

# Iron Age boathouses in Arctic Norway viewed as multifunctional expressions of maritime cultural heritage

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## Abstract

Boathouses have been in use in Norway for at least 2000 years and c. 850 structures pre-dating the 16th century have been recorded. The majority of boathouse remains (at least 500 structures) are found in northern Norway. The limited extent of boathouse excavations to date has severely handicapped attempts at interpreting the function and chronology of these structures. This paper explores the nature of boathouse use during the Iron Age up to the early Middle Ages (c. AD 300-1200) in northern Norway by focusing on archaeological investigations of boathouses on the island of Vestvågøy and the Iron Age chieftain centre at Borg in the Lofoten Islands. Archaeological evidence from recent test excavations at a number of large boathouses, including multiple cultural layers with hearths and pit features, is suggestive of seasonal habitation and a range of activities far more diverse than those traditionally associated with the storage of boats and related equipment. Radiocarbon dates demonstrate that some boathouses were in use over many centuries thus adding another element of complexity to our understanding of boathouses as multifunctional components of the Iron Age maritime landscape.

*Keywords: Arctic Norway, Norse culture, Iron Age, boathouses.*

## 1 Norwegian Iron Age boathouses

The maritime aspects of Norse culture and “Vikings” presented by the media and in popular publications focus to a disproportionate extent on the role of Viking Age ships engaged in warfare, raiding and, to a lesser extent, trade. This image is based in large part on evidence from a limited number of ship finds including the



spectacular Norwegian ship burials of Oseberg, Gokstad and Tune and the Skudelev and Roskilde ships in Denmark (see Christensen [1], Bill [2], Bill et al. [3], Crumlin-Pedersen and Olsen [4]).

The history of Iron Age archaeological research in Norway provides us with a somewhat different perspective. Up until the 1930s the focus was almost exclusively on graves, with the addition of longhouses as objects of interest during the 1930s e.g. Grieg [5]. In northern Norway, longhouse excavations did not begin until the 1960s Johansen [6]. The excavation of longhouses and graves has produced a limited number of finds that provide information on maritime activity such as fishing from both an economic and ideological perspective e.g. Helberg [7], Jørgensen [8], Stamsø Munch [9]. Apart from boat remains, boathouses are the most important source of information on maritime aspects of Iron Age society. Despite their potential, archaeological investigations of boathouses are still frustratingly limited in quantity and scope. Our main purpose in this paper is to highlight the research potential of prehistoric boathouses for exploring not only maritime issues but also more general questions concerning their role as material expressions of social practice.

### 1.1 What is a boathouse?

Iron Age boathouses in Norway are recognizable in the landscape as linear mounds formed from the remains of collapsed walls constructed of a combination of stone, peat and soil. The walls commonly form an open-ended rectangular feature facing the water. These structures exhibit considerable variation in both size and shape with inner lengths ranging from 4-40 m and floor widths from less than 2 m to about 8 m. Inner widths of up to 16 m have been reported but these are associated with historic boathouses and structures which may have had other functions Johansen [10]. Wall construction is also variable and original dimensions are difficult to reconstruct without adequate excavation. Wall heights of up to 2 m and widths of nearly 5 m have been documented Matland [11] but less substantial dimensions are far more common.

Boathouse floors were commonly dug below the existing ground surface and the excavated soil used in wall construction. The presence of a narrow ditch extending along the central floor axis has been documented in a number of boathouses and may have served both to improve drainage and as a keel trench to facilitate the movement of boats in and out of the structure.

There has been considerable discussion of various aspects of boathouse reconstruction such as the nature of roof support and its relationship to wall construction Hinsch [12], Rolfsen [13]. Although there is no direct evidence of roof construction, it is clear that roofs were supported both by the walls themselves and parallel rows of posts placed at regular intervals along the interior and/or exterior of the walls. The relative importance of walls and support posts and their construction appears to have both geographical and chronological significance. Another variable trait is the degree to which boathouse walls were curved rather than straight with the former more common in southwestern Norway and the latter in northern Norway.



Although the primary function of boathouses is for the storage of boats and associated equipment, there is ample evidence that they had a much broader role during the Iron Age in Norway Rolfsen [13]. The majority of boathouses were designed to house a single vessel but there is also evidence for so-called double boathouses which were either wider than normal or expanded by the construction of an additional wall or annex to accommodate more than one vessel. A considerable amount of the Norwegian boathouse research has focused on determining the size of vessels being housed based on the size and form of boathouse structures (i.e. interior width to length ratio). Although this approach does allow a coarse-grained reconstruction of maritime activity, it oversimplifies the situation by assuming a one to one correspondence between the size of the structure and the type of boat associated with it. The basis for interpretation can also be questioned as actual floor dimensions are often obscured by wall collapse and other disturbance factors and can only be confirmed through excavation.

## 1.2 Boathouse distribution

Nearly all pre-modern Scandinavian boathouse remains are found in Norway, distributed along former and present-day shorelines, rivers, lakes and other bodies of water. A small number of Nordic boathouses have also been recorded in Sweden, Denmark, Iceland, the Faeroes and Newfoundland. Of the c. 850 structures documented in Norway, at least 500 are located north of the Arctic Circle. A second distribution centre with around 250 boathouses lies along the southwestern coast in Vestlandet. A substantial number of boathouses can be classified as very large (*stornaust*). If this category is restricted to boathouses with an internal length of 18 m or more, it is estimated that 250-300 have been recorded in Norway Grimm [14], although only c. 40 are located in northern Norway.

In this paper we are concerned with Iron Age boathouses from northern Norway and will focus on structures from the large island of Vestvågøy in the Lofoten Islands for the following reasons (Fig. 1). Firstly, Vestvågøy has the densest concentration of boathouses in northern Norway. Of the more than 80 structures recorded on the island, at least 62 are from the Iron Age Nilsen [15]. Secondly, the boathouses are well documented in comparison to most other parts of Arctic Norway. All of the boathouses have been recorded in detail and excavations carried out in seven structures, six of these by the authors. Thirdly, the island has been systematically surveyed for other Iron Age archaeological remains including longhouses and graves. An inter-Scandinavian research project focusing on the excavation of longhouse structures at Borg has provided detailed information for this Iron Age chieftain seat and central place Stamsø Munch et al. [16], Stamsø Munch and Johansen [17].

## 1.3 A short history of Norwegian boathouse research

Despite the abundance of boathouses in Norway, research on these maritime features remains extremely limited. The first boathouse excavation using (relatively) modern techniques was carried out by Erik Hinsch [12] in 1957.



Based on these excavation results from a boathouse at Stord in Vestlandet, he discussed similarities between boathouse and longhouse construction as well as boat types associated with these structures. Hinsch's work and ideas had an important influence on subsequent boathouse research.

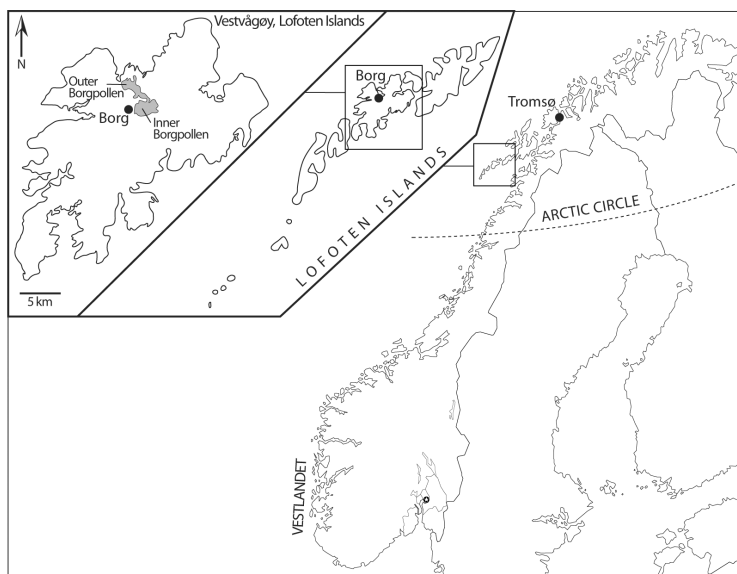


Figure 1: Map showing the location of Vestvågøy and Borg (illustration: Adnan Içagic, Tromsø Museum).

The next archaeologist to focus on boathouse research was Perry Rolfsen [13] who investigated 34 structures in Rogaland, southwestern Norway for his thesis in 1974. In addition to documenting additional constructional details, Rolfsen developed a relative dating method for boathouses using elevation above sea level and a floor length to width index. The basis for this dating method is linked to two chronological processes. Firstly, boathouses tend to be found at progressively lower elevations over time due to a steady rise in land elevation since the retreat of glaciers at the end of the Pleistocene. Secondly, the width of seagoing vessels increased during the Late Iron Age following the introduction of sails and is assumed to have had a direct impact on boathouse size.

Bjørn Myhre [18,19] further developed and expanded Rolfsen's relative dating approach in an analysis of 21 Iron Age boathouse sites from Rogaland, Hordaland and Vest-Agder in southwestern Norway. He focused on the largest/longest boathouses (*stornaust*) as a source of information on the localization of economic and political centres.

Roy Nilsen [20] was the first to look at boathouse evidence from northern Norway, apart from Vestvågøy, in a systematic fashion with his synthesis of

existing data from 444 boathouses. His approach built on previous work but introduced a new methodological element; a three-dimensional simulation program for shoreline dating developed by Møller [21]. This program increased the reliability of boathouse age estimates based on elevation above sea level to provide a more robust chronological sequence.

Although excavations have been undertaken in approximately 50 pre-modern Norwegian boathouses to date Grimm [22], this figure is not as impressive as it might seem at first glance. Many of the excavations consist of little more than a single test pit or narrow trench for the purpose of extracting a quick dating sample and are best characterized as “keyhole archaeology”. This approach is less than satisfactory for addressing wider issues related to aspects of chronology, construction and function and can present a misleading or false picture of the structure due to insufficient data. Only a handful of boathouses have been totally excavated, and all of these are in southern Norway. Of the 22 boathouses in northern Norway where excavations have been undertaken, six of the seven on Vestvågøy have been investigated by the authors. Only 12 of the northern Norwegian boathouses have been radiocarbon dated, including all of the seven from Vestvågøy. None of the boathouses have more than two dates and those with multiple dates include four on Vestvågøy and three at other locations. Thus it is clear that the number of excavated boathouses, the extent of excavation and radiocarbon dating efforts are woefully inadequate in northern Norway, although Vestvågøy has better coverage than elsewhere.

## 2 Previous boathouse investigations on Vestvågøy

During an intensive boathouse survey on Vestvågøy for her M.A. thesis, Gørrill Nilsen [15] recorded 82 structures and excavated test trenches in four of these. Limited excavations had previously been carried out in two additional boathouses and radiocarbon dates were obtained from each of the six boathouses. An analysis of use area for boat storage was also conducted on the basis of estimated floor dimensions for all of the recorded boathouses. The analytical results show that the material from the late Roman Iron Age/Migration Period (AD 400-600) up until the recent past is quite consistent. This means there is little difference in boat types from before and after the assumed beginning of commercial fishing during the Viking Age (AD 800-1050).

Based in part on this evidence, Nilsen has claimed that commercial fishing had already begun during the Migration Period. Additional support for this claim includes the large number of boathouses from this early period and types of boats the structures could have housed. Boats similar in size to a historic boat type known as a *seksroring* and larger could have been used for commercial cod fishing. Boathouses suitable for larger boats the size of a traditional *byrding* bear witness to trade and transport of goods along the coast such as the export of dried cod (stockfish). Thus the collective evidence indicates that commercial winter season cod fishing in Lofoten began much earlier than previously thought.

One of the goals of boathouse excavation was to reveal construction details such as floor width for “use area” estimates and the nature of roof support. A



consistent pattern of wall construction was documented with an inner wall consisting of a double row of stacked rock with peat placed between and an outer supporting wall of peat. Postholes for roof supporting posts were documented along the inner wall of one boathouse. This supports the contention that boathouses on Vestvågøy, and elsewhere in northern Norway, had roofs supported primarily by interior posts and may have been strengthened by crossbeams Nilsen [23]. In contrast, boathouses in southwestern Norway had roofs resting directly on walls which often have an outer supporting rock wall to help bear the weight.

Another excavation objective was to obtain radiocarbon dates to test the reliability of elevation above sea level as a relative dating method. Cultural deposits in the excavated boathouses ranged from a few centimetres up to 35 cm in thickness with evidence for multiple phases of use and occupation.

### 3 Current boathouse investigations at Borgpollen

Stephen Wickler is currently investigating boathouses at Inner Borgpollen, a brackish water lake that was a harbour for the Iron Age power centre at Borg on Vestvågøy. This work is part of a larger project documenting the maritime cultural landscape at Borg that began with waterborne geophysics and underwater archaeological surveys of Inner Borgpollen in 2001 and 2002 Wickler [24,25]. The scope of field investigations has since been expanded to maritime archaeological remains on land.

In 2003, a cluster of three Iron Age boathouses along the western shore of Inner Borgpollen was documented by micro-topographical total station mapping and geophysical survey. The survey results provided a basis for ongoing test excavations in two of the boathouses, which are the largest at Borg/Borgpollen with interior lengths of approximately 21 m and 22 m. As with previous boathouse excavations on Vestvågøy, trenches were excavated perpendicular to the long axis of the structures between the walls in order to document both floor width and wall construction.

Despite the limited area excavated in each of the structures (1.5 m<sup>2</sup> and 3.5 m<sup>2</sup>), a great deal of information concerning construction, function and chronology has already been gained. The relative abundance of material remains can be directly linked to field methods including the sieving of all matrix through 4 mm mesh and wet sieving of cultural deposits. Dense cultural deposits and features were bulk bagged after sieving for lab sorting. This approach insured maximum recovery of charcoal and small finds such as flint flakes, slag from metal working, burnt animal bone and a textile fragment. Despite the fact that sieving has been a standard archaeological method for many decades, it has only been used in a small percentage of boathouse excavations in Norway and, to our knowledge, never before in northern Norway.

Construction details are similar to other boathouses on Vestvågøy with floor widths of 2.3 m and 3.6 m and walls over 2 m wide with inner stacked rock and outer peat components. Cultural deposits are fairly thick (15-20 cm) with multiple cultural layers. Other evidence suggesting long-term use includes



charcoal bands and hearths at different levels and superimposed pit and ditch features. Two radiocarbon dates have been obtained so far from one of the boathouses and additional samples are being processed from both structures. The existing dates support the stratigraphic evidence for long-term use with a basal date from the Merovingian Period ( $1450 \pm 45$  BP, cal AD 530-670, 2 sigma) and a date from the upper cultural deposit straddling the transition from the Viking Age to Medieval Period ( $860 \pm 75$  BP, cal AD 1020-1280, 2 sigma). This suggests that boathouse use was more complex and of much longer duration than is commonly thought. Similar radiocarbon evidence for multiple phase long-term use was found in a boathouse at Sletteng near the entrance to Inner Borgpollen excavated by G. Nilsen. Here a basal Early Iron Age date from a hearth, one of the earliest ever obtained from a boathouse, was rejected by Nilsen as representing a feature predating boathouse construction while a Merovingian Period date from the main cultural deposit was accepted. In hindsight, it may be worth reconsidering the validity of the early date as representing boathouse use.

Collective results from the current excavations demonstrate that boathouses were used for much more than boat storage. Multiple cultural layers with dense charcoal concentrations, heat-altered rock and burnt bone suggest intensive use including activities such as food preparation. Slag provides evidence of metal working while whetstone fragments and assorted iron objects are indicative of various everyday tasks. The abundance of boat nails/rivets associated with boat maintenance is typical of boathouse excavations. The presence of multiple hearths and a deep pit with artefacts, charcoal and heat-altered rock also points to activities unrelated to boat storage. The pit feature is especially interesting as it extends below a central keel trench in the largest boathouse.

#### **4 Boathouses as social representations and multifunctional components of the maritime landscape**

As reflected in the Vestvågøy evidence, boathouse appearance and construction in northern Norway appears to have been stable throughout the Iron Age. This contrasts with material from southwestern Norway where Early Iron Age boathouses had different characteristics and structures from the Late Iron Age remain poorly documented. Models of boathouse function have been based almost exclusively on the southern (i.e. Early Iron Age) Norwegian material and the extent to which this can be applied to northern Norway is unclear. One significant difference is the importance of winter cod fishing in the Lofoten Islands and its influence on boathouse use. G. Nilsen [15] has argued that boathouses in Lofoten may have been used as temporary residences by boat crews during the winter fishing season dating back to the Early Iron Age. The presence of relatively thick and complex cultural deposits with multiple phases potentially spanning many centuries in northern Norwegian boathouses supports the temporary habitation model.

In addition to their more mundane practical uses, boathouses also served an important social purpose as material expressions of group cohesiveness and symbols of social practice. This social aspect is reflected by boathouse clusters in



locations that are not dictated by environmental factors or property boundaries. These clusters can be seen as symbolic representations of the social collective at the micro level. A boathouse must thus be viewed as an important *place* not only for the local social group or farmstead but for an understanding of the landscape – the maritime cultural landscape. Life in northern Norway has always had a maritime focus but interpretations of Iron Age society have been unduly influenced by a South Scandinavian agrarian model that has also left its mark on boathouse research. This highlights the need for models of the past based on maritime material culture such as boathouses using data from northern Norway. In order to do this we have to start utilizing the archaeological resources at our disposal more effectively, including the excavation of boathouses using appropriate methods.

## References

- [1] Christensen, A.E., Ships and navigation. Vikings: the North Atlantic Saga, eds. W. Fitzhugh & E. Ward, Smithsonian Institution Press: Washington and London, pp. 86-98, 2000.
- [2] Bill, J., Ships and seamanship. The Oxford Illustrated History of the Vikings, ed. P. Sawyer, Oxford University Press: Oxford, pp. 182-201, 1997.
- [3] Bill, J., Gøthche, M. & Myrhøj, H.M., Roskildeskibene. Civitas Roscald – fra Byens Begyndelse, eds. I. Christensen & M. Andersen, Roskilde Museums Forlag: Roskilde, pp. 211-260, 2000.
- [4] Crumlin-Pedersen, O. & Olsen, O., (eds.). The Skuldelev Ships I: Topography, archaeology, history, conservation and display, Ships and Boats of the North 4.1. National Museum of Denmark, Viking Ship Museum: Roskilde, 2002.
- [5] Grieg, S., Jernalderhus på Lista, Instituttet for sammenlignende kulturforskning, H. Aschehoug & Co. (W. Nygaard): Oslo, 1934.
- [6] Johansen, O.S., Jernaldergårder i Nord-Norge. På Leiting etter den Eldste Garden, eds. R. Fladby & J. Sandnes, Skrifter fra Norsk lokalhistorisk institutt No. 6, Universitetsforlaget: Oslo, pp. 95-115, 1979.
- [7] Helberg, B.H., Fiskeriteknologi som Uttrykk for Sosial Tilhørighet. En studie av nord-norsk fiske i perioden 400-1700 e. Kr. Mag. Art. thesis, University of Tromsø, 1993.
- [8] Jørgensen, R., Bleik. En økonomisk/økologisk studie av grunnlaget for jernaldergården på Andøya i Nordland. Mag. Art. thesis, University of Tromsø, 1984.
- [9] Stamsø Munch, G., Hvorfor finner vi så få fiskeredskaper fra nord-norsk jernalder? Ottar, 6:83, No.145, pp. 29-32, 1983
- [10] Johansen, H.M., Naust fra jernalderen. Spor, 2002 (1), pp. 16-20, 2002.
- [11] Matland, S., Korleis så stornaustet på Trondenes ut? Mellomalderarkeologi Mellom Salten og Senja, ed. P. Simonsen, Tromsø kulturhistorie nr. 35, Tromsø University Museum: Tromsø, pp. 49-54, 2002.





- [12] Hinsch, E., 1961 Naust og hall i jernalderen. Årbok for universitetet i Bergen, Humanistisk serie, 1960 No. 2.
- [13] Rolfsen, P., Båtnaust på Jærkysten. Stavanger Museums Skrifter No. 8, 1974.
- [14] Grimm, O., The military context of Norwegian boathouses AD 1-1500. Maritime Warfare in Northern Europe: Technology, organisation, logistics and administration 500 BC-1500 AD, eds. A. Nørgård Jørgensen, J. Pind & B.L. Clausen, PNM Studies in Archaeology & History Vol. 6, Copenhagen, pp. 105-123, 2002.
- [15] Nilsen, G., Jernaldernaust på Vestvågøy i Lofoten. Stensilserie B No. 49, University of Tromsø, 1998.
- [16] Stamsø Munch, G., Johansen, O.S. & Roesdal, E., (eds.). Borg in Lofoten: a chieftain's farm in North Norway. Tapir Academic Press, 2003.
- [17] Stamsø Munch, G. & Johansen, O.S., Borg in Lofoten - an inter-Scandinavian research project. Norwegian Archaeological Review, 21(2), pp. 119-126, 1988.
- [18] Myhre, B., Boathouses as indicators of political organization. Norwegian Archaeological Review, 18, pp. 36-60, 1985.
- [19] Myhre, B., Boathouses and naval organisation. Military Aspects of Scandinavian Society in a European Perspective, AD 1-1300, eds. A. Nørgård Jørgensen & B.L. Clausen, PNM Studies in Archaeology & History Vol. 2: Copenhagen, pp. 169-183, 1997.
- [20] Nilsen, R., Nausttuffer i Nord-Norge. Distribusjon og kronologi relatert til samtidige båttyper og havnivå. M.A. thesis, University of Tromsø, 1995.
- [21] Møller, J.J., Geometric simulation and mapping of Holocene relative sea-level changes in northern Norway. Journal of Coastal Research, 5(3), pp. 403-417, 1989.
- [22] Grimm, O., Norwegian boathouses from the late Roman and Migration Periods: an analysis of their military function. Military Aspects of the Aristocracy in the Roman and Early Migration Periods, ed. B. Storgaard, PNM Studies in Archaeology & History Vol. 5: Copenhagen, pp. 55-66, 2001.
- [23] Nilsen, G., Naust og båt på Vestvågøy i jernalderen. Lofotr – Årboka for Vestvågøy historielag, pp. 20-28, 1997.
- [24] Wickler, S., The Borg maritime cultural landscape project: geophysical and archaeological investigations of a Viking Age harbour in the Lofoten Islands. Paper presented at The Norwegian Archaeology Meeting (NAM), Kabelvåg, Lofoten, October 3-4, 2002.
- [25] Wickler, S., Exploring the maritime cultural landscape of Borg, an Iron Age power centre in the Lofoten Islands, Arctic Norway. Paper presented at the Session "Underwater Archaeology: Problems, Results, Prospects", 9th Annual Meeting of the EAA, St. Petersburg, Russia, September 10-14, 2003.

