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Expanding Horizons

Settlement Patterns and Outfield Land Use in the Norse North Atlantic

Dawn Elise Mooney, Lísabet Guðmundsdóttir, Barbro Dahl, Howell Roberts and Morten Ramstad (eds.)

UNIVERSITY OF BERGEN

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UBAS – University of Bergen Archaeological Series 13

University Museum of Bergen (UM) and
Department of Archaeology, History, Cultural Studies, and Religion (AHKR)
Box 7800
5020 Bergen
Norway

ISBN 978-82-8436-004-1 (printed) UBAS 13
ISBN 978-82-8436-005-8 (online)
ISSN 2535-390X (printed)
ISSN 2535-3918 (online)

Editors of the series UBAS
Nils Anfinset
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Lars L. Forsberg

Proofreading
Gwendolyne Knight Keimpema

Layout
Cover: Arkikon, www.arkikon.no
Material: Christian Bakke, Communication Division, University of Bergen

Reverse side photo
Photos: Lísabet Guðmundsdóttir
The wood artefacts on the left side are from Borgund, Norway while the artefacts on the right side are from Norse Greenlandic sites.

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Preface

This volume stems from the Expanding Horizons project, which began in 2018. The project was funded by a Workshop Grant from the Joint Committee for Nordic Research Councils in the Humanities and Social Sciences (NOS-HS), held by Orri Vésteinsson, Ramona Harrison, and Christian Koch Madsen. Funding was awarded for two workshops, as well as a subsequent publication of the material presented. Workshop organisation and grant administration were carried out by Morten Ramstad, Lísabet Guðmundsdóttir, Howell Roberts, Barbro Dahl, Birna Lárusdóttir, and Dawn Elise Mooney. The workshops gave researchers and practitioners from across the North Atlantic region an opportunity to forge new connections with each other, not only through academic presentations but also through shared experiences of archaeological sites, standing Medieval structures and their surrounding landscapes.

The first Expanding Horizons meeting took place in Norway, on June 1st–4th 2018. The program began in Bergen with a tour of the city's Medieval sites, led by Prof. Gitte Hansen, before travelling to Mo in Modalen for two days of presentations and discussions. The workshop was attended by 36 participants, 27 of whom gave presentations on topics including archaeological survey in mountain regions, driftwood, seaweed, stone, birds and feathers, and fishing and marine mammals. The two-day seminar was followed by an excursion visiting sites including the stave churches at Borgund, Hopperstad and Kaupanger, the Viking trading sites at Kaupanger and Lærdal, and Norway's oldest secular wooden building, Finnesloftet in Voss, built around AD 1300. In between archaeological sites, the excursion also took in the dramatic fjord landscape of western Norway. Here and in Iceland, both the upstanding structures and their surrounding landscape should be seen as key actors in the development of the settlement and subsistence practices discussed in this volume.

Just under a year later, on April 25th–28th 2019, the Expanding Horizons group met again in Iceland. Forty-one participants gathered in Brjánsstaðir for two more days of talks and discussions. While the first workshop had a main focus on remote wild resources, the second focused on settlement and land-use patterns, agricultural practices, and trade and exchange. Again, the workshop concluded with an excursion to local archaeological sites. Attendees visited the episcopal manor farm and church at Skálholt, the reconstructed Viking Age house at Stöng in Þjórsárdalur, the caves at Ægissíðuhellir, the archaeological site at the manor farm Oddi and the preserved medieval turf-built farm and museum at Keldur. Photographs of the participants of both workshops are presented on the following pages.

Partly due to the ongoing coronavirus pandemic, more time than anticipated has passed between these meetings and the publication of this volume. We thank the authors for their patience, and for their outstanding contributions to the archaeology of western Norway and the Norse North Atlantic diaspora. We are also very grateful to our colleagues who assisted the editors in the peer review of this volume. Lastly, we thank you, the reader, and we hope that you find inspiration in the papers presented here.

Stavanger/Reykjavík/Bergen, Spring 2022

Dawn Elise Mooney, Lísabet Guðmundsdóttir, Barbro Dahl, Howell Roberts and Morten Ramstad

Attendees of the first Expanding Horizons workshop at Mo in Modalen, June 2018.

Back row, left to right: Jennica Einebrant Svensson, Garðar Guðmundsson, Even Bjørdal, Orri Vésteinsson, Morten Ramstad, Jørgen Rosvold, James Barrett, Gísli Pálsson, Michael Nielsen, Christian Koch Madsen, Konrad Smiarowski, Howell Magnus Roberts, Ragnar Orten Lie; Middle row, left to right: Solveig Roti Dahl, Brita Hope, Ragnheiður Gló Gylfadóttir, Kristoffer Dahle, Douglas Bolender, Håkan Petersson; Front row, left to right: Mjöll Snæsdóttir, Birna Lárusdóttir, Lilja Laufey Davíðsdóttir, Irene Baug, Kristin Ilves, Jørn Henriksen, Kathryn Catlin, Lilja Björk Pálsdóttir, Gitte Hansen, Kristborg Þórsdóttir, Élie Pinta, Dawn Elise Mooney, Lísabet Guðmundsdóttir, Sólveig Guðmundsdóttir Beck, Ramona Harrison. *Photo: Kathryn Catlin.*

Attendees of the second Expanding Horizons workshop at Brjánsstaðir, April 2019.

Back row, left to right: Howell Magnus Roberts, Morten Ramstad, Kjetil Loftsgarden, Kristoffer Dahle, Douglas Bolender, Ragnheiður Gló Gylfadóttir, Hildur Gestsdóttir, Michael Nielsen, Orri Vésteinsson, Jennica Einebrant Svensson, Trond Meling, Knut Paasche, Anja Roth Niemi, Knut Andreas Bergsvik, Símun Arge; Middle row, left to right: Guðrún Alda Gísladóttir, Brita Hope, Håkan Petersson, Kathryn Catlin, Even Bjørdal, Ragnheiður Traustadóttir, Élie Pinta, Solveig Roti Dahl, Per Christian Underhaug; Front row, left to right: Kristborg Þórsdóttir, Sólveig Guðmundsdóttir Beck, Guðmundur Ólafsson, Gitte Hansen, Mjöll Snæsdóttir, Lisbeth Prøsch-Danielsen, Kari Loe Hjelle, Irene Baug, Christian Koch Madsen, Ramona Harrison, Barbro Dahl, Dawn Elise Mooney, Thomas Birch, Lísabet Guðmundsdóttir, Jørn Henriksen. *Photo: Lísabet Guðmundsdóttir.*

Kathryn A. Catlin and Douglas J. Bolender

Beyond the farmstead: the role of dispersed dwellings in the settlement of Iceland

Norse farms of the Viking Age were organised in diverse ways, and adaptable to the variety of geographic, social, and ecological circumstances throughout Scandinavia and the Norse diaspora. Scandinavian farms show a range of dispersed infrastructure, including outfields, shielings, and specialised sites. Early settlers in Iceland also exploited the hinterland; however, settlement archaeology in Iceland has focused primarily on farmhouses, and few targeted investigations have taken place beyond the farmstead. Recent archaeological work has revealed numerous small, continuously occupied dwellings beyond core farmstead areas. These sites were part of the earliest settlement and included a wide range of productive activity but do not appear to be specialised, seasonal camps or standalone farms. These sites do not fit into existing categories of habitation, seasonality, or land use derived from analogies to later history. The settlement of Iceland was therefore characterised by different patterns of land use and farm organisation than later periods, including a distributed network of farm and non-farm dwellings. These sites appear to have played a transient but critical role in the settlement process.

Introduction

The Settlement of Iceland (c. AD 870-930) has traditionally been conceptualised as a stream of elite Norse chieftains and farmers along with their households, arriving in Iceland to claim large, discrete territories throughout the productive lowlands and inland valleys. This settlement organisation is described in historical and literary accounts, and archaeological research has supported the general outlines of this process. The initial settlement landscape of dispersed farms had remarkable continuity, and most modern Icelandic farmhouses are only metres from buried ruins of their thousand-year-old counterparts. Considerable archaeological research has understandably focused on Settlement-period longhouses, with over 30 having been fully or partially excavated.

However, a recent archaeological survey from the Hegranes region in North Iceland has demonstrated that small, non-farm dwelling sites were also an important dimension of the settlement landscape. These dispersed sites seem to have gone out of use by the early 11th century and have no clear ethnohistoric or archaeological analogue. The unexpectedly early date, small size, short time span, and diverse activities of these sites demonstrate that the settlement process was more diverse than literary sources and previous archaeological research

have indicated. The new site-type opens an opportunity to look beyond the immediate households of original land claimants to illuminate radically different and historically unacknowledged settlers and settlement processes.

We contextualise this early Icelandic settlement pattern with studies of medieval agricultural hinterlands in Scandinavia, where many of the settlers originated. The Scandinavian cases demonstrate that intensive exploitation of land beyond the farmstead was vital to Norse economic practice and provide context for the critical role that people living and working outside centralised farms played in the settlement of Iceland.

Historical and Archaeological Perspectives on the Settlement of Iceland

Historical accounts of the settlement of Iceland describe migration, land claiming, and farm establishment from c. AD 870 until 930, when the landscape was 'fully settled' and new immigration largely ceased (Grønlie 2006). It is generally understood that the first settlers imported ecological practices from their homelands, organised around dispersed farming households. Each farm had an infield for growing arable crops or hay to support livestock, with more distant cleared land used for pasture and other resources. These practices were then slowly modified to better suit the Icelandic environment (McGovern *et al.* 2007).

Landnámabók (*Book of Settlements*), with its origins in the 12th century, describes approximately 400 original land claims (Pálsson and Edwards 1972, Friðriksson and Vésteinsson 2003). These land claims were huge in comparison to later farm properties, often encompassing the lands of 20-30 later farms and covering essentially all the productive land in Iceland. Settlement parties often included individuals beyond the land claimant's immediate household. These large expedition parties often split into multiple households as important members went on to establish their own properties. Many of the Icelandic sagas trace regional family histories from settlement to the 11th century (Clunies Ross 2010, p. 90). The sagas depict a complex settlement landscape with many more farms than are recorded in *Landnámabók*, spanning a range of household statuses from chieftains to farms that belonged to formerly enslaved individuals.

The Icelandic farm has traditionally been positioned as the main settlement type and the farming household (farmer, immediate family, and dependent labourers) as the primary unit of production, consumption, and social and biological reproduction prior to the 20th century (Gunnlaugsson 1988, Miller 1990). Historical and literary sources rarely mention dwellings that were not farms, though there are occasional references to cottages, shielings, or shelters for outlaws in the sagas. *Egils saga Skallagrímssonar* notably describes the establishment of some non-farm dwellings during the late 9th century. When Skallagrím settles in Borgarfjörður, he gives land to members of his crew and his sons and establishes several farms for himself, each specialised to exploit a specific ecological niche. Most of these holdings are described as farms (*bú*) but two are instead described simply as places where Skallagrím set a man to live on the land (*bjó*). These places are associated with the exploitation of wild resources, and in one case the man apparently lives alone as a place-name element implies a solitary dwelling (*einbúa-*) (Halldórsson *et al.* 1998, pp. 402-403).

Since the 19th century, archaeological research has focused on the settlement landscape, driven in part by an enduring interest in the historicity of the sagas (Friðriksson 1994, Friðriksson and Vésteinsson 2003). Archaeological work has assumed that the primary unit of settlement

was the single-household farm, and focus has usually been on longhouses and buildings that comprise the core farmstead area. Recent work has moved beyond literary-based accounts to produce new insights on rapidity of settlement, such as processes of initial land claims, land division, and new farm establishment (Steinberg *et al.* 2016); inland frontiers of settlement (Sveinbjarnardóttir 1992, Vésteinsson *et al.* 2014); and ecological impacts of human colonisation (McGovern *et al.* 2007). This work has demonstrated that settlement processes varied considerably in different regions, although the farm and its associated household continue to be the primary units of analysis.

Icelandic farms consisted of a 'farmstead' - the core concentration of farmhouse, barns, and homefield - as well as extensive pastures and outfield areas. Outfields have received some archaeological attention, including special activity areas such as shielings (Sveinbjarnardóttir 1991) and iron production sites (Smith 2005), wall and boundary networks (Einarsson *et al.* 2002), and the management of rangelands (Thomson and Simpson 2007). The few small, distant sites that have been systematically investigated were seasonally occupied shielings and activity areas rather than year-round dwellings, and generally date to the mid-10th century or later (Lucas 2008, Kupiec and Milek 2014).

More recently, work in several regions has demonstrated that small dwellings outside of traditional farmstead boundaries were a significant part of the settlement landscape (Vésteinsson *et al.* 2010, Vésteinsson and McGovern 2012, Catlin 2019, 2021). These sites share some but not all attributes of farmsteads, with some similarity to the descriptions of single-person dwellings in *Egils saga*. This discovery adds a new dimension to our understanding of settlement processes, providing the opportunity to look beyond the immediate households of the first settlers. However, because the dwellings share few characteristics with known archaeological site types, literary sources, or the historical record of the 13th century and later, it has been difficult to situate them within the social and ecological landscape of settlement.

We define 'dwelling sites' as distinct from 'activity areas.' Dwellings have evidence for full-time occupation rather than seasonal, as well as a range of productive activities, including those required for subsistence (hunting, fishing, livestock, agriculture, and on-site food preparation), and may include craft activities such as textile or metal production. Dwellings with generational continuity (such as farmsteads) will also show evidence of household reproduction, such as childrearing (Callow 2007) and care for the elderly (Sigurðsson 2008). During the Viking Age, pagan and early Christian cemeteries associated with individual farm properties also suggest multigenerational household continuity (Friðriksson 2004, Zoëga 2015). In this conception, dwellings include farmsteads as well as the small early non-farm dwelling sites that are the focus of this paper. 'Activity areas' are associated with specialised practices and were sometimes inhabited by part of the household temporarily or seasonally, although their middens may contain evidence of varied practices. These include shielings, fishing stations, and processing sites for iron or charcoal.

We argue here that the new-to-us Icelandic small dwelling sites are best understood via a comparative perspective on settlement organisation and outfield use across medieval Scandinavia and the Norse diaspora. Norse settlement patterns and economic practices had considerable diversity prior to the 7th through 11th centuries, during which time livestock herding and transhumance began to increase in prominence over other economic activities (Øye 2004, Pettersson 2005, Øye 2011, Svensson 2015). Earlier settlement patterns included

diverse ecological practices that were adaptable to many different social and ecological contexts, with significant and varied exploitation of hinterlands and outfields. Therefore, if Icelandic settlers began with an existing Norse model of economic and agricultural practice, such a model was almost certainly more diverse than the relatively simple, historically documented landscape of dispersed, centralised farmsteads.

New Evidence for Early Non-Farm Dwellings

Between 2015-2018, the authors and other researchers from the University of Massachusetts Boston and the Skagafjörður Heritage Museum performed an archaeological settlement survey of medieval dwelling sites in the region of Hegranes in Skagafjörður, North Iceland (Figure 1). Hegranes is an eroded rocky headland between the mouths of the Héraðsvötn river. Dwelling sites are mostly located just above wetland areas or in spatially distinct pockets of deeper soil.

The Skagafjörður Church and Settlement Survey (SCASS) and its predecessor, the Skagafjörður Archaeological Settlement Survey (SASS, 2001-2014), aimed to determine the size and earliest settlement date of farmsteads in Hegranes and the neighbouring Langholt region. New farms were created into the 11th century, as initial land claims were first divided among subsequent generations, then subdivided into smaller holdings presumably occupied by dependent farming households (Bolender 2015). This settlement landscape was highly stable: between the 9th and 20th centuries, few farmsteads were abandoned for long periods, and none moved farther than a few hundred metres from its initial location (Bolender *et al.* 2011). Farmstead establishment dates significantly correlate with size and historically documented production values: sites established earlier are both larger (by the 12th century) and more productive (in the 18th and 19th centuries) (Steinberg *et al.* 2016).

The *Fornbýli* Landscape and Archaeological Survey on Hegranes (FLASH), Catlin's doctoral project, investigated the environmental and settlement history of eighteen sites at peripheries of farm properties, of which thirteen may be classified as dwelling sites (Catlin 2016, 2019, 2021). Most sites in the FLASH survey were described by Hjalti Pálsson (2010) in his *Byggðasaga Skagafjarðar* as *fornbýli* (ancient farms: sites of probable medieval settlement) or *rústir* (ruins: likely without medieval settlement). The sites are several hundred metres or more away from the nearest known farmstead, and most have visible surface ruins of livestock buildings and enclosure walls from the 12th through 19th centuries, long after dwelling at the sites came to an end. To date, excavations at these dwelling sites have focused on middens.

Eleven of the small dwelling sites have domestic midden dating to the late 9th or early 10th centuries (Figure 2, Table 1) (two other surveyed sites, Hendilkot and Ríp 2, were established later and are better categorised as small farmsteads or cottages). Coring survey at some of the sites suggested that Settlement-period turf ruins may be present beneath the ruins of more recent outbuildings. These early sites were settled at the same time or slightly before neighbouring farmsteads. Radiocarbon dating from one site (Kotið) indicates activity prior to cal. AD 884, placing it among the earliest sites identified in Skagafjörður (Damiata 2019). Most of the dates are from Hordeum seeds; however, the earliest dates are from charred Empetrum nigrum and Ericaceae seeds recovered from the interface of cultural and prehistoric sterile layers. The later dates for Hordeum may indicate that arable cultivation was not part of the earliest activities at small dwellings.

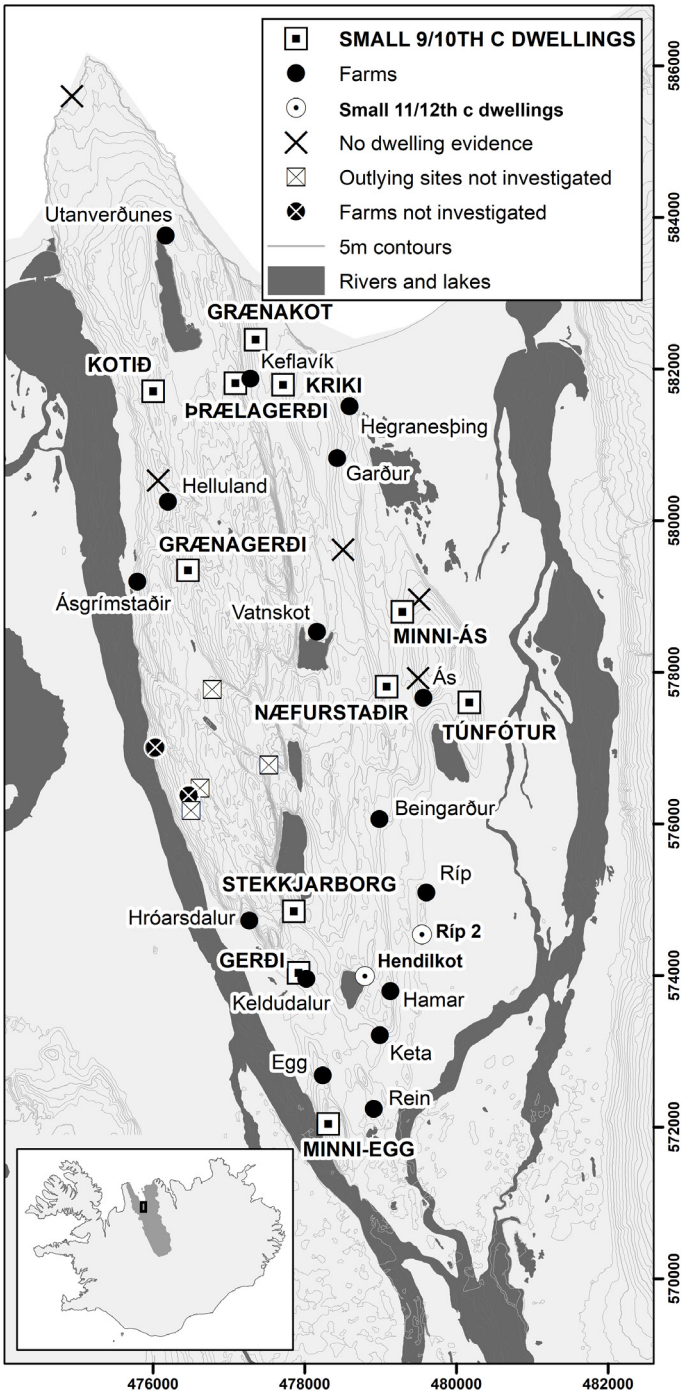

***Figure 1**. Map of the Hegranes survey area. Easting and northing (metres) are shown in the ISN93 coordinate system on the bottom and right edges of the figure respectively.*

All the dates are consistent with establishment during the Settlement period. End dates are less clear, but it is likely that most sites had either lost habitation entirely or were undergoing a transition to a second phase by the late 10th century or earlier. The four sites with a second dwelling phase nonetheless came to an end by the early 12th century. These small, early dwellings therefore do not fit the observed settlement sequence for farms in Skagafjörður, in which the oldest farmsteads are also the largest, nor do they exhibit the strong continuity and stability that categorised most farmsteads over the following millennium. In fact, they seem to have been abandoned before the smallest farmsteads were established in Langholt and Hegranes.

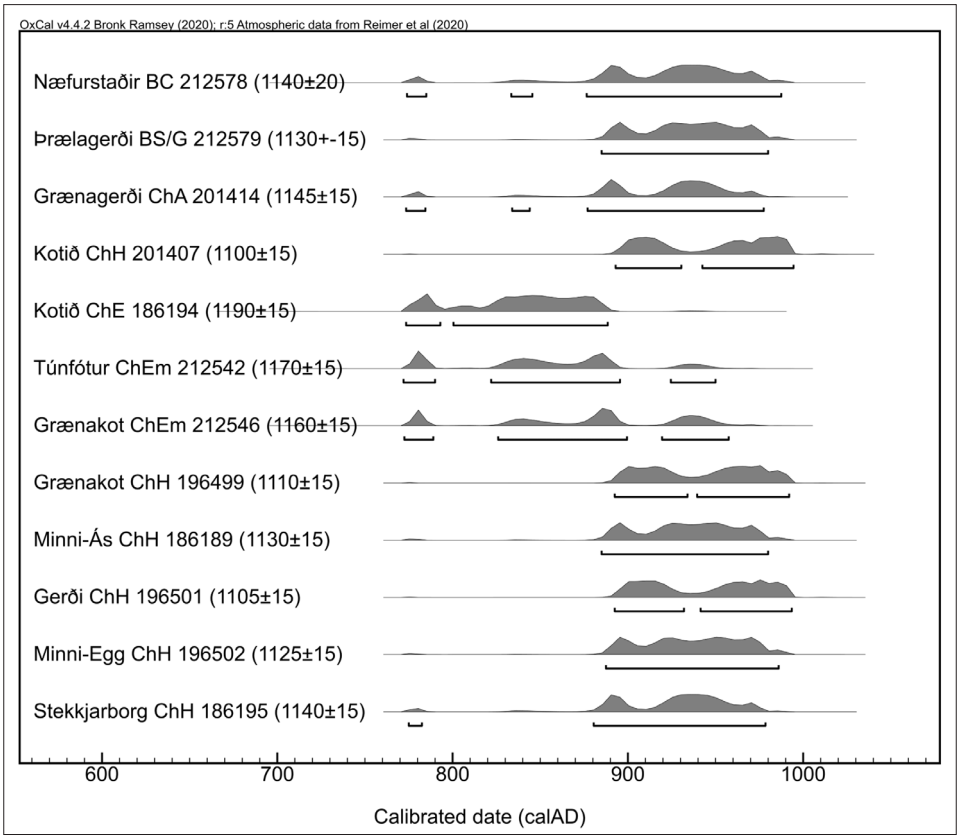

***Figure 2**. Radiocarbon from the earliest contexts of small dwelling sites on Hegranes (Damiata 2019). No dateable specimens were retrieved from Kriki. Radiocarbon source: BC - cow bone, BS/G - sheep/goat bone, ChA - charred cf Avena (likely oat), ChE - charred Ericaceae (heather), ChEm - charred Empetrum (European blueberry), ChH - charred Hordeum (barley); 95.4% probability range is shown. Sample numbers are UCI AMS# and years BP are provided in parentheses.*

Site Name	Phases	Site Area (m^2)	Midden Matrix	% Wild Faunal NISP	Notable Macrobotanicals
Gerði	1	45	Peat Ash	-	17 Hordeum
Grænagerði	2	420†	Charcoal	82% (Ph1) 79% (Ph2)	34 cf. Avena* 28 Hordeum*
Grænakot	2	135†	Peat Ash	-	6 Hordeum**
Kotið	1	316†	Charcoal	83%	1 Hordeum
Kriki	1	25†	Charcoal	-	-
Minni-Ás	1‡	439†	Both‡	-	3 Hordeum
Minni-Egg	1	29	Charcoal	-	1 Hordeum
Næfurstaðir	2	1575†	Charcoal (Ph1) Peat Ash (Ph2)	93% (Ph1) 83% (Ph2)	-
Stekkjarborg	1	634	Charcoal	-	4 Hordeum
Túnfótur	2	163†	Charcoal (Ph1) Peat Ash (Ph2)	-	-
Þrælagerði	1	535†	Charcoal	93%	-

***Table 1**. Data from coring survey and midden excavations at small dwelling sites on Hegranes. Notes: NISP: Number of Identified Specimens. cf. Avena: likely oat. Hordeum: barley. Ph1/Ph2: Phase 1/Phase 2. †: Likely area prior to late-10th century tephra. All others, area is pre-H1104. ‡: Coring at Minni-Ás revealed two midden areas, one primarily charcoal and the other primarily peat ash, but existing data does not permit us to place them in a relative chronology. *: All but one seed of each type at Grænagerði was retrieved from Phase 2 contexts (11th-century). **: All seeds at Grænakot were retrieved from Phase 1 contexts (likely 9/10th century). (Catlin 2019, 2021, Cesario 2021, Ritchey 2019)*

Small dwelling sites range in size from 30 to 1600 m^2 of turf and midden (all but one of them are under 650 m^2), generally smaller than the Viking Age component of sites historically identified as farms in the Langholt and Hegranes surveys (which ranged from 600 m^2 to more than 15,000 m^2) (Steinberg *et al.* 2016). The sites appear to have been occupied year-round: middens were not laminated to suggest seasonal deposition. Dwellings show a range of production and consumption activities (Catlin 2019, 2021). Middens at many of the sites were primarily composed of charcoal, indicating a preference for wood over peat as fuel. While all faunal assemblages included a farm-like signature of domestic mammals (all ages and cuts of cattle and caprine), they also included a higher-than-expected proportion of wild foods, mostly marine birds and fish (>70% of NISP) (Cesario 2021). Fish exhibit a producer signature (more head than body bones), indicating that people at the sites were involved in preparation of dried fish to be sent elsewhere for consumption. Seven sites had charred barley in their macrobotanical assemblages (Ritchey 2019), and artifacts included two carved bone pins. One site has evidence for iron production (Zeitlin 2020).

Interpreting Small Icelandic Dwellings

The evidence for year-round occupation and diverse economic activities indicates that the dwelling sites were not simply outbuildings or specialised activity areas. They also differ substantially from excavated farmsteads. Some farmstead establishment models suggest the first buildings at a new farm may have been pit houses, occupied during construction of the main longhouse (Milek 2012). If such a site were abandoned before the longhouse was complete, perhaps upon discovering the available land was insufficient for farm production, archaeological remains would include a small midden. However, this scenario does not match what appears to be long-term midden accumulation, on the scale of years to decades. We must therefore look beyond existing site typologies to make sense of these sites.

One way to clarify the role of small dwellings is to consider them in terms of their reproductive, as opposed to productive, capacity. Historical sources indicate that the capacity to support a farming household was intrinsic to the notion of a farm. While the sites have evidence of farm-like production, their small size and the apparent absence of typical domestic farm buildings, such as longhouses, and associated outbuildings suggests a limited capacity for household reproduction. Household reproduction implies multiple generations dwelling together and often goes along with long-term habitation at a site (see also Netting *et al.* 1984, Øye 2003).

The later historical rural landscape of Iceland included some small dwelling places for people whose social status and reproductive capacity did not fit into the narrow notion of the farming household or the farm as a legal unit. These included small dwellings on farm properties and contract labourers whose production was only partially tied to the household in which they were resident. These labourers were highly mobile, often moving from place to place, such that their lifetime economic production and reproduction transcended any single farm and was not encompassed by a single, enduring dwelling place (Bolender and Johnson 2018). However, the dwelling itself would continue contributing to the reproduction of its associated farm, as specific residents departed and new ones arrived. This is distinct from the apparent closure of habitation at early small dwellings: no one arrived to take the place of the final occupants. Thus, historically known small sites do not provide a good analogy for the small dwellings of the Viking Age.

Empirically, the small dwelling sites did not reproduce themselves in the long run: depopulation appears to have occurred after no more than a few decades of habitation, perhaps one or two generations of inhabitants. Many of the sites may have ultimately supported the reproduction of some other, larger economic unit, such as a more traditional farming household. The sites may therefore have lost viability when economic or social pressures, such as a growing emphasis on farming over communal exploitation of wild resources, brought these cooperative arrangements to an end.

Small dwelling sites also likely contributed to land clearance and the domestication of Iceland's pre-settlement landscape (Catlin 2019). Hegranes rapidly declined in woodland cover during the hundred years after settlement (Hallsdóttir 1996), and the prevalence of charcoal in middens at small dwelling sites demonstrates a ready source of wood for fuel. Most dwelling sites are on slopes between wetlands below, and now-eroded bedrock above (Figure 3). Distributed dwellings may therefore have facilitated the dispersal and supervision of livestock in wet pastures, while residents cleared land to create more extensive, drier pastures. Open land may have been an important criterion for settlement location, especially at wetland boundaries (Vésteinsson 1998, Øye 2011), and areas of grassland away from the farmstead may thus have been critical while homefield areas were being first established. A need for such places would come to a natural end when extensive pasture land had been created on Hegranes.

***Figure 3**. Photos of small dwelling sites and their landscapes. Lines denote visible walls and features that date to the 12th century and later. A: Minni-Egg, drone photo, facing west; star denotes location of Viking Age midden. B: Þrælagerði, facing south; wetlands to the west (not visible) include evidence of peat cutting.*

Due to some combination of environmental, economic, and social pressures, all the small dwelling sites of Hegranes were depopulated by the early 12th century. Whatever ongoing contributions the sites may have made to regional production, they no longer included human habitation. Rather, their economic function was reduced to providing outfields and short-term livestock housing for nearby farmsteads. Other productive activities appear to have moved from the small dwellings to farmsteads or seasonal activity sites.

Assessing the Prevalence of Small Icelandic Dwellings

Small early dwelling sites have also been observed elsewhere in Skagafjörður, though no follow up work has yet been conducted. SASS identified two areas of isolated midden well away from main farmsteads during systematic reconnaissance coring in Langholt, dating to before AD 1104. However, as the survey did not specifically target small sites, others easily could have been missed due to the widely-spaced reconnaissance coring grids (between 25m-100m intervals in outfields) (Steinberg *et al.* 2016). Surveying in back valleys by Byggðasafn Skagfirðinga suggests that small, early non-farm dwellings are likely present in other regions of Skagafjörður (Zoëga *et al.* 2017).

Limited survey and excavation at numerous small sites in Mývatnssveit revealed similar traits to the Hegranes dwellings. Many of the sites pre-date the 940 tephra, were permanently inhabited, and hosted a variety of activities comparable to farms. These have been interpreted variously as early attempts at farming, or as 'outstations' - permanently inhabited sites that facilitated access to resources or asserted ownership over land on behalf of a parent farm, perhaps as an effective way to control land before hayfields were established (Vésteinsson 2010, Vésteinsson *et al.* 2011). In other parts of Iceland, limited survey suggests similar diversity in early land use (Lárusdóttir 2006, Júlíusson 2016).

Based on the limited scope of current work, it is difficult to assess the prevalence of non-farm dwelling sites during Iceland's settlement, or their comparability across different regions. The establishment of small, dispersed dwellings may have varied as a response to local social or geographic conditions. It is also possible that small dwellings are common but difficult to locate. In Hegranes, the sites had visible, named ruins due to their reuse over many centuries, albeit under a different production regime. Small middens were difficult to detect even at sites where their presence was suspected, often requiring 10 m coring grids and a little luck (Catlin 2019). In regions with direct access to extensive or highland pastures, small early dwellings may not have been repurposed, and thus might lack surface signs or placenames. Likewise, field flattening, cryoturbation, or sediment deposition may obscure or bury ruins. Identifying sites without surface features would be prohibitively time consuming. We would like to see more investigation away from farmsteads, but suggest that the search for small, early dwellings should concentrate on places with visible outfield infrastructure, especially where historians and surveyors have speculated about prior settlement, while acknowledging that placenames may be modern and have little bearing on Settlement period activity.

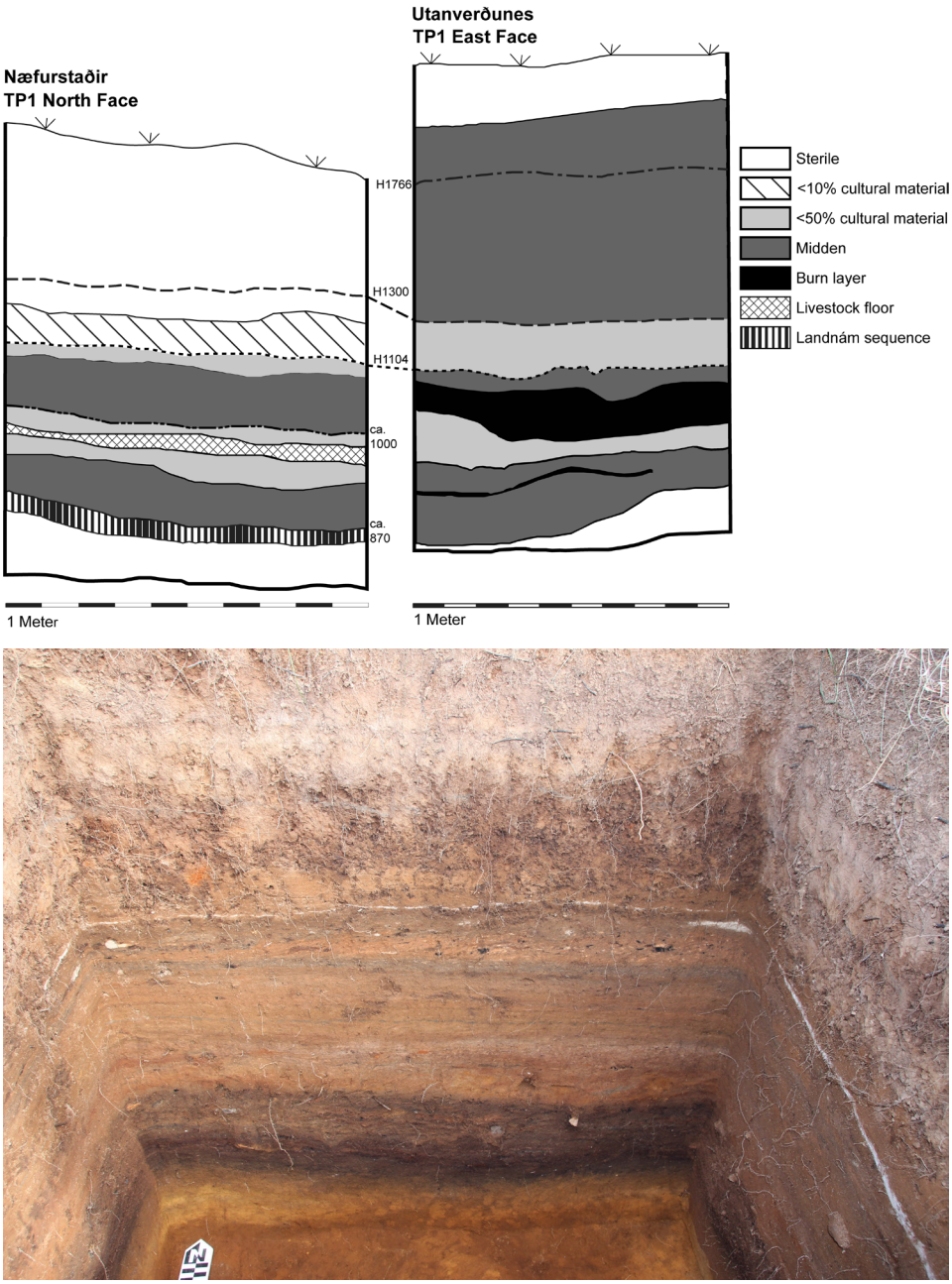

***Figure 4**. A: Simplified profile drawings from excavation units at Næfurstaðir and Utanverðunes. B: Photo of Næfurstaðir TP1 North Face.*

Figure 4. *C: Photo of Utanverðunes TP1 East Face.*

Furthermore, some early dwelling sites may have transitioned to farmsteads, with their own defined farm properties and households. If these transitions were successful over the long term, evidence for early non-farm dwellings would be obscured beneath later farmstead deposits. Several sites in Hegranes have depositional sequences that suggest a transition from non-farm dwelling to farmstead. At Næfurstaðir, one of the dwellings on the contemporary property of the farm Ás, there is a break in human occupation during much of the 10th century, after which the site was re-settled on a slightly larger scale with midden deposition more like farmsteads, before being permanently abandoned by the early 12th century (Figure 4). This second dwelling phase appears to represent a short-lived, unsuccessful attempt at full-scale farming. Furthermore, at some farmstead sites, early midden deposits were identified that fit the character of the small dwellings. At Utanverðunes, the earliest midden layers have a high concentration of wild bird bones, similar to some small dwelling sites (Cesario 2021). This is followed by evidence for extensive burning across the site before the sequence transitions to more typical farmstead deposition. This is not dissimilar to other excavated farm sites that showed evidence of activity prior to farmstead establishment (Smith 2005, Vésteinsson 2010).

Viking Age Outfield Use in Scandinavia and the North Atlantic

As in Iceland, archaeology of the Viking Age in Norway and Sweden has traditionally focused either on farmsteads or on broad ecological studies of landscape change, while the relationship between farms and outfields has been largely based on ethnohistoric analogies. Recent work has demonstrated the importance of studying farmsteads together with outfield resources and infrastructures, to fully understand the context of the farm and its role in social and economic development (Holm 2002, Øye 2003, 2005, 2011, Svensson 2015). There appear to have been site types and landscape practices throughout the medieval Norse world with no clear ethnohistorical analogy, including sites that have been interpreted as shielings but appear to have been occupied year-round.

Norse landscape practices depended upon diverse and flexible outland strategies that could be adapted to unfamiliar environments. These strategies required different sets of knowledge and expertise, including game hunting; fishing; iron, charcoal, and tar production; gathering plant resources; clearing wooded land for use as pasture or outfields; dairying and tending livestock; and gathering winter fodder. The specific implementation of these landscape practices depended on local ecology and topography, availability of resources, and the social and economic context of the farm (Eriksson-Trenter 1998, Øye 1999, Holm 2002, Øye 2003, 2004, 2009). Settlement organisation and outfield use varied substantially both within and between regions, including the balance between hunting, arable agriculture, and extensive grazing in the farm's productive strategy. In some places, agriculture appears to have been supplemental to outfield resources, especially in regions where little land was available for cultivation. Norse economic practice has therefore been described as an 'innovation package' (Costello and Svensson 2018, p. 10), from which elements could be lifted and applied to changing social and environmental conditions. This flexible, adaptable agricultural framework was important to the successful establishment of Norse colonies across the North Atlantic (Øye 2005).

The Faroe Islands and Greenland have evidence for small, diverse outfield sites during their settlement, ranging from barely-occupied shielings to something less than a traditional farm. For example, the artifact assemblage from Argisbrekka, a shieling in the Faroes, is similar to that at traditional farms (Arge 2014). At the other end of the range, Madsen (2019) has recently drawn on an adaptive model of outfield use to explore 'marine shielings' in Greenland - stations that facilitated hunting, fishing, and travel, often without evidence of sustained seasonal or permanent occupation. Within this diversity, many small settlement sites appear to have exploited environmental niches characterised by semi-open wetlands and mixed heath (Borthwick 2006, Ledger *et al.* 2013). Likewise, small sites were often abandoned within a couple of centuries, and thus appear to have played a transitional role between the initial settlement and historically documented landscape management practices (Mahler 1998).

Thus, from the beginning of North Atlantic colonisation, outfield exploitation was a necessary part of the settlement process. A new Norse settlement of the late 9th century would likely incorporate diverse types of land use, with regional variation in length and seasonality of occupation, type of activities performed, and spatiotemporal relationship to farmsteads. Greater flexibility might be expected in early Iceland than in Scandinavia, since creative

innovations to existing strategies could be freely applied on the frontier, in a landscape without millennia of embedded economic practices. The early small dwellings in Iceland may thus represent an innovative transformation of the Norse economic system to the conditions of the Icelandic landscape. We therefore look to Scandinavia not for specific comparative examples, but to emphasise the broad range of possible landscape practices.

Norse Shieling Diversity

Shielings may present the closest available analogue for small non-farm dwellings. Shielings have been instrumental to agricultural production across much of Europe since the Neolithic, including Scandinavia and the Norse diaspora, though their specific form and cultural context has varied considerably across time and space (Sveinbjarnardóttir 1991, Øye 2005, Svensson 2015, Costello and Svensson 2018). Traditional Norse shielings facilitated seasonal dairy production and livestock transhumance during summer months, permitting grazing far from arable fields in advance of the harvest. Shielings can resemble farms in the number and basic form of their buildings, and often transitioned between permanent and seasonal habitation throughout their histories. Therefore, it can be difficult to distinguish between farms and shielings archaeologically, though detailed analysis of excavated floors or artefact assemblages can sometimes differentiate between seasonal and year-round occupation (Lucas 2008, Kupiec *et al.* 2016).

Across the Norse diaspora, archaeological shielings have usually been identified based on comparison to ethnohistoric landscape practices up to the 19th century. Although historically known shielings could be flexible in use and function, comparisons between shielings of the 19th century and the Viking Age have been critiqued on the basis that specialised seasonal sites do not adequately capture the diversity of activities performed at older sites (Øye 2004, Pettersson 2005, Øye 2005, 2009, Kupiec and Milek 2014, Svensson 2015). There is mounting evidence that Scandinavian shielings during the Iron Age supported a diverse array of productive activities and were likely used for longer periods throughout the year, rather than only for dairying and pasture in summer. The relationship between shielings and farms also varied widely, and the extent to which outfield activities were managed by farms or directly at shielings is unclear. In some places, sites interpreted as shielings appear to pre-date the establishment of a nearby farm, while elsewhere shielings seem to have begun as dependent sub-holdings of older farms (Skyllberg 1998, Øye 2003).

The transition to a more seasonal and specialised Norse shieling appears to have been underway during the 8th and 9th centuries. This period corresponds to a demographic increase in Scandinavia, accompanied by more land clearance, farm subdivisions, and settlement reorganisation, including the creation of new farms in former outfields and increased emphasis on transhumance (Øye 2004, Pettersson 2005, Øye 2011). The settlement of Iceland occurred in the context of these profound transformations of the Scandinavian landscape. It is therefore likely that early Icelandic outfield use had more in common with late Iron Age Norse practice than with ethnohistoric shielings from anywhere in Scandinavia or the North Atlantic. Although it has been assumed that summer farms were transplanted to Iceland by the earliest settlers, archaeological evidence is limited for shielings prior to the mid-10th century (Sveinbjarnardóttir 1991, Vésteinsson and McGovern 2012, Kupiec and Milek 2014). Ninth and early 10th century Icelandic outfield dwellings may have facilitated a broad spectrum of diverse activities, similar to Pálstóftir, a late 10th century shieling that had

evidence of hunting, metalworking, and possibly religious practice (Lucas 2008). Shielings and small sites at the boundaries of farm properties might also have served to reinforce claims over large areas (Lucas 2008, Vésteinsson 2010, Vésteinsson *et al.* 2011).

Svensson (2015) has suggested that shielings, as an inclusive and broad category, should be understood as an adaptive process rather than a static typology and as a flexible method for strategic problem-solving to meet diverse and changing needs for activities beyond agricultural infields. This expansive shieling concept, an innovative and flexible outfield infrastructure, becomes a useful lens through which to examine parts of the built landscape that are not adequately explained through other means. It is possible that small dwelling sites like those on Hegranes may have been similar to Iron Age shielings, adapted to the needs of the immediate context of settlement. These needs included many of the same purposes that were later served by seasonal sites as well as by farms, but were performed in the context of permanent habitation separate from a traditional farmstead.

The Settlement Farmstead as an Incomplete Landscape

The variety and adaptability of the Norse agricultural package to diverse contexts throughout the Norse diaspora suggests that we may consider early Icelandic landscape practices as a particular adaptation of farming to the specific context of settlement. However, as a concept, the Norse farm is as ambiguous as the shieling, shifting in underexamined ways that may bear little resemblance to the way medieval Norse understood their landscape. Differing assumptions of the meaning of 'farm' have led to confusion when comparing research between different academic disciplines or regions of Scandinavia (Øye 2011). In Norway, the word had little specific meaning and substantial regional variation, and could refer to essentially any type or size of agrarian settlement (Øye 1999, 2004, 2005). This might include multiple households sharing one or more dwellings and infields, along with the broader landscape and resource base that contributed to subsistence.

Historical and archaeological research in Iceland has traditionally understood the farm as a social and ecological unit that extended well beyond the buildings and fields of the core farmstead. Historical and archaeological sources suggest farm properties were highly stable. Texts describing the earliest settlement patterns, such as Landnámabók, make it clear that farms or land claims comprised a tessellated mosaic encompassing practically all productive land. At the same time, multiple people could share rights to resources outside of individual farm properties, and land use extended into communal areas to cover the whole island. While land claims were bounded territories owned by individuals, there is no evidence that they had equivalent legal or practical status to that of later farm properties. In most cases, the recorded land claims are far larger than medieval farm properties, including those associated with named Settlement farms (Friðriksson and Vésteinsson 2003). The rapid division of primary claims into secondary and tertiary properties indicates that claims were more easily dissolved and subdivided than later farm properties, and much of this land would presumably have been undeveloped and underutilised during the first years of settlement (Bolender 2015).

Most archaeology in Iceland has concentrated on farmsteads - especially longhouses - or indirect evidence of extensive land use (e.g., Streeter and Dugmore 2014). The result of this farmstead-centric approach has been an incomplete understanding of the settlement landscape, and the farm as an expansive and bounded property has been largely taken for granted in Icelandic

archaeological research. Archaeologists have usually understood any permanent dwelling site as a farm, which has contributed to our difficulty in interpreting small early dwelling sites, as they challenge our notions of what it means to be a farm (Catlin 2019). The existence of small dwellings illustrates our incomplete understanding and provides a mechanism to engage archaeology beyond the farmstead, by illuminating boundary practices, settlement organisation, and resource exploitation patterns of the earliest settlers.

Conclusion

Assessing both conservatism and innovation in the Icelandic settlement requires a deep understanding of Norse homeland and diasporic settlement patterns, including the range and variation of outfield land use. It is clear that the Norse dwelling sites of the Viking Age were diverse, part of a distributed network of land use that was highly adaptable to changing ecological and social conditions. We join a growing body of scholars who have called for more interregional and comparative study to clarify the settlement diversity of the Norse diaspora, including the changing roles of outfields and shielings, the conceptual and methodological implications of the 'farm,' and the processes that accompany colonisation (Øye 1999, Holm 2002, Øye 2005, 2011, Kupiec *et al.* 2016,).

There is a clear need for more attention to the role of small early dwellings in the settlement of Iceland. This will require broadening the conceptual approach beyond farmsteads to include the complete landscape. Small early dwelling sites appear to represent a form of landscape organisation and productive activity that corresponds neither to later ethnohistorically documented practices nor to the traditional model of the Settlement farm. These small dwellings seem to have served a purpose in the process of settling the new landscape. The social and ecological practices that they facilitated appear to have changed during the late 10th and 11th centuries, as the process of new farm establishment ended (see Steinberg *et al.* 2016), and much of the lowlands had been converted from woodlands to pasture (Simpson *et al.* 2003). The end of habitation at small dwellings may also have enabled farm production to the extent that resources in the broader landscape, such as outfield hay and grazing, became more accessible (Catlin and Bolender 2018).

A more complete understanding of outfield practices, small and marginal dwellings, and diverse settlement patterns has the potential to illuminate processes of social complexity throughout the Norse world (Øye 2003, 2009, Costello and Svensson 2018). The opportunity to look beyond the immediate households of the original land claimants allows us to more clearly distinguish the lives of landowners from other members of the household. Studying the closure of non-farm dwellings and the transition from diverse to specialised outfield use also sheds light on long-term human ecodynamics in Iceland, as the long settlement process gave way to the historically familiar landscape.

Acknowledgements

We thank SASS/SCASS co-directors John Steinberg, Guðný Zoëga, and Brian Damiata, and all the students and collaborators who contributed time and expertise to the success of the research. This work would not have been possible without the support of Sigríður Sigurðardóttir and Bryndís Zoëga of The Skagafjörður Heritage Museum, the community of Skagafjörður, and the farmers of Langholt and Hegranes who kindly granted access to their land. We also

thank the organisers and participants in the Expanding Horizons meetings for bringing us all together and inspiring this work. The research conducted by SASS/SCASS/FLASH was supported by the National Science Foundation under grant nos. BCS 9908836, 0107413, 0453892, 0731371, ARC 0909393, and OPP 1417772 and 1523025, by fellowships from the Fulbright Commission and the Leifur Eiríksson Foundation, and operated under permits granted by Þjóðminjasafn Íslands and Fornleifavernd ríkisins. Project reports are available at http://www.fiskecenter.umb.edu/Projects/SCASS.html.

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From the 9th century AD onwards, Norse migration resulted in the spread across the North Atlantic of cultural traits originating in Norway. The challenging landscapes of this region rewarded resilience and adaptability, evidenced by complex subsistence strategies incorporating the exploitation of a variety of outfield resources. However, differing methodologies and approaches across the region have limited the extent to which the connections between western Norway and the North Atlantic have been explored in archaeological research. The Expanding Horizons project brought together junior and senior practitioners in archaeology and related fields, from both within and outside of academia, to address this. The papers in this volume present case studies of outfield resource use and its impact on settlement patterns, placed in the wider context of Norse settlement and subsistence across the North Atlantic.

ISBN: 978-82-8436-004-1