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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.)



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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 Brjónsstaðir 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, Hákan Petersson; Front row, left to right: Mjöll Snæsadóttir, 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, Lisabet 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, Simun Arge; Middle row, left to right: Guðrún Alda Gísladóttir, Brita Hope, Hákan 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 Snæsadóttir, Lisbeth Prösch-Danielsen, Kari Loe Hjelle, Irene Baug, Christian Koch Madsen, Ramona Harrison, Barbro Dahl, Dawn Elise Mooney, Thomas Birch, Lisabet Guðmundsdóttir, Jørn Henriksen. *Photo: Lisabet Guðmundsdóttir.*



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

Expanding Horizons in North Atlantic Archaeology

Introduction

From the 9th century AD onwards, Norse migration resulted in the spread across the North Atlantic of cultural traits originating in Norway. Although these colonies were dispersed over islands scattered across thousands of kilometres of open ocean, they remained politically and culturally interlinked. Moreover, these islands share much with western Norway in terms of climate, landscape and topography, being characterised by heathland and mountain areas, including glaciers and ice caps, bordered by relatively small areas of land suitable for agriculture mainly along the coasts and in sheltered fjords and valleys. These challenging landscapes rewarded resilience and adaptability, as evidenced by complex subsistence strategies including pastoralism, transhumance, hunting and fishing, alongside arable agriculture. However, although the significance of these elements varied both over time and at local and regional scales, this variability itself has so far been little understood.

Although much data addressing such research questions has been, and continues to be, generated through archaeological surveys, development-led excavations, and research projects, this information is often inaccessible: overview publications are lacking, and results are often presented only in unpublished reports. Furthermore, there has been relatively little collaboration between archaeologists in western Norway and the North Atlantic, partly due to separation between research and development-led archaeology, and to differing approaches and methodologies across the region. The Expanding Horizons project aimed to provide a means to address these issues by drawing together junior and senior practitioners in archaeology and related fields, from both within and outside of academia, to present their work.

Two workshops, in Norway in 2018 and in Iceland in 2019, brought together researchers and practitioners from Europe and North America to share their ideas, methods and results, and explore common problems and goals. Importance was also placed on building personal connections through informal discussions and shared experiences of relevant archaeological sites and cultural landscapes. The papers in this volume comprise material presented at the Expanding Horizons workshops, placed in the wider context of Norse settlement and subsistence patterns across the North Atlantic. These workshops and papers were the primary goal of the Expanding Horizons project, but that does not mean that the work is over. There is huge scope for forging further collaborative connections between researchers and practitioners in western Norway and the North Atlantic. Suggestions for how we might achieve this closer

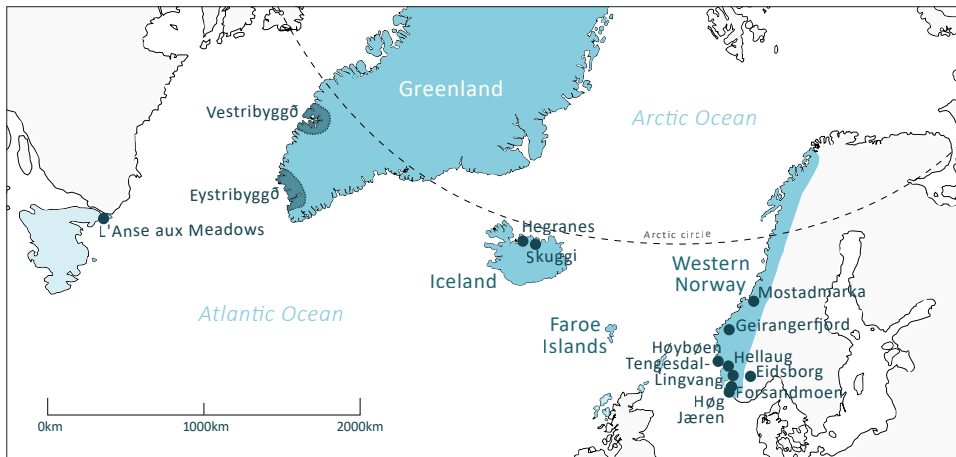


Figure 1. Map showing the area defined as the North Atlantic in this volume (mid blue) and other areas potentially included in this definition (light blue), along with some of the key case studies and locations referenced in the following chapters. Map by Dawn Elise Mooney.

Scandinavia is another geographical unit frequently referenced within the following papers, generally defined as encompassing modern-day Denmark, Norway and Sweden. These countries are politically, socially and geographically intertwined through their shared history, and it is often less convenient to talk about modern geopolitical divisions than it is to reference general regions: southern Scandinavia, western Scandinavia etc. Throughout this volume, these terms will be defined by the authors where necessary.

The geopolitical and linguistic interconnectedness of our region of study has given rise to a shared way of talking about the past, using terms that may be unfamiliar to readers who do not speak a North Germanic language. Chief amongst these is *landnám*. This term, from the Old Norse meaning “land-take”, is most often used to describe the Norse colonisation of the North Atlantic islands, particularly Iceland, during the Viking Age. In Scandinavian archaeology, the concept has also been applied to the settlement of new (unoccupied) land throughout prehistory, characterised by both the establishment of settlements and the beginning of agricultural activity. When discussing North Atlantic settlement patterns, authors in this volume define and use *landnám* in their own ways within this framework, as outlined in their papers.

Outfield and remote resources

The complex subsistence strategies that drove settlement across the ‘marginal’ (for agropastoralism) environments of western Norway and the North Atlantic hinge upon the exploitation of so-called ‘remote resources’ (Keller and Perdikaris 2016). These are defined by their remoteness as experienced from the infield of a typical Norse North Atlantic farm, although in the papers presented below we will see that ‘remoteness’ is perhaps in the eye of the beholder. To acknowledge this, papers within this volume also use the term ‘outfield resources’, as distinct from the arable fields and hay meadows of the infield (Øye 2005). These resources, be they marine or terrestrial, animal, vegetable or mineral, are necessary for survival or of high value, or both, and thus draw humans to the peripheral hinterlands of their

region. In some cases, their exploitation necessitates only short visits and ephemeral camps, while others engender the establishment of seasonal or even permanent settlements. Many of the papers in this volume address the links between settlement patterns and remote resource exploitation.

Marine resources are perhaps the best studied of the remote resources exploited in the Norse North Atlantic. Such resources include fish, marine mammals, and driftwood. Norwegian and Icelandic fisheries were of great importance to these two countries during the early second millennium AD, although little fishing seems to have been conducted in Norse Greenland (Smiarowski *et al.* 2017). Initially, fishing was a significant element in the subsistence economy of coastal and inland communities in Norway and Iceland (Gísladóttir *et al.* 2012, Guðmundsdóttir 2021, Guðmundsdóttir and Ramstad 2022), and the exploitation of the sea as a part of the outfield was vital to many households. Out of such strategies grew commercial enterprises providing northern European markets with dried fish, beginning around AD 1100 in Norway and AD 1200 in Iceland, which resulted in the establishment of large seasonal fishing stations (Amundsen *et al.* 2005, Tulinius 2005, Edvardsson 2005, 2010, Keller 2010).

The exploitation of marine mammals is much less clearly visible in the archaeological record, yet has been cited as a key driver of the Norse colonisation of Greenland (Frei *et al.* 2015). While walrus ivory was valued as a luxury commodity, seals and whales were vital at a subsistence level. Isotopic analysis of skeletons from Greenland indicates that the diets of some of the late Norse occupants consisted of up to 80% marine foods, likely mostly seal (Arneborg *et al.* 1999). Whales were also highly valued: although there is little evidence for whale hunting in the North Atlantic, beached and drifted whales were vital for both food and the provision of whale bone for the production of a wide variety of objects (Szabo 2008, van der Hourk 2020).

Coastal regions were also a source of gathered resources. Chief among these was driftwood, which was vital as a construction material and fuel source in tree-poor areas in northern Norway, Iceland and Greenland (Alm 2019, Mooney *et al.*, this volume). Seaweed also appears to have been widely used throughout Scandinavia, Iceland and Greenland in the past. This versatile resource has many potential uses in agriculture, craft and food preparation, although its exploitation remains little researched (Mooney 2018). Clear archaeological evidence from Greenland indicates the use of seaweed ash, “black salt”, as a flavouring or preservative (Buckland *et al.* 1998). It can also be assumed that shellfish were gathered from the intertidal zone: while shellfish exploitation has been little studied in the Norse North Atlantic, there is unequivocal evidence of limpet harvesting from the Viking Age Faroe Islands (McGovern *et al.* 2004). Shellfish were also extensively collected in Medieval northern Scotland (Noble *et al.* 2018) and Orkney (Milner *et al.* 2007), although it remains unclear whether they were consumed by humans or used as bait.

Norse settlements across the North Atlantic were concentrated around prime agricultural lands. While these sites were often coastal, they did not necessarily permit immediate access to marine resources. The logistics and infrastructure surrounding the exploitation of these resources was therefore complex, involving long journeys, specialised transport and equipment, and often seasonal occupation in ‘marginal’ regions. Madsen (2019) has conceptualised such sites as ‘marine shielings’, inviting comparison with inland seasonal sites connected to transhumance.

The agricultural exploitation of the terrestrial outfield played a key role in subsistence across the study area (Stene and Wangen 2016), most clearly evident through shieling sites. Shielings in upland areas allowed farmers to utilise grazing areas in the outfield, especially for dairy production, during the summer months. Evidence from Pálstóftir in Iceland suggests that small-scale craft and hunting activities may also have been integral to the function of shielings (Lucas 2008). Many shielings have at one point in their history been used as permanent settlements, and their study can therefore elucidate not only agricultural practice but also patterns of social and/or environmental change. Two papers in this volume explore shieling use in western Norway (Dahle and Busengdal, Prøsch-Danielsen).

While shielings may have been a base for hunting of wildfowl and small game, the hunting of larger animals required specialist infrastructure. The mountain areas of western Norway are dotted with thousands of devices for hunting reindeer (Bang-Andersen 2004, 2015, Bergstøl 2015, Indrelid 2015), and data from woodlands show a similar pattern related to the large-scale hunting of elk, fur-bearing animals, and birds (Post-Melbye and Bergstøl 2020). The Norse also hunted caribou in Greenland, but remains comparable to those found in Norway have not yet been identified. In Iceland, terrestrial hunting was limited to birds such as falcons (for live export), ptarmigan, and waterfowl, but much remains unexplored regarding practice and economic significance. Other terrestrial outfield resources such as bird eggs, eiderdown, stone and iron ore would also have been collected through short expeditions. In sparsely-wooded Iceland and Greenland, the collection of firewood and the production of charcoal often necessitated such journeys as well. Outfield goods and commodities were traded locally: as is demonstrated below (Neset and Hjelle, this volume), farms or settlements in areas 'marginal' for agropastoralism often became specialised in the exploitation of local outfield resources.

The vital importance of outfield resources to Norse North Atlantic societies is also clearly visible in historical sources from across the region. The Medieval Norse law codes, such as *Gulatingssloven* and *Grágás*, set out in clear detail the legal basis for the use and ownership of a variety of remote resources, and the punishments for their misuse. The importance of such resources can also be seen in the Icelandic sagas, where they are often a source of conflict. Key examples of this include in *Grettis saga*, where a beached whale carcass becomes the scene of a bloody battle (ÍF VII Chapter 12), and *Eyrbyggja saga*, in which a dispute over the ownership of the woodland at Krákunes descends into a lengthy feud (ÍF IV Chapter 31 onwards). Scholars have explored the legislation of remote resource use as it relates to woodlands (Mooney 2013), driftwood (Mooney 2013, Alm 2019), drift whales (van der Hourk 2020), eiderdown (Doughty 1979), fishing (Perdikaris and McGovern 2009, Dufeu 2018), grazing lands (Austrheim *et al.* 2008), and hunting (Oehrl 2013). Remote resources continued to be important in early modern Iceland, as demonstrated by the complex networks of ownership rights listed in the 18th century land register *Jarðabók Árna Magnússonar og Páls Vídalíns* (Pálsson 2018).

Trade, exchange and settlement patterns

The exploitation of dispersed remote resources has implications for trade and exchange, routes of movement through the landscape, and settlement patterns. Intensification of marine, outfield, and mountain hunting, as well as fishing, in the Viking and Medieval Periods should be viewed in the light of the development of new networks of exchange reaching far beyond the regional level. What was once consumed and used locally could now be turned

into valuables and commodities such as walrus ivory, antler, skins and hides, and eiderdown, which were traded internationally. Such exchanges would have occurred at formalised seasonal trading places (e.g., Skre 2007, Harrison *et al.* 2008, Loftsgarden *et al.* 2016, Traustadóttir 2018) but also informally at gatherings such as politico-judicial assemblies (e.g., Loftsgarden *et al.* 2016, Semple *et al.* 2020), and in the home. Some of the exchange networks are long distance: Norwegian whetstones are found in Iceland and Denmark (Hansen 2011, Baug *et al.* 2019, 2020), Icelandic sulphur reaches the Baltic (Mehler 2015), and Greenlandic ivory is found across Europe (Roesdahl 1995, Frei *et al.* 2015, Barrett *et al.* 2020). Others are more local, allowing marine resources to reach inland valleys (Amundsen 2005, McGovern *et al.* 2006), and upland resources such as antler reach lowland communities (Rosvold *et al.* 2019).

Both the acquisition and exchange of these resources lead to the development and reinforcement of routes and tracks linking sites and settlements together. Such features are difficult to examine archaeologically due to their continued use over long periods of time, but place-name evidence along with the presence of sites along the routes can help us to explore these pathways. Surveys covering large areas from the fjords to the mountains offer new insights into a variety of sites interlinked by terrestrial travel routes (Svensson and Dahl, this volume). Furthermore, in this volume Barbro Dahl argues that the site of Forsandmoen in southwest Norway owes its long occupation history and large size to the control of routes between the mountains and the fjords. While sites like Forsand were situated to capitalise on the movement of goods between lowland and upland areas, the exploitation of outfield resources influenced settlement patterns in a variety of ways. The papers presented in this volume explore this theme through specific examples from western Norway, Iceland and Greenland.

Overview of the articles

The articles presented here address a range of topics relating to the themes explored above, and have all grown out of presentations given at the Expanding Horizons workshops. We begin in western Norway, where Kristoffer Dahle and Susanne Busengdal (Chapter 2) utilise multiple lines of evidence and an interdisciplinary approach to re-examine the origins, development and structuration of the cultural landscape in the marginal areas of Geiranger Fjord. Documentary sources are contrasted with archaeological evidence from both rescue work and targeted research, and placed alongside various theoretical frameworks to produce a more complex and nuanced model of settlement patterns. The paper examines geographical and social factors and their interaction, and develops a new model of longer-term changes in structure.

Kathryn Catlin and Douglas Bolender (Chapter 3) also explore land use and settlement on a regional scale, this time in Iceland. They move away from the traditional narrative of the Icelandic *landnám*, with its focus on the large farms of prominent settlers, in their presentation of excavation and survey results from the Skagafjörður region of northern Iceland. Here numerous small, continuously-occupied dwellings located within what is usually considered as the 'outfield' have been found. These sites date from the earliest settlement and appear to be neither seasonal camps nor standalone farms, but rather part of a network of farm and non-farm dwellings. They appear to have facilitated the exploitation of diverse outfield resources whilst also reinforcing land claims over large areas. It is unclear to what extent this pattern can be applied to the rest of Iceland or the North Atlantic in general, but it provides a new lens through which to explore outfield exploitation and occupation.

The farm of Skuggi, as presented by Ramona Harrison and Howell Roberts in Chapter 4, was occupied for a longer period than the Skagafjörður dwellings presented by Catlin and Bolender, and represents a different style for the organisation of outfield production. The farm's location on a north-facing slope is not ideal for hay production, and it is significant that it seems to have its inception during a period of climatic stability favourable for the use of upland pastures. The zooarchaeological record indicates that, despite its 'marginal' location, Skuggi was well integrated into a complex system of trade and exchange, both in the Eyjafjörður region and further afield via the trading post at Gásir. Climatic deterioration in the 12th century is contemporaneous with destabilisation of the slopes on which Skuggi is located, as evidenced by buried landslide deposits. These events lead up to the abandonment of the farm, after which it is likely that its pastures became part of one of the larger local farms, or the landholdings of the monastery at Möðruvellir.

Norwegian farm sites also demonstrate that outfield resources could be just as important for the success of a settlement as agricultural activities. Barbro Dahl (Chapter 5) discusses the example of Forsandmoen in southwest Norway, which is the largest known prehistoric settlement in the country. The location of Forsandmoen provided easy access to mountain outfield resources, such as pelts and iron. The site acted as an intermediary by controlling the routes from the mountains to the fjord, and took an active part in the exchange of goods. Furthermore, Dahl points out how archaeological methods can shape our knowledge of the past. Methodological changes are demonstrated in the stripping of topsoil in cultivated fields, introduced in Norway by the Forsandmoen project. While surveys and excavations of cultivated fields have revealed sites that radically change our interpretation of past settlement, the potential for the use of mechanical excavators is still largely unexplored in areas currently used as pasture.

The mountain outfield resource areas around Forsand, like the entire region of Ryfylke, have been subject to a limited number of archaeological excavations. Few research excavations take place in Norway, and therefore the archaeological record is greatly biased towards finds from pre-development excavations in lowland areas. Jennica Einebrant Svensson and Solveig Roti Dahl (Chapter 6) argue for the need to combine data from surveys and excavations in their presentation of three cases from Ryfylke. By overlooking the data from surveys, we risk losing crucial knowledge of prehistory, in remote areas in particular, but also undercut the understanding of entire prehistoric and early historic societies. The examples have been chosen to highlight the potential for new insights into Iron Age land use practices from five years of surveys in different areas in the same region. At the same time, the cases represent different levels of previous knowledge, allowing the authors to explore how the survey results can interact with previous research.

The outfields of western Norway are further examined by Therese Nasset and Kari Loe Hjelle (Chapter 7) in their comparison of archaeological and botanical evidence from two abandoned Medieval farms at Høybøen and Hellaug. The characterisation of such farms as 'marginal' is closely tied to the perception of arable agriculture as the main focus of farming activity. However, while these farms were likely subordinate to larger landowners, they were an essential part of a farming system in which the exploitation of outfield resources was critical. While pastoral agriculture was the focus of both farms, the exploitation of other remote resources is seen in the presence of charcoal pits and bloomery slag at Hellaug, and fishing equipment and fishbone at the coastal Høybøen. At both farms, we see an adaptation of traditional farming

practices in order to best take advantage of local ‘remote’ resources. Despite their ‘marginal’ locations, both farms were in fact an integral part of the Medieval agrarian society.

Another key element in the agricultural systems of the Norse North Atlantic was shielings. These ‘summer farms’ played an essential role in maximising the exploitation of pastures in the outfield in Norway, Iceland and Greenland. Lisbeth Prøsch-Danielsen (Chapter 8) presents two cases from different shieling zones in the southernmost group of shielings in Norway. Land use practices are discussed in an interdisciplinary, long-term perspective. On the coastal heathland plateau, the use of shielings was implemented during the transition between the Pre-Roman Iron Age and the Roman Iron Age, while the shielings located in the steep inner fjord area were established in the Migration Period. In both shieling zones, haymaking was the driving force for shieling use, and the stacking of hay can be traced back to the Viking Age/Early Medieval Period.

As has already been touched upon, grassland was not the only outfield resource that was of value. Wood was one of the most important raw materials in past societies, and no less so in the wood-poor North Atlantic islands. Wood was used for a variety of purposes like house construction, boat building, fuel, and for various tools and utensils. Taking this at a starting point, Dawn Elise Mooney, Élie Pinta and Lísabet Guðmundsdóttir (Chapter 9) explore how the Norse settlers in the North Atlantic adapted their wood exploitation strategies to the available wood resources. Based on an up-to-date synthesis of available data, they demonstrate that the investigation of native woodland and driftwood gives insight not only into environmental conditions, but also into materiality and cultural identity. Importantly, it is also stressed that the study of the Norse North Atlantic has a clear relevance for the larger research community working with the Viking Age and Early Medieval Period.

Stone is another key outfield resource, especially where specific types of stone are required for specialised purposes. Irene Baug (Chapter 10) uses whetstone quarry sites to explore outfield resources from a socio-political and economic viewpoint. Her case study’s quarries are located in present day Mostadmarka and Eidsborg in Norway. Production of whetstones began here in the 8th century AD, and can be examined in connection with intensified exploitation of outfield resources from the early Viking Age onwards. The whetstones from these sites had a wide distribution network, and were an important factor for the Viking Age economy as well as being integrated into social and cultural systems.

When read in conjunction with one another, these studies demonstrate how settlement patterns, land use, and ways of moving through and interacting with the landscape in the past were deeply influenced by the exploitation of outfield resources. We hope that this volume will lead researchers and practitioners to consider the potential importance of the outfield in all parts of the archaeological process across the North Atlantic.

Future directions

This volume, combined with the wide range of papers presented at the Expanding Horizons workshops, demonstrates the existence of a vibrant and dynamic research community around remote resource use in the North Atlantic. There is also great enthusiasm for collaboration amongst researchers in the region, although this is not always straightforward. The complexity of Norse North Atlantic settlement patterns, land use and resource exploitation requires archaeologists to be adaptable in the methods we employ to identify, excavate and analyse sites,

which are often also threatened by the impacts of human activity such as rising temperatures, coastal erosion, and the impact of renewable energy projects on upland areas.

Despite these common challenges, co-operation between archaeologists working in these regions has at times been limited, especially in terms of the sharing of methods. Practitioners working in western Norway are more likely to draw on excavation and recording methods employed elsewhere in Scandinavia, while many archaeologists working in Iceland and Greenland are influenced more strongly by approaches developed in Britain and North America. These regional alignments also influence research results: the differing methods and practice of survey, fieldwork and post-excavation analysis lead to the creation of datasets which can be challenging to compare directly.

The Expanding Horizons workshops took steps towards addressing this by providing a forum in which archaeologists and related specialists working in cultural heritage in western Norway, Iceland and Greenland can compare and discuss the methods we use and the challenges we face in identifying, recording and interpreting archaeological sites. By discussing how archaeological prospection, excavation and analysis are conducted in different regions and at different kinds of sites, we aim to improve methods and practice in all areas of the archaeological process. A future aim is to expand this understanding of different working practices through increased mobility - both internationally and locally, and ideally for both researchers and practitioners. In Norway, for example, this would benefit practitioners working in one specific subfield (e.g., in the University Museums, which are responsible for development-led excavations of prehistoric sites) who may miss out on experience in others (e.g., survey and registration, conducted by regional authorities, or development-led excavations of medieval towns, conducted by the Norwegian Institute for Cultural Heritage Research [NIKU]).

While there has been some progress in this sphere as a result of Expanding Horizons, such as the involvement of Icelandic researchers in the Borgund Kaupang project (Hansen 2020), much has been delayed by recent circumstances. Unfortunately, the coronavirus pandemic (ongoing at the time of writing) has limited the extent to which it is possible to travel and mix with other groups, and this has hindered potential developments in researcher/practitioner mobility. Nonetheless, the groundwork has been laid for future collaborations of this sort, when circumstances permit. All researchers and practitioners who attended the workshops are now much better acquainted with each other's interests and skills, and have a personal connection which can be vital in the inception of collaborative projects.

We must now maintain this momentum in order to address new challenges. The sites addressed in this volume often lie in 'marginal' regions. We can see from the history of their occupation and use that they have in the past been taken into use and abandoned in connection with environmental changes. These 'marginal' outfield areas are by nature less stable than sheltered, fertile agricultural land, and they are therefore at more immediate risk from the effects of the climate crisis. Fishing stations, marine shielings, and other sites related to the exploitation of marine resources lie in exposed coastal areas vulnerable to erosion with worsening winter storms (Pálsdóttir 2014, Harmsen *et al.* 2018, Hollesen *et al.* 2018, Zoëga 2021). Higher demand for renewable energy leads to the establishment of new wind farms and hydroelectric dams, impacting traces of hunting and related infrastructure, and other archaeological remains in upland areas (Friðriksson 2001, Indrelid 2009, Riksantikvaren 2019, Skogstrand 2020). In these same upland areas, and across the Arctic in general, the melting of snow patches,

glaciers and permafrost threatens the survival of organic remains (Callanan 2016, Harmsen *et al.* 2018, Pilø *et al.* 2020).

It has been argued (e.g., McGovern 2018) that these 'burning libraries' behave archaeologists to excavate vanishing sites as quickly and as thoroughly as possible, in order to both preserve such remains and archive them for future study. This in itself will require huge increases in funding for archaeology and storage facilities for archaeological material at universities and museums - against a backdrop of general decline in both these resources. Furthermore, while relatively stable materials such as bone require limited intervention in terms of conservation, much more intensive treatment is needed for fragile organic artefacts (e.g., leather, wood, textiles, basketry etc.) - those that are most immediately at risk from changing environmental conditions (Mooney and Martín-Seijo 2021). Responding to these challenges will require a concerted effort from the archaeological community as a whole, both to raise awareness of these issues and to argue for the necessary increases in funding and resources (McGovern 2018). While we do not have the answers here, collaborative projects such as the Expanding Horizons workshops are vital for facilitating the exchange of ideas and fostering new connections, both of which allow us to use our shared knowledge and experience to work together towards solutions.

References

- Alm, T., 2019. Drivved og drivtømmer i norsk folketradisjon. *Blyttia*, 77, 247-270.
- Amundsen, C., *et al.*, 2005. Fishing Booths and Fishing Strategies in Medieval Iceland: an Archaeofauna from the of Akurvík, North-West Iceland. *Environmental Archaeology*, 10 (2), 127-142.
- Arneborg, J., *et al.*, 1999. Change of Diet of the Greenland Vikings Determined from the Stable Carbon Isotope Analysis and 14C Dating of Their Bones. *Radiocarbon*, 41 (2), 157-168.
- Austrheim, G., *et al.*, 2008. *Sheep grazing in the North-Atlantic region - A long term perspective on management, resource economy and ecology*. Rapport zoologisk serie 2008-3. Trondheim: Norges teknisk-naturvitenskapelige universitet (NTNU).
- Bang-Andersen, S., 2004. *Reinsdyrgraver i Setesdal Vesthei: analyse av gravenes beliggenhet, byggemåte og brukshistorie*. AmS-Varia 40. Stavanger: Arkeologisk museum i Stavanger.
- Bang-Andersen, S., 2015. Use of pitfall traps in wild reindeer hunting in the mountains of South-West-Norway: The location, construction method and use of the hunting sites. In: S. Indrelid, K.L. Hjelle and K. Stene, eds. *Exploitation of outfield resources - Joint Research at the University Museums of Norway*. Universitetsmuseet i Bergen skrifter nr. 32. Bergen: University of Bergen, 37-48.
- Barrett, J.H., *et al.*, 2020. Ecological globalisation, serial depletion and the medieval trade of walrus rostra. *Quaternary Science Reviews*, 229, 106122.
- Baug, I., *et al.*, 2019. The Beginning of the Viking Age in the West. *Journal of Maritime Archaeology*, 14, 43-80.
- Baug, I., *et al.*, 2020. Brynesteiner i Ribe - fra fjerne utmarksområder til sentrale markeder. *By, marsk og geest: Kulturhistorisk tidsskrift for Sydvestjylland*, 32, 44-59.
- Bergstøl, J., 2015. Trapping pits for reindeer - a discussion on construction and dating. In: S. Indrelid, K.L. Hjelle and K. Stene, eds. *Exploitation of outfield resources - Joint Research at the University Museums of Norway*. Universitetsmuseet i Bergen skrifter nr. 32. Bergen: University of Bergen, 49-54.

- Buckland, P.C., Buckland, P.I., and Skidmore, P., 1998. Insect remains from GUS: an interim report. In: J. Arneborg and H.C. Gulløv, eds. *Man, Culture and Environment in Ancient Greenland*. Copenhagen: Danish National Museum & Danish Polar Centre, 74-79.
- Callanan, M., 2016. Managing frozen heritage: Some challenges and responses. *Quaternary International*, 402, 72-79.
- Doughty, R.W., 1979. Eider husbandry in the North Atlantic: trends and prospects. *Polar Record*, 122, 447-459.
- Dufeu, V., 2018. *Fish Trade in Medieval North Atlantic Societies: An Interdisciplinary Approach to Human Ecodynamics*. Amsterdam: Amsterdam University Press.
- Edvardsson, R., 2005. Commercial and subsistence fishing in Vestfirðir. *Archaeologia Islandica*, 4, 51-67.
- Edvardsson, R., 2010. *The role of marine resources in the Medieval economy of Vestfirðir, Iceland*. Thesis (PhD). City University of New York.
- Frei, K.M., et al., 2015. Was it for walrus? Viking Age settlement and medieval walrus ivory trade in Iceland and Greenland. *World Archaeology*, 47 (3), 439-466.
- Friðriksson, A., 2001. *Fornleifakönnun vegna fyrirbugaðrar virkjunar við Kárahnjúka*. FS135-00061. Reykjavík: Fornleifastofnun Íslands.
- Gísladóttir, G. A., et al., 2012. The Svalbarð Project. *Archaeologia Islandica*, 10, 65-76.
- Guðmundsdóttir, L., 2021. *Landnámsminjar í Sandvík. Björgunarrannsókn*. FS826-20081. Reykjavík: Fornleifastofnun Íslands.
- Guðmundsdóttir, L., and Ramstad, M., 2022. *Landnám og auðlindanýting á Selströnd á Ströndum. Könnunarrannsókn á Hvítsöndum*. FS867-21461. Reykjavík: Fornleifastofnun Íslands.
- Hansen, G., 2020. Fakta: Borgund Kaupang Prosjektet. *Árbok for Universitetsmuseet*, 2020, 73.
- Hansen, S.C.J., 2011. The Icelandic Whetstone Material - An Overview of Recent Research. *Archaeologia Islandica*, 9, 65-76.
- Harmsen, H., et al., 2018. A Ticking Clock? Preservation and Management of Greenland's Archaeological Heritage in the Twenty-First Century. *Conservation and Management of Archaeological Sites*, 20 (4), 175-198.
- Harrison, R., Roberts, H.M., and Adderley, P.W., 2008. Gásir in Eyjafjörður: International Exchange and Local Economy in Medieval Iceland. *Journal of the North Atlantic*, 1, 99-119.
- Hollesen, J., et al., 2019. Climate change and the deteriorating archaeological and environmental archives of the Arctic. *Antiquity*, 92 (363), 573-586.
- ÍF: *Íslensk Fornrit*, 1985. Volumes IV and VII. Reykjavík: Hið Íslenska Fornritafélag.
- Indrelid, S., 2009. *Arkeologiske undersøkelser i vassdrag: faglig program for Sor-Norge*. Oslo: Riksantikvaren.
- Indrelid, S., 2015. Medieval reindeer trapping at the Hardangervidda mountain plateau. In: S. Indrelid, K.L. Hjelle and K. Stene, eds. *Exploitation of outfield resources - Joint Research at the University Museums of Norway*. Universitetsmuseet i Bergen skrifter nr. 32. Bergen: University of Bergen, 29-36.
- Keller, C., 2010. Furs, Fish and Ivory: Medieval Norsemen at the Arctic Fringe. *Journal of the North Atlantic*, 3, 1-23.

- Keller, C., and Perdikaris, S., 2016. The Northern Frontier - North Atlantic Farming During the Viking and Middle Ages. In: F. Retamero, I. Schjellerup and A. Davies, eds. *Agricultural and Pastoral Landscapes in Pre-Industrial Society: Choices, Stability and Change*. Oxford: Oxbow, 37-56.
- Loftsgarden, K., Ramstad, M., and Stylegar, F.-A., 2016. The skeid and other assemblies in the Norwegian 'Mountain Land'. In: Z.T. Glørstad and K. Loftsgarden, eds. *Viking-Age Transformations: Trade, Craft and Resources in Western Scandinavia*. London: Routledge, 232-249.
- Lucas, G., 2008. Pálstóftir: A Viking Age Shieling in Iceland. *Norwegian Archaeological Review*, 41 (1), 85-100.
- Madsen, C.K., 2019. Marine Shielings in Medieval Norse Greenland. *Arctic Anthropology*, 56 (1), 119-159.
- McGovern, T.H., et al., 2004. *An Interim Report of a Viking-Age & Medieval Archaeofauna from Undir Junkarinsflótti, Sandoy, Faroe Islands Undir Junkarinsflótti, Sandoy, Faroe Islands*. New York: CUNY Northern Science and Education Center.
- McGovern, T.H., et al., 2006. Coastal connections, local fishing, and sustainable egg harvesting: patterns of Viking Age inland wild resource use in Mývatn district, Northern Iceland. *Environmental Archaeology*, 11 (2), 187-205.
- McGovern, T.H., 2018. Burning Libraries: A Community Response. *Conservation and Management of Archaeological Sites*, 20 (4), 165-174.
- Mehler, N., 2015. The Sulphur Trade of Iceland from the Viking Age to the End of the Hanseatic Period. In: I. Baug, J. Larsen and S.S. Mygland, eds. *Nordic Middle Ages - Artefacts, Landscapes and Society. Essays in Honour of Ingvild Øye on her 70th Birthday*. University of Bergen Archaeological Series 8. Bergen: University of Bergen, 193-212.
- Milner, N., Barrett, J., and Welsh, J., 2007. Marine resource intensification in Viking Age Europe: the molluscan evidence from Quoygre, Orkney. *Journal of Archaeological Science*, 34 (9), 1461-1472.
- Mooney, D.E., 2013. *The use and control of wood resources in Viking Age and medieval Iceland*. Thesis (PhD). University of Aberdeen.
- Mooney, D.E., 2018. Charred Fucus-Type Seaweed in the North Atlantic: A Survey of Finds and Potential Uses. *Environmental Archaeology*, 26 (2), 238-250.
- Mooney, D.E., and Martín-Seijo, M., 2021. Editorial: Archaeobotany in the Wider Landscape. *Environmental Archaeology*, 26 (2), 115-121.
- Noble, G., et al., 2018. Early Medieval Shellfish Exploitation in Northwest Europe: Investigations at the Sands of Forvie Shell Middens, Eastern Scotland, and the Role of Coastal Resources in the First Millennium AD. *Journal of Island & Coastal Archaeology*, 13 (4), 582-605.
- Oehrl, S., 2013. Hunting in the West Norwegian Gulathing Law. In: O. Grimm and U. Schmölcke, eds. *Hunting in northern Europe until 1500 AD: Old traditions and regional developments, continental sources and continental influences*. Neumünster: Wachholtz, 505-514.
- Pálsdóttir, L.B., 2015. *Under the Glacier. 2014 Archaeological investigations on the fishing station at Gufuskálar, Snæfellsnes*. FS575-08235. Reykjavík: Fornleifastofnun Íslands.
- Pálsson, G., 2018. Storied Lines: Network Perspectives on Land Use in Early Modern Iceland. *Norwegian Archaeological Review*, 51 (1-2), 112-141.
- Pilø, L., Finstad, E., and Barrett, J.H., 2020. Crossing the ice: an Iron Age to Medieval Mountain Pass at Lendbreen, Norway. *Antiquity*, 94 (374), 437-454.

- Perdikaris, S., and McGovern, T.H., 2009. Viking Age Economics and the Origins of Commercial Cod Fisheries in the North Atlantic. In: L. Sicking and D. Abreu-Ferreira, eds. *Beyond the Catch: Fisheries of the North Atlantic, the North Sea and the Baltic, 900-1850*. Leiden: Brill, 61-90.
- Post-Melbye, J., and Bergstøl, J., 2020. *Fangstgroper og ledegjerder fra steinalder til jernalder i Elverum*. In: C.L. Rødsrud and A. Mjærum, eds. *Ingen vei utenom. Arkeologiske undersøkelser i forbindelse med etablering av ny rv. 3/25 i Løten og Elverum kommuner, Innlandet*. Oslo: Cappelen Damm Akademisk, 311-321.
- Riksantikvaren, 2019. *Nasjonal ramme for vindkraft på land. Riksantikvarens innspill til eksklusjonsrunde 3. Tema: Kulturminner og kulturmiljøer*. Oslo: Riksantikvaren.
- Roesdahl, E., 1995. *Hvalrostand elfenben og nordboerne i Grønland*. Odense: Odense Universitetsforlag.
- Rosvold, J., Hansen, G., and Røed, K., 2019. *From mountains to towns: DNA from ancient reindeer antlers as proxy for domestic procurement networks in medieval Norway*. *Journal of Archaeological Science*, 26, 101860.
- Simple, S., et al., 2020. *Negotiating the North: Meeting-Places in the Middle Ages in the North Sea Zone* (1st ed.). London: Routledge.
- Skogstrand, L., 2020. *Arkeologiske undersøkelser i vassdrag: faglig program for Midt- og Nord-Norge*. Oslo: Riksantikvaren.
- Skre, D., ed., 2007. *Kaupang in Skiringssal*. Aarhus: Aarhus University Press.
- Smiarowski, K., et al., 2017. Zooarchaeology of the Scandinavian settlements in Iceland and Greenland: diverging pathways. In: U. Albarella, et al., eds. *The Oxford Handbook of Zooarchaeology*. Oxford: Oxford University Press, 148-163.
- Stene, K., and Wangen, V., 2016. The Uplands: The deepest of forests and the highest of mountains - resource exploitation and landscape management in the Viking Age and early Middle Ages in southern Norway. In: Z.T. Glørstad and K. Loftsgarden, eds. *Viking-Age Transformations: Trade, Craft and Resources in Western Scandinavia*. London: Routledge, 160-187.
- Szabo, V., 2008. *Monstrous Fishes and the Mead-Dark Sea: Whaling in the Medieval North Atlantic*. Leiden: Brill.
- Traustadóttir, R., 2018. Kolkuós in the north of Iceland: A harbour site and trading place in Viking Age to the Medieval Period. In: D. Mahler, ed. *Gruel, Bread, Ale and Fish. Changes in the Material Culture related to Food production in the North Atlantic 800-1300 AD*. København: Danish National Museum, 119-138.
- van der Hourk, Y., 2020. *Cetacean Exploitation in Medieval Northern and Western Europe: Zooarchaeological, Historical, and Social Approaches*. Thesis (PhD). University College London.
- Zoëga, B., 2021. *The disappearing past: Coastal archaeology, shoreline erosion and contributing factors along the coast of Skagafjörður, Northern Iceland*. Thesis (MA), University of Bergen.
- Øye, I., 2005. Introduction. In: I. Holm, S. Innselset and I. Øye, eds. *“Utmark” – the outfield as industry and ideology in the Iron Age and the Middle Ages*. University of Bergen Archaeological Series International 1. Bergen: University of Bergen, 9-20.



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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.

