaky surface
2665	Deposit	Yellow turf deposit
2666	Deposit	Turf dump
2667	Deposit	Mixed dump
2668	Deposit	Mixed turf dep.
2669	Fill	Fill of pit [2671]
2670	Fill	Peat ash fill of pit [2671]
2671	C	Pit
2672	Deposit	Turf/peat ash mix
2673	Deposit	Turf/peat ash mix
2674	Fill	Fill of [2671]
2675	Deposit	Sandy bland stuff
2676	Deposit	Mixed turf
2677	Deposit	Turf + peat ash dump
2678	Void?	Mixed t/c etc.
2679	Deposit	Mixed turf deposit
2680	Deposit	Mixed turf deposit
2681	Deposit	Mixed turf deposit
2682	Deposit	Mixed dump
2683	Deposit	Poss. Surface
2684	Deposit	Mixed peat ash etc.
2685	Deposit	Mixed turf
2686	Deposit	Scorching + peat ash
2687	Deposit	Compacted mix
2688	Deposit	Greasy mixed occup. Debris
2689	Deposit	Dark greyish surface
2690	Deposit	Possib. Surface
2691	Deposit	Peat + wood ash lenses
2692	Deposit	Mixed dump, peat ash-turf
2693	Deposit	Mixed turf
2694	Deposit	Sandy silt lens
2695	Deposit	Mixed turf deposit
2696	Deposit	Mixed debris at W-side of cut.
2697	Deposit	Grey silt w/charcoal
2698	Deposit	Turf dump
2699	Deposit	Peat ash mix

2700	Deposit	Peat ash dump
2701	Deposit	Turf mix
2702	Deposit	Peat ash dump
2703	Deposit	Mixed trample- track
2704	Deposit	Mottled turf dep. Sat in cut
2705	Deposit	Mixed turf + silt
2706	Deposit	Turf dump
2707	Deposit	Wooden barrel lid
2708	Deposit	Mixed sandy silt + turf
2709	Deposit	Mixed peat ash dump
2710	Deposit	Track layer
2711	Deposit	Grey silt
2712	Deposit	Track layer
2713	Deposit	Mixed turf
2714	Deposit	Peat ash lens
2715	Deposit	Peat ash dump
2716	Deposit	Yellow turf deposit
2717	Deposit	Dark grey brown sandy silt
2718	Deposit	Layer of compacted, trampled turf debris
2719	Deposit	Layer of compacted, trampled turf debris
2720	Deposit	Turf lump
2721	Deposit	Peat ash dump
2722	Deposit	Compact sand deposit
2723	Deposit	Scorching + peat ash process in hearth
2724	Deposit	Trackway
2725	Deposit	Trackway deposit
2726	Deposit	Sandy gritty surfaces
2727	Deposit	Turf dump
2728	Deposit	Sandy silt deposit
2729	Deposit	Mixed T/C + upcast etc.
2730	Deposit	mixed brown dep. w/ sand lenses.
2731	Deposit	Trampled mixed turf, possibly an entrance to the big room in West
2732	Fill	Fill of [2733]
2733	Cut	Post hole
2734	Deposit	Peat ash rich silt lens
2735	Deposit	Mixed silty sand deposit
2736	Deposit	Dark grey brown silt lens
2737	Deposit	Turf collapse
2738	Deposit	Turf block
2739	Deposit	Orange mottled deposit
2740	Deposit	Mixed turf dump
2741	Deposit	Turf deposit
2742	Deposit	Turf mix
2743	Deposit	Mid brown silt
2744	Deposit	peat ash against outside of hearth
2745	Deposit	Trampled turf - trackway deposit
2746	Deposit	Occupation deposit
2747	Deposit	Brown silty sandy deposit

2748	Deposit	Peat ash deposit.
2749	Deposit	Peat ash in hearth
2750	Deposit	Turf deposit
2751	Deposit	Mixed deposit against slope
2752	Deposit	Turf deposit on trackway
2753	Deposit	Dark grey occup. Surface
2754	Deposit	Turf collapse
2755	Deposit	Mixed turf
2756	Deposit	Mixed debris against hearth
2757	Deposit	Mixed primary backfill of W- hearth
2758	Deposit	Turf deposit
2759	Deposit	Mixed turf/tephra on trackway
2760	Deposit	Layer of turf
2761	Deposit	Yellow turf mix
2762	Deposit	Turf deposit
2763	Deposit	Turf blocks
2764	Deposit	Sandy dep. Trampled
2765	Deposit	Mixed-lensed yellow dep.
2766	Deposit	Mixed debris
2767	Deposit	Trampled trackway dep.
2768	Deposit	Sandy (trampled?) dep.
2769	Deposit	Orange mottled deposit
2770	Deposit	Turf debris
2771	Deposit	Peat ash dump
2772	Deposit	Trampled dep. On trackway
2773	Group	Group for 8255/7690 and 8255/7695. Group for XXX dep. Forming a mound.
2774	Deposit	Turf debris
2775	Deposit	Sandy silt
2776	Deposit	Peat ash
2777	Deposit	Turf debris
2778	Deposit	Trampled dep. On trackway
2779	Deposit	XXXX sand
2780	Deposit	Trampled turfy dep. On trackway
2781	Fill	Peat ash
2782	Cut	Cut-pit
2783	Deposit	Trampled silty deposit with peat ash and charcoal.
2784	Deposit	Trampled sandy silt on trackway
2785	Deposit	Turf mix
2786	Deposit	Turf dump on trackway
2787	Deposit	Mixed turf debris
2788	Deposit	Mixed turf deposit
2789	Deposit	Brown silty deposit
2790	Deposit	Brown sandy silt
2791	Deposit	Turf dep. Partially trampled
2792	Deposit	Sandy silt, trapped deposit
2793	Deposit	Mottled turf mix
2794	Fill	Peat ash
2795	Deposit	Mixed turf + peat ash

2796	Deposit	Track
2797	Deposit	Mixed turf
2798	Deposit	Mixed turf
2799	Deposit	Turf block
2800	Deposit	Turfy dep.-greasy
2801	Cut	Cut for fill [2804]
2802	Cut	Turf deposit
2803	Deposit	XXXX eastern side of door cut.
2804	Fill	Fill of cut [2801]
2805	Group	Group for cut [2801] and fill [2804]
2806	Fill	Probable fill for eastern pit. Occup. Dep.?
2807	Deposit	Turfy dep. On top of trackway
2808	Deposit	Peat ash dump
2809	Deposit	Mixed turf deposit
2810	Deposit	Turf deposit
2811	D/F	Peat ash in pit
2812	Deposit	Dump
2813	Deposit	Mixed dep. On track
2814	Deposit	Mixed turf
2815	Deposit	Peat ash dump in N-side of room
2816	Deposit	Wood ash + burnt sand deposit
2817	Deposit	Charcoal rich layer
2818	Deposit	Peat ash dump
2819	D/F	Brown mixed XXX deposit
2820	Deposit	Dark mixed debris
2821	Deposit	Peat ash dump/spread
2822	Deposit	Mixed turf dump
2823	Cut	Cut for earlier pit
2824	Deposit	Trampled mixed turf debris
2825	Deposit	Silty sand deposit
2826	Deposit	Mixed mottled dep.
2827	Deposit	Peat ash + charcoal (hearth)
2828	Deposit	Hearth deposit (in situ?) Peat ash burning.
2829	Deposit	Mixed turf
2830	Deposit	Floor, primary
2831	Deposit	Mixed turf debris
2832	Deposit	Silty sand
2833	Deposit	Peat ash dump
2834	Deposit	Peat ash dump
2835	Deposit	Possible floor
2836	Deposit	Mixed turf deposit.
2837	Deposit	Peat ash
2838	Deposit	Mixed turf deposit
2839	Deposit	Floor
2840	Deposit	Mixed brown w. Purple dep.
2841	Deposit	Peat ash dep.
2842	Deposit	Sandy trampled deposit
2843	Deposit	Floor surface

2844	Deposit	Stones forming part of hearth
2845	Deposit	Stones forming part of hearth
2846	Deposit	Peat ash layer
2847	Deposit	Turf deposit
2848	Deposit	Turf mix
2849	Deposit	Turf mix
2850	Deposit	Mixed turf debris + peat ash
2851	Deposit	Wood ash
2852	Deposit	Mixed turf
2853	Deposit	Mixed turf
2854	Cut	Cut for room.
2855	Deposit	Mixed orange dep
2856	Deposit	Sandy trample on trackway
2857	Fill	Fill of P/H [2858]
2858	Cut	P/H
2859	Fill	Fill of [2858]
2860	Fill	Fill of [2858]
2861	Deposit	Yellow/pink mottled
2862	Deposit	Multicoloured mixed turf
2863	Deposit	Yellow turfy layer
2864	Deposit	Peat ash
2865	Deposit	Turf mix
2866	Deposit	Mixed turf dump on trackway
2867	Deposit	Yellow turf deposit
2868	Deposit	Turf mix
2869		
2870	Deposit	Turf debris
2871	Deposit	Mixed turf on trackway
2872	Deposit	Mixed turf
2873	Deposit	Sandy subsoil/topsoil interface
2874	Deposit	Dark sandy silt
2875	Deposit	Bland yellow brown silty subsoil
2876	Deposit	Sandy surface
2877	Deposit	Sandy silt deposit
2878	Deposit	Greenish trampled surface
2879	Deposit	Mixed turf
2880	Deposit	Hearth
2881	Deposit	Trampled mix
2882	Deposit	Dump with upcast
2883	Deposit	Green sand
2884	Deposit	Peat ash
2885	Deposit	Green silty sand
2886	Deposit	T/C
2887	Fill	Peat ash
2888	Deposit	Mixed turf deposit
2889	Deposit	Mixed, compacted
2890	Deposit	Sandy silt w/ T/C
2891	Deposit	Coarse sand- fill of [2892] + [2897]

2892	Cut	Pit
2893	Deposit	Layer with peat ash
2894	Deposit	Turf debris
2895	Fill	Fill of [2896]
2896	Cut	Stakehole
2897	Cut	Stakehole
2898	Deposit	Turf, possible badly degraded wall
2899	Deposit	Mixed debris w. T/C+ upcast grey clay.
2900	Deposit	Mixed turf + peat ash
2901	Deposit	Mixed orange mottled dep.
2902	Deposit	Mixed yellow brown trample
2903	Deposit	Brown sandy silt
2904	Deposit	Trampled sandy deposit on trackway
2905	Deposit	Brown sandy silt
2906	Deposit	Mixed XXX from XXX of cut
2907	Deposit	Brown sandy silt w. Turf collapse
2908	Fill	of [2909]
2909	Cut	P/H
2910	Group	[2908] + [2909]
2911	Fill	of [2912]
2912	Cut	P/H
2913	Group	[2911] + [2912]
2914	Fill	of [2915]
2915	Cut	P/H
2916	Group	[2914] + [2915]
2917	Deposit	Mixed turf + silt
2918	Deposit	Mixed turf debris
2919	Deposit	Dump with upcast tephra + sandy interface
2920	Deposit	Mixed turf debris
2921	Deposit	Mixed turf on trackway
2922	Deposit	Compacted turf blocks
2923	Deposit	Dense turf collapse
2924	Deposit	Mixed debris w. T/C
2925	Deposit	Sandy silt turf deposit
2926	Group	Group nr. For posthole+ stakeholes.
2927	Fill	fill of [2928]
2928	Cut	cut
2929	Fill	fill of [2930]
2930	Cut	cut
2931	Fill	fill of [2932]
2932	Cut	cut
2933	Fill	fill of [2934]
2934	Cut	Cut
2935	Fill	fill of [2936]
2936	Cut	Cut
2937	Fill	fill of [2938]
2938	Cut	Cut
2939	Deposit	Sandy silt dump w. T/C + clay upcast.

2940	Deposit	Charcoal rich hearth
2941	Deposit	Cleanish silt layer
2942	Deposit	Bland dump against wall
2943	Deposit	Mixed turf dump
2944	Deposit	Hearth
2945	Deposit	Scorched dep.
2946	Deposit	Uniform, trampled layer of sand
2947	Deposit	Greenish sand
2948	Deposit	Turf deposit
2949	Deposit	Turf collapse
2950	Deposit	Trampled sandy silt on trackway
2951	Deposit	Occupation surface
2952	Fill	of [2953]
2953	Cut	P/H
2954	Group	[2952] + [2953]
2955	Fill	of [2956]
2956	Cut	P/H
2957	Group	[2955] + [2956]
2958	Fill	of [2959]
2959	Cut	Slot
2960	Group	[2958] + [2958]
2961	Deposit	Mixed turf dump
2962	Deposit	
2963	Deposit	
2964	S	
2965	Deposit	
2966	Fill	
2967	Cut	
2968	Deposit	
2969	Deposit	
2970	Deposit	
2971	Deposit	
2972	Deposit	
2973	Deposit	
2974	Deposit	
2975	Deposit	
2976		
2977	Deposit	
2978	Deposit	
2979		
2980	Deposit	Hearth
2981	Deposit	Mixed dump w/turf
2982	Group	Group [3001] Section
2983	Group	Group [3001] Section
2984	Group	Group [3001] Section
2985	Group	Group [3001] Section
2986	Group	Group [3001] Section
2987	Group	Group [3001] Section

2988	Group	Group [3001] Section
2989	Group	Group [3001] Section
2990	Group	Group [3001] Section
2991	Group	Group [3001] Section
2992	Group	Group [3001] Section
2993	Group	Group [3001] Section
2994	Group	Group [3001] Section
2995	Group	Group [3001] Section
2996	Group	Group [3001] Section
2997	Group	Group [3001] Section
2998	Group	Group [3001] Section
2999	Group	Group [3001] Section
3000	Group	Group [3001] Section
3001	Group	Group [3001] Section
3002		Void?
3003	Group	
3004	Deposit	Hearth fill
3005	Deposit	Occupational layer
3006	Deposit	Turf collapse
3007	SEC	East facing section of LF's and FS's room
3008	Deposit	Hearth
3009	SEC	West facing section-LF/FS room
3010	Sec/Group	North facing section in square 8255/7705

Appendix 2- Fundalisti

Finds No	Context No	Object keyword	Material Keyword	Weight (g)	Count
06-001	2416	Manuport	Glass	0.2	1
06-002	2436	Nail?	Iron	6.7	1
06-003	2437	Nail	Iron	14.5	2
06-004	2503	Object	Iron	28.5	7
06-005	2803	Object	Iron	46.9	1
06-006	2456	Manuport	Stone	1.8	2
06-007	2456	Whetstone	Stone	3.6	1
06-008	2461	Nail?	Iron	10.7	1
06-009	2503	Slag	Slag	3.2	1
06-010	2475	Object	Copper alloy	0.2	1
06-011	2452	Pendant?	Copper alloy	11.2	1
06-012	2503	Object	Iron	16.7	1
06-013	2881	Vessel	Ceramic	11	1
06-014		Object	Iron	97.9	1
06-015		Object	Iron	210.2	1
06-016		Whetstone	Stone	35	1
06-017	1	Pottery	Ceramic		1
06-018		Baking plate	Stone		1
06-019	1	Object	Iron	5.1	1
06-020	2564	Baking plate	Stone	1.3	1
06-021	2580	Nail	Iron	12.9	1
06-022	2580	Object	Iron	3.8	1
06-023	2585	Knife	Composite	19	1
06-024	2588	Nail?	Iron	21.7	1
06-025	2593	Stone	Stone	5.7	1
06-026	2601	Nail?	Iron	89	1
06-027	2606	Baking plate	Stone	129.7	1
06-028	2621	Object	Copper alloy	0	1
06-029	2626	Baking plate	Stone	9.9	1
06-030	2632	Object	Iron	12.4	1
06-031	2634	Vessel	Ceramic	9.5	1
06-032	2634	Nail	Iron	5.3	1
06-033	2634	Vessel	Ceramic	8.9	1
06-034	2645	Offcut	Leather	2.34	1
06-035	2645	Discarded - natural	Stone	28.9	3
06-036	2645	Nail	Iron	14.2	1
06-037	2649	Baking plate	Stone	11.6	1
06-038	2861	Vessel	Ceramic	21.9	1
06-039	1	Vessel	Ceramic	3.3	1
06-040	2664	Baking plate	Stone	2.7	1
06-041	2684	Vessel	Ceramic	18.2	1
06-042	2684	Vessel	Ceramic		1
06-043	2677	Object	Iron	7.3	3
06-044	2680	Shoe	Leather		1
06-045	2680	Vessel	Ceramic	1.9	1
06-046	2681	Vessel	Ceramic	1.19	1
06-047	2689	Vessel	Ceramic	4.3	1
06-048	2702	Whetstone	Stone	21.3	1
06-049	2705	Object	Iron	10.9	1
06-050	2714	Baking plate	Stone	78	1
06-051	2719	Vessel	Ceramic	5.9	1
06-052	2724	Vessel	Ceramic	3.52	1
06-053	2724	Baking plate	Stone	69.5	1
06-054	2724	Object	Iron	27.3	1
06-055	2724	Schist	Stone	4	1

06-056	2738	Nail	Iron	5.6	1
06-057	2738	Vessel	Ceramic	27.33	1
06-058	2741	Vessel	Ceramic	6.6	1
06-059	2741	Vessel	Ceramic	11.7	1
06-060	2755	Object	Iron	63	1
06-061	2760	Vessel	Ceramic	4.6	1
06-062	2767	Indeterminate	Copper alloy	0.2	1
06-063	2772	Object	Iron	23.3	1
06-064	2775	Rivet	Iron	13.8	1
06-065	2776	Object	Iron	63.9	1
06-066	2777	Industrial waste	Copper alloy	21	1
06-067	2783	Vessel	Ceramic	9.9	1
06-068	2784	Vessel	Ceramic	0.4	1
06-069	2785	Nail	Iron	10.6	1
06-070	2787	Vessel	Ceramic	5.9	1
06-071	2788	Object	Copper alloy	0.6	1
06-072	2783	Nail	Iron	17.7	1
06-073	2795	Horsehair	Fibre	4.6	1
06-074	2804	Object	Copper alloy	0.5	1
06-075	2814	Nail	Iron	3.2	1
06-076	2813	Baking plate	Stone	40.8	1
06-077	2816	Industrial waste	Sulphur	25.3	1
06-078	2824	Textile	Wool	2.48	1
06-079	1	Offcut?	Leather	35.3	3
06-080	2833	Object	Iron	47.3	1
06-081	2837	Worked bone	Worked bone		
06-082	2840	Indeterminate	Lead	1	1
06-083	2842	Worked	Worked bone	0	2
06-084	2846	Vessel	Ceramic	2.9	2
06-085	2842	Object?	Copper alloy	1	2
06-086	2757	Object	Iron	27.3	1
06-087	2757	Slag	Slag	28.8	1
06-088	2853	Vessel	Ceramic	4.5	1
06-089	2853	Object	Copper alloy	4.4	1
06-090	2853	Object	Copper alloy	2.4	1
06-091	2853	Object	Iron	23.8	1
06-092	2853	Vessel	Ceramic	7.4	1
06-093	2856	Bead?	Stone	0.2	1
06-094	2856	Object	Copper alloy	4.6	1
06-095	2856	Nail	Iron	15.7	1
06-096	2863	Nail	Iron	20.9	1
06-097	2862	Polished	Stone	1.8	1
06-098	2865	Object	Iron	8.7	1
06-099	1	Object	Copper alloy	0.4	1
06-100	2869	Textile	Wool	12.3	1
06-101	2869	Schist	Stone	26.5	2
06-102	2872	Object	Copper alloy	2.8	2
06-103	2872	Nail	Iron	8.6	2
06-104	2872	Object	Copper alloy	0.7	1
06-105	2893	Object	Copper alloy	4.9	1
06-106	2893	Vessel	Ceramic	4.6	1
06-107	2904	Object	Copper alloy	0.7	2
06-108	1	Whetstone	Stone	5.3	1
06-109	2921	Object	Iron	17.9	1
06-110	1	Vessel	Ceramic	6.4	1
06-111	2946	Object	Iron	38.2	1
06-112	2946	Baking plate	Stone	9.1	1
06-113	1	Object	Iron	39	1

06-114	1	Baking plate	Stone	122.6	1
06-115	1	Vessel	Ceramic	15.6	1
06-116	1	Nail	Composite	28.6	1
06-117	1	Nail	Iron	14.3	1
06-118	2907	Slag	Slag	5.6	1
06-119	2626	Slag	Slag	0	1
06-120	2467	Quartz	Stone	0.7	1
06-121	1	Stone	Stone	22.9	1
06-122	2774	Quartz	Stone	0.6	1
06-123	2645	Flint flake	Stone	0.5	1
06-124	1	Vessel	Ceramic	0	1
06-125	2751	Sulphur	Sulphur	2.1	2
06-126	2453	Stone	Stone	12.5	1
06-127	2471	Quartz	Stone	4.2	2
06-128	2443	Quartz	Stone	2.2	1
06-129	2595	Quartz	Stone	0.8	1
06-130	2477	Manuport	Stone	1.1	1
06-131	2638	Stone	Stone	6.8	1
06-132	2453	Quartz	Stone	4.1	1
06-133	2594	Wood	Wood	0	1
06-134	2724	Burnt flint	Stone	1.3	1
06-135	2783	Flint flake	Stone	2.1	1
06-136	1	Nail	Iron	13.5	1
06-137	2724	Flint flake	Stone	621	1
06-138	2517	Quartz- natural, discard?	Stone	70.1	1
06-139	2461	Worked	Worked bone	0	1
06-140	2634	Bark	Wood	0	1
06-141	1	Object	Iron	12.6	1
06-142	2724	Baking plate	Stone	1.3	1
06-143	1	Object	Iron	67.3	1
06-144	1	Nail	Iron	4.3	1
06-145	2754	Nail	Iron	9	1
06-146	2751	Object	Iron	2.6	1
06-147	1	Nail	Iron	7.3	1
06-148	1	Nail	Iron	4.7	1
06-149	1	Object	Iron	23.7	1
06-150	1	Slag	Slag	9.2	1
06-151	2456	Slag	Slag	4.4	1
06-152	2467	Slag	Slag	8.7	1
06-153	2522	Object	Iron	8.7	1
06-154	2789	Slag	Slag	7.5	1
06-155	2621	Slag	Slag	24	1
06-156	2948	Slag	Slag	9.2	1
06-157	1	Slag	Slag	30	1
06-158	1	Nail	Iron	5.6	1
06-159	2702	Slag	Slag	33.8	2
06-160	2738	Slag	Slag	41.3	1
06-161	2485	Schist?	Stone	382.4	1
06-162	1	Baking plate	Stone	2.6	7
06-163	2691	Schist	Stone	1	1
06-164	1	Schist	Stone	28.4	1
06-165	2432	Slag	Slag	24.7	2
06-166	2638	Slag	Slag	149	1
06-167	2547	Slag	Slag	95.7	5
06-168	2476	Slag	Slag	62.3	1
06-169	2435	Slag	Slag	30.4	1
06-170	2476	Slag	Slag	10.7	1
06-171	2645	Slag	Slag	10	2

06-172	2440	Slag	Slag	32.3	6
06-173	2427	Slag	Slag	11.4	2
06-174	2414	Slag	Slag	16.5	1
06-175	2517	Slag	Slag	20	5
06-176	2452	Slag	Slag	231	18
06-5101	5019	Bone	Bone	112.5	1
06-5102	5019	Bone	Bone	26.2	1
06-5103	5001	Vessel	Glass	584.3	1
06-5104	5117	Stone	Stone	4.8	1
06-5105	5004	Textile	Wool	0	1
06-5106	5001	Bone	Bone	9.8	1
06-5107	5001	Vessel	Glass	48.1	1
06-5108	5001	Slag	Slag	7.94	1
06-5109	5001	Worked bone	Worked Bone	15	1
06-5110	5135	Stone	Stone	311.7	1
06-5111	5132	Bone	Bone	7.5	1
06-5112	5142	Slag	Slag	14.1	1
06-5113	5143	Nail	Iron	5.3	1
06-5114	5143	Object	Wood	8.5	1
06-5115	5143	Bone	Bone	18.9	1
06-5116	5143	Bone	Bone	9.1	1
06-5117	5143	Rove	Iron	6.7	1
06-5118	5149	Stone	Stone	12.49	2
06-5119	5146	Bone	Bone	29.8	10
06-5120	5148	Bone	Bone	0.7	1
06-5121	5153	Bone	Bone	49.7	1
06-5122	5153	Pin	Iron	2.9	1
06-5123	5162	Nail	Iron	6.5	1
06-5124	5166	Bone	Bone	2.6	1
06-5125	5158	Bone	Bone	19.5	1
06-5126	5167	Stone	Stone	26.1	1
06-5127	5172	Bone	Bone	0.8	2
06-5128	5167	Bone	Bone	42.3	2
06-5129	5177	Stone	Stone	56.4	1
06-5130	5167	Buckle?	Iron	9	1
06-5131	5176	Whetstone	Stone	42.4	1
06-5132	5167	Wood	Wood	4.1	1
06-5133	5167	Pottery	Ceramic	8.9	1
06-5134	5167	Whetstone	Stone	16.3	1
06-5135	5157	Object	Iron	5.7	1
06-5136	5192	Bone	Bone	2.5	1
06-5137	5194	Object	Iron	6.9	1
06-5138	5194	Slag	Slag	97	1
06-5139	5200	Bones	Bone	65.3	1
06-5140	5202	Bone	Bone	6.1	1
06-5141	0	Void	VOID		
06-5142	5206	Baking plate	Stone	129.5	1
06-5143	5205	Wood	Wood	0	1
06-5144	5207	Bone	Bone	39.3	2
06-5145	5207	Wood	Wood	0	1
06-5146	5224	Bone	Bone	140	1
06-5147	5220	Textile	Wool	0	1
06-5148	5190	Bone	Bone	6.4	2
06-5149	5126	Bone	Bone	10	1
06-5150	5019	Slag	Slag	49.7	1
06-5151	5227	Bone	Bone	53.5	1
06-5152	5227	Pottery	Ceramic	13.5	1
06-5153	5227	Bone	Bone	5	1

06-5154	5227	Charcoal	Wood	2.1	1
06-5155	5227	Object	Iron	17.5	1
06-5156	5227	Stone	Stone	19.3	2
06-5157	5227	Flint flake	Stone	5	1
06-5158	5126	Slag	Slag	0.7	1

Appendix 3- Sýnalisti						
No	Area	Context	Grid	Vol	Quant	Description
06-01	A	2415				Hearth
06-02	A	2418			1 Bucket	Turfy deposit
06-03	A	2419			1 bucket	Floor-turf trample
06-04	A	2433			1 Bucket	Hearth
06-05	A	2434			1 Bucket	Floor
06-06	A	2432			1 Bucket	Hearth
06-07	A	2441	8240-5/7695	10 l	1 Bucket	Floor
06-08	A	2463	8245-5/7695	4-5 l	c. 0.5 bucket	Surface
06-09	A	2469	8240-5/7695	3-4 l	c. 0.33 bucket	Peat ash rich occup. Dep.
06-10	A	2470	8240/7695	4-5 l	c. 0.5 bucket	Dark charcoal rich occ. Dep.
06-11	A	2477	8240/7695	20 l	2 buckets	Clay and sand floor
06-12	A	2520	8240/7695	2-3 l	> 1 bucket	Peat ash dump
06-13	A	2521	8240/7695	c. 5 l	1/2 bucket	Laminated occ.XXXX
06-14	A	2525	8240/7695	c. 10 l	1 bucket	Dark soft occ. Deposit
06-15	A	2526	8240/7695	c. 5 l	1/2 bucket	Light brown occ. Deposit
06-16	A	2517	8245/7700 + 7705	10 l	1 Bucket	Hearth
06-17	A	2502	8245/7700	10 l	1 Bucket	Occ. Surface
06-18	A	2534	8240/7695	c. 10 l	1 Bucket	Wood floor
06-19	A	2536	8245/7695	c. 10 l	1 Bucket	Floor
06-20	A	2528	8245/7700	10 l	1 Bucket	XXX dung?
06-21	A	2529	8245/7700	10 l	1 Bucket	Floor
06-22	A	2545	8245/7695	5 l	1/2 bucket	Peat ash occ. Dep.
06-23	A	2544	8250/7700		1 Bucket	Floor
06-24	A	2552	8240/7695	>5 l	1/2 bucket	Occ. Dep.
06-25	A	2555	8245/7700	10 l	1 bucket	Hearth
06-26	A	2571	8240/7695	5 l	1/2 bucket	Peat ash w. Charc.
06-27	A	2578	8240/7695	5 l	1/2 bucket	Peat ash dump
06-28	A	2586	8240/7695	6-7 l	1/2 bucket	Floor
06-29	A	2600	8250/7700		1 Bucket	Hearth
06-30	A	2674				Fill from fireplace w. Charcoal and poss. Dung
06-31	A	2697	8240/7695	3-5 l		Charcoal rich silt
06-32	A	2749	8240/7695	10 l	1 Bucket	Hearth deposit
06-33	A	2776	8240/7700	10 l	1 Bucket	Peat ash dep.
06-34	A	Multi	8240/7695	N/A		Micromorph. # A
06-35	A	Multi	8240/7695	N/A		Micromorph. # B
06-36	A	Multi	8240/7695	N/A		Micromorph # C
06-37	A	Multi	8240/7695	N/A		Micromorph # D
06-38	A	Multi	8240/7695	N/A		Micromorph # E
06-39	A	2816	8265/7705	10 l	1 Bucket	Wood ash + burnt sand
06-40	A	2827	8265/7705	10 l	1 Bucket	Hearth (peat ash)
06-41	A		8245/7695	10 l	1 Bucket	Peat ash fill in pit
06-42	A	2940	8245/7695	5 l	1/2 bucket	Charcoal hearth
06-42b		2944				VOID_renumbered 06-56
06-43	A	2951	8240-5/7695	10 l	1 Bucket	Occupation surface
06-44	A	2980	8245/7695	10 l	1 Bucket	Hearth
06-45	A	2979	Gr. 3003		1 Bag	Unknown tephra in turf
06-46	A	3004	Gr. 3003		1 Bucket	Hearth -C14
06-47	A	2989	8250/7705	5 l	1 Bucket	Peat ash deposit
06-48	A	2977			1 Bag	Peat ash deposit
06-49	A	2992	8250/7705	2.5 l	1 bag	Peat ash deposit
06-50	A	2993	8250/7705	2.5 l	1 Bag	Peat ash deposit
06-51	A	2994	8250/7705	2 l	1 Bag	Wood ash deposit
06-52	F	3008	Area F	10 l	1 Bucket	Peat ash hearth dep.
06-53	F	3006	Area F	Tiny	1 Pc	Charcoal sample
06-54	A	2555				Charcoal, 12.8 gr.
06-55	A	2904	Area A		1 bag	Plant remains. Now broken in two. Found with artefacts
06-56	A	2944		5l	1/2 bucket	Hearth

Appendix 4 - Beinalisti

Bag No.	Area	Context	Object Keyword	Material keyw	QuantWeight gr.	Date	ID	Bags	Notes
06-001	A	2621	animal bone	bone	5	6.8.2006	RH	1	
06-002	A	2632	animal bone	bone	105	6.8.2006	RH	1	
06-003	A	2634	animal bone	bone	317	6.8.2006	RH	1	
06-004	A	2414	animal bone	bone	36	6.8.2006	RH	1	
06-005	A	2424	animal bone	bone	28	6.8.2006	RH	1	
06-006	A	2427	animal bone	bone	22	6.8.2006	RH	1	
06-007	A	2428	animal bone	bone	9	6.8.2006	RH	1	
06-008	A	2437	animal bone	bone	28	6.8.2006	RH	1	
06-009	A	2440	animal bone	bone	18	6.8.2006	RH	1	
06-010	A	2443	animal bone	bone	24	6.8.2006	RH	1	
06-011	A	2445	animal bone	bone	27	6.8.2006	RH	1	
06-012	A	2446	animal bone	bone	7	6.8.2006	RH	1	
06-013	A	2452	animal bone	bone	123	6.8.2006	RH	2	
06-014	A	2453	animal bone	bone	2	6.8.2006	RH	1	
06-015	A	2456	animal bone	bone	2	6.8.2006	RH	1	
06-016	A	2459	animal bone	bone	14	6.8.2006	RH	1	
06-017	A	2471	animal bone	bone	25	6.8.2006	RH	1	
06-018	A	2475	animal bone	bone	2	6.8.2006	RH	1	
06-019	A	2478	animal bone	bone	5	6.8.2006	RH	1	
06-020	A	2490	animal bone	bone	15	6.8.2006	RH	1	
06-021	A	2494	animal bone	bone	24	6.8.2006	RH	1	
06-022	A	2473	animal bone	bone	38	6.8.2006	RH	1	
06-023	A	2503	animal bone	bone	2	6.8.2006	RH	1	
06-024	A	2504	animal bone	bone	22	6.8.2006	RH	1	
06-025	A	2535	animal bone	bone	5	6.8.2006	RH	1	
06-026	A	2549	animal bone	bone	5	6.8.2006	RH	1	
06-027	A	2553	animal bone	bone	3	6.8.2006	RH	1	
06-028	A	2564	animal bone	bone	2	6.8.2006	RH	1	
06-029	A	2583	animal bone	bone	6	6.8.2006	RH	1	
06-030	A	2595	animal bone	bone	10	6.8.2006	RH	2	
06-031	A	2638	animal bone	bone	6	6.8.2006	RH	1	
06-032	A	2642	animal bone	bone	13	6.8.2006	RH	1	
06-033	A	2645	animal bone	bone	30	6.8.2006	RH	1	
06-034	A	2651	animal bone	bone	15	9.8.2006	RH	1	
06-035	A	2652	animal bone	bone	2	9.8.2006	RH	1	
06-036	A	2654	animal bone	bone	34	9.8.2006	RH	2	
06-037	A	2656	animal bone	bone	90	9.8.2006	RH	1	
06-038	A	2662	animal bone	bone	144	9.8.2006	RH	1	
06-039	A	2668	animal bone	bone	33	9.8.2006	RH	1	
06-040	A	2669	animal bone	bone	231	9.8.2006	RH	1	
06-041	A	2679	animal bone	bone	43	9.8.2006	RH	1	jaw
06-042	A	2680	animal bone	bone	107	9.8.2006	RH	1	horncore
06-043	A	2681	animal bone	bone	500	9.8.2006	RH	1	
06-044	A	2692	animal bone	bone	5	9.8.2006	RH	1	
06-045	A	2705	animal bone	bone	4	9.8.2006	RH	1	
06-046	A	2706	animal bone	bone	8	9.8.2006	RH		
06-047	A	2716	animal bone	bone	3	9.8.2006	RH	1	
06-048	A	2718	animal bone	bone	108	9.8.2006	RH	1	
06-049	A	2719	animal bone	bone	3	9.8.2006	RH	1	
06-050	A	2724	animal bone	bone	89	9.8.2006	RH	1	
06-051	A	2725	animal bone	bone	12	9.8.2006	RH	1	
06-052	A	2730	animal bone	bone	121	9.8.2006	RH	1	
06-053	A	2735	animal bone	bone	12	9.8.2006	RH	1	
06-054	A	2738	animal bone	bone	13	9.8.2006	RH	1	
06-055	A	2739	animal bone	bone	84	9.8.2006	RH	1	
06-056	A	2750	animal bone	bone	5	9.8.2006	RH	1	bird femur, left side
06-057	A	2752	animal bone	bone	71	9.8.2006	RH	1	
06-058	A	2754	animal bone	bone	24	9.8.2006	RH	1	
06-059	A	2755	animal bone	bone	63	9.8.2006	RH	1	
06-060	A	2760	animal bone	bone	11	9.8.2006	RH	1	
06-061	A	2761	animal bone	bone	63	9.8.2006	RH	1	
06-062	A	2763	animal bone	bone	54	9.8.2006	RH	1	
06-063	A	2766	animal bone	bone	8	9.8.2006	RH	2	
06-064	A	2772	animal bone	bone	172	9.8.2006	RH	1	
06-065	A	2776	animal bone	bone	46	9.8.2006	RH	1	
06-066	A	2781	animal bone	bone	46	9.8.2006	RH	1	
06-067	A	2782	animal bone	bone	31	9.8.2006	RH	1	
06-068	A	2783	animal bone	bone	1320	9.8.2006	RH	4	
06-069	A	2785	animal bone	bone	26	9.8.2006	RH	1	
06-070	A	2795	animal bone	bone	17	9.8.2006	RH	1	
06-071	A	2799	animal bone	bone	8	9.8.2006	RH	1	
06-072	A	2807	animal bone	bone	29	9.8.2006	RH	1	