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Preliminary Report 2021: Coring and Excavations at Hof in Hjaltadalur

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RANNSÓKNASKÝRSLUR FERÐAMÁLADEILDAR HÁSKÓLANS Á HÓLUM



Preliminary Report 2021: Coring and Excavations at Hof in Hjaltadalur

John M. Steinberg, Zachary N. Guttman and Guðný Zoëga

HJALTADALUR ARCHAEOLOGICAL SETTLEMENT PROJECT



HH 2022/6

Photo on front page – Zachary Guttman with exposed profile at Hof showing rocks from landslide just under the black 1766 tephra



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HH 2022/6 (Hólar University Research Report no. 6)

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Titill: Preliminary Report 2021: Coring and Excavations at Hof in Hjaltadalur

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2022

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Kathryn Catlin designed the scheme for displaying coring data for her dissertation. Unless otherwise noted, the underlying data such as elevation land type are based on data from Landmælingar Íslands (the National Land Survey of Iceland). Images and data are used based on the terms of the License for National Land Survey of Iceland free data (<https://www.lmi.is/is/moya/page/licence-for-national-land-survey-of-iceland-free-data>). Aerial photographs, unless otherwise noted, are from Loftmynd ehf. and in accordance with the educational license are marked with their square logo.

Any opinions, findings, conclusions, or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the individuals and institutions who support this work. Products, data, or instruments mentioned should not be construed as an endorsement.

Hólar University

Hólar University is located at Hólar in Hjaltadalur, North Iceland. For over 700 years Hólar was one of Iceland's two episcopal sees and an important power base in North Iceland. The first school in Hólar was founded at the establishment of the bishopric in 1106 AD. It was renamed Hólar Agricultural College in 1882 and became Hólar University in 2007. Hólar offers education centered on rural communities and specializes in three areas: aquaculture, equine science, and rural tourism. Hólar houses the Center for the history of the Icelandic horse, Hólar Cathedral, and the turf house Nýibær.

Fiske Center for Archaeological Research

The Andrew Fiske Memorial Center for Archaeological Research at the University of Massachusetts Boston was established in 1999 through the generosity of the late Alice Fiske and her family as a living memorial to her late husband Andrew. As an international leader in interdisciplinary research, the Fiske Center promotes a vision of archaeology as a multi-faceted, theoretically rigorous field that integrates a variety of analytical perspectives into its studies of the cultural and biological dimensions of colonization, urbanization, and industrialization that have occurred over the past one thousand years in the Americas and the Atlantic World. As part of a public university, the Fiske Center maintains a program of local archaeology with a special emphasis on research that meets the needs of cities, towns, and Tribal Nations in New England and the greater Northeast. The Fiske Center also seeks to understand the local as part of a broader Atlantic World.

Hjaltadalur Archaeological Survey Project - HASP

The Hjaltadalur Archaeological Survey Project seeks to determine if Hólar, the historically important site of the northern bishopric, rose to political and religious primacy due to the conditions created during the initial settlement of Iceland around A.D. 870, or if it arose as part of a fundamental social reorganization associated with the later institutionalization of Christianity. Through a program of soil coring, geophysics, and test excavation, the project will chronicle the changing site size and relative importance of Hólar and its neighboring 20 farms. This will allow us to determine if the institutionalization of Christianity in the valley of Hjaltadalur was directly dependent on the conditions of the initial settlement, or if it was an outcome of the placement of the bishopric at an otherwise ordinary farm.

Contents

Acknowledgments.....	ii
Hólar University.....	iii
Fiske Center for Archaeological Research	iii
Hjaltadalur Archaeological Survey Project - HASP	iii
Contents	iv
List of Figures.....	v
List of Tables	vi
Útdáttur (Icelandic Summary)	1
Abstract.....	1
Introduction.....	2
Geology and tephra in Hjaltadalur.....	3
Farmstead stratigraphy.....	4
Short history of Hof	4
Previous archaeological work.....	7
Land Surveying and establishment of grids.....	8
Coring	8
Excavations.....	12
Test Pit 4	13
Test Pit 5	13
Test Pit 6	14
Estimation of farm size	23
Archaeological surface remains at Hof.....	34
Discussion.....	38
Conclusion and further work	39
References.....	41
Appendix A - The protocol used for the HASP coring and test-trenching project.....	44
Farmstead deposits identified in coring.....	44
Appendix B – 2021 Excavation data	48
Appendix C – 2021 Excavation Harris matrices.....	49
Appendix D – 2021 Coring Data	51
Data set 1 Coring locations	51
Fields.....	51

Data set 2: Core layers	51
Fields.....	51
Data set 3: core tephra.....	52
Fields.....	52

List of Figures

Figure 1. Map of Hjaltadalur showing modern farm boundaries in yellow. Hólar, which contains Hof, are both in bold.....	2
Figure 2. Outlines of original land claims from <i>Landnámabók</i> . The subdivision of Sleitu-Björn's claim (Kolbeinn, Hjalit & Öndóttur) is indicated. Farmsteads along Hjaltidal are represented by triangles and farmsteads with churches by crosses.	5
Figure 3. Georeferenced 1917 túnakort map superimposed on air photo.....	6
Figure 4. Core locations at Hof.....	10
Figure 5. Area of high disturbance. Cores are displayed showing the percentage of disturbed deposits within them.	11
Figure 6. Test pit locations at Hof. The building next to TP4 is the main farmhouse.....	12
Figure 7. Location of Test pit 4 with pre-1104 cores underlain by orthophoto.....	16
Figure 8. Location of Test pit 5 with pre-1104 cores underlain by orthophoto.....	17
Figure 9. Location of Test pit 6 with pre-1104 cores underlain by orthophoto. The yellow structure (left) is the turf structure identified by the 2001 SASS project	18
Figure 10. Drawn profile of north and west walls of test pit 4.	19
Figure 11. Drawn profiles of test pit 5	20
Figure 12. Drawn profiles of Test pit 6.....	21
Figure 13. Photo of the west wall of TP4 with H1 tephra visible.....	22
Figure 14. Photo of the top of context [131] in TP5	22
Figure 15. Farm mound areas superimposed on orthophoto.....	25
Figure 16. Farm mound areas with pre-1104 cores	26
Figure 17. Farm mound areas with 1104-1300 cores	27
Figure 18. Post-1300 cores	28
Figure 19. Close up of lower farmstead area with pre-1104 cores	29
Figure 20. Close up of lower farmstead area with 1104-1300 cores	30
Figure 21. Close up of upper farmstead and area with 1104-1300 cores	31
Figure 22. Close up of the area around core 211725	32
Figure 23. Pre-AD 1104 Hof showing (from south to north) graves in a probable churchyard, the concentration of early midden deposits seen in cores, the ephemeral pre-1104 deposits around Hoftoft, and a potentially short-lived early longhouse. (G. Ólafsson created the map of Halaftoft; T Horsley produced the resistivity map of the churchyard area).	33
Figure 24. Preserved areas of Hof.....	34

Figure 25. Skálatóft and Hoftóft preserved monuments with pre-1104 core locations and results shown.	36
Figure 26. The scheduled monument of Halatoft superimposed on G. Ólafsson's map with earlier excavations (pink) and current excavations (black). Cores and cultural material are indicated by turquoise symbol (see Figure 16 for symbol key).....	37
Figure 27. Hjaltahaugur monument with surrounding cores.	38
Figure 28. Harris matrix of test pit 4.....	49
Figure 29. Harris matrix of test pit 5.....	49
Figure 30. Harris matrix of test pit 6.....	50

List of Tables

Table 1. Farm mounds sizes. Area is in square meters, centroids are in ISNET93	24
Table 2. Context list.....	48
Table 3. Preliminary Find list	48

Útdáttur (Icelandic Summary)

Í þessari skýrslu er gerð grein fyrir fornleifarannsókn á Hofi í Hjaltadal á vegum verkefnisins Hjaltadalur Archaeological Survey Project (HASP). Rannsóknin er þriggja ára samstarfsverkefni Háskólans á Hólum og UMass Boston háskóla, með styrk frá Bandaríska rannsóknarsjóðnum (National Science Foundation). Hún fór fram sumarið 2021 og beindist fyrst að aðaljörðunum tveimur, landnámsbýlinu Hofi og biskupssetrinu á Hólum. Rannsóknin fór að stærstu leyti fram fram í formi borkjarnatöku, en á völdum stöðum voru smærri könnunarskurðir teknir í meinta öskuhauga til frekari aldursgreiningar og sýnatöku. Borkjarnar gáfu til kynna að býlið hafi verið heldur minna en önnur landnámsbýli sem rannsökuð hafa verið í Skagafirði. Hinsvegar virðist það stækka milli 1104 og 1300. Könnunarskurður, tekinn í öskuhaug rétt norðan núverandi bæjarhúsa á Hofi 1, gaf til kynna byggð á þeim stað bæði fyrir og eftir 1104. Um 150m norður af því bæjarstæði eru friðlýstar leifar skálatóftar en þar fundust litlar leifar mannvistar utan skálans, sem gæti að hluta skýrst af 20. aldar landvinnslu, en einnig kann búseta þar að hafa verið skammvinn. Ummerki mannvistar fyrir 1104 á núverandi bæjarstæði bendir ennfremur til að bærinn hafi snemma flust þangað. Við, og að hluta ofan, suðurenda skálans eru leifar yngri tóftar, mögulega lítils miðaldabæjar. Leifar af öskuhaugi sem gæti tilheyrt þeirri byggingu fundust í brekku austan hennar. Á Hofi er að finna vel varðveitt minjalandslag, en minjar þar eru margar hverjar friðlýstar sem leifar landnámsbæjarins. Hinsvegar er nú ljóst að sumar þeirra eru leifar 12.-13. aldar byggðar á staðnum. Þegar byggt var við íbúðarhúsið á Hofi 1 1955 og við gerð hitaveituskurðar 1983 komu í ljós beinagrindur úr kristnum grafreit sem tímasettar hafa verið til 13. aldar. Það er því augljóst að þvert á viðtekna söguskýringu um að byggð á Hofi hafi lagst af á 10. öld og flust í Hóla, þá var á Hofi býli og kirkjugarður allt fram á 13. öld. Ritheimildir geta afbýlis frá Hólastað á Hofi 1550 og vera kann að þar hafi verið stopul byggð gegn um aldirnar en niðurstöður fornleifarannsókna benda til að byggð hafi að mestu lagst af um og eftir 1300. Nýr bær var byggður ofan á gömlu bæjar- og kirkjugarðsleifunum 1824 og hófst þá byggð á Hofi að nýju. Seinni tíma byggingaframkvæmdir hafa máð út öll yfirborðsummerki fornrar byggðar á bæjarstæðinu og þar eru jarðlög mjög rótuð. Ítarlegri rannsókn þarf til að kanna betur tengsl landnámsskálans og byggðar á bæjarstæðinu, auk þess sem frekari aldursgreining kann að gefa skýrari mynd af tengslum bæjarins og Hólastaðar.

Abstract

This report outlines the 2021 work at Hof as part of the Hjaltadalur Archaeological Survey Project (HASP). The results of soil coring suggest that the site of Hof is relatively small compared to other settlement farms. The footprint of the farmstead expands substantially after the 11th Century. The midden from the 11th and 12th centuries appears to be located just north of the main farmhouse (Hof 1). Cores from this area show an abundance of midden on either side of the white AD 1104 tephra. There is a notable absence of post-1300 midden deposits. The excavation unit dug on the main farm mound supports this conclusion. The other two excavation units placed in the fields to the west and north of the main farm mound show evidence of post-1104 midden and the expansion of the farmstead. The coring and excavations suggest that many of the visible ruins at Hof are remnants of the occupation in the 12th and 13th

centuries. Overall, this data suggests that Hof was occupied from before 1104 to sometime around 1300 before being abandoned as a fully functioning farm.

Introduction

The modern farm of Hof lies within the land boundary of the Hólar estate (Figure 1). The farmstead is located on the northern slope deep in the valley of Hjaltadalur, a scree-lined glacial valley in the east of Skagafjörður, North Iceland. More specifically, the site occupies the boundary between the valley's midland region and the start of the highland passes (Carter 2010). The valley of Hjaltadalur is historically important, as this was where the northern bishopric was established at Hólar in 1106 AD. Hólar was the primary power center of northern Iceland, boasting a population of more than a hundred residents at its peak. Hof sits approximately 2.1 kilometers southeast of Hólar, at a slightly higher elevation on the northern side of the Hjaltadalsá river. The site of Hof also holds historical importance—according to the *Landnámabók* (The Book of Settlements) it was the first farm settled in the valley (Íslensk fornrit I, landnámabók). The name of the farm is notable, being the Old Norse word for temple, but no sources mention such an establishment there. The site is made up of two geological areas: a raised plateau of dry rocky soils and abundant scree on the northern half of the site, and flat wetlands to the south consisting of bog soils extending to the Hofsá river (Carter 2010).

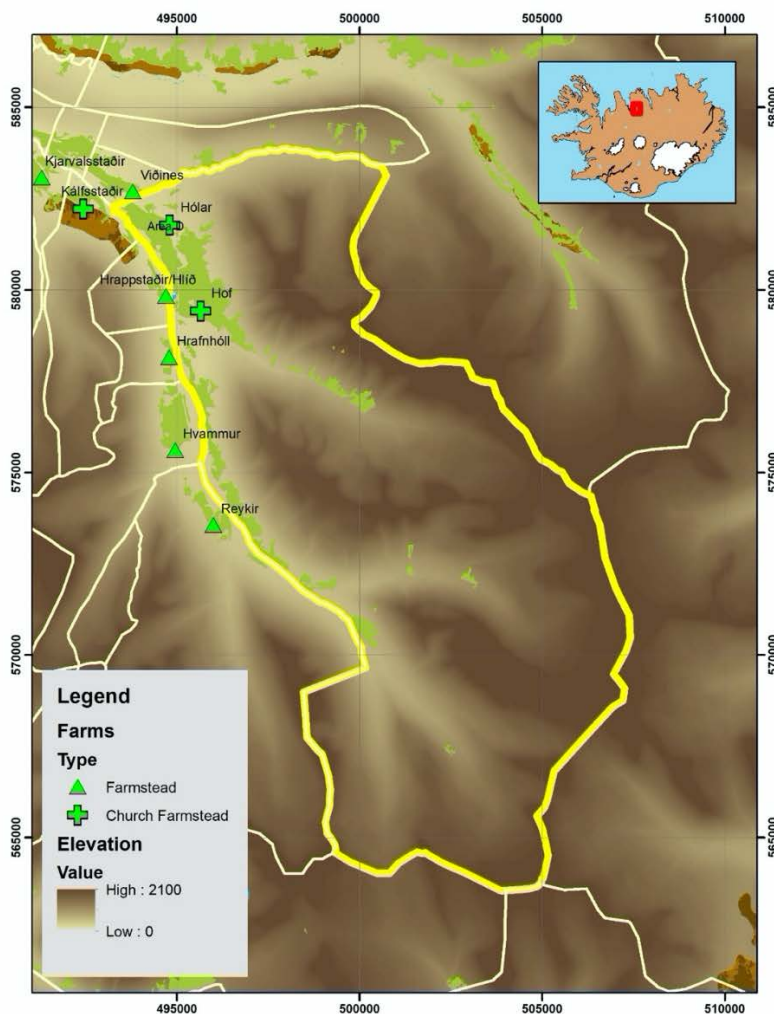


Figure 1. Map of Hjaltadalur showing modern farm boundaries in yellow. Hólar, which contains Hof, are both in bold.

The present farmstead at Hof consists of two components: Hof I and Hof II. Hof I is the main farmhouse, located on the plateau at 180 masl and Hof II lies about 120 meters east of Hof I, higher up on the northeastern slope of the valley. The contemporary farmstead is agriculturally productive, specializing in horses and grass cultivation. The residential building at Hof I stands adjacent to the north of the location of the old turf farmstead. The current house was built in 1938 with a later extension.

Geology and tephra in Hjaltadalur

The geology of the Hjaltadalur region is characterized by flows of Upper Tertiary basic and intermediate extrusive basalts (Feuillet *et al.* 2012) interbedded with weak pulverized red vesicular basaltic strata (Decaulne *et al.* 2016). The area was deglaciated by 6100 yr cal.BP and then subject to uplift (Cossart *et al.* 2014). Hjaltadalur is a large scree-lined glacial valley with several distinct ecological zones corresponding to both highland and midland elevations. The midland areas are characterized by organic-rich soils and iron, while highland areas have drier soils and dwarf birch forests (Carter 2010). Carter (2010) suggests that Hjaltadalur is naturally sheltered by large mountain ranges resulting in a slow rate of erosion.

The natural stratigraphy of the near-surface of the region consists of rapidly formed sediment and soil with intermixed tephra layers, along with gravel layers and lenses of glacial origin. The soil is a brown andosol that derives from aeolian sediments of volcanic origin but is not the direct product of eruptions (Arnalds *et al.* 1995; Arnalds 2004, 2008). The andosol is non-cohesive but has an extremely high water-retention capacity (Arnalds 2008).

The Hjaltadalur Archaeological Survey Project relies heavily on tephra layers preserved in the soil. Skagafjörður has an early tephra sequence that allows for a fine-grained chronology of the changes in early settlement patterns (Larsen *et al.* 2002). While tephra deposition can vary over small distances (Davies *et al.* 2010) the basic tephra sequence is found throughout Skagafjörður and allows for a common dating system among farms and farmsteads (Þórarinnsson 1977). The geologist and tephra specialist Magnús Sigurgeirsson oversaw the analysis of tephra for the project.

❖ Historic:

- Hekla A.D. 1766. A black tephra usually found in turf or in the upper 10 cm of the soil sequence (Þórarinnsson 1967; Kirkbride and Dugmore 2006).
- Hekla A.D. 1300: A gray-blue to dark black tephra (Larsen 1984; Sveinbjarnardóttir 1992; Larsen *et al.* 1999; Larsen *et al.* 2001; Larsen *et al.* 2002).
- Hekla A.D. 1104 (H1). This white or yellowish-white tephra is the most consistent in Skagafjörður (Eiríksson *et al.* 2000) and is readily identifiable in both natural and cultural stratigraphic sequences.

❖ Landnám sequence (LNS):

- Vj~1000 tephra. A blue to bluish-black layer whose source has not been determined but is likely to be either from a Grímsvötn and/or Veiðivötn eruption dated to approximately A.D. 1000 (Sigurgeirsson 2001). The layer was first suggested in two undergraduate theses (Ólafsson 1985; Jónsson 2005) and it has been proposed that this layer may be found in other areas (Aldred and Sigurgeirsson 2005; Lárusdóttir *et al.* 2012). Preliminary analysis of the composition of volcanic glass shards by scanning electron microprobe (SEM) has identified a mixture of shards from both volcanic sources.

- “Landnám” or “settlement” layer (LNL, LTL, also designated as 871). The layer is so-named for its association with the earliest settlements in Iceland (Dugmore and Newton 2012)) and is dated to A.D. 871 ±2, (Grönvold *et al.* 1995), but could be dated to A.D. 877±4 (Zielinski *et al.* 1997; Schmid *et al.* 2017). The tephra originates from the Vatnaöldur fissure swarm associated with the Torfajökull and Bárðarbunga volcanos (Larsen 1984; Dugmore and Newton 2012). In general, this layer consists of two distinct tephras—an olive-green tephra overlying a white tephra. However, in Skagafjörður, only the green portion is present (cf. Hallsdóttir 1987). In many cases, this layer and surrounding layers of the LNS are tightly spaced in a brown organic-rich soil matrix associated with the environmental changes of colonization.
- Black tephra below the LNL (K600). The earliest tephra in this sequence is a dark black layer probably from the Katla volcano but is not well dated (Wastegard *et al.* 2003).
- ❖ Prehistoric:
 - Hekla 3 (H3). A thick (generally 2-3 cm) white or whitish-yellow tephra dating to about 950 B.C. (Dugmore *et al.* 1995).
 - Hekla 4 (H4). A thick (generally 1-3 cm) white or yellowish-white tephra dating to about 2300 B.C. (Eiriksson *et al.* 2000).

Deposits are then periodized using these tephras (and AMS dates when available) in a sequence of date ranges. These ranges are not applied to tephra layers (which are given a single date). In the absence of a tephra layer, the latest date range is applied.

Farmstead stratigraphy

Chronological phasing of farmstead sizes primarily relies on two tephra layers: the white Hekla AD 1104 (H1) and the dark Hekla AD 1300. These layers are most commonly found in cores and are often the easiest to identify of the historical tephras. H1 is presented twice as often as Hekla A.D. 1300. Using these tephra layers to date cultural deposits allows for the chronological phasing of farmstead sizes and for farmstead sizes to be compared across contemporary temporal horizons. Their presence also allows for the identification of changes in the size of individual farmsteads. Other tephra layers are used to help identify the overall stratigraphic sequence in the soil cores and to associate specific layers with historical periods. Deposits categorized by these temporal phases are based on whether or not they contained “farmstead” material. The resulting chronology allows for the estimation of farmstead size for three primary periods:

- Pre-AD 1104
- AD 1104-1300
- Post-AD 1300

Short history of Hof

The earliest mention of Hof is found in the *Landnámabók (the Book of Settlements, Íslensk fornrit I* 1986), which recounts the details of the initial settlement of Iceland and the land claims staked by the approximately 400 settlers starting in around A.D 870 (Smith 1995). According to this source, a wealthy and influential chieftain named Hjalti Þórðarson took possession of the valley of Hjaltadalur and established the first farm at Hof. According to *Landnámabók*, the first settler in the region was Sleitu-Björn Hróarsson whose huge land claim was later

subdivided roughly into fourths (Sleitu-Björn at Sleitu-Bjarnastaðir, Öndóttur at Viðvík, Kolbeinn somewhere in Kolbeinsdalur, and Hjalti at Hof in Hjaltadalur, Figure 2). Hjalti’s funeral at Hof is described as “the most magnificent funeral feast ever to be held in Iceland”, attended by 1200 guests. *Landnámabók* mentions two sons, Þorvaldur and Þórður, and that their lineage was both large and powerful (*Íslensk fornrit I.* 1986). The general assumption has been that Hólar took over from Hof at some point in the 10th century as the main farm in Hjaltadalur, but no written sources throw light on how or when that happened.

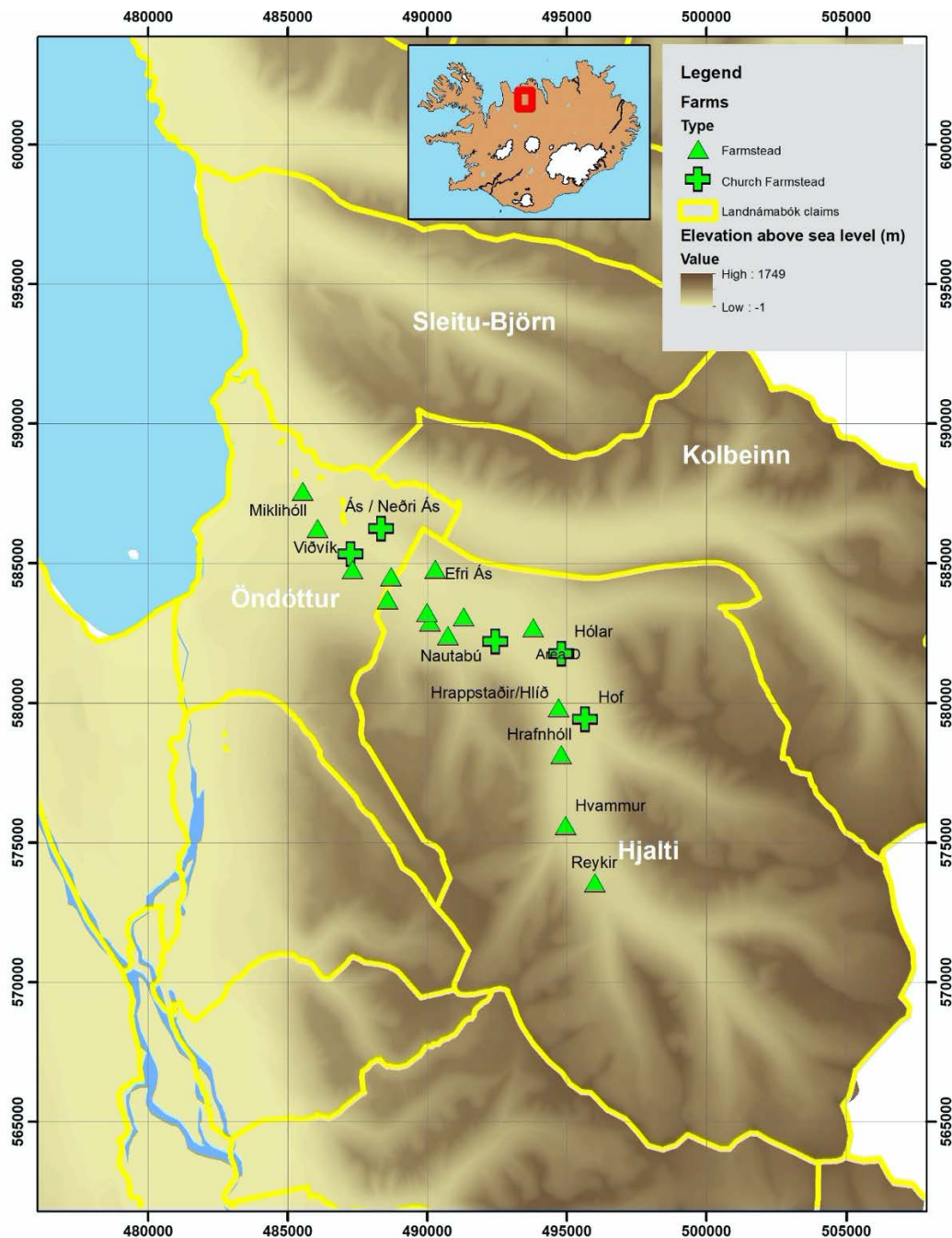


Figure 2. Outlines of original land claims from *Landnámabók*. The subdivision of Sleitu-Björn’s claim (Kolbeinn, Hjalti & Öndóttur) is indicated. Farmsteads along Hjaltidal are represented by triangles and farmsteads with churches by crosses.

The 18th-century *Jarðabók* (collected in 1714) suggests that Hof was already abandoned when the bishopric at the neighboring farm of Hólar was formed in 1106. According to this source, only the bishopric's sheep corrals were located at Hof (Magnússon and Vidarín 1930, 218). An abandoned Hof farm is also mentioned in 18th and 19th-century travelogs (Henderson 1818; Olafsson 1964). In the 1550 Sigurðar Register, Hof is included as a rented sub-farm within the estate boundary of Hólar (Íslenzkt fornbréfasafn. 1906-1913, 859) which indicates that the farm might have been temporarily occupied, at least at that time.

In 1824 Benedikt Vigfússon purchased the Hólar estate (along with Hof), which had been deteriorating, and lost the see in 1801. He started to rehabilitate the property. In 1827 Benedikt Vigfússon restarted farming at Hof and a tenant lived in a newly constructed turf house (Pálsson 2011, 129). A new concrete house was built in 1938 next to the old turf house. The old turf house was demolished in 1956 (Pálsson 2011, 125). In the *Jarðatal á Íslandi* census, (Johnsen 1847, 267), Hof is characterized as a tenant/sharecropper farm and described as a newly constructed on Hólar's homeland. The 1916 túnakort (Þjóðskjalasafn Íslands 1917) indicates the location of about 10 structures for animals, the location of the old turf house along with the outline of the infield (Figure 3). Today, only one fallen-down sheep pen built of stone and turf remains.

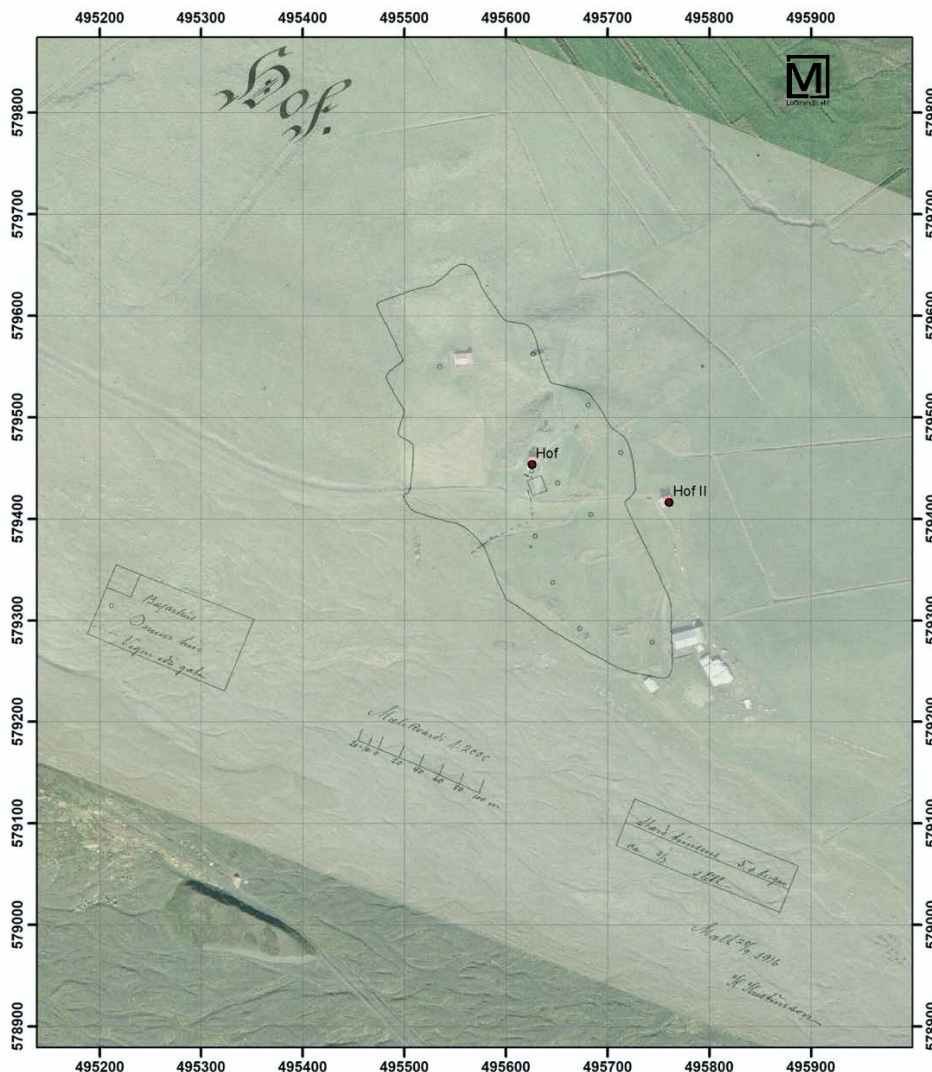


Figure 3. Georeferenced 1917 túnakort map superimposed on air photo.

Previous archaeological work

In 1886 Sigurður Vigfússon (1892) visited Hof and described several of the visible runes. This visit forms the basis of much of the official preservation of specific areas of the farm. The only excavation he did was a small test trench into Hjaltahaugur, the proposed burial of the first settler. Benedikt Vigfússon, the priest at Hólar from 1827-1861, had started this excavation and these earlier results are unknown. Sigurður Vigfússon (1892, 109) continued Benedikt Vigfússon's excavation, and concentrated in the center of the mound, and found, by testing with a steel rod, that the mound was mostly stone and difficult to penetrate. He seems to have abandoned the excavation mid-way. There is still a trench visible today that we assume is related to both Benedikt Vigfússon & Sigurður Vigfússon's combined excavations.

The remains of a Christian cemetery dating to the 13th century were discovered at Hof during the demolition of the old turf farmhouse in 1955 and during utility work in 1983 (Ólafsson 1984). These skeletons dated to the 13th century—a time when no sources mention occupation of the farm. (Sveinbjörnsdóttir *et al.* 2010). In 1999 Gunnarsdóttir (2000) conducted an archaeological survey at the farm, registering all known surface and sub-surface remains.

A soil coring survey was undertaken at Hof in 2001 by the Skagafjörður Archaeological Settlement Survey (SASS) project with the goal of reconstructing the medieval environment (Steinberg 2001; Carter 2003, 2010). Soil profiles and subsequent conductivity measurements discovered pre-modern cultural material on the raised plateau in the northern half of the site suggesting that Hof was abandoned before 1104 and reoccupied just after 1300. Two test trenches confirmed the survey results revealing the remains of a potential longhouse dating to before 1104, as well as a late medieval (post-1300) turf structure. According to Steinberg (2001), the areas to the east and north of these ruins may have been agriculturally productive in the past but have since been heavily eroded, potentially contributing to the early abandonment of the site and re-occupation at the current farmstead location (but see Archaeological surface remains at Hof section on page 34). Other than the turf walls and several loom weights, no cultural deposits consistent with burning and long-term occupation were identified.

In 2002, Tim Horsley conducted a resistivity survey of the area due south of Hof 1. There was no obvious church foundation, but the survey may show some features of the post-*Járðabók* turf structure.

Carter and Traustadóttir (2012) returned to Hof in 2008 and conducted additional soil coring and targeted excavation as part of Carter's dissertation work (2010). One of the test trenches from the 2001 survey was reopened and extended to more securely date the suspected longhouse structure and clarify the earliest occupation at the site. The re-excavation upheld the previously determined pre-1104 date for the structure. Turf and stone were both used as building materials in the structure, and parallel rows of stone flanked either side of the turf walls. This layout was reminiscent of stone sleeping benches found in other medieval longhouses. Overall, the oval shape of the structure combined with the possible stone benches indicated that it was likely a longhouse dating to the earliest occupation of the site. No cultural deposits of occupation (e.g., floors, burnt charcoal, or peat ash) were identified in the reopening.

In 2011, Zoëga and Pálsson (p. 124) conducted limited ad-hoc coring at a few locations around Hof to date a few remains that are specified under heritage protection laws. Cores were taken into the remains of the so-called Skálatóft ruin, which yielded almost no signs of any human activity other than the visible evidence of the construction of the extensive turf walls. Specifically, no floors, charcoal, or peat ash deposits were identified at Skálatóft and the structure seems to be constructed during the AD 1104-1300 interval. A few cores were put into the Hoftóft location which yielded some turf and deposits of charcoal that were clearly pre-1104 and a potential floor that might also be that early. Coring was also done at the Sundlaug showing that the now ephemeral turf walls seem to have been constructed after 1104, and probably before 1300.

Land Surveying and establishment of grids

All land-survey data were collected based on the ISN93 coordinate system. Core locations were determined in several ways. For only a few cores that were taken at widely spaced intervals and away from potential occupation sites, the internal GPS receiver in the iPads that were used to record the coring data was used.

Within Hof, most cores were collected on a 10 x 10 m paced grid. The cores were initially located with the internal iPad GPS and then refined with a HiPer SR DGPS corrected with the IceCORS network (<https://www.lmi.is/is/maelingar/icecors>). Similarly, judgmentally placed cores were originally located with an iPad and then refined by a Topcon HiPer SR to improve upon the accuracy of the locational data.

Coring

During the 2021 field season, 747 cores were taken at Hof (Figure 4). There were 39 (5.2%) cores that had midden deposits within them. Out of these cores, 22 (56.4%) were located within 50 meters of the main farmhouse. No cores at Hof contained floor deposits, and only one core contained a cultural layer. There were 40 (5.4%) cores that contained low-density cultural deposits (LDC) and 71 (9.5%) that contained turf deposits. Many cores contained multiple types of deposits, but overall, 122 (16.3%) cores contained some sort of cultural deposit while 625 (83.7%) had none.

As for tephra layers, 11 cores contained an in situ 1766 tephra (1.5%), which is usually very difficult to identify in cores (e.g., of the 1,993 total cores taken at Hof and Hólar in the 2021 field season, 16 (0.8%) contained in situ 1766 tephra). There were 54 (7.2%) cores that contained an in situ 1300 tephra layer, higher than the amount identified for both Hof and Hólar combined (4.6%). In situ H1 tephra was relatively abundant, appearing in 125 (16.7%) cores. This was slightly below the average amount found at both Hof and Hólar (18.2%). The prehistoric H3 tephra was the most commonly identified. It appeared in 208 (27.8%) cores, while the H4 tephra appeared in 58 (7.8%). These percentages are slightly lower than the percentages for both sites as a whole (33.7% for H3 and 9.3% for H4). Seventeen (2.3%) cores encountered an in situ dark tephra between the H1 and the time of settlement. This was identified in the field as the “1000” layer. This Hof percentage was higher than the 1.4% of cores containing 1000 for both sites. Finally, 27 (3.6%) cores were found to contain an in situ

LNL (slightly higher than the 3.1% for both sites), and 16 (2.1%) contained the LNS, which appeared as a dark distinct mixed layer (the same percentage as the amount at both sites).

Overall, the sequence of tephra layers at Hof ranked in terms of their frequency is almost identical to that of both Hof and Hólar as a whole. At Hof, with tephra frequency increasing from left to right, the order is: 1766, LNS, 1000, LNL, 1300, H4, H1, and H3. For both sites, the order is the same except that 1000 and LNS are switched. Additionally, the five tephra layers with the lowest frequency of occurrence have either slightly higher percentages or the same percentage when looking at Hof compared to both sites combined. Conversely, the top three most abundant tephra (H4, H1, and H3) have higher percentages when looking at both sites.

The cores taken at Hof bottom out an average depth of 40.03 cm (SD = 28.37) below the ground surface. The overall average core depth for both Hof and Hólar during the 2021 field season is 44.37 cm. This suggests that the cores from Hof are generally shallower than the cores taken at Hólar, a fact likely attributed to the large amount of scree at the site. Additionally, the 122 cores at Hof containing some sort of cultural deposit have an average end depth of 72.9 cm (SD = 28.4), approximately 33 cm deeper than the average core depth at the site (all cores). Similarly, for both sites combined, the average depth of a core with some type of cultural deposit is 78.5 cm, around 34.1 cm deeper than the average core depth.

Based on the coring data, one continuous area was visually identified with a high percentage of disturbance. No cores with preserved 1104 or 1300 tephra or confirmed farmstead deposits were present within this area (Figure 5). Only one core with an LNT was observed in this area and 8 cores with H3. This area runs approximately northeast to southwest for 220 meters, overlapping the main farmhouse and making a boundary between the area of the farmstead with Hjaltahaugur to the east and the slope of the main farm mound to the west. This disturbed area is consistent with the land leveling activities, probably with heavy machinery,

More importantly, the coring also identified an area on the edge of the plateau just northeast of Hof 1 that had a substantial and well-preserved deposit of pre-11004 charcoal, peat ash, wood ash, charcoal, and burned bone. This substantial area, as well as two smaller areas of peat and wood ash, were investigated with test pits.

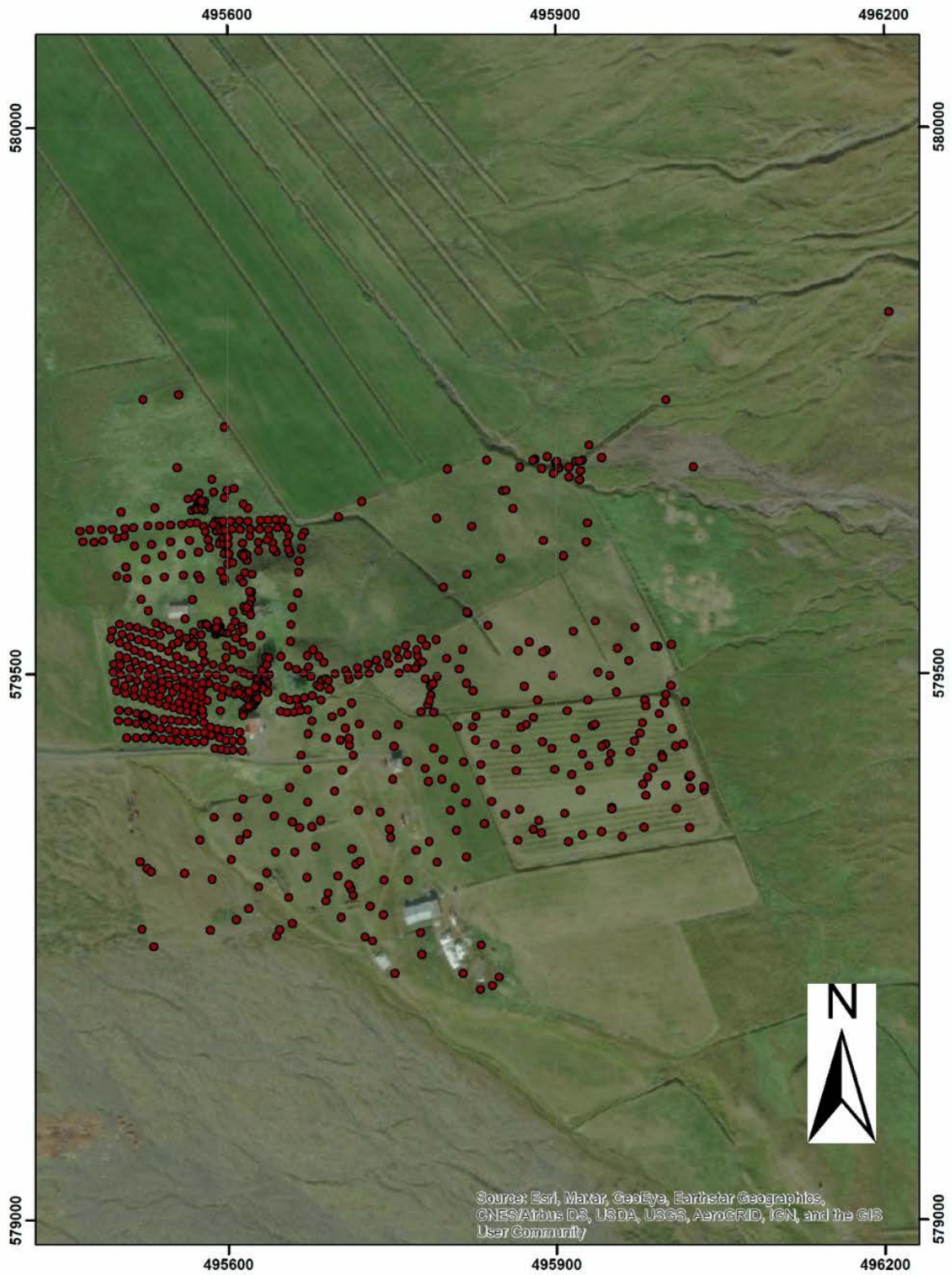
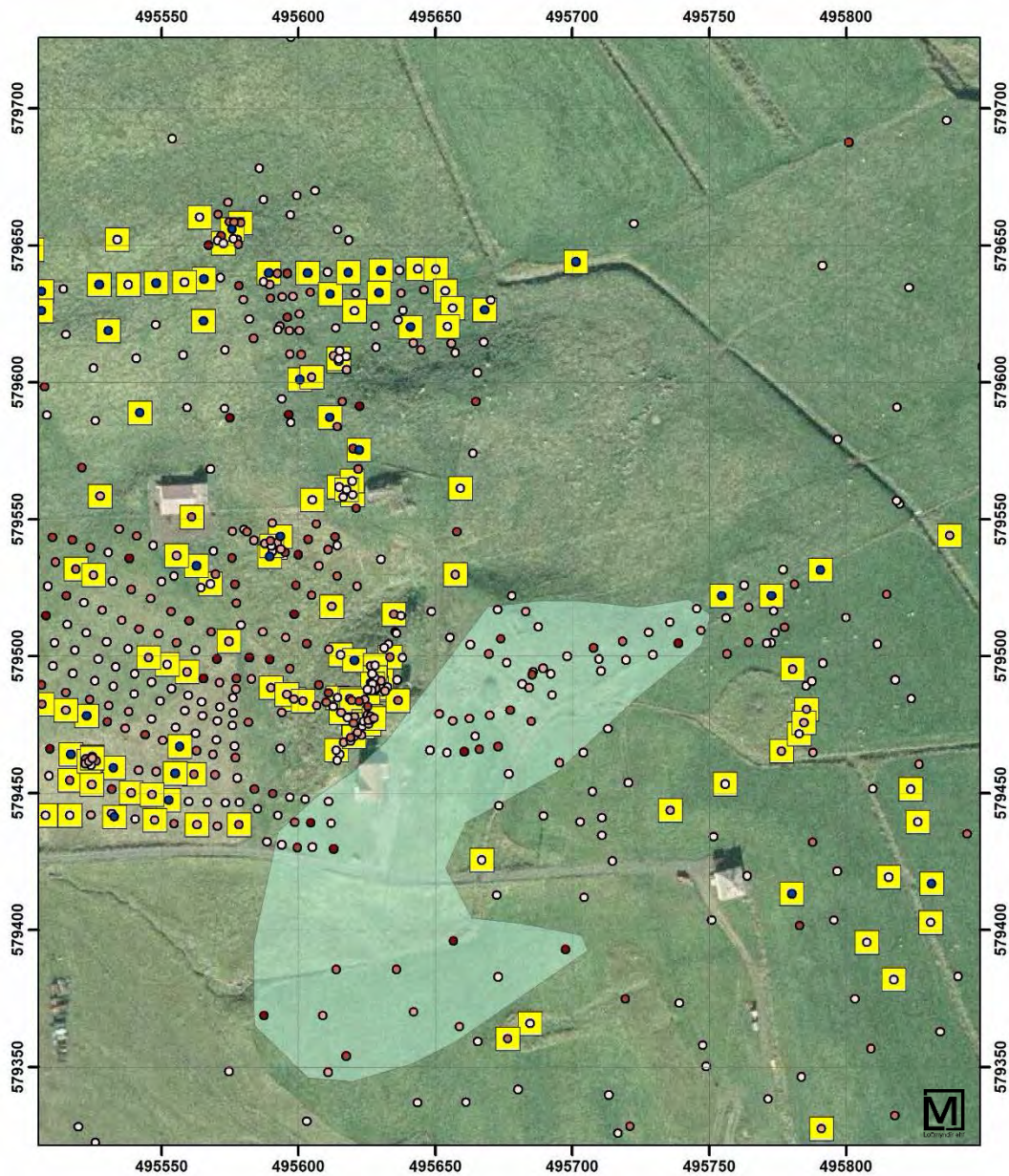


Figure 4. Core locations at Hof



Legend

Disturbed percentage

- 0-10%
 - 10-29%
 - 30-48%
 - 48-70%
 - 70-100%
- Cores with in-situ H1 or 1300
 - Disturbed area



Figure 5. Area of high disturbance. Cores are displayed showing the percentage of disturbed deposits within them.

Excavations

Three test pits were excavated at Hof during the 2021 field season (Figure 6). The goal was to place the excavations in locations where both midden deposits and in situ tephra layers were present. This would allow for the temporal estimation of abandonment and occupation sequences at the site. The 2021 test pit numbers start at 4 to avoid confusion with earlier test pits, excavated as part of other projects.



Figure 6. Test pit locations at Hof. The building next to TP4 is the main farmhouse.

Test Pit 4

Test pit 4 (TP4) was located on the eastern edge of what turned out to be the farm mound, about 16 meters north of the Hof 1 farmhouse. The test pit was placed based on coring data (Figure 7). Cores in this area showed midden below the 1104 tephra layer and possible turf deposits above it. For instance, core 212465 had 17 cm of turf on top of H1 which rested on top of 19 cm of midden. That core experienced refusal at 55 cm bgs, probably on rock or gravel.

The Sequence at TP4 (Figure 10 and Figure 28) is generally consistent with the coring. It consisted of root mat and a disturbed deposit [101] over a turf deposit [110]. This turf deposit overlay two midden deposits [111 and 113] which were separated by the 1104 tephra layer [112] (Figure 13). The break is temporal, as the midden was obviously continually deposited through the deposition of the tephra. The bottom midden deposit [113] was on top of aeolian subsoil [114] containing H3 tephra. The root mat and underlying disturbed soil reached a depth of around 20cm below the ground surface. The turf deposit was the thickest in the sequence and contained wisps of the 1104 tephra within it, as well as bits of charcoal, burned bone, and evidence of bioturbation. The first excavated midden deposit [111] was orangish-brown in color and contained peat ash, wood ash, charcoal, burned bone, and some gravel. The 1104 tephra layer [112] was white in color and approximately 1 mm thick and very continuous across the test pit. The bottom midden deposit [113] was composed primarily of pink peat ash with additional wood ash, charcoal inclusions, burned bone, and gravel. Aeolian deposits were interspersed throughout the midden. Context [114] contained H3 tephra in it and was only exposed on the south half (and deepest section) of the unit. The midden was thicker in the west and north sections of the unit, and it was apparent that context [114] continued underneath it. Large angular cobbles were present at the bottom of the unit. These cobbles were determined to be older than the midden as the midden material filled in the gaps and crevasses between the rocks as if trash was thrown on top of the rocks.

The sequence of TP4 – specifically the presence of midden deposits above and below an in situ 1104 tephra – suggests a continuous occupation at Hof starting sometime before the year 1104 and continuing after it. The top of the midden does not appear to be truncated and there is no aeolian deposition between the midden and the turf. This suggests a rapid additive succession where turf was placed directly on top of the midden deposits. There appears to be approximately 15 cm of midden on either side of the 1104 tephra, but without the 1300 tephra layer it is impossible to say when exactly the occupation started and ended in this location, but this finding contradicts the narrative of abandonment described in the 18th-century land census (Magnússon and Vidálín 1930).

Test Pit 5

Test pit 5 (TP5) was located in the field west of the farm mound and was placed based on coring data. The cores in this area were characterized by pre-1104 LDC and midden, although one core (211899) about 0.6 meters southwest of the TP5 unit had LDC identified in the 1104-1300 and post-1300 periods (Figure 8).

The sequence at TP5 (Figure 11) consisted of a root mat [101] on top of a disturbed layer [125] overtop three LDC deposits [126, 127, 128]. Below these LDC deposits was a midden [129] followed by another LDC deposit [130], which was separated from a lower turf

deposit [131] by a thin line of wispy 1104 tephra layer (Figure 14). An aeolian deposit [132] was identified beneath this turf, although it was only present on the western side of the unit. Beneath this aeolian deposit was the in situ H3 tephra [133]. The first LDC deposit [126] contained charcoal and animal bone, while context [127] had no inclusions except for turf along the north and east walls. The final LDC deposit – context [128] – contained charcoal, peat ash, wood ash, and burned bone. Context [127] and [128] were not present in the south wall of the unit. The midden deposit [129] was very thin—only about 3 cm thick in the deepest spot, and contained peat ash, charcoal, and animal bones. During excavation, it was noted that wisps of 1104 tephra appeared between context [130] and [131] and were concentrated in the south of the unit (Figure 13). It is not clear if the [131] turf deposit is a natural turf or bog deposit or remnants of a cultural feature. Currently, we interpret this pre-1104 turf deposit as not belonging to the farm mound area. Either way, the burnt wood and peat ash cultural deposits are all post-1104. The aeolian deposit [132] underneath the turf deposit was only present in the west profile and had a lens of H3 [133] interspersed within it. In the southern profile, the [131] turf bottoms out directly on the H3.

The sequence of TP5 indicates that the midden deposit [129] is post-1104. This seems to be at odds with the cores taken at this location, one of which identified pre-1104 midden (212468). The white layer, identified as the 1104 tephra layer in these cores, may have been diatoms. The three LDC deposits [126, 127, 128] are generally consistent with the LDC identified in core 211899 that extended on either side of what was believed to be the 1300 tephra layer, although no in situ 1300 layer was found in this excavation. The lack of a 1300 layer also makes it impossible to say if the midden is pre- or post-1300. The area around test pit 6 is included in the 1104-1300 farmstead but not in the pre-1104 farmstead area. The results from TP5 suggest that the later post-1104 cultural deposits are part of the main farm mound, and these deposits represent the farmstead area's post-1104 expansion.

Test Pit 6

Test pit 6 (TP6) was located approximately 150 meters north of the main Hof 1 farmhouse and was placed according to coring data. The cores in the immediate vicinity of the unit had pre-1104 turf and midden and possible pre-1104 LDC. Turf and midden between 1104 and 1300 were also identified, as well as possible turf, midden, and LDC. Finally, possible post-1300 midden and LDC were identified. (Figure 9) in the area. The test pit results only partially clarify the ambiguous coring results.

The Sequence at TP6 (Figure 12) started with the root mat [101] overtop a mixed/LDC deposit [135] followed by the 1766 tephra on top of a midden [136]. The 1766 tephra layer only appeared in the south profile. A second midden deposit [137] existed beneath the first. This midden covered an aeolian deposit [139], which contained the 1104 tephra within it, although the tephra mainly appeared on the west side of the unit and was only present in the south profile. The aeolian deposit was on top of a bog layer [140] which was above a layer of clay [141] visible only in the south profile. This clay was on top of another aeolian deposit [142]. In the north profile, the final deposit was a layer of mixed turf with H3. In the south profile, the LNS [143] was located beneath context [142], followed by a layer of clay with H4 [144].

Many of the deposits and layers were not consistent across the entire unit and therefore the sequence is difficult to interpret. The pre-1104 midden deposits seen in the cores (Figure 9) were not confirmed in the TP6 test pit profile. For instance, core 212032 was described as having midden on both sides of what was identified in the field as the 1000 layer (no H1 to use as a guide). This tephra may have instead been the 1300 or 1766 tephra layer. Thus, while the cores suggest early cultural deposits in the area, the TP6 sequence suggests that only a bog/turf layer is pre-1104 and there are no pre-1104 midden or LDC deposits.

Test pit 6 is about 15 meters east of the southern area of the Halatóft turf structures. The northern part of this complex has been dated to pre-1104 but no pre-1104 midden deposits have been associated with this complex. The midden deposit in TP6 may be associated with the main farm mound near Hof 1, or it may be associated with the post-1300 structures identified at the southern end of the Halatóft complex. If the dating of the natural sequence holds, the TP6 sequence would suggest that a bog [140] formed in the depression on what was previously a dry land deposit. TP6 then would have intersected the southwest edge of this wetland that probably formed before the deposition of the H1 tephra and most likely after the 1000 tephra. Test pit 6 probably represents a small area of 1104-1300 occupation and is considered a distinct entity because it cannot be easily connected to the main farmstead from that period.

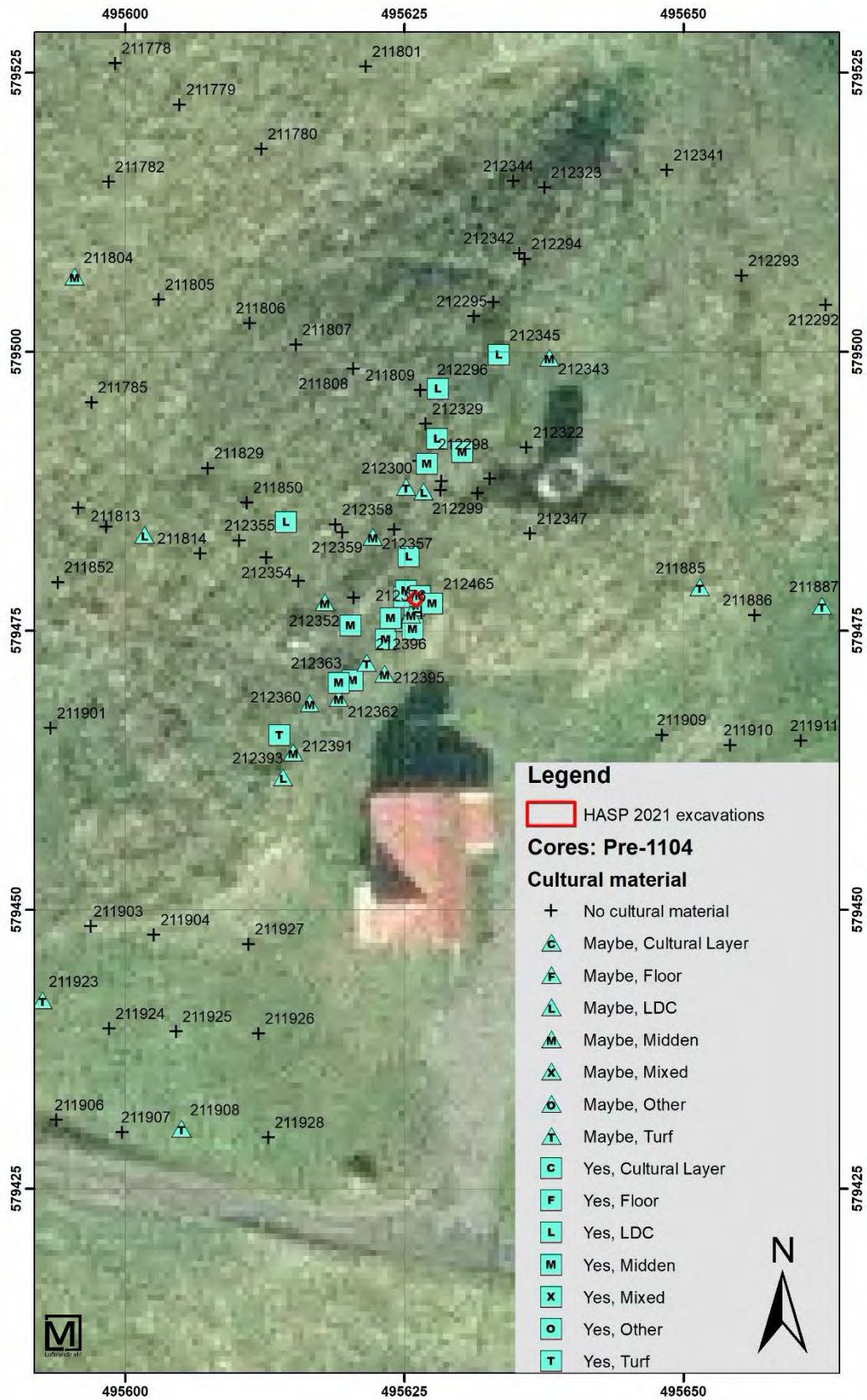


Figure 7. Location of Test pit 4 with pre-1104 cores underlain by orthophoto

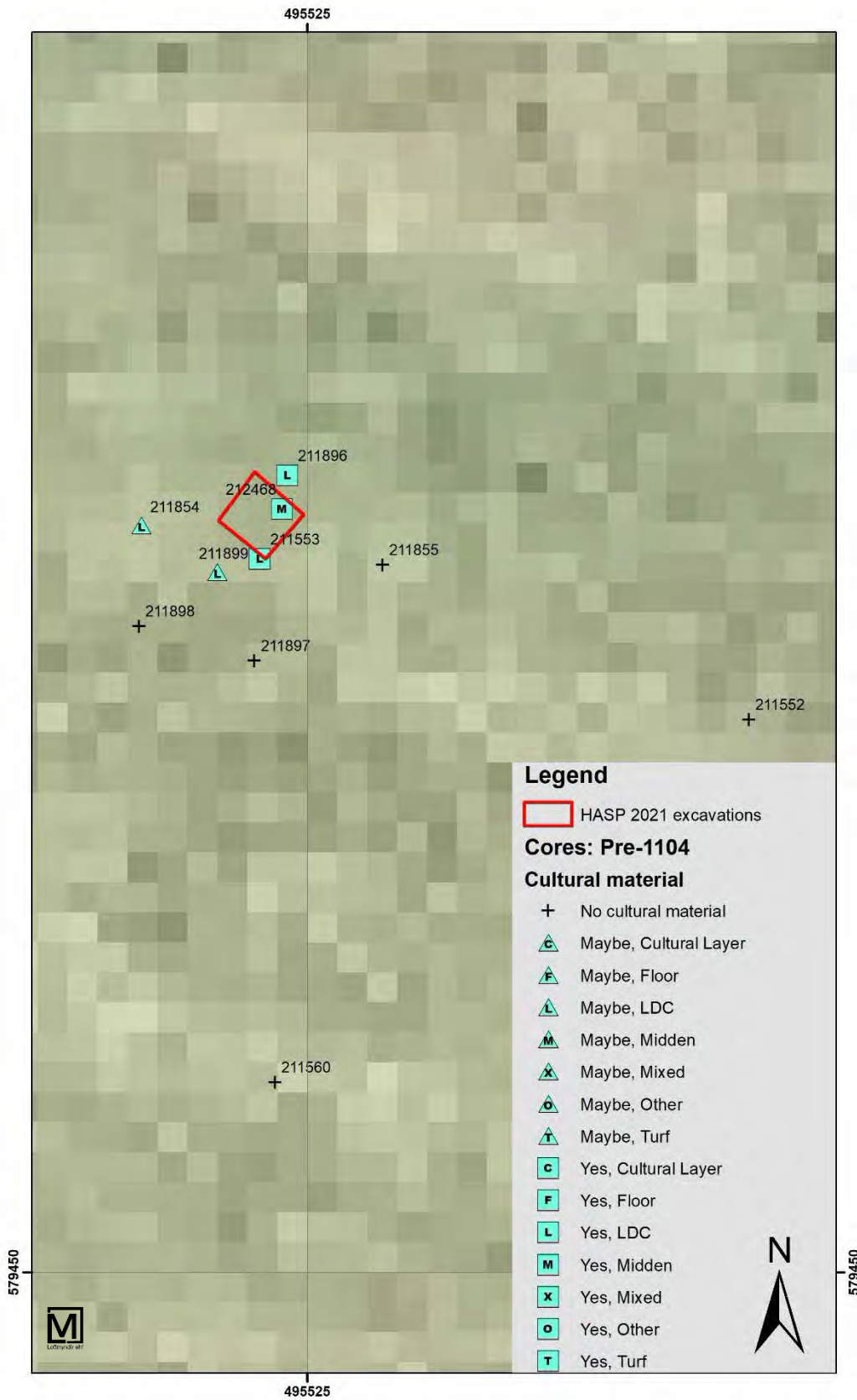


Figure 8. Location of Test pit 5 with pre-1104 cores underlain by orthophoto

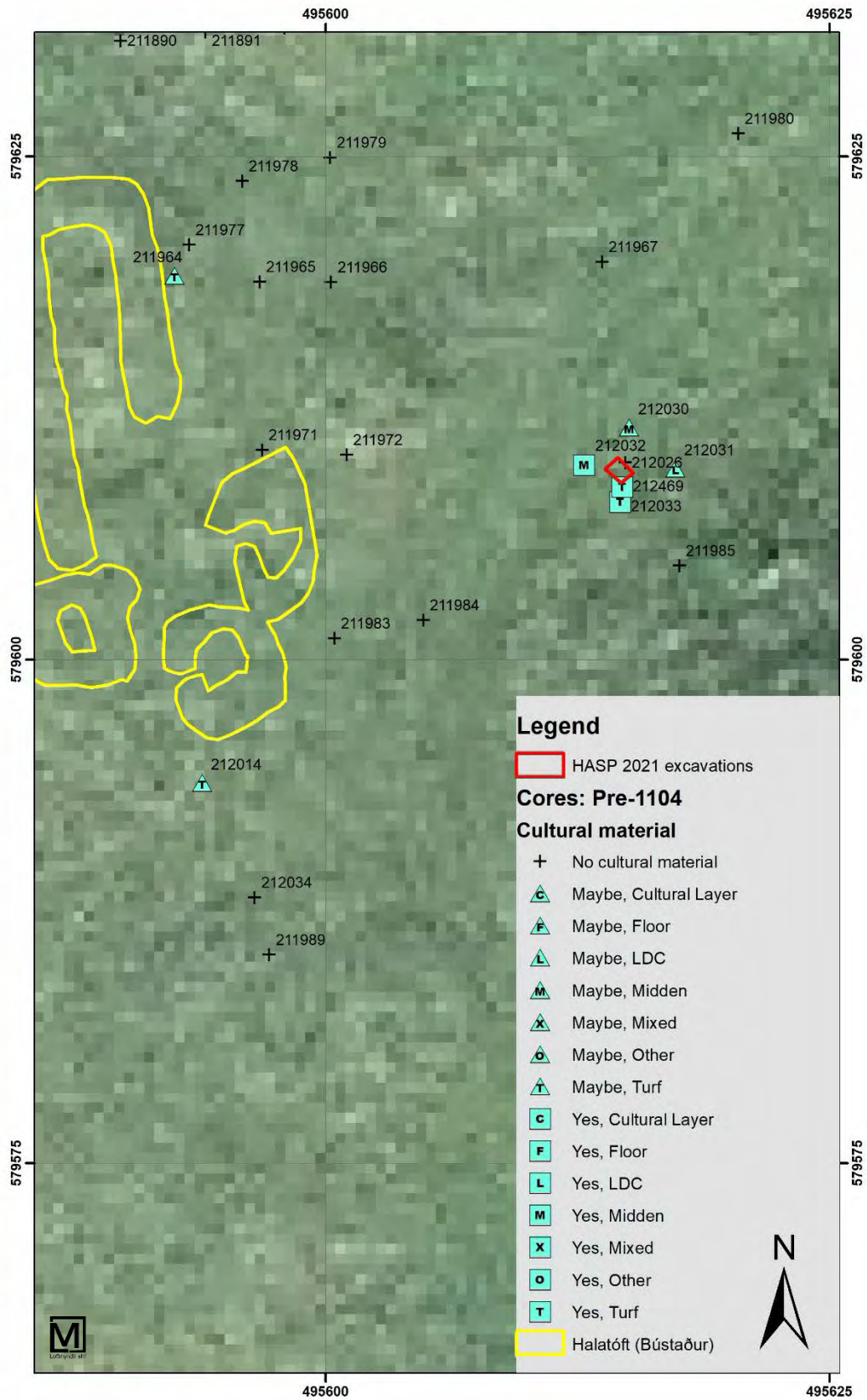


Figure 9. Location of Test pit 6 with pre-1104 cores underlain by orthophoto. The yellow structure (left) is the turf structure identified by the 2001 SASS project

HASP 2021

Hof 250-0 TP4

North and West Wall Profiles

Z.G, EAW
05/08/2021

- Legend**
[101] = Root mat
[110] = Turf
[111] = Midden
[112] = 1104
[113] = Midden
[114] = Aeolian subsoil with H3 patches
R = rock

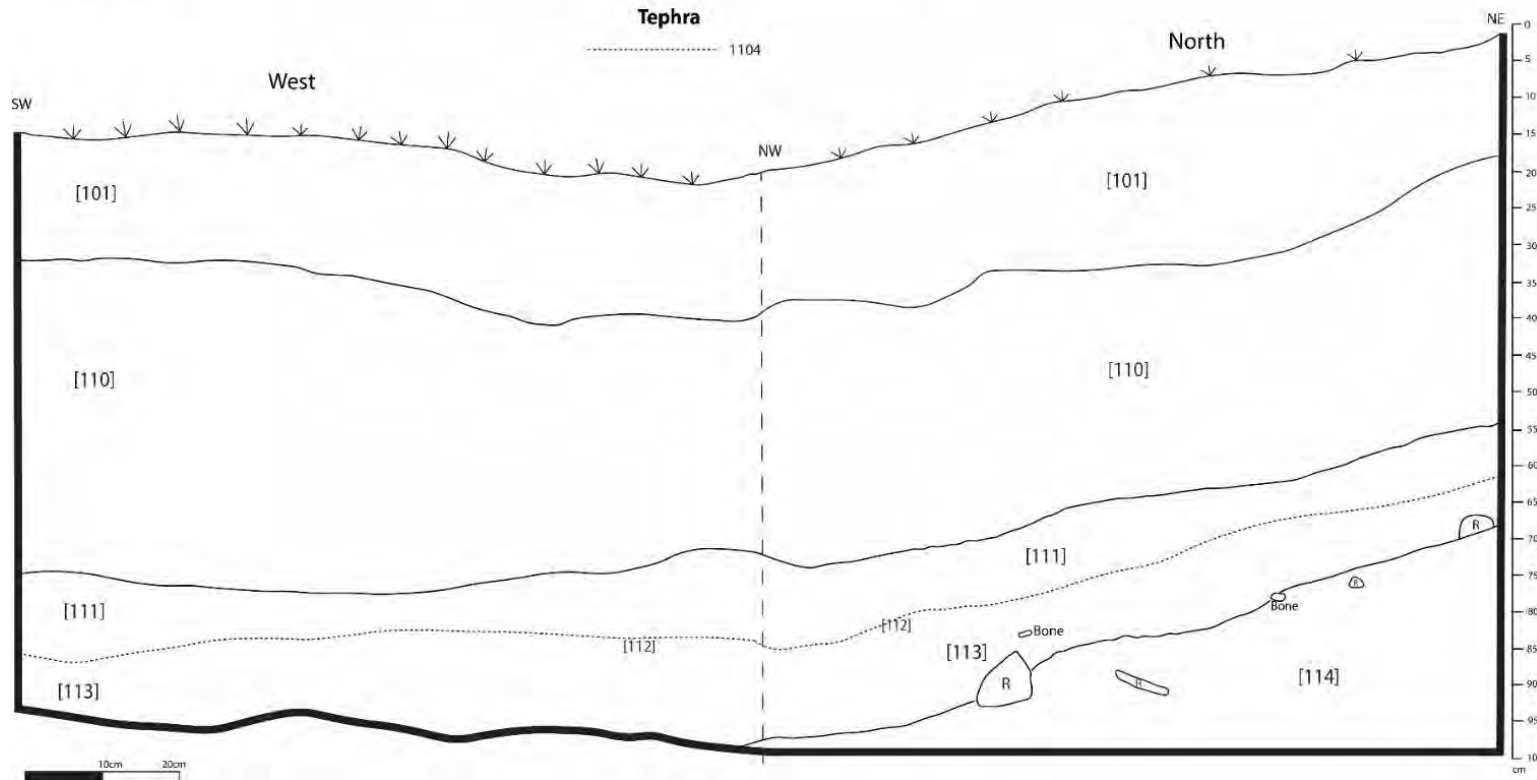


Figure 10. Drawn profile of north and west walls of test pit 4.

HASP 2021

Hof 250-0 TP5

South and West Wall Profiles

G.G, JEM
1:10 scale

Legend

- [101] = Root mat
- [125] = Disturbed
- [126], [127], [128] = LDC
- [129] = Midden
- [130] = LDC
- [131] = Turf
- [132] = Aeolian
- [133] = H3
- R = rock

Tephra

- 1766
- 1300
- 1104

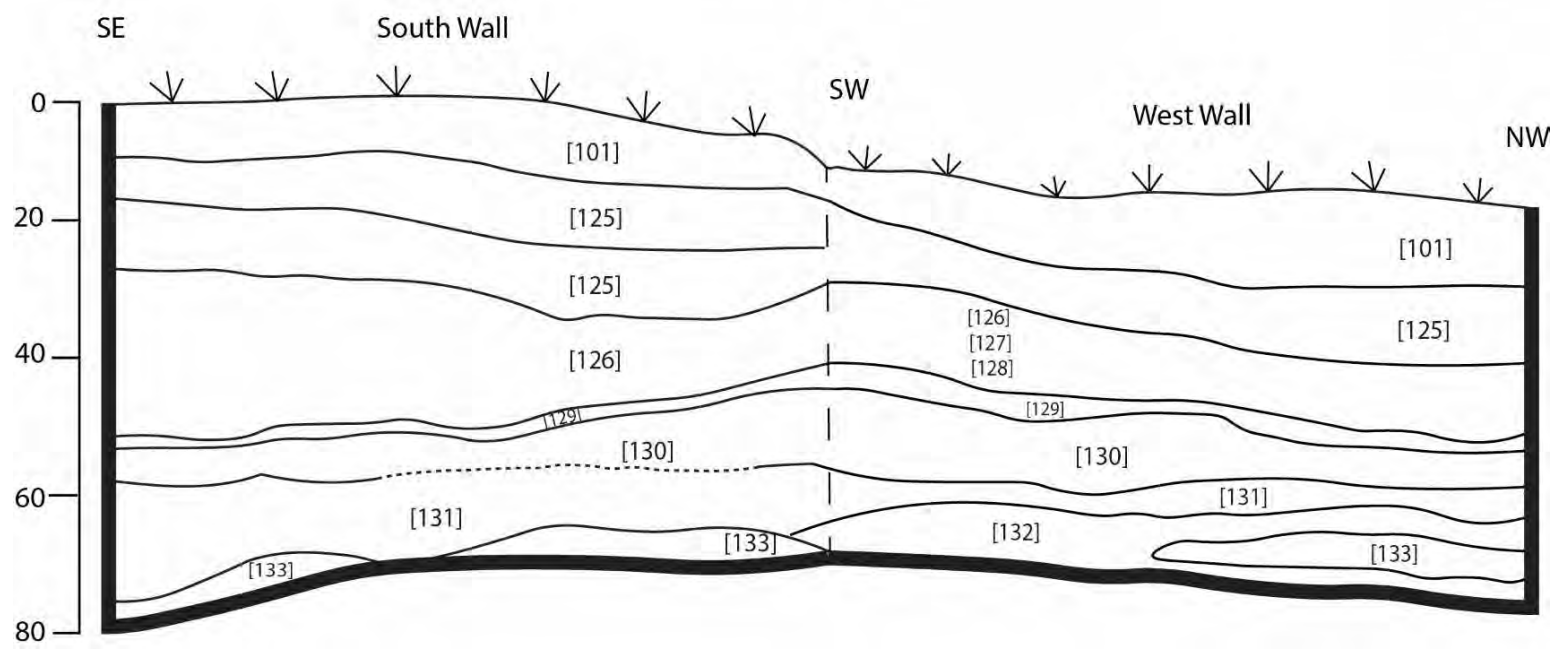


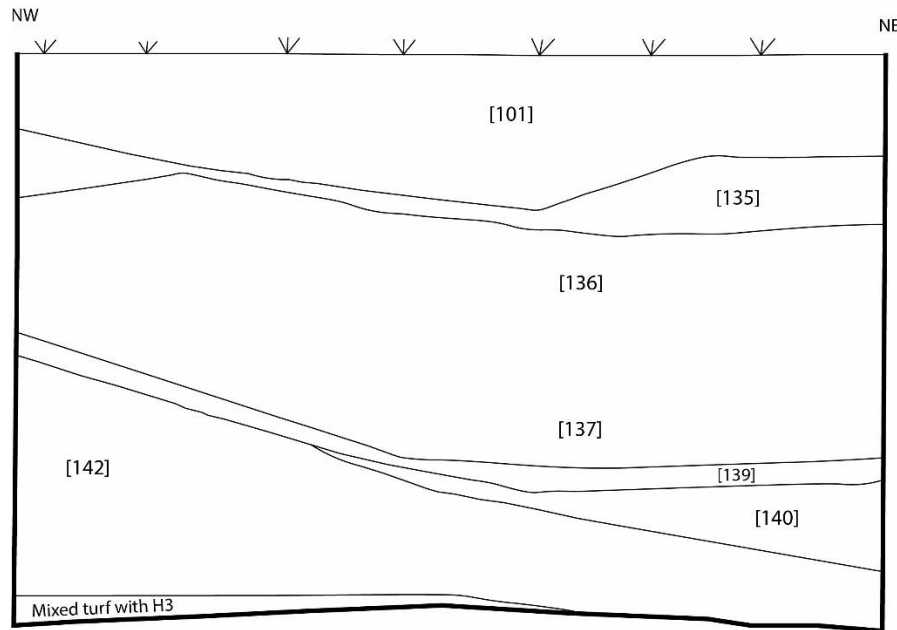
Figure 11. Drawn profiles of test pit 5

HASP 2021 Hof 250-0 TP6 North Wall Profile

JEM, BNP
05/08/2021
1:5 scale

- Legend**
 [101] = Root mat
 [135] = Mixed / LDC
 [136] = Midden
 [139] = Aeolian
 [140] = Bog
 [142] = Aeolian

Tephra
 1104



HASP 2021 Hof 250-0 TP6 South Wall Profile

JEM, BNP
05/08/2021
1:5 scale

- Legend**
 [101] = Root mat
 [135] = Mixed / disturbed
 [137] = Midden
 [139] = Aeolian
 [140] = Bog
 [141] = Clay
 [142] = Aeolian
 [143] = LNS
 [144] = Clay (black) with H4

Tephra
 1104

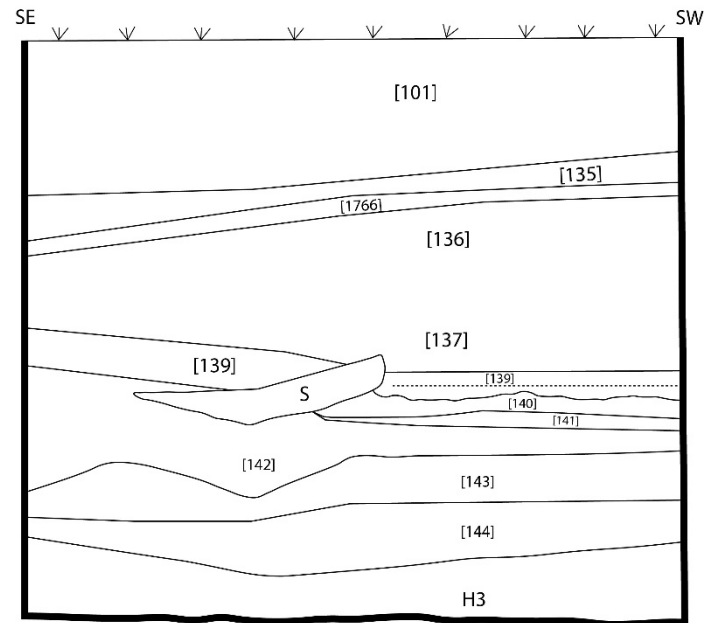


Figure 12. Drawn profiles of Test pit 6



Figure 13. Photo of the west wall of TP4 with H1 tephra visible



Figure 14. Photo of the top of context [131] in TP5

Estimation of farm size

The pre-1104 farmstead area at Hof is quite small, encompassing the area around the modern main farmhouse and extending downslope into the western field for approximately 60 meters (Figure 15, Figure 16, and Figure 19). The area around the modern farmhouse was assigned to this time period based on the large prevalence of cores with confirmed pre-1104 midden within them (Figure 7 and Figure 19). Additionally, the profile of TP4 is consistent with the findings of these cores, with approximately 20 cm of midden found beneath an in-situ 1104 layer (Figure 10). Core 211804 represents the northernmost point of the pre-1104 boundary and was included because it falls within 30 meters of other cores with farmstead deposits.

The eastern side of the farmstead boundary is likely a product of high disturbance, as it roughly coincides with the edge of the area defined as disturbed (Figure 5). The cores present within the “disturbed area” to the east of the main farmhouse had no in-situ 1104 or 1300 tephra or farm deposits within them and had a high percentage of disturbed soil. With better preservation, the farm boundary would likely extend farther to the east, perhaps encompassing the whole disturbed area.

The western area around TP5 was not assigned to the pre-1104 farm mound. This decision was based on the inconsistency between core 212468 (see Figure 8), which had pre-1104 midden identified within it, and the profile of neighboring test pit 5. The test pit profile found no evidence of pre-1104 midden and instead found midden approximately 10cm above a wispy layer of 1104 (Figure 11). These findings led the pre-1104 midden in core 212468 to be discounted. While the area around TP5 can be connected to the main farm mound by cores that are less than 30 meters apart, the 30-meter rule need not apply to bounding clusters without confirmed midden. In this case, the lack of confirmed pre-1104 midden and the sparsity of cores with farm deposits in the interstitial area superseded the 30-meter rule. That being said, the area around TP5 was assigned to the 1104-1300 farm mound area.

The northern area around TP6 was not assigned to the pre-1104 farmstead. Although one core had confirmed pre-1104 midden (core 212032), it is inconsistent with the profile of test pit 6, which found no evidence of pre-1104 midden (see Figure 9). Additionally, the pre-1104 date for the midden in core 212032 was not determined based on the presence of an in-situ 1104 tephra layer, but rather on its association with the 1000 tephra layer. This tephra is more obscure in the field and may have been misidentified.

Core 211725 is the only other core with confirmed pre-1104 midden at Hof, located about 70 meters northwest of the main Hof 1 farmhouse and over 30 meters from the nearest cores belonging to the main farmstead boundary to the south (Figure 22). This area is about 15 m from the Skálatóft monument. This core is surrounded by two cores with possible pre-1104 turf and one with possible midden for this time period. This area was not defined as a separate farmstead “island”, mainly because the photos of core 211725 did not show a convincing midden deposit. Additionally, other cores taken in the same area were unable to locate the same midden.

The 1104-1300 farmstead boundary is larger than the pre-1104 boundary (Table 1 Figure 15, Figure 17, Figure 20). The area around the modern farmhouse was included due to the presence of multiple cores with confirmed 1104-1300 midden deposits. The profile of TP4 is consistent with these cores, showing approximately 20 cm of midden immediately above the

in-situ 1104 tephra layer. The 1104-1300 farm boundary extends westward encompassing the area around TP5. This decision was mainly based on the profile of TP5, which showed a thin line of midden about 10 cm above a wispy layer of 1104 tephra (Figure 11). The cores around TP5 did not show any confirmed midden for this time period, but one had confirmed LDC. It is possible that the midden identified in core 212468, which was discounted for the pre-1104 time period, actually belongs to this the 1104-1300 period. A small area around TP6 was defined as a separate farm “island” for the 1104-1300 time period (Figure 21). This area had one core with confirmed 1104-1300 midden (core 212469), one with confirmed turf, and a number with possible midden, turf, and LDC. The profile of TP6 also showed post-1104 midden (Figure 12). Because neither TP6 nor TP5 had any in-situ 1300 tephra, it is impossible to assign any identified midden in these profiles to the 1104-1300 time period with certainty, however, the lack of concrete evidence for midden in cores during the post-1300 period makes this assignment the most likely scenario.

Based on the coring data, there appears to have been no post-1300 farmstead at Hof (Figure 18). Only one core (212344) had post-1300 midden, and it is isolated north of the main farm mound. While this core is technically within 30 meters of three other cores with possible farmstead deposits, these three cores do not lead to any other areas with confirmed midden. Additionally, while there appears to be a midden layer directly beneath the 1766 tephra in the profile of test pit 6 (Figure 12), the lack of an in situ 1300 makes it impossible to assign this midden to the post-1300 time period without a full tephra report. The 1766 layer could actually be the misidentified 1300 layer, or the 1300 layer could have been eroded from between the midden and the 1766 layer. These facts combined with the complete absence of confirmed midden for this time period in the coring data suggest that Hof may have been abandoned sometime after 1300. This finding is consistent with the estimated occupation sequence derived from the TP4 profile.

Table 1. Farm mounds sizes. Area is in square meters, centroids are in ISNET93

FARM	Date	Area	Centroid_E	Centroid_N
Hof	Pre-1104	3977	495599	579471
Hof	1104-1300	6392	495574	579473
Hof	1104-1300	39	495613	579608

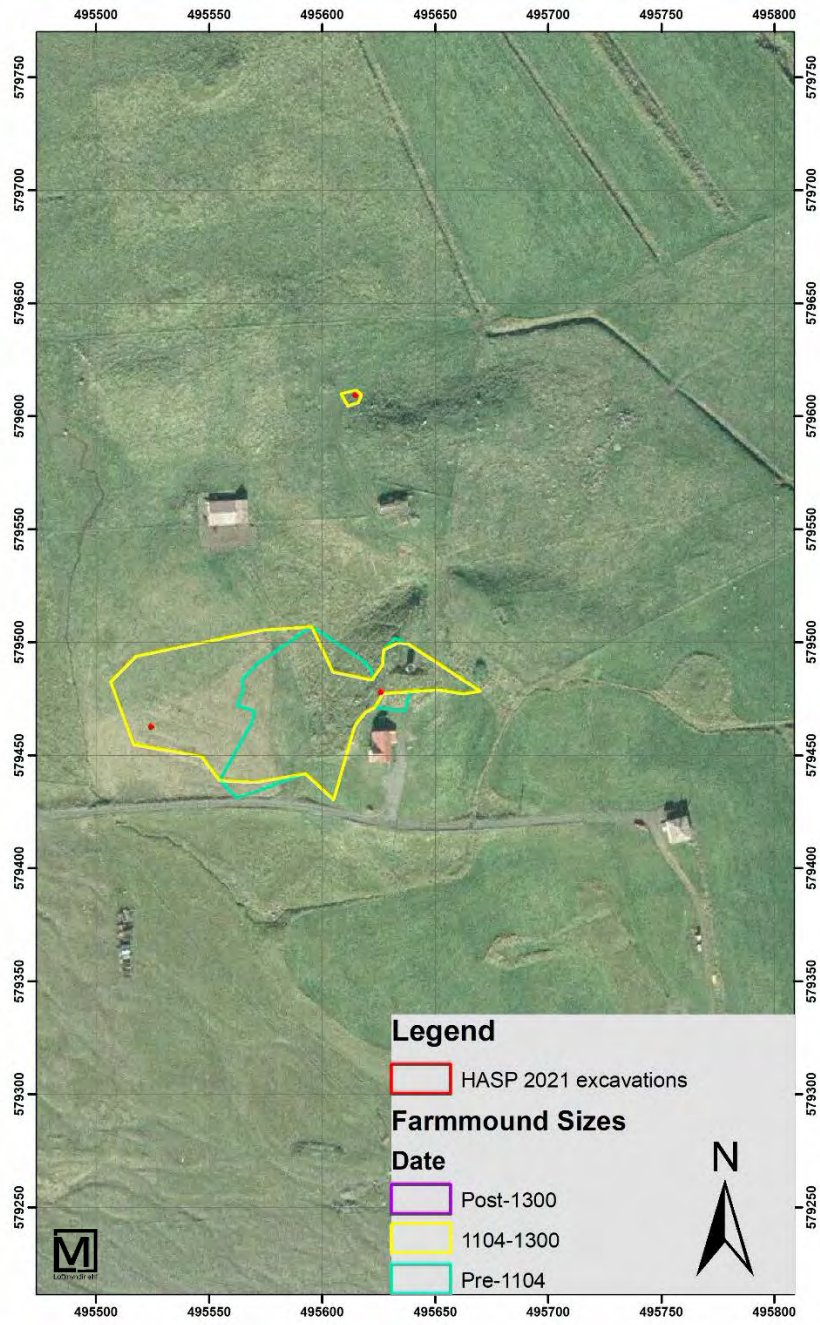
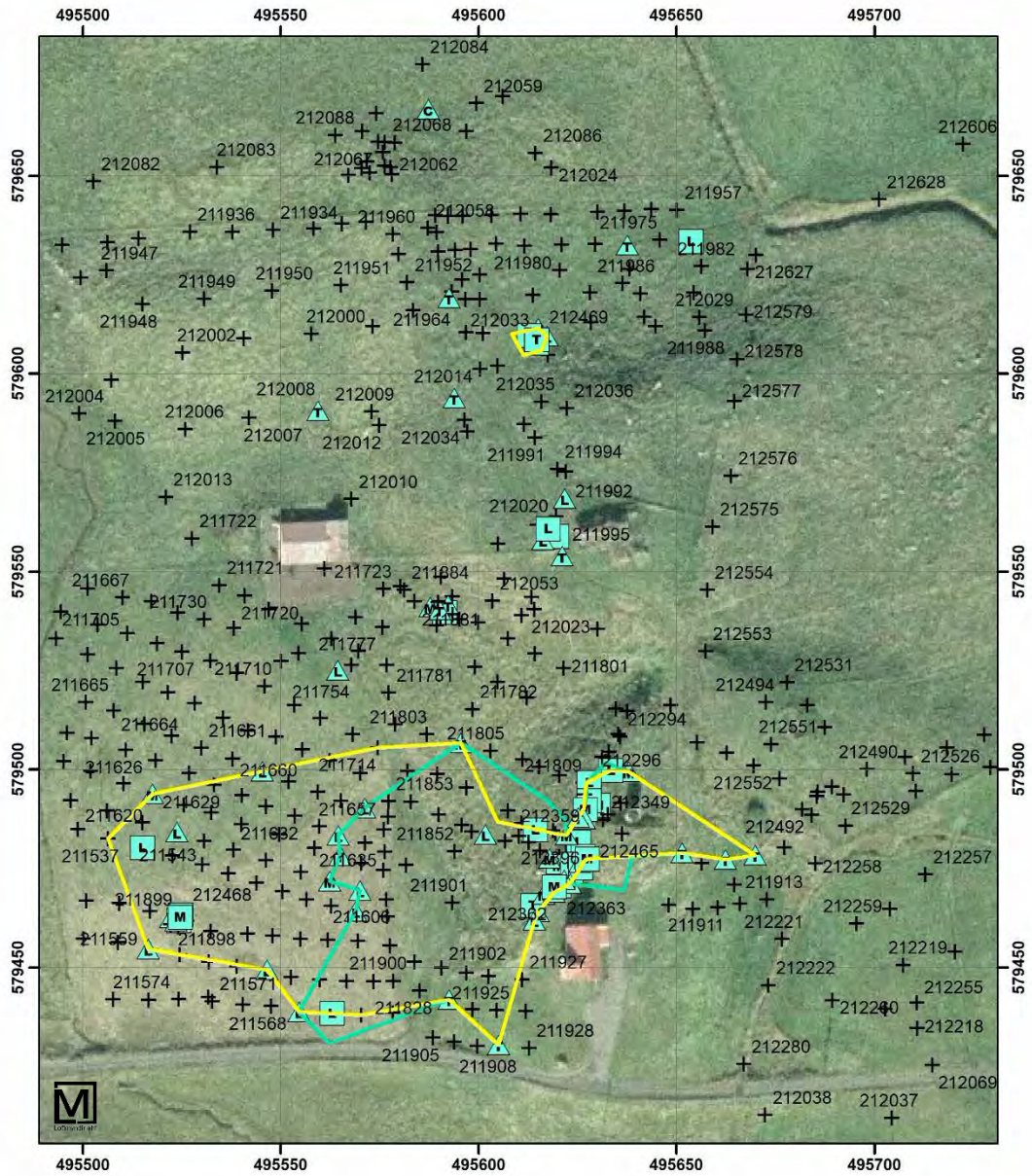


Figure 15. Farm mound areas superimposed on orthophoto



Legend

Cores: Pre-1104

Cultural material

- + No cultural material
- △ Maybe, Cultural Layer
- △ Maybe, Floor
- △ Maybe, LDC
- △ Maybe, Midden
- △ Maybe, Mixed
- △ Maybe, Other

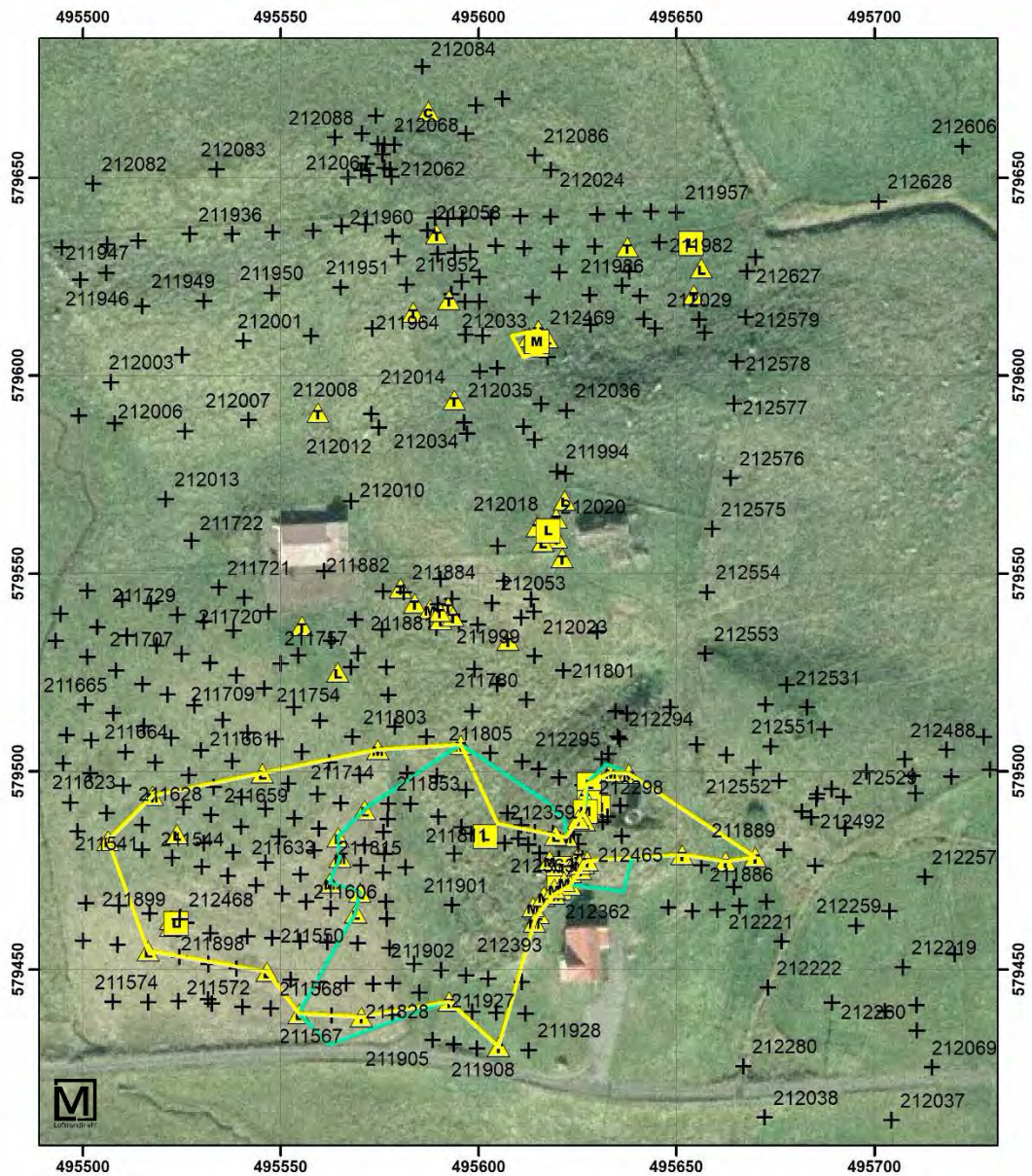
- △ Maybe, Turf
- Yes, Cultural Layer
- Yes, Floor
- Yes, LDC
- Yes, Midden
- Yes, Mixed
- Yes, Other
- Yes, Turf

Farmmound Sizes

- Date**
- Post-1300
 - 1104-1300
 - Pre-1104



Figure 16. Farm mound areas with pre-1104 cores



Legend

Cores: 1104-1300

Cultural material

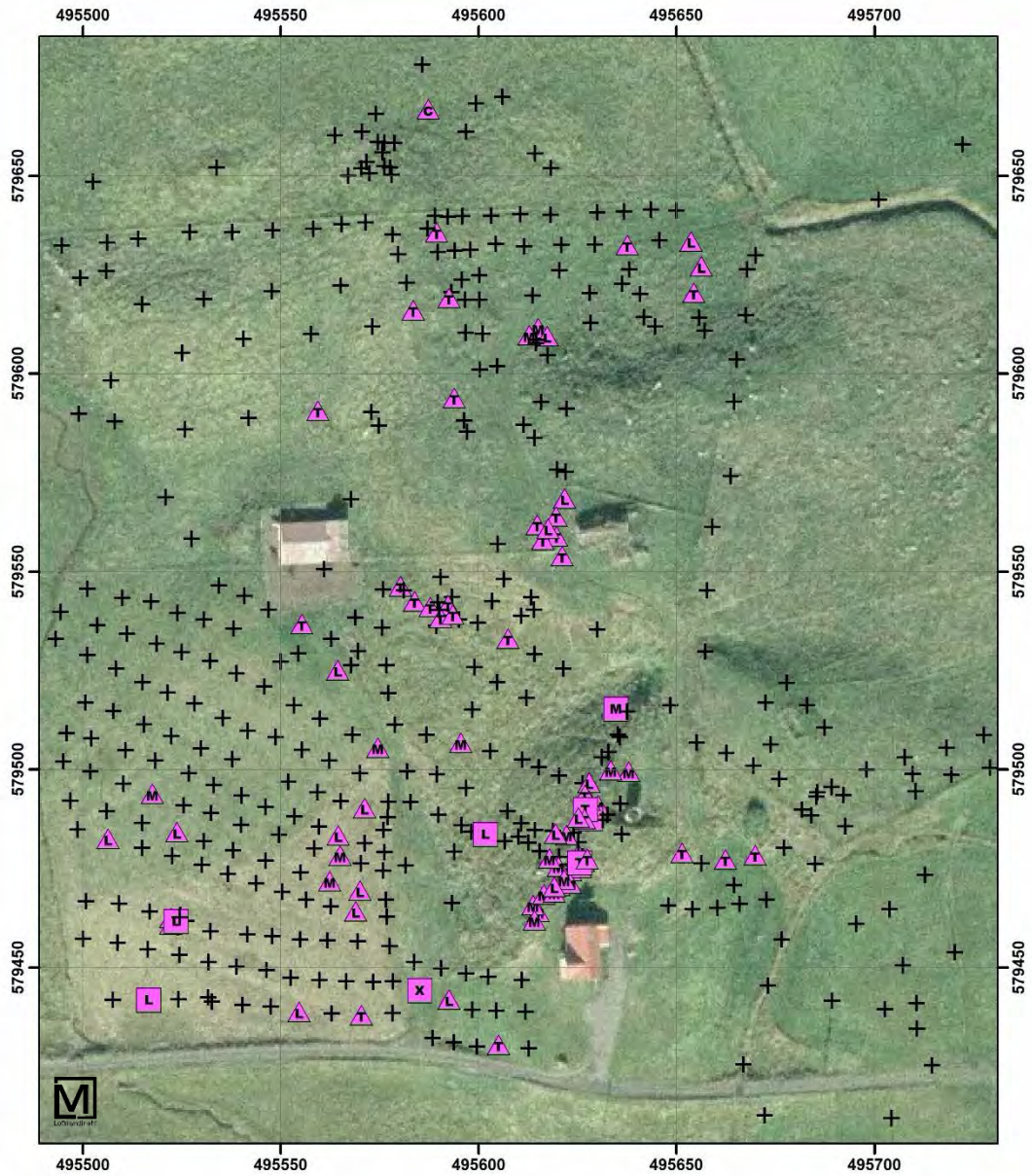
- | | | | |
|---|-----------------------|---|---------------------|
| + | No cultural material | ▲ | Maybe, Turf |
| ▲ | Maybe, Cultural Layer | ■ | Yes, Cultural Layer |
| ■ | Maybe, Floor | ■ | Yes, Floor |
| ▲ | Maybe, LDC | ■ | Yes, LDC |
| ■ | Maybe, Midden | ■ | Yes, Midden |
| ▲ | Maybe, Mixed | ■ | Yes, Mixed |
| ▲ | Maybe, Other | ■ | Yes, Turf |

Farmmound Sizes

- Date**
- Post-1300
 - 1104-1300
 - Pre-1104



Figure 17. Farm mound areas with 1104-1300 cores



Legend

Cores: Post-1300

Cultural material

- | | | | |
|---|-----------------------|---|---------------------|
| + | No cultural material | △ | Maybe, Turf |
| △ | Maybe, Cultural Layer | □ | Yes, Cultural Layer |
| △ | Maybe, Floor | □ | Yes, Floor |
| △ | Maybe, LDC | □ | Yes, LDC |
| △ | Maybe, Midden | □ | Yes, Midden |
| △ | Maybe, Mixed | □ | Yes, Mixed |
| △ | Maybe, Other | □ | Yes, Turf |



Figure 18. Post-1300 cores

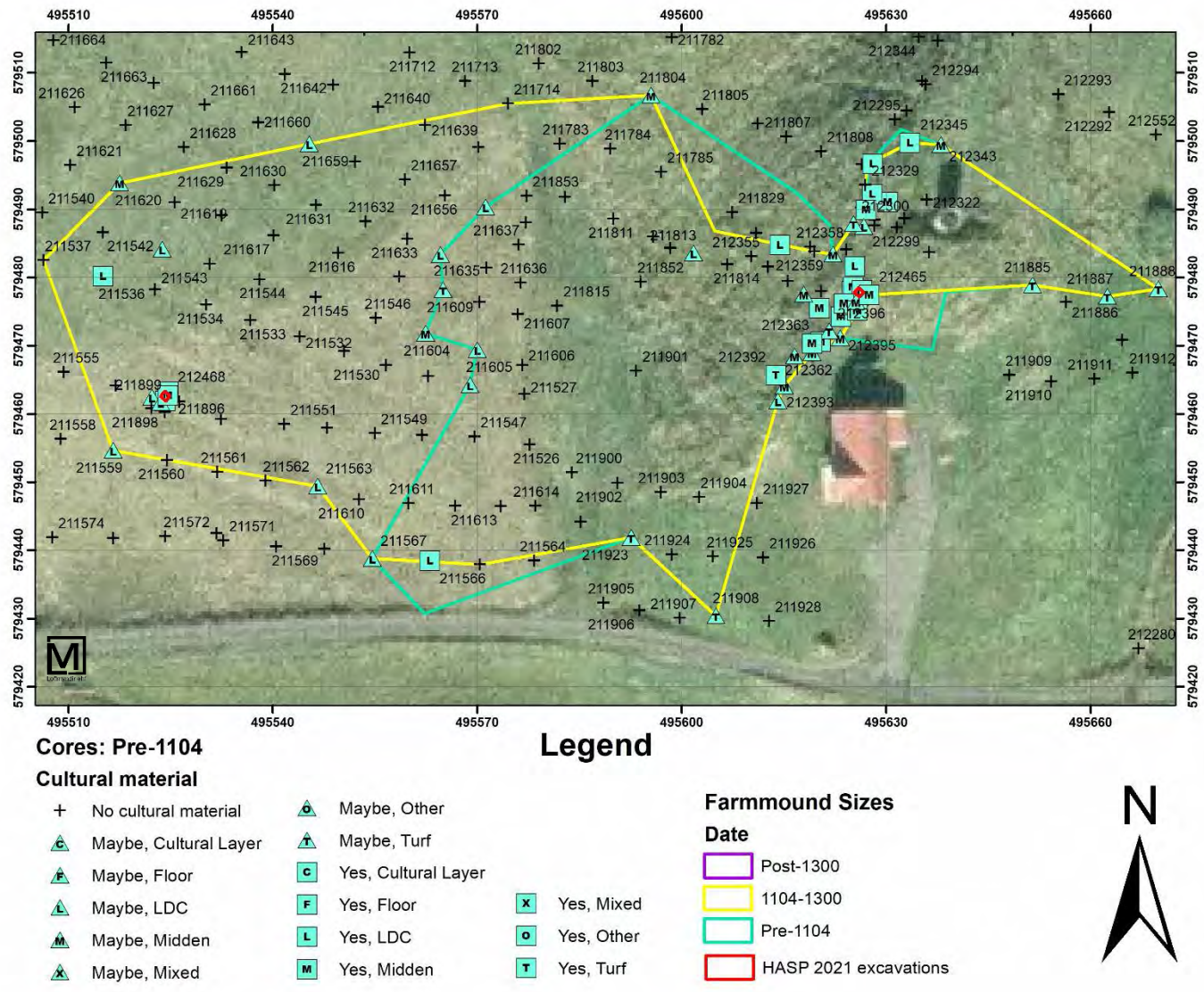


Figure 19. Close up of lower farmstead area with pre-1104 cores

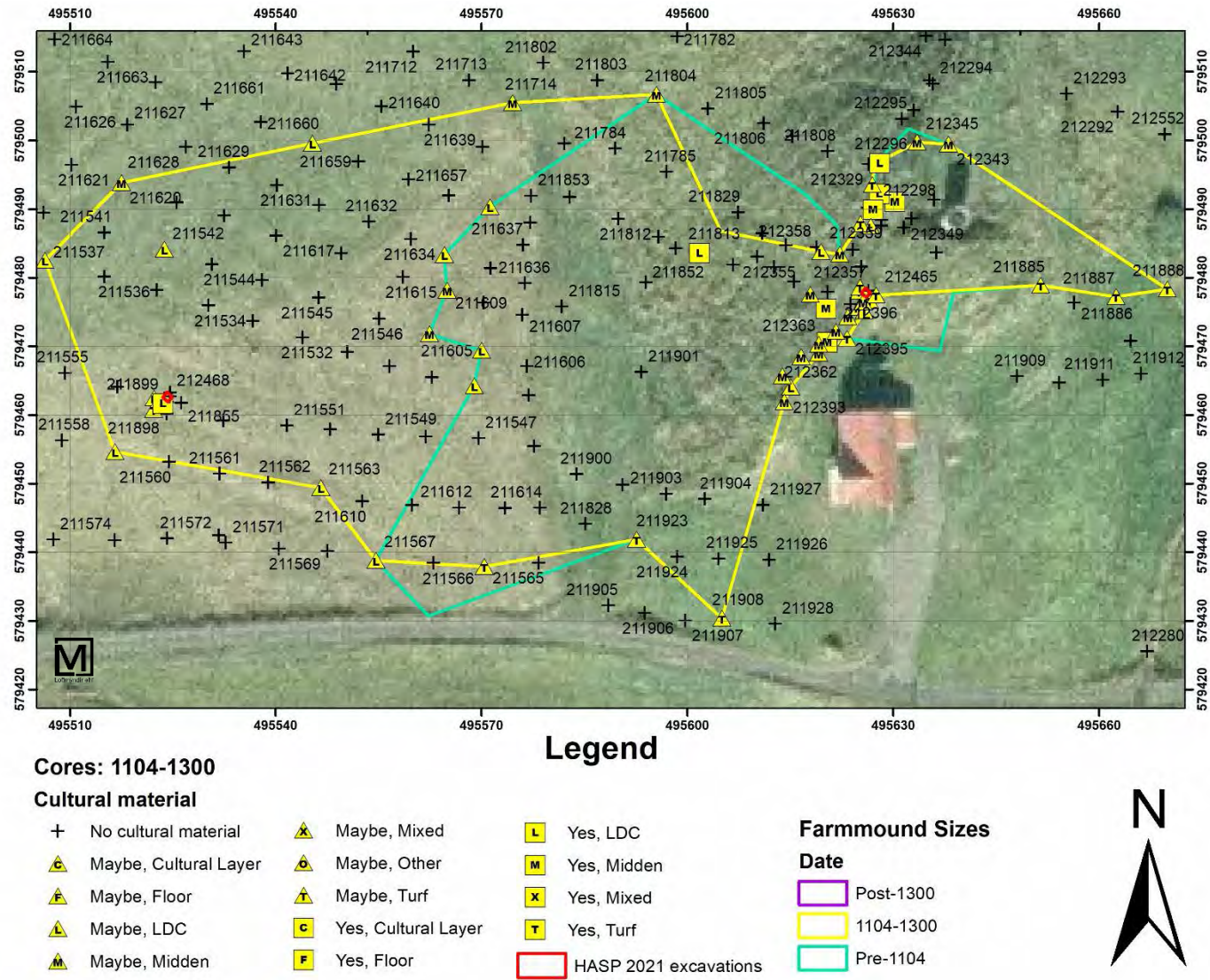
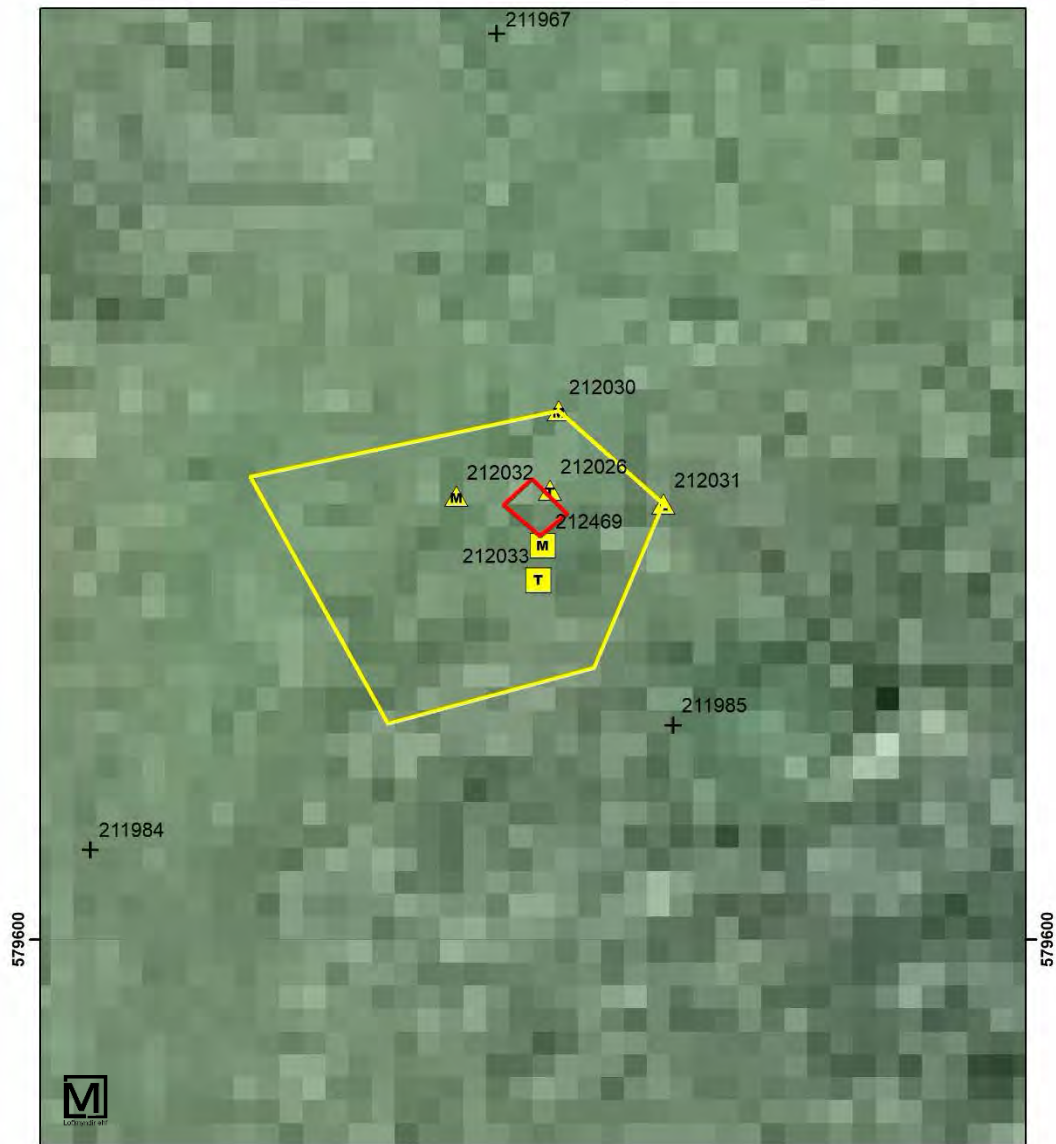


Figure 20. Close up of lower farmstead area with 1104-1300 cores



Legend

Cores: 1104-1300

Cultural material

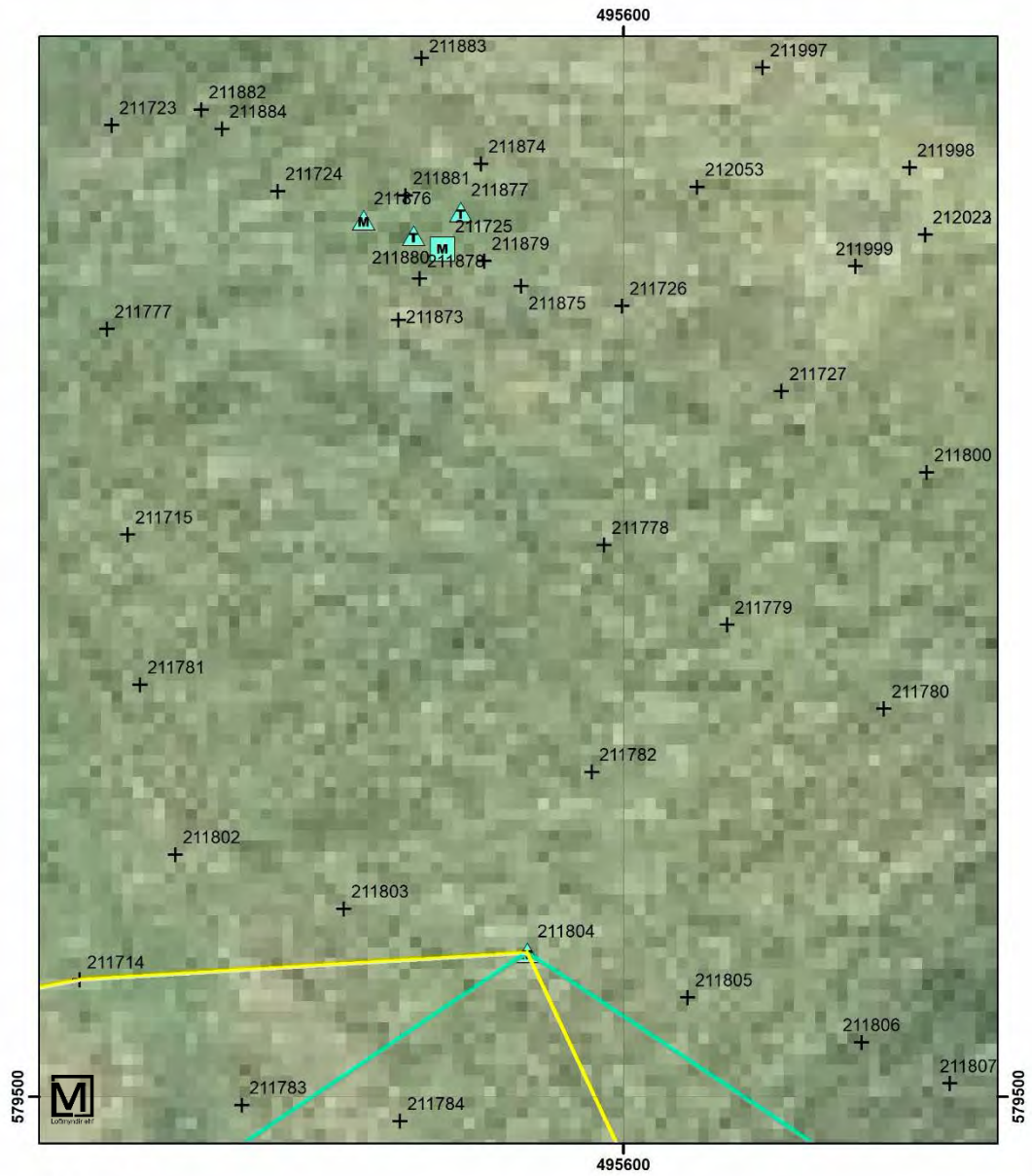
- | | | | |
|---|-----------------------|---|---------------------|
| + | No cultural material | ▲ | Maybe, Turf |
| ▲ | Maybe, Cultural Layer | ■ | Yes, Cultural Layer |
| ▲ | Maybe, Floor | ■ | Yes, Floor |
| ▲ | Maybe, LDC | ■ | Yes, LDC |
| ▲ | Maybe, Midden | ■ | Yes, Midden |
| ▲ | Maybe, Mixed | ■ | Yes, Mixed |
| ▲ | Maybe, Other | ■ | Yes, Turf |

Farmstead Sizes

- Date**
- Post-1300
 - 1104-1300
 - Pre-1104
 - HASP 2021 excavations



Figure 21. Close up of upper farmstead and area with 1104-1300 cores



Legend

Cores: Pre-1104

Cultural material

- + No cultural material
- △ Maybe, Cultural Layer
- △ Maybe, Floor
- △ Maybe, LDC
- △ Maybe, Midden
- △ Maybe, Mixed
- △ Maybe, Other

- △ Maybe, Turf
- Yes, Cultural Layer
- Yes, Floor
- Yes, LDC
- Yes, Midden
- Yes, Mixed
- Yes, Other
- Yes, Turf

Farmmound Sizes

- Date**
- Post-1300
 - 1104-1300
 - Pre-1104



Figure 22. Close up of the area around core 211725

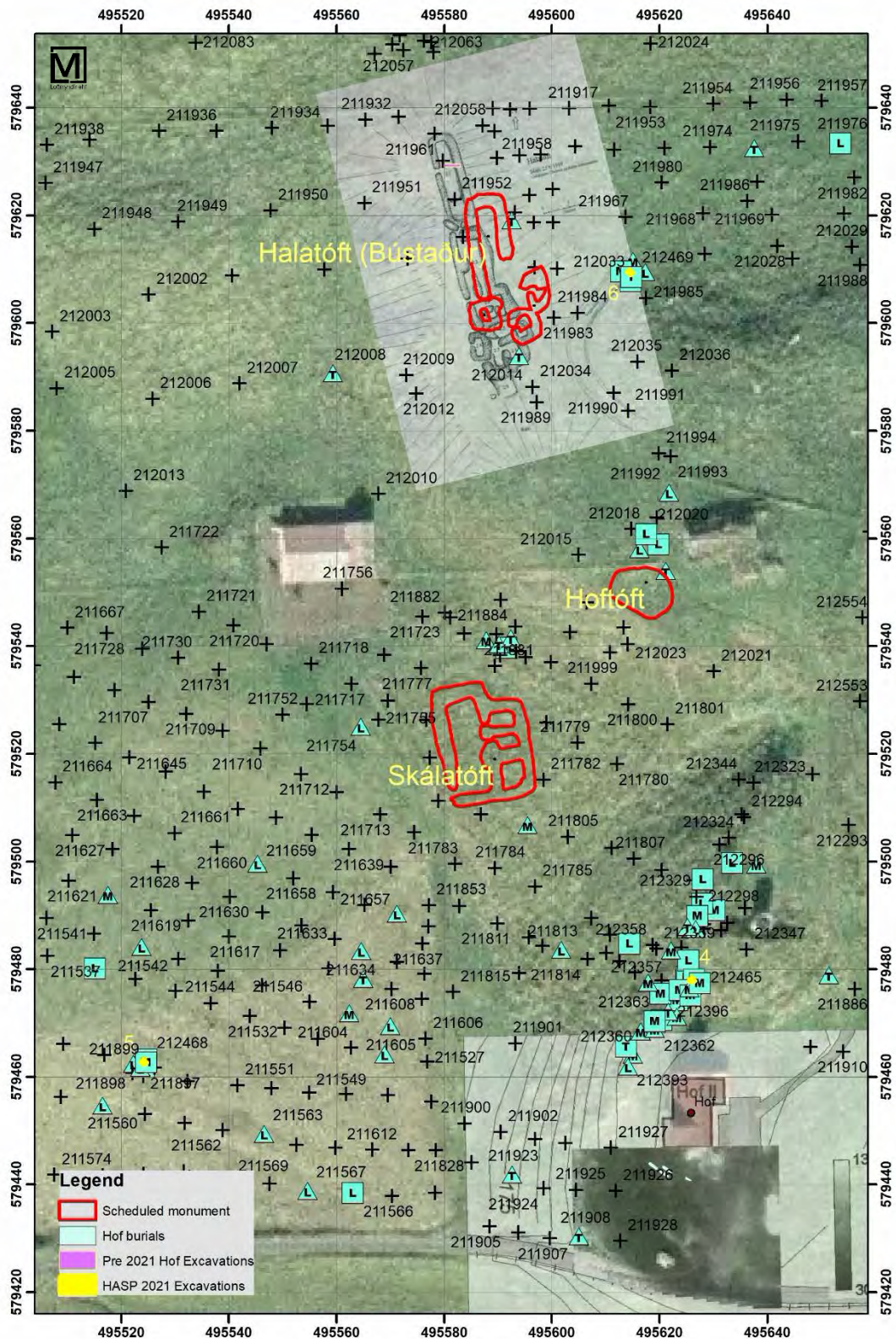


Figure 23. Pre-AD 1104 Hof showing (from south to north) graves in a probable churchyard, the concentration of early midden deposits seen in cores, the ephemeral pre-1104 deposits around Hoftoft, and a potentially short-lived early longhouse. (G. Ólafsson created the map of Halaftoft; T Horsley produced the resistivity map of the churchyard area).

Archaeological surface remains at Hof

There are 5 separate areas of archaeological remains at Hof that were preserved at the highest level in 1926. The preservations are primarily based on the observations of Vigfússon (1892) from a trip in 1886 (Friðlýsingarskrá, 1994). As part of the HASP fieldwork, coring took place around all of the scheduled monuments (Figure 24).

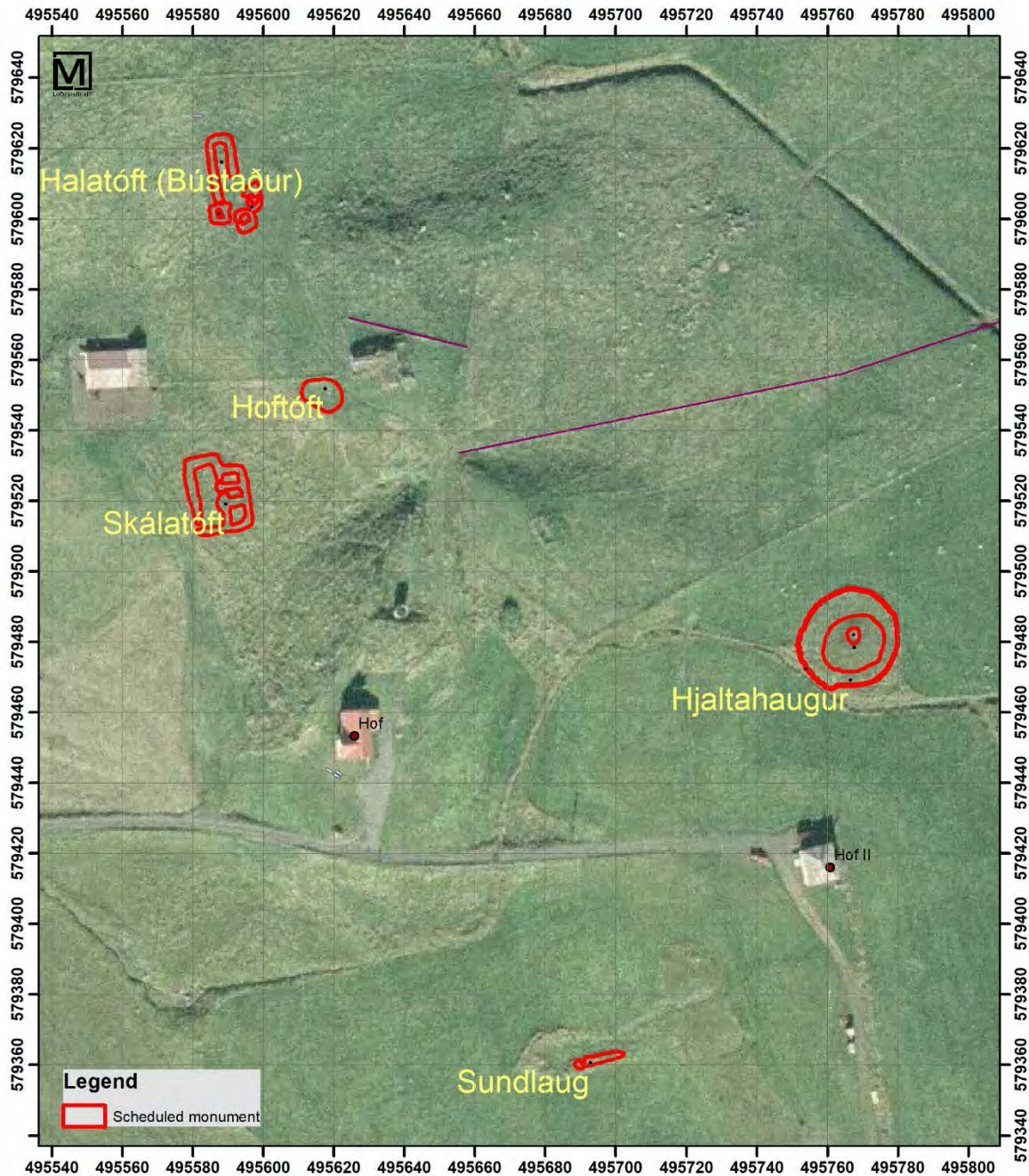


Figure 24. Preserved areas of Hof

The so-called *Skálatóft*, was originally defined by the observations of Vigfússon (1892, 108). He concluded that the original Hof stood in this general area before the farmstead was moved up the hill to the present location of Hof I. He claims this structure has been associated

with the funeral feast for the original settler Hjalti. There is no mention of such a structure in the description of the feast in the *Landnámabók*. In preparation for Byggdasaga Skagafjardar publication, several cores were placed into the walls of the structure. The phase in the walls would strongly suggest an AD 1104-1300 construction period (Pálsson 2011, 128). We could confirm no pre-1104 deposits in the area. While several cores initially hinted at a pre-1104 occupation, follow-up cores did not confirm the early deposits and suggested later occupation. The shape and absence of any early cultural deposits are consistent with a structure for animals.

A ruin on top of a hill above the Skálatóft was proposed by Vigfússon (1892) to be the remains of a *Hof* or temple (Hoftóft). Specifically, Vigfússon points to its position on the hill and the name of the stream nearby (Goðalaut) and assumes that the temple must be nearby. In 2011 cores taken within the ruin pointed to a possible pre-1104 floor layer (Pálsson, 2011, 128). Further two cores taken near this area in 2021 have some LDC deposits, below H1 and one with the LNL (cores 212016 & 212020). The ruin is now partially overlain by a sheep pen but as the area does contain early cultural layers they should be further investigated. This area is not part of the pre-1104 farmstead.

Halatóft, located on an elongated hill north of the modern farmstead, is mentioned in passing by Vigfússon (1892) as a potential older structure. The layout and results of excavations in 2001 and 2008 show that this most likely is a typical dwelling or skáli, although the lack of cultural layers suggests a rather short-lived occupation. The lack of cultural material surrounding the ruin may, to a degree, be due to land clearance on both sides of the hill the ruin lies on. According to Pálsson (2011, 128), the presence of midden (öskuhaugur) was noted east of the ruin, when heavy machinery was used to work the fields on either side of it. Possible medieval dwellings overlying the southern part of the skáli may be associated with the midden deposits in TP6.

The so-called *Sundlaug/sundpollur* is a walled enclosure up against two hills, now in a worked field which means that the walls are now leveled out. Vigfússon (1892, 108) states that based on the layout of the walls and the presence of a creek running into it, it may be a swimming pool. No pool is mentioned in association with Hof in any of the documentary sources. The coring described by Pálsson (2011) indicates that the turf walls are post-1104. There is no evidence for cultural activity that involved burning at this location and there are no cultural layers identified anywhere in the region. The HASP survey did not identify any turf walls or bog deposits.

Hjaltahaugur is the supposed burial mound of Hjalti the first settler. It was first described by Sigurður Vigfússon as a mound surrounded by a circular turf wall. Benedikt Vigfússon, the priest at Hólar from 1827-1861 who purchased Hof in 1824, had started to excavate a trench in the middle of the mound. This trench was partially re-excavated in 1886 by Vigfússon (1892, 107) who found it full of gravel and stones. The Hjaltahaugur area has good soil with natural sequences around its base. Preservation of H1 immediately around Hjaltahaugur is very good with 5 out of seven closest cores having H1 preserved. Cores taken into the supposed wall could not establish turf and very limited soil and no tephra was found within the structure itself (Pálsson 2011, 127) All the 2021 cores in the surrounding area had at least 10 cm of soil. No cultural material was identified in any of the surrounding cores. The mound looks man-made but, so far, archaeological confirmation is missing.

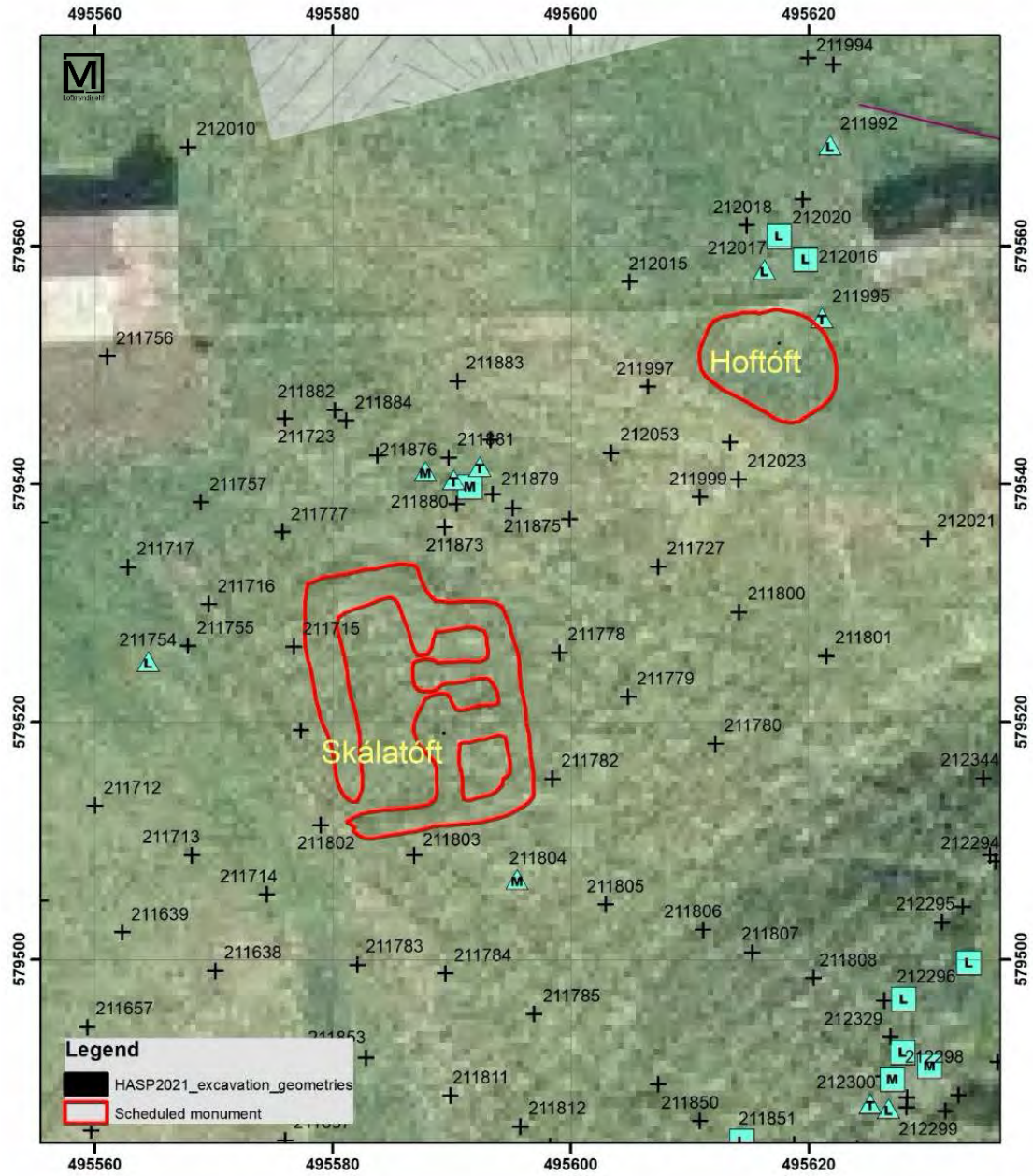


Figure 25. Skálatóft and Hofatóft preserved monuments with pre-1104 core locations and results shown.

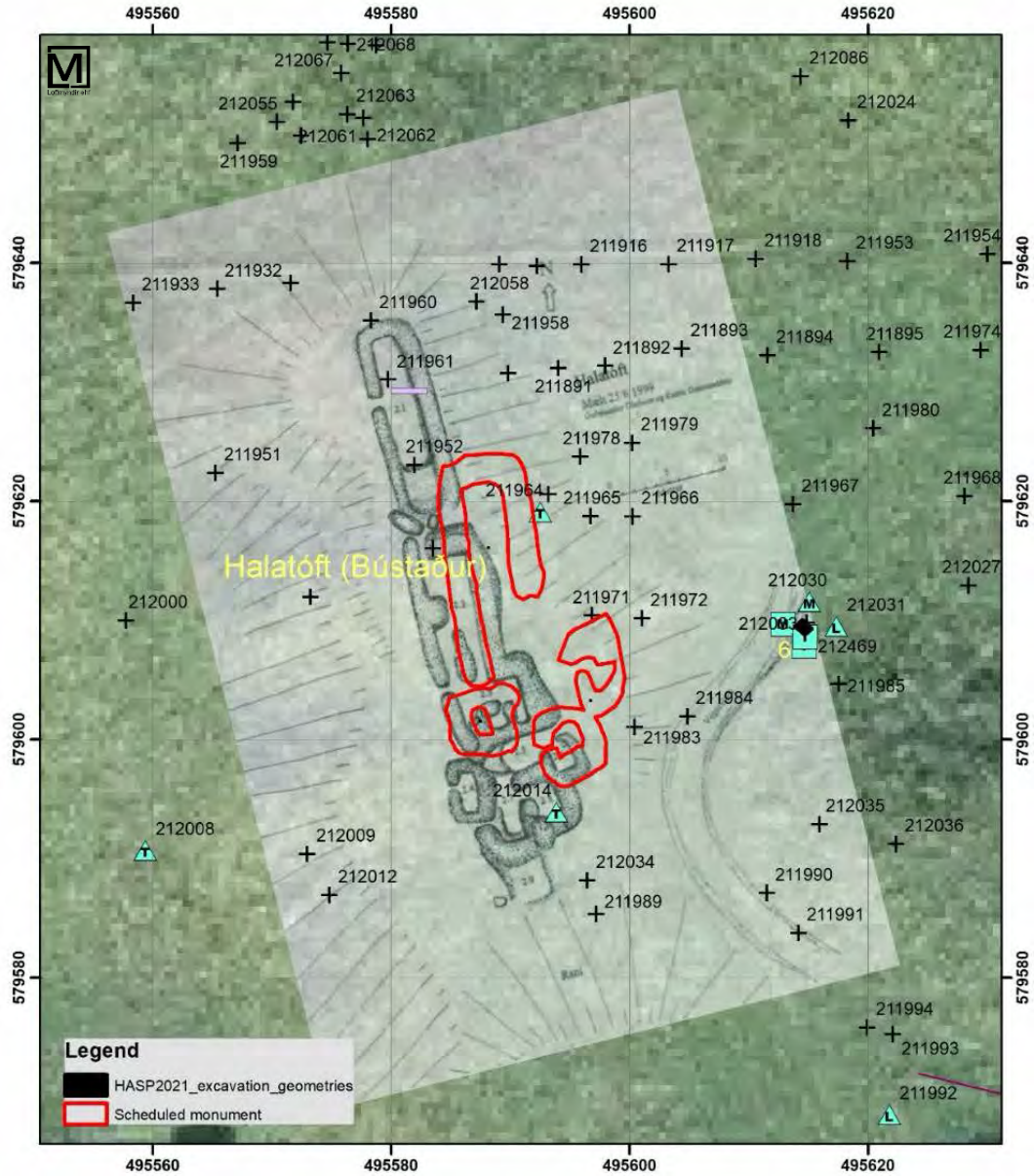


Figure 26. The scheduled monument of Halatóft superimposed on G. Ólafsson's map with earlier excavations (pink) and current excavations (black). Cores and cultural material are indicated by turquoise symbol (see Figure 16 for symbol key)

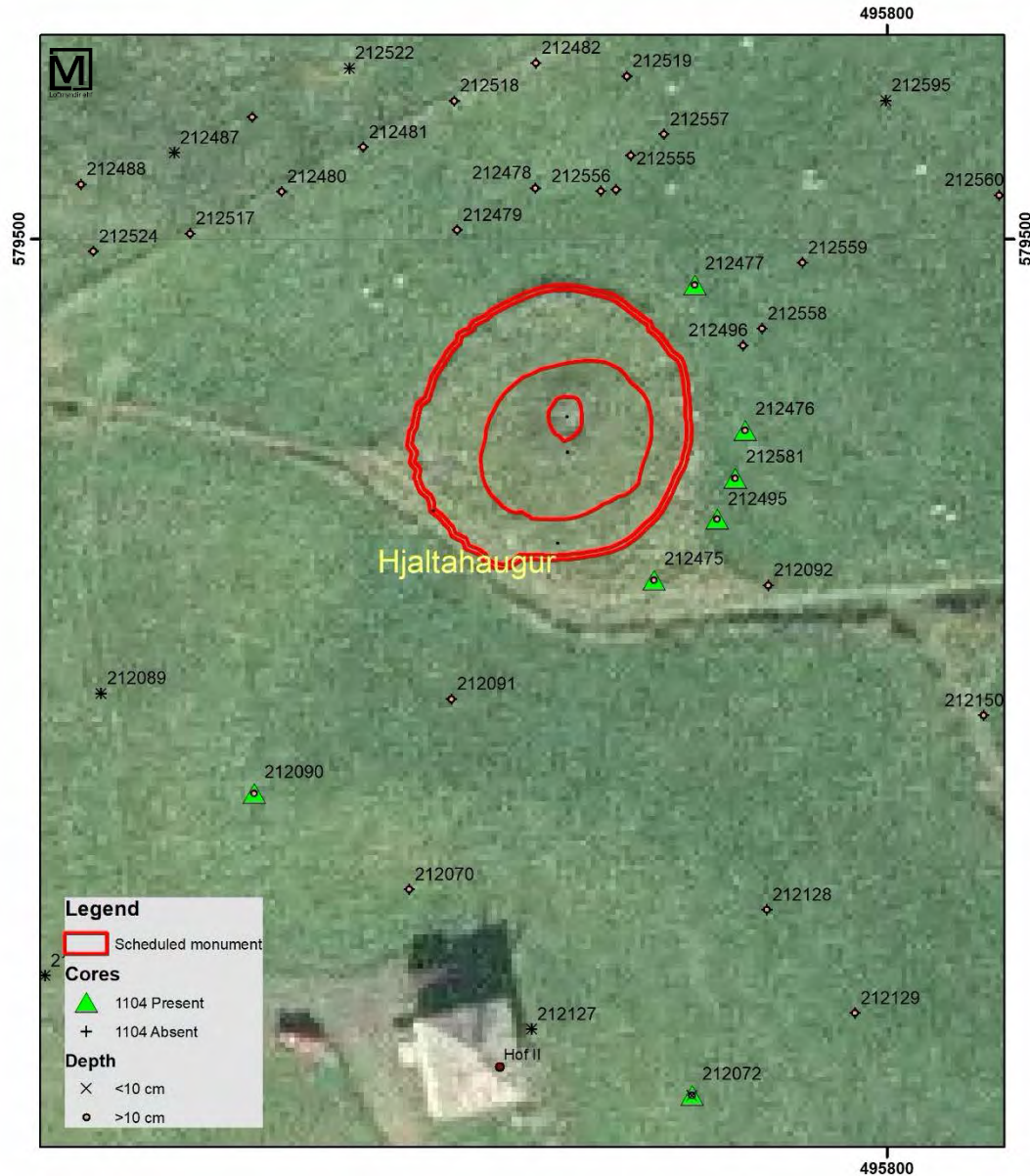


Figure 27. Hjaltahaugur monument with surrounding cores.

Discussion

The abandonment of Hof as a working farm sometime around 1300 and the protection of the archaeological remains, make the cultural landscape of the farmstead unique and worthy of preservation and study. This is especially true since this was an important farm from the settlement which likely has some historical connection to the rise of the bishopric at the neighboring farm of Hólar.

The combined data from the HASP 2021 field season has identified a substantial area of pre-1104 occupation which is consistent with an early farmstead that was probably located somewhere in the area of the current Hof 1 farmhouse. The midden excavated close to the farmhouse indicates continual occupation before and after the 1104 tephra fell. This is supported by the findings of Carter and Traustadóttir (2010). The remains as well as the

archaeological evidence is inconsistent with the 18th-century *Jarðabók* which suggests that Hof was already abandoned when the bishopric at the neighboring farm of Hólar was formed in 1106 (Magnússon and Vidalín 1930, 218). The bishopric's sheep corrals, mentioned in the *Jarðabók*, could be related to the younger ruins on the southern end of Halatóft and the Skálatóft, although the ruins are several centuries earlier than the source. The proposed dates for the Hof farmstead extend from the settlement age and into the 13th century. This is supported by the dates of the 13th Century burials found on the south side of the Hof 1 farmhouse. This constellation of midden deposits, farm mound, and churchyard is common throughout Skagafjörður in the 11th century (Zoëga 2015; Zoëga and Murphy 2016; Zoëga and Bolender 2017). In fact, it would be unusual for a farm of Hof's stature not to have a church and associated burials, if the farm was indeed occupied in the 11th century (Zoëga 2014).

Even after all this work, the overall structure of the pre-1104 occupation is still unclear. While the 2021 work has identified a substantial area of pre-AD 1104 occupation at and around Hof 1 farmhouse, it is still unclear how it is related to the surrounding visible or scheduled ruins. It is clear though that the main farm was located at the site of Hof 1 at least from the 11th century and into the 13th century, indicating a rather short-lived occupation at the Halatóft. However, the presence of peat ash and other pre-1104 cultural material at the proposed site of the Hof (temple) may indicate a more complicated picture. Whether it means that there was a relocation of the farm as is common in 10th and 11th-century Skagafjörður (Bolender et al 2011) or indeed if there might have been more than one dwelling at the same time is uncertain.

The area of pre-1104 farmstead is rather small compared to other farms surveyed in the Skagafjörður region, even if the disturbed/bulldozed area is included (Figure 5). The pre-1104 and 1104-1300 buried farmstead areas suggest an up-down, east-west general orientation of the farm (e.g., Figure 19). The reestablishment of the Hof farm and subsequent 20th-century activities at the site obliterated all earlier structures at the site of Hof 1. The discovery of the cemetery at the edge of the southern end of the hill is consistent with the location of many early cemeteries in the Skagafjörður region with cemeteries placed just south of the associated dwelling (Zoëga, 2014). It is, therefore, not unlikely that the skáli or dwelling was located just north of the cemetery, which is consistent with the location of the excavated midden. Where the farm was located at the time of the Sigurðar register in 1550 is uncertain but more recent ruins at the south of Halatóft are consistent with such an occupation and the midden just north of there is also may be associated with these structures.

Conclusion and further work

At Hof, there are a number of well-preserved ruins still visible on the surface. The coring and excavation from 2021 strongly suggest that the site was largely abandoned sometime around AD 1300. There may have been intermittent occupation at the site post-1300, as the 1550 register seems to suggest, but the research indicates that the farm was not extensively reoccupied as a permanent dwelling place until the 19th century. The coring and excavations suggest that many of the visible ruins are remnants of the occupation in the 12th and 13th centuries. This means that many of the scheduled monuments are not from the settlement period but reflect the layout of Hof when abandoned.

The Coring and excavation from the 2021 season also suggest that the identified pre-1104 component of Hof is concentrated in the area of Hof 1 which was reestablished as a farmstead in the 19th century. That is, the reestablished farmstead largely follows the footprint of the 11th-century farmstead and cemetery. It is unclear if the area of pre-1104 at Hof identified in the coring and Test Pit 4 is the oldest part of Hof, but it is the most substantial. Further research will be necessary to understand the relationship between the midden area with its inferred adjacent farms mound along with the church and the midden deposits and visible ruins.

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Appendix A - The protocol used for the HASP coring and test-trenching project

Farmstead deposits identified in coring

To determine the location and area of farmstead deposits, the results of cores were divided into three simple categories: “yes,” “no,” and “maybe” for each of the three temporal periods based on the presence of cultural material above or below specific tephra layers (Steinberg *et al.* 2016). Small and infrequent anthropogenic inclusions in soils – such as ash, charcoal, and bone – are common near farmsteads and other activity areas. These are good indicators that an activity area or domestic site may be nearby, but we do not count infrequent inclusions as contributing to the areal extent of the farmstead. Higher concentrations of anthropogenic inclusions, midden deposits, turf, and floors are included in farm mound deposits. These deposits are listed in the “category” column in the coring (e.g., Appendix D – 2021 Coring DataError! Reference source not found.) list and the class column in the context list (Table 2).

The first step in determining a “yes,” “no,” or “maybe” was to check if there were any in situ primary tephra layers (1766, 1300, or H1) present in the core. If none of these tephra layers were present, then all time periods were listed as “maybe”. This procedure was also followed if any pre-H1 tephra layers (ex. H3 and H4) were present below the deepest cultural deposit in the core. The deposit type listed as “maybe” for each time period depended on how many total farmstead deposits were present in the core and their relative stratigraphic location. If there were 3 different deposit classes, they were listed in stratigraphic order with the deepest deposit corresponding to the pre-1104 time period, the middle deposit listed for 1104-1300, and the latest deposit for post-1300. If there was only one deposit, it was listed as “maybe” in all three time periods. If there were two deposits, the deepest one was listed for pre-1104 and the latest was listed for post-1300. For deposit classes, floor and midden were prioritized for 1104-1300, and if there was no floor or midden, the deepest deposit was listed for this time period. If there were more than three deposits, the deepest was listed for pre-1104 and the latest for post-1300. The deposit for 1104-1300 was assigned based on descending priority: Floor, midden, cultural layer, LDC, turf.

If there were in situ primary tephra layers present, the method was slightly different. For the pre-1104 time period, a deposit was assigned as “yes” if it extended through an in situ H1 layer, started below one, or extended through any deeper tephra, such as the LNL, H3, or H4. If there were multiple cultural deposits that could be listed as “yes”, priority was given to midden or floor. If none of the deposits were midden or floor, the deposit type was listed as “mixed”. A “no” was assigned for this time period if there were no deposits deeper than an in situ H1 layer. A deposit was listed as “maybe” if H1 was missing but the deposit was determined in association with another tephra, such as 1766, 1300. The absence of the H1 in a context of a cultural deposit is mostly because it was not preserved or the core did not penetrate deeply enough to encounter it (i.e., refusal within more recent deposits). In this case it was unclear whether the deposit would have extended below H1. A “maybe” was also given if H1

was missing and a deposit ended at the exact depth of a tephra layer below H1 but did not extend through it. If there were multiple deposits that could be listed as “maybe” the deepest one was selected for this time period.

For the 1104-1300 time period, a deposit was assigned as “yes” if it extended through the H1 layer or the 1300 layer or was located between these two in-situ layers without overlapping either one. If there were multiple cultural deposits that could be listed as “yes”, priority was first given to the one that physically overlapped with the H1 or 1300, and then floor followed by midden. If no floor or midden were present, any combination of deposits was listed as “mixed”. A “no” was assigned for this time period if there were no cultural deposits above the H1 tephra, or none extending through or existing between an in situ 1300 and H1. A deposit was listed as “maybe” if it existed above an in situ H1 with no 1300 present, or if there was no H1 present, but the deposit was determined in association with another tephra layer. A “maybe” was also given if there was no 1300 layer and a cultural deposit ended at the exact depth of an in situ H1 but did not extend through it. If there were multiple cultural deposits that could be listed as “maybe” the middle one was prioritized. However, if there were only two potential deposits, and therefore no middle, the earlier deposit was selected. Finally, if there was a greater even number of potential deposits (and thus no middle deposit), floor was prioritized, followed by midden, cultural layer, LDC, and turf.

For the post-1300 time period, a deposit was assigned as “yes” if it extended through the 1300 tephra layer, started and ended above it, or extended through a later tephra, such as 1766. If there were multiple deposits that could be listed as “yes” priority was given to midden and floor, and if none of the deposits were midden or floor the deposit type was listed as “mixed”. A “no” was assigned for this time period if no farmstead deposit existed after the 1300 layer. A deposit was listed as “maybe” if there was no in situ 1300 layer, but the deposit was identified in association with another tephra. If multiple deposit types could be listed as “maybe”, the latest one was selected.

For the purposes of the coring survey, farmstead or farm mound class deposit categories include:

- Turf deposits: any evidence for a turf structure, including collapsed or leveled turf, are considered evidence of farm buildings. The organic content and percentage of soil in turf deposits is variable. Sometimes tephra layers are present in turf, which represents a special case, as the tephra can provide a terminus post quem (TPQ) date for the deposit. As a rule, the turf must always postdate the tephra layer incorporated within it. This can lead to some specific situations. For example, a turf deposit containing a 1300 tephra layer is assigned a “yes” for the post-1300 time period if there are no other farmstead deposits above 1300 that would take priority. All other time periods are assigned according to the rules for in-situ tephra outlined above. If turf with H1 in it is the only farmstead deposit, and no in-situ tephra are present, a “no” is assigned for the pre-1104 time period, and the turf is assigned as “maybe” for both later time periods. If there is turf with H1 as the oldest deposit, a “no” is assigned for the pre-1104 time period, and the other time periods are assigned according to the rules for in-situ tephra outlined above. Finally, if there is turf with H1 in it as the only farmstead deposit, but there is also an in situ 1300 layer above the turf, the turf deposit is listed as “yes” for the 1104-1300 time period.

- Low-density cultural layers (LDC): defined by anthropogenic inclusions amounting to 10-50% of the soil matrix. These are assumed to result from indistinct and extensive depositional events that suggest regular activity typical of farmsteads or other farm production areas. Sometimes this deposit has a “mixed” character.
- Middens: defined by anthropogenic inclusions amounting to more than 50% of the soil matrix that suggest the regular deposition of household or production area waste. Middens are the result of distinct and intensive depositional events associated with purposeful disposal. In both LDC and Midden layers that are punctuated by tephra layers, for purposes of farm mound dating, the deposits are assumed to be continuous, occurring immediately before and after the date of the tephra deposition. For example, in a midden deposit with only H1 present, surrounded on either side by midden, both “Pre 1104, and “1104-1300” would be positive (“yes”) while “Post-A.D. 1300” would be “maybe.”
- Floor: characterized by dense, compacted, and/or greasy cultural layers indicative of floors, extramural activity areas, or areas of intense deposition of organic materials. Sometimes floors are distinct fine-grained black ash. These floor deposits are often thin but are very distinct.

A coring shapefile was generated with a 3 layered symbology (one layer for each time period) where each core displayed a specific color for each time period, a specific shape for “yes”, “no” or “maybe” within each time period, and a specific letter referencing the type of farmstead deposit in that time period. For a farmstead to be defined, for a specific time period at least one core had to have some confirmed evidence of human burning or other unambiguous evidence of human occupation that would be distinct from an animal-only outbuilding. More specifically, a farmstead perimeter for a specific time period was defined starting in a location where some confirmed evidence (“yes”) of midden was found, whether from a single core or an excavation profile. The perimeter was then extended out to neighboring cores with farmstead deposits and was plotted halfway between a “yes” and “no” core, or on a “maybe” core. The continuous area within the perimeter was calculated to produce the maximum possible area of a farmstead.

Most cores with farmstead deposits are clustered together allowing for the definition of a single contiguous farmstead area. However, isolated areas with multiple cores containing farmstead deposits that are some distance removed from the main farmstead area are often identified in the coring. Generally, cores with farmstead deposits that were less than 30 meters from the main farmstead area were included within the farmstead perimeter. However, because of the complexity of the site, there were exceptions to this rule. The boundary could be stopped within 30 meters of other cores if there was a justified reason, such as a line of interstitial cores with no farmstead deposits but good preservation (ex. intact 1104). The farmstead boundary should encompass areas of cores with confirmed midden or floor, so single isolated cores or groups of multiple cores within 30 meters of the main farmstead area without confirmed midden or floor were generally not included unless they were interstitial between two areas of cores with confirmed midden or floor.

Groups of multiple cores with farmstead deposits located further than 30 meters from the main farmstead area were considered separate islands if at least one core had a confirmed

midden or floor deposit. Single isolated cores with farmstead deposits or isolated areas of turf or LCD, without nearby midden, floor, or distinct cultural deposits, were not defined as farmstead islands. Separate enclosing boundaries were generated for islands that had sterile interstitial areas of more than 30 m from the main farmstead area. The area of these isolated islands was then added to the area of the main farmstead. Isolated farmstead deposits beyond 100 meters from the main farmstead are counted as separate named farmstead areas.

The coring data was also used to generate a point shapefile showing the percentage of disturbed deposits in each core. This was accomplished by dividing the combined thickness of any disturbed deposits within the core by the end depth of the core. Any large continuous areas of disturbance were identified and delineated by polygons in ArcMap, as these areas can impact the ability to accurately define the farmstead boundary.

Appendix B – 2021 Excavation data

Table 2. Context list

Test pit	Context	Class	Description	Date	
				Lower	Upper
TP4	101	Root Mat	Root mat and disturbed	1766	Present
TP4	110	Turf	Turf	1300	1766
TP4	111	Midden	Midden	1104	1300
TP4	112	Tephra	H1 tephra	870	1104
TP4	113	Midden	Midden below H1	870	1104
TP4	114	Aeolian Deposit	Aeolian Subsoil with H3 patches	-	870
TP5	101	Root Mat	Root mat	1766	Present
TP5	125	Disturbed	Disturbed under rootmat	1766	Present
TP5	126	Low Density Cultural Deposit	Light LDC	1104	1766
TP5	127	Mixed Turf	Turf along north and east wall	1104	1766
TP5	128	Low Density Cultural Deposit	LDC	1104	1766
TP5	129	Midden	Midden	1104	1766
TP5	130	Low Density Cultural Deposit	LDC	1104	1766
TP5	1104	Tephra	H1. Wispy and concentrated in south Below [130	870	1104
TP5	131	Turf	Turf	870	1104
TP5	132	Aeolian Deposit	Aeolian	870	1104
TP5	133	Tephra	H3, bottom	-	870
TP6	101	Root Mat	Root mat	1766	Present
TP6	135	Low Density Cultural Deposit	Low density	1766	Present
TP6	136	Midden	Midden	1104	1766
TP6	137	Midden	Midden, Second under 1300	1104	1766
TP6	138	Upcast	Yellow brown turf under yellow upcast.	1104	1766
TP6	139	Aeolian Deposit	Aeolian - above H1	1104	1766
TP6	140	Bog	Bog	1000	1104
TP6	142	Aeolian Deposit	Aeolian	870	1104
TP6	143	Tephra	LNS	870	1000
TP6	144	Clay	clay with H4	-	870

Table 3. Preliminary Find list

Farm	Place	Excavation	Context	Find #	Material Type	Object Type	Count	Description
Hof	Hof	TP4	113	1	Stone	Stone, round	1	Smoothed, rounded stone with definitive edges
Hof	Hof	TP6	101	1	Metal	Rivet	1	
Hof	Hof	TP6	135	2	Metal	Nail	1	possible copper
Hof	Hof	TP6	137	3	Metal	Unknown	1	Iron found near top context
Hof	Hof	TP6	137	4	Metal	Rivet	1	Mid context
Hof	Hof	TP6	137	5	Metal	Rivet	1	Bottom context
Hof	Hof	TP6	138	6	Metal	Unknown	1	Possible key

Appendix C – 2021 Excavation Harris matrices

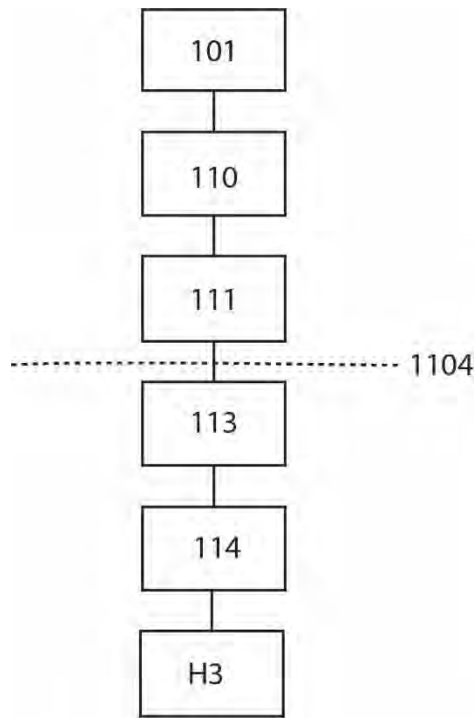


Figure 28. Harris matrix of test pit 4

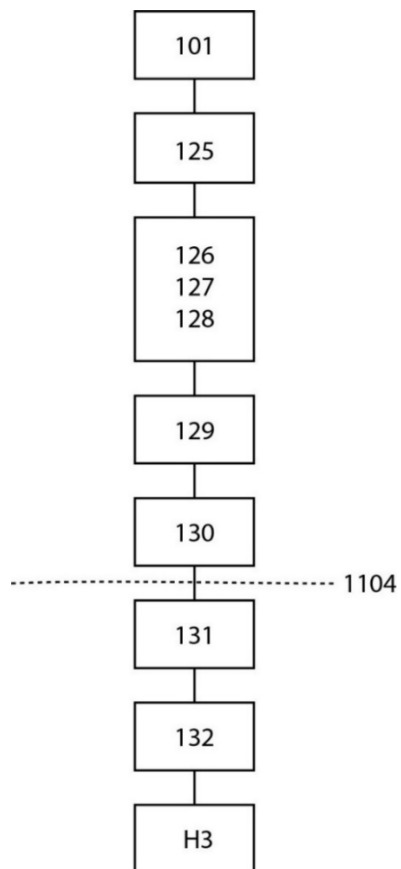


Figure 29. Harris matrix of test pit 5

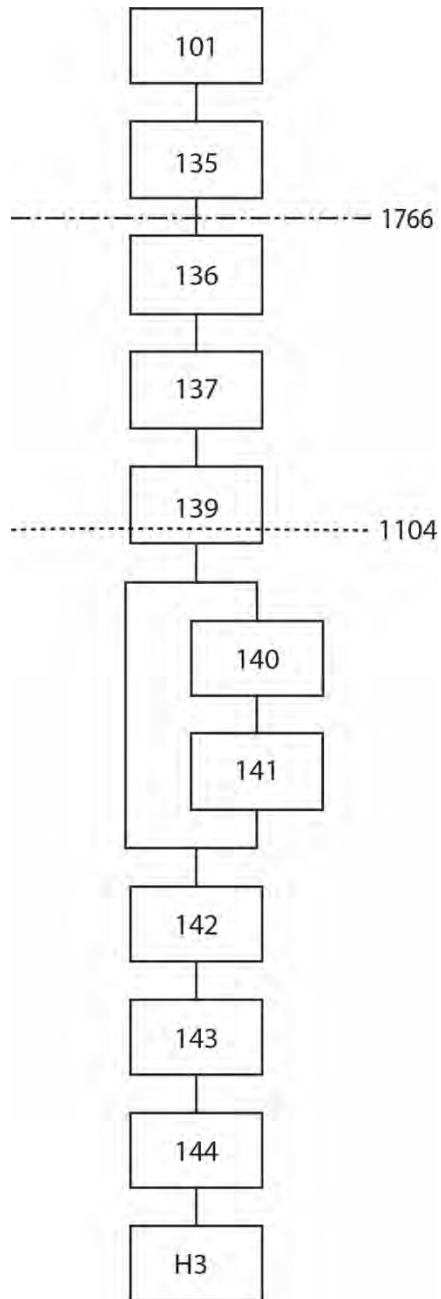


Figure 30. Harris matrix of test pit 6

Appendix D – 2021 Coring Data

The coring data is permanently archived and publicly available from http://www.fiskecenter.umb.edu/HASP/HASP_2021_core_data.zip or <https://arcticdata.io/catalog/portals/hasp> where it can be downloaded. Blank cells or cells with N/A indicate that the researcher did not fill in the data or that there was an instrument failure and only partial data was retained. The comma-separated value (CSV) files use UTF-8 encoding. There are three tables: coring locations, core layers, and core tephra. The tables should be joined by the Core_ID field.

Data set 1 Coring locations

The location of each core taken as part of archaeological work. Coordinates are in ISN 93 - Lambert 1993.

Fields

Core_ID: Unique identification code for each core. Usually consisting of a farm number (and place), the year recorded, and a sequential number

Place: Name of place on a farm. If the place and farm are the same, it usually indicates that cores were taken on and around the main visible farm mound.

Jonsbok_ID: A unique number of a modern farmstead in Skagafjörður.

Place_ID: A sequential number for a sub-location on a farmstead. Corresponds to Place

Farm: A sequential number for a sub-location on a farmstead. Corresponds to Place

ISN93_East: Coordinate in ISNET93. ISNET93 (or ISN93) is the reference coordinates of GPS measurements for Iceland

ISN93_North: Coordinate in ISNET93. ISNET93 (or ISN93) is the reference coordinates of GPS measurements for Iceland

Date: Date core recorded

Full_core: If the full depth of the JMC backsaver core (1.2 m) was reached

End_depth: Depth of core below ground surface

Arch_Initials: Initials of the archaeologist who placed the core

Comments: Any notes about core

Core: Sequential core number

Data set 2: Core layers

Each layer (natural and cultural) from the core taken as part of archaeological work. Layers from a single core form a sequence.

Fields

Core_ID: Unique identification code for each core. Usually consisting of a farm number (and place), the year recorded, and a sequential number

Category: Description of layer

Top_depth: Depth of top of the layer below ground surface

Bottom_depth: Depth of bottom of the layer below ground surface

Inorganic_inclusions: Gravel, tephra, or other inorganic inclusions in layer

Organic_inclusions: Organic inclusions (e.g., bone) in layer

Tephra_in_turf: List of tephra, if the identified layer is identified in building turf (Only necessary if identified layer category is turf.)

Description: Any notes on layer

Core: Sequential core number

Data set 3: core tephra

Each tephra layer from the core taken as part of archaeological work. Tephra layers from a single core form a sequence.

Fields

Core_ID: Unique identification code for each core. Usually consisting of a farm number (and place), the year recorded, and a sequential number

Tephra: Tephra layer - sometimes date (e.g. AD 1300) or tephra layer (e.g., H1)

Depth: Depth below ground surface

Thickness: Thickness of the tephra layer

Description: Notes on tephra