

THE POTENTIAL OF SHORELINE AND SHALLOW SUBMERGED IRON AGE AND MEDIEVAL ARCHAEOLOGICAL SITES IN THE LOFOTEN ISLANDS, NORTHERN NORWAY

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The Lofoten-Vesterålen archipelago (67°30' - 69°30'N) is a chain of mountainous islands dissected by cirques, glacial valleys, and fjords that extends from northeast to southwest into the Norwegian Sea (Figure 1). Vesterålen is the northerly chain of islands and the seven islands of Lofoten lie to the south. The climate of Lofoten is mild despite this high latitude location. Temperatures are strongly affected by northward transport of heat through oceanic and atmospheric dynamics and the Norwegian Current flowing directly west of the islands carries warm water to the high latitudes of northern Norway (Hopkins 1991). Human habitation in this region has always been dependent on the marine environment with a reliance on the ocean and coastal areas for subsistence, shelter and transportation since initial settlement. Lofoten is situated in the midst of one of the most productive cod fishing grounds in the North Atlantic and the climate is also ideally suited for drying and preserving fish, another factor that helped this region develop as an important fishing center.

Although current evidence confirms that northern Norway was settled more than 10,000 years ago, the earliest archaeological site in Lofoten is only 5500 years old (Utne 1973). Due to changes in sea level, earlier settlements are currently below sea level or disturbed by subsequent transgression. Late Stone Age (4500-1800 BC) and Bronze Age (1800-500 BC) sites in Lofoten are concentrated along the coast and reflect a focus on marine resources (Bertelsen 1985). Archaeological and palynological evidence suggests the establishment of agriculture by the early Iron Age at around 500 BC (Johansen 1990; Sjøgren and Arntzen 2012). The quantity and variety of sites expands dramatically by the Roman Iron Age (AD 0-400) and includes house sites and other residential features, boathouses, court sites, grave complexes and cultivation evidence.

During the late Iron Age (AD 600-1030), Lofoten witnessed the growth of powerful chieftain centers and fishing underwent a transition from a purely subsistence based activity to more intensive exploitation under chiefly control that is reflected in the nature of coastal settlement (Perdikaris 1999). Lofoten was also a center for the commercialization of winter cod fishing leading to an extensive long-range trade network in dried cod (stockfish) with Europe by the 13th century AD, although long distance transport of cod was already taking place in the Viking Age (Barrett *et al.*, 2008).

Archaeological approaches to the nature-society debate have been criticized for a bias that favors the land. Although there has been an increasing focus on this problem with more explicit attempts to place the sea at center stage (Van de Noort 2011), the terrestrial bias is still evident in Norwegian archaeology and northern Norway in particular. A South Scandinavian agrarian model of prehistoric settlement has been transplanted to Arctic Norway where agriculture is far less important and marine resources take precedence. The agrarian bias is evident in settlement models for Lofoten and this paper contributes to redressing the imbalance by examining issues related to coastal settlement during the Iron Age and medieval period in the region. Three case studies that illustrate the potential of archaeological sites in shoreline and submerged contexts for documenting the maritime cultural landscape are presented and discussed (see Figure 1). Each of the studies highlights the importance of fishing and marine resources in the maintenance of a maritime economy where a holistic approach integrating archaeologies of the land and the sea is essential.

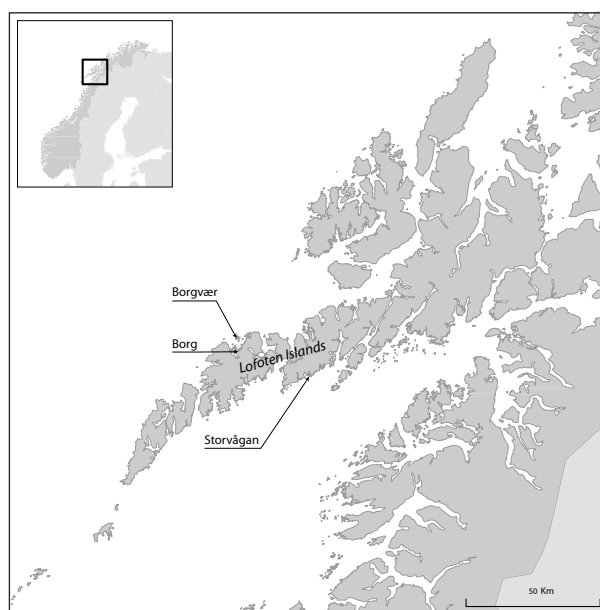


Figure 1. Map of the Lofoten Islands showing the location of places mentioned in the text. Illustration: Johan Arntzen, Tromsø University Museum.

VÁGAR/STORVÅGAN: A MEDIEVAL FISHING SETTLEMENT AND URBAN COMMERCIAL CENTER

This case study examines the development of Vágur, the only medieval urban locality north of the Arctic Circle and a center for trade and commerce in Lofoten (Bertelsen 1985, 2008, 2009; Bertelsen and Urbańczyk 1988; Urbańczyk 1992), from a maritime viewpoint. Archeological excavations of cultural deposits on land and a shallow submerged context at Storvågan, the central settlement area of Vágur, are discussed together as a means of highlighting the maritime aspects of the settlement from an integrated cultural landscape perspective.

There is indirect mention of Vágur from the 10th century AD and references to important events taking place at this location appear in the early 11th century AD in the medieval sagas (Bjørge 1982). More secure evidence for Vågan's rising status as a central place appears in the 12th century AD but the process by which it was transformed from a small fishing settlement to the commercial center of medieval Arctic Norway is still poorly understood. However, it is clear that this transformation was directly linked to the commercialization of cod fisheries in Lofoten during the 12th century AD which had dramatic long-term consequences for the sociopolitical structure of northern Norway (Perdikaris 1998, 1999). The commercial fishing of spawning cod during the winter was channeled into the production and export of dried cod (stockfish) fueled in part through demand created by Lenten fare regulations of the Catholic Church in the rapidly growing urban centers of northern Europe (Urbańczyk 1992). The stockfish trade provided the economic foundation enabling the rise of Vágur to its position of prominence in the 13th century AD. Stockfish production is a seasonal activity and both population size and the level of commercial activity at Vágur reflected this cycle and fluctuated accordingly. Permanent year round settlement is evident in the archaeological record from the 13th century AD, but the seasonal nature of settlement appears to increase over time in keeping with the intensification of commercial cod fishing in the winter (Bertelsen 2009, 205).

Insights into the significant scope of maritime activity during the 13th century AD from the sagas stress the large number of ships in the Vágur fleet (*Vaga-flota*) and their common origin. The commercial vessels known as *byrding* that were used in this traffic and dominated Norwegian coastal shipping were shallow draft vessels similar in size to warships but with wider hulls and higher sides (Urbańczyk 1992, 135). From the 12th century AD onward, the port of Bergen had a monopoly on the foreign export of stockfish. The German Hanseatic merchants made substantial inroads into the Norwegian market during the 13th century AD and completely dominated foreign trade by the first half of the 14th century AD, accompanied by a marked decrease in direct trade with England. As a result of the Hanseatic merchants effective foreign trade organization, the existing network of trade contacts by Norwegian merchants between Vágur and Bergen, and positive terms of trade with European markets, Vágur flourished as a transit center for the export of stockfish.

Vágur's urban phase of settlement waned by the second half of the 14th century AD and in 1384 it is described as "a provincial town" (Bertelsen 1985, 174), having returned to its former status as a common fishing settlement (*fiskevær*). The reasons for this transformation are complex as a variety of contributing factors led to a diminished role for Vágur as a transit port in the stockfish trade. Both environmental factors and socioeconomic conditions may have been equally important in this process. The main settlement of Vágur lies on a narrow rocky headland known as Storvågan between two small embayments forming a natural harbor with a shoreline of about 450m. Both embayments are shallow with somewhat difficult access to the open sea for larger vessels. Many coastal European trade centers with similar harbor conditions lost their importance by the 12th century AD as a result of changes in seagoing cargo vessels favoring deeper-bottomed cogs. Although this transition was delayed for some time due to the continued use of shallow draft Norwegian coastal vessels, the reduced importance of Storvågan in favor of a deeper harbor was inevitable. The main harbor was first relocated a short distance eastward along the coast to Kabelvåg by the 16th century AD and further east to the current coastal center of Svolvær during the 1800s.

The Archaeology of Vágur: Terrestrial and Submerged Cultural Deposits

Although Vágur was known from the sagas and other written sources, the actual settlement location was not discovered by archaeologists until the 1970s. Test excavations at Vágur's harbor area, Storvågan, followed during the 1980s with more intensive excavation in the 1990s led by the University of Tromsø (Bertelsen *et al.*, 1987; Bertelsen and Urbańczyk 1988; Urbańczyk 1992). Archeological investigations have revealed *c.* 20,000m² of contiguous settlement deposits that are the most extensive in northern Norway (Figure 2), although only about four percent has been excavated (Bertelsen 2008, 2009). The central site deposit is over two meters thick and extends to the medieval shoreline, which had a sea level about one meter higher than at present. Prior to *c.* AD 1200, the harbor settlement was separated by a narrow tidal channel which cut across the present day peninsula. This channel was subsequently filled in with building remains and rubbish to create additional land for settlement during the early 13th century AD (Bertelsen 2008, 30-31).

Archaeological settlement deposits are minimal at Storvågan prior to AD 1200 and most of the remains derive from the following two centuries. There has been considerable discussion as to whether Vágur should be classified as a true medieval urban center. Bertelsen (2008, 2009) asserts that Vágur is marked by economic, administrative, legal and ecclesiastical functions similar to those we find in medieval towns during the 13th and 14th centuries AD. The archaeological remains also demonstrate that Vágur was integrated into European medieval society during this period and reflected its traditions and norms. However, both before AD 1200 and after AD 1400 the settlement was no more than a simple fishing village.

Despite the obvious maritime orientation of Vágar throughout its existence, archaeological investigations up until the late 1980s focused exclusively on the land component of the settlement. Initial underwater survey by Tromsø University Museum at Storvågan covered a limited portion of the inner eastern harbor known as Austvågen in 1987 (Jasinski and Jørgensen 1990) followed by a more systematic survey of the eastern harbor entrance in 1990 (Carpenter 1990). A majority of the surface artifacts recovered during the surveys date to the post-reformation period although some earlier medieval ceramics were found. The surveys demonstrated the potential for submerged cultural deposits based on the abundance and time span of stray finds on the sea floor.

In 1998 Tromsø University Museum conducted underwater test excavations in the harbor at Storvågan as part of ongoing maritime archaeological investigations of harbors from the late Iron Age and medieval period in northern Norway (Nymoen 1998; Wickler 1999, 2004). The excavations were exploratory in nature and consisted of test trenches in the shallow inner harbor area (Figure 2 and Figure 3). A single trench in the western harbor Vestvågen (Trench E) documented *c.* 30cm of recently deposited sand over the earlier sea floor but no evidence of a cultural deposit. In contrast, three of four trenches excavated in the eastern harbor (Trench A, B and D) revealed a medieval cultural deposit. Trench A was placed at a depth of about 2.5m where a disturbed deposit with both medieval and post-reformation remains was documented from 20 to 45cm below the surface.

Two of the trenches located at depths of less than one meter at maximum low tide (Trench B and D) uncovered an undisturbed organic cultural deposit *c.* 30cm below the surface and roughly ten centimeters thick. The presence of an intact cultural deposit in such a shallow water environment exposed to tidal influences and wave action was unexpected and is highly unusual. The presence of large boulders from 200-300kg on the seabed surface at this location is responsible for preserving the underlying cultural deposit. The boulders do not appear to be part of a structural feature and were most likely deposited in their present location by natural forces. A series of three overlapping radiocarbon dates (810 +/- 50 BP, 855 +/- 40 BP, 910 +/- 75 BP) with a collective calibrated age range of AD 1000-1280 at two sigma were obtained from wood and hazelnut shell samples collected from the deposit in Trench B and D. These dates indicate that the deposit formed over a relatively brief period of time during the early medieval period before being sealed in and compacted by the large boulders currently covering the surface.

A lack of disturbance combined with excellent preservation of organic remains in the submerged medieval cultural deposit provides an unprecedented opportunity to explore the nature of settlement at Vágar during the period when it was assuming its role as a central place. Perhaps even more important is the marine focus reflected by the archaeological remains that are interpreted as originating for the most part from boats anchored in the harbor potentially supplemented to lesser extent by refuse washed out from land and structures in the intertidal zone. Of

particular interest is the presence of fishing gear including bone line runners originally fastened to the gunwales of fishing boats and a dense concentration of fish bone. Other organic remains include a variety of worked pieces of wood, wood shavings, and the remains of both textiles and leather including pieces of shoes, jackets, pouches, and various types of wool clothing. Although organic remains were recovered from the excavations on land, neither the quality of preservation nor density of material approaches that of the submerged deposit.

Of the *c.* 5700 pieces of bone analyzed from the medieval cultural deposit in Trench B and D, about 90 percent are fish and the remainder are domestic mammals (cattle, sheep/goat, pig) together with a small amount of reindeer (Amundsen and Julsrud 2007). The identified fish are dominated by cod (95%). A majority of the fish bone consists of cranial elements from cod most likely disposed of during the first stage of stockfish production. The abundance of cod otoliths, with a total of *c.* 400 collected, including 53 from a single ten liter bulk sample collected directly from the deposit, also supports this conclusion. Otolith analysis reveals a fishery with spawning old and large individuals dominated by Northeast Arctic cod rather than coastal cod (Pedersen *et al.*, 2009). A similar emphasis on stockfish production is documented in the faunal remains from the land excavations at Storvågan (Perdikaris 1998, 1999), although only a small number of otoliths were recovered due in part to poor preservation.

The well preserved archaeological remains from the submerged medieval deposit enable a more reliable and complete picture of marine oriented activity that was the foundation upon which the settlement of Vágar was built and provide an important supplement to the terrestrial deposits. The collective results from underwater excavations at Storvågan also demonstrate the potential of marine archaeology in providing insights into the maritime orientation that characterized coastal settlement in Lofoten during the medieval period.

BORG: AN IRON AGE CHIEFTAIN CENTER AND MARITIME CULTURAL LANDSCAPE

The settlement of Borg on the island of Vestvågøy in Lofoten was an important chieftain seat in the Iron Age from the Migration Period (AD 400-570) to Viking Age (AD 800-1030). Large scale excavations of residential structures associated with the chieftain's farm at Borg were conducted during the late 1980s and included documentation of an 83m long chieftain's dwelling; the largest known Viking Age house structure. The presence of high status objects also point to long-distance connections with South Scandinavia (Munch *et al.*, 2003). Although archaeological investigations have highlighted the prominence of Borg in relation to agricultural activity, its importance was also closely linked to maritime activity that was in turn dependent on the natural harbor at Borgpollen situated below the ridgeline where the settlement was located. The focus on agricultural production at Borg reflects to some extent the transference of a South

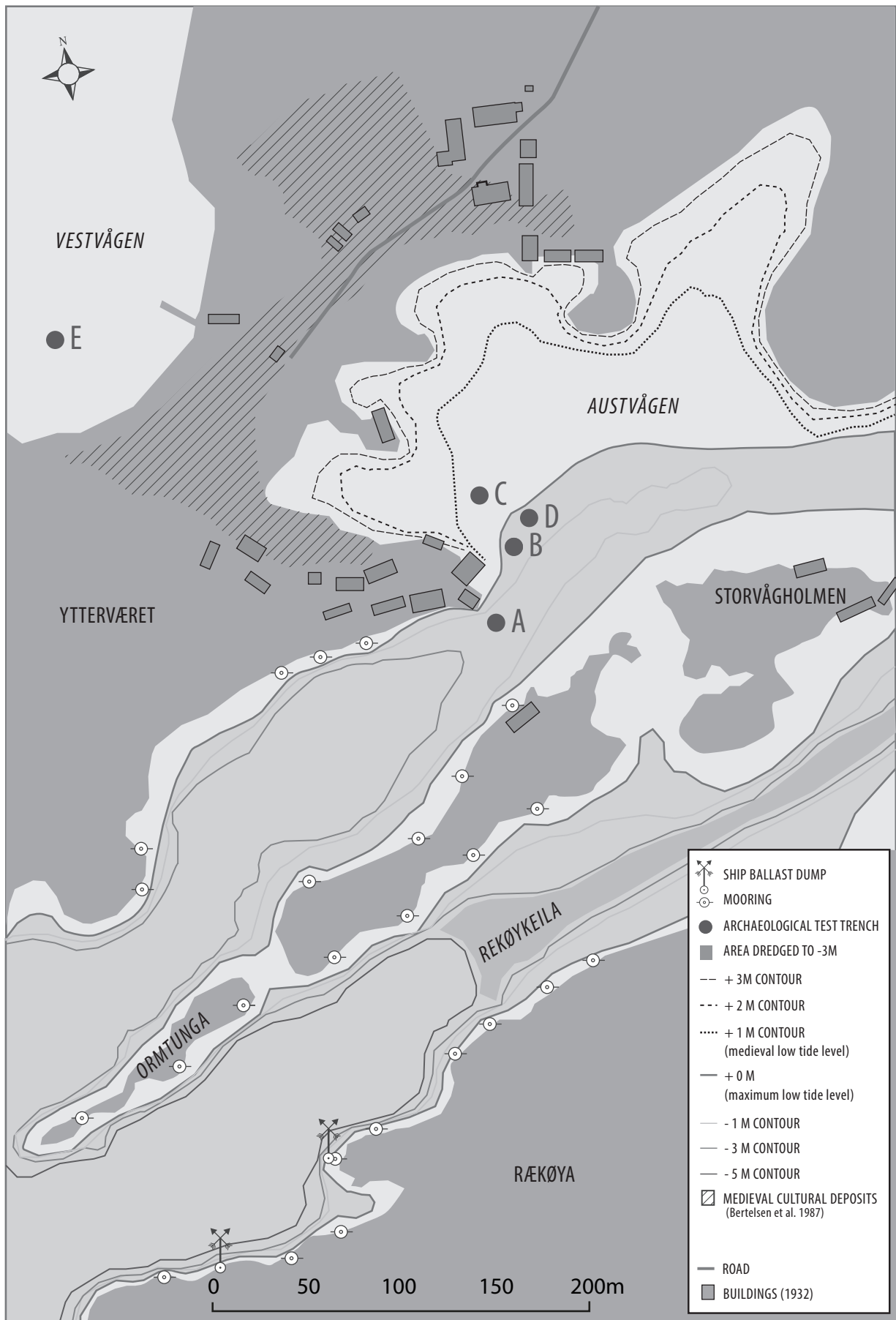


Figure 2. Site map of Storvågan, Vestvågøy. Illustration: Ernst Høgtun, Tromsø University Museum.

Scandinavian agrarian model to a region where agriculture is far less important than marine resources.



Figure 3. View of Storvågen looking north from the intertidal zone at low tide in the vicinity of the submerged medieval deposit. Photo: Stephen Wickler.

In order to gain a better understanding of the role played by maritime activity and the harbor at Borg, underwater archaeological surveys were carried out under the direction of Tromsø University Museum in 2001 - 2002 in the brackish water lake Inner Borgpollen. In addition to a diver survey (Gundersen 1999), waterborne surveys utilizing a range of geophysical techniques (multibeam swath bathymetry, side-scan sonar, marine magnetometer and sub-bottom profiler) produced detailed maps of the submerged landscape documenting aspects of geology, geomorphology, and sedimentology (Waterborne Geophysics Ireland Limited 2002). This work was conducted by geophysicists from the Applied Geophysics Unit at National University of Ireland, Galway. The lake has a highly variable bathymetric profile with depths up to 45m (Figure 4) and areas with soft sediments up to 15m in thickness. Although a number of potential objects of interest were investigated by divers, no archaeological remains were located. It is likely that larger objects such as boat or ship remains would lie deeply buried in the fine silt that is common in the deeper parts of the lake and would therefore be difficult to locate.

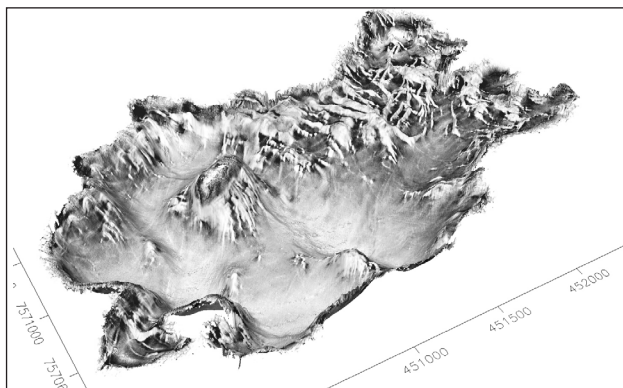


Figure 4. 3D representation of Inner Borgpollen showing bathymetry with backscatter data (view to northeast). Illustration: Waterborne Geophysics Ireland, Limited.

An important feature of the maritime cultural landscape at Borg is the remains of 20 Iron Age boathouses

clustered along the shoreline of Borgpollen. The island of Vestvågøy also has the highest concentration of Iron Age boathouses in northern Norway with at least 62 of the 80 recorded structures dating to the Iron Age (Nilsen 1998). The boathouses at Borgpollen are currently one to three meters above sea level and based on estimates of former shorelines and radiocarbon ages from excavations, the structures span most of the Iron Age and extend into the early medieval period, c. AD 1-1100 (Balascio *et al.*, 2011; Nilsen 1998; Wickler 2004).

Six of the boathouses surrounding Inner Borgpollen have been partially excavated since the 1990s, including four structures investigated by the author (Wickler 2004; Wickler and Nilsen 2005, 2012). Two of the earliest boathouse dates in northern Norway, both from the Roman Iron Age (AD 0-400), represent initial use of two of the Borgpollen boathouses with multiple use phases. Both dates were obtained from hearths in structures with evidence of long-term use and main use phases during the late Iron Age. A third boathouse in the same area also has two temporally distinct phases of use and has recently been dated more precisely using tephrochronology linked to volcanic eruptions on Iceland (Balascio *et al.*, 2011). Abandonment of this structure prior to AD 1104 has also been established through tephra analysis. A radiocarbon dated hearth in this structure documents initial use straddling the boundary between the early and late Iron Age (cal. AD 538-662 at two sigma) with a main use phase at the end of the Viking Age. These three boathouses thus appear to have experienced a hiatus or minimal use over periods ranging from 250 to 400 years between initial construction and their main use phase. Whether this evidence for long-term multiple use phases represents a local trend or is more widespread remains unclear.

The importance of the harbor at Borgpollen was linked to providing access to the interior of Vestvågøy and its protected position relative to the exposed coast. However, the usefulness of the harbor was susceptible to sea level lowering. During the Iron Age, navigation of the narrow and shallow connections between Outer and Inner Borgpollen may have become more difficult with lowering sea level, a process documented by recent lake sediment cores (Mills *et al.*, 2009). Moreover, sea level lowering would have progressively restricted the amount of seawater entering Inner Borgpollen possibly leading to freezing of the surface water in winter months when the local cod fisheries are most productive. Both factors may have contributed to the abandonment of boathouses. The submerged foundations of a unique wooden bridge radiocarbon dated to the 11th to 12th century AD have been documented at the narrow, shallow entrance to Inner Borgpollen (Jørgensen 1997; Nævestad 1981). This structure, originally up to 50m in length, may have been part of a land-based alternative route to the outer coast with construction motivated by worsening harbor conditions at Borgpollen.

BORGVÆR: TRACING THE DEVELOPMENT OF A FISHING SETTLEMENT ON THE OUTER COAST OF LOFOTEN FROM THE IRON AGE TO MODERN PERIOD

Borgvær is a small (1.8 x 1km) offshore island located 8.5km to the north of Borg along the outer coast of

Vestvågøy. The island is first mentioned in tax records from 1610 and Borgvær is listed as a source of income for the parish priest at Borg in the 1626 land register. The economic relationship between the religious leader at Borg and Borgvær most likely extended back at least to the High Middle Ages (AD 1200-1400) (Nielsen 1977, 2009). It is also not unreasonable to suggest that the connection between Borgvær and Borg extended even further back in time to the late Iron Age.

Borgvær is likely to have represented an important node in the distribution network for the winter cod fishery by the late Iron Age and was located much closer than Borg to the fishing grounds that provided an abundant and stable source of fish throughout the year. It is also possible that Borgvær assumed greater importance within a maritime context as a consequence of deteriorating harbor conditions at Borgpollen by the 12th century AD. Archaeological evidence, including clusters of grave cairns, also point to the importance of Borgvær during the late Iron Age.

In order to trace the settlement history of a small island where marine exploitation was of paramount importance for subsistence and provided the basis for a maritime economy as well as investigate the potential role of Borgvær in relation to Borg, an archeological research project was initiated at Borgvær in 2008 led by Tromsø University Museum in collaboration with Lofotr Viking Museum at Borg. The discovery in 2003 of several clusters of house remains associated with fishing activity and potentially dating back to the Iron Age, in addition to the presence of Iron Age grave cairns and a farm mound with an associated boathouse, raised the possibility of studying antecedents to the large historic fishing settlement on Borgvær (Figure 5).

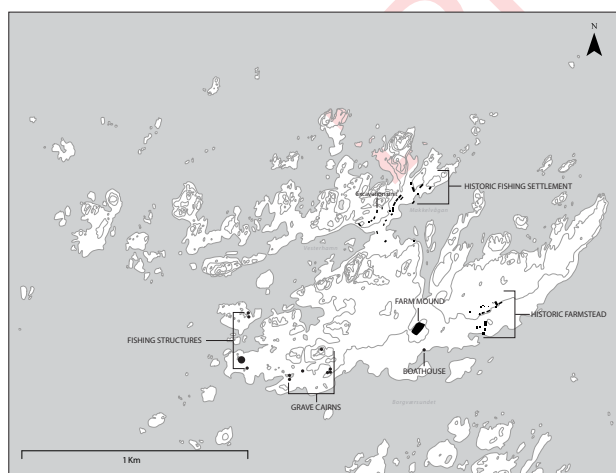


Figure 5. Archaeological site map of Borgvær. Illustration: Ernst Høgtun, Tromsø University Museum.

Field investigations in 2008 consisted of test excavations in the fishing-related house structures located in three areas along the southwestern shoreline of the island. The main concentration of structures is found in Area 1 (three adjacent structures) and Area 2, which has eight contiguous structures facing a cleared boat landing (Figure 6). Area 3 lies a short distance to the north and has two structures. A total of seven 50 x 50cm test units were

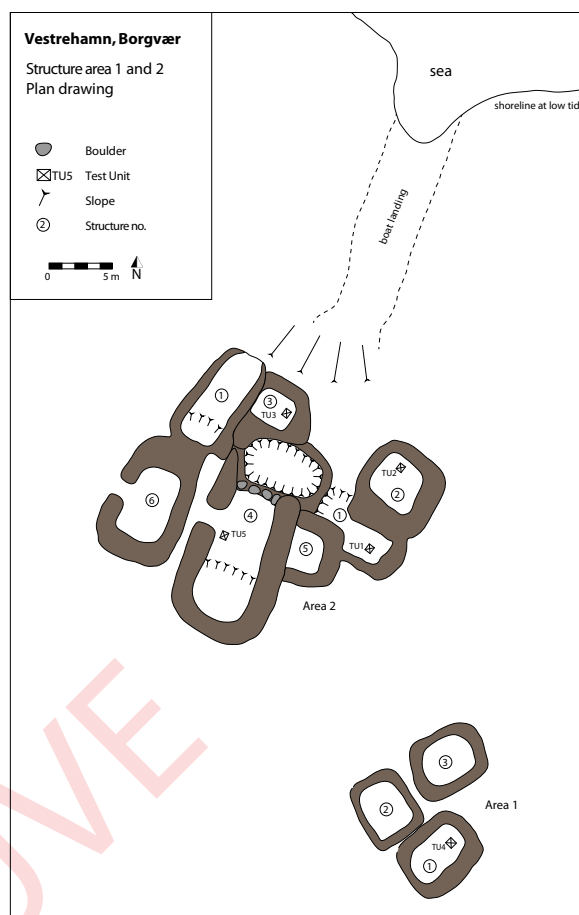


Figure 6. Plan view drawing of house structures in Area 1 and 2 at Vestrehamn, Borgvær. Illustration: Lars Erik Narmo and Johan Terje Hole.

excavated within the floor area of individual structures with a single unit in Area 1, four units in Area 2, and two units in Area 3. The largest group of structures is found in Area 2, where the individual rooms have shared walls constructed of stacked rock up to two meters wide and 50-60cm high on average, forming a multi-room house complex. The largest room is ten meters in length and divided into two levels, but most rooms have interior dimensions of c. 3 x 2.5m.

The second phase of field investigations in 2009 focused on test excavations in the farm mound known as Vestigårdshaugen in addition to a single test unit in the historic fishing settlement at Makkelvågan. The farm mound is situated on a natural rise at an elevation of c. 14m a.s.l. and is roughly 70 x 40m with diffuse boundaries. The remains of an undated boathouse structure are found just above the modern shoreline to the south of the farm mound. The mound has an estimated maximum thickness of c. 2.5m but the upper portion of the deposit has been removed in the northern half where a modern potato field is located. A 50 x 50cm test unit placed at the top of the mound reached a depth of 80cm and a soil probe extended to 140cm without reaching the base of the cultural deposit. A second test unit was excavated in the potato field and reached culturally sterile shell sand at a depth of 60cm.

Site Chronology

Radiocarbon dating results from the house structure excavations document initial use during the Merovingian Period (cal. AD 670-715) in Area 3 interpreted as intermittent temporary occupation of a natural rock overhang shelter where a house structure was later built (see Figure 7 for a site sequence overview). Expanded use of the area by the early Viking Age (cal. AD 770-880) is documented from a hearth in a structure at Area 2. Two additional structures in Area 2 have dates from the transition between the Viking Age and medieval period (cal. AD 1040-1160). Two dates from the base of the farm mound deposit associated with a flagstone floor are also from this period (cal. AD 975-1075). A series of three dates from the test unit at the top of the farm mound are interpreted as indicating continuous occupation from the late 12th century AD through to the middle of the 15th century AD. Secondary use of a single house structure in Area 2 is also documented during the early medieval period (cal. AD 1150-1280).

Very few artifacts were recovered from the house structures prior to the medieval period when a broader range of material appears, including a fishing sinker and other soapstone objects. Strike-a-light flints are present from the Viking Age onward. Finds are more abundant and varied in the medieval farm mound deposit and include a whetstone, baking plate fragments, strike-a-light flints and well preserved organic remains such as worked wooden objects, leather, and textile fragments.

There is a clear stratigraphic break between medieval and post-reformation occupation in the farm mound which may indicate a hiatus in use from c. AD 1450 until sometime in the late 16th century AD. Abandonment of the farm mound at some point during the 17th century AD is suggested by the absence of ceramics more recent than the 16th-17th century AD and lack of clay smoking pipe remains which would have been widespread by the middle of the 17th century AD. Reoccupation of several house structures in Area 2 also appears to occur during the 16th century AD.

Intensified use of Borgvær is documented in the written records by the middle of the 17th century AD when several farmsteads are present (Nielsen 2009). Borgvær was established as a trading post with a cargo ship (*jektefart*) beginning in 1794 and an extensive fishing settlement developed during the 1800s at Makkelvågen and Vesterhamn. It is noteworthy that nearly all of the fishing structures in Area 1-3 have evidence of late historic fishing settlement use with artifacts from the 19th century AD and early 20th century AD.

Borgvær - a Model of Fishing Settlement Development

One of the research problems to be addressed by the Borgvær project was the relationship between the house structures in Area 1-3 and the farm mound. The type of use reflected by the house structures is difficult to interpret due to the meager cultural remains and limited extent of the test excavations. However, the general impression obtained from excavation results is that of temporary short term or seasonal use associated with fishing activity. It remains unclear when the visible structural remains (stone walls, floors) in Area 1-3 were constructed, although multiple use phases with hearths and structural features documented within the floor areas suggest considerable antiquity. On the other hand, three of the excavated structures only have evidence of recent historic use. The documentation of secondary medieval and early post-reformation occupation in only two of the structures suggests that occupation was limited between the early medieval period and reformation. In contrast, initial occupation of the farm mound takes place at the transition from the Iron Age to medieval period and appears to be followed by permanent year round settlement up until the middle of the 15th century AD. There is no indication of abandonment following the Black Death at c. 1350 as is the case with a substantial number of other farms in Lofoten (Nielsen 1977).

The collective evidence from Borgvær reflects occupation focused on fishing since the Merovingian Period in the late Iron Age. The house structures shed light on temporary settlement associated with seasonal fishing activity that may

Site	Merovingian Period - early Viking Age	Viking Age early medieval period	medieval period	16th - 17th century	19th - 20th century
<i>Fishing structures</i>					
Area 1, structure 1					X
Area 2, structure 1	?	?	?	X?(ceramics)	x (limited)
Area 2, structure 2	X		X	X?(ceramics)	x (limited)
Area 2, structure 3		X		X	X
Area 2, structure 4					X
Area 3, structure 1					X
Area 3, structure 2	X	X			
Makkelvågen					X
<i>Farm mound</i>					
Test Unit 1			X	X	
Test Unit 2		X			X (intrusive)

Figure 7. Borgvær site sequence overview.

be related to the consolidation of power by the chieftain at Borg, including increasing control over marine resources. The location of the structures was maintained for many centuries due to their optimal placement in the maritime landscape with convenient access to a sheltered natural harbor and advantageous boat landing locations. There appears to have been a shift in settlement focus from temporary fishing structures in the Iron Age to more permanent settlement in the medieval period at the farm mound site.

Parallels to the temporary fishing structures located along the shoreline at Borgvær (*strandtufter*) can be found at other traditional fishing settlements in Lofoten. Once such location is Nusfjord on the island of Flakstad where the remains of turf houses dating from the Migration Period (AD 400-570) to Viking Age are interpreted as evidence of an early fishing settlement (Narmo and Larsen 2004). There are also similarities to house structures from Hordaland in western Norway dating back to the Roman Iron Age (c. AD 300) that have been interpreted as temporary dwellings associated with seasonal fishing activity that was regulated by chieftains during their main phase of use in the Viking Age (Johannessen 1998).

CLOSING THOUGHTS ON THE IMPORTANCE OF THE SEA

The case studies from Lofoten illustrate how closely linked coastal settlement is to marine resources and the importance of sea-based models for settlement in such contexts. They also demonstrate the advantages of combining the investigation of landscapes both below and above the surface of the sea to provide a fuller understanding of maritime cultural activity, as in the case of Borg and Storvågan. By tracing transformations of the submerged and terrestrial landscape in tandem it is possible to obtain a better understanding of coastal settlement in its totality. This point is well illustrated at Vågar where changes in sea level and other natural forces must be coupled with cultural factors such as human modification of the intertidal zone and changes in the nature of seagoing vessels in order to understand the role played by the harbor at Storvågan. A similar approach is necessary to reconstruct changes in Borgpollen as a harbor from the late Iron Age to medieval period. Here natural forces such as shoreline displacement and a lowering of sea level played a critical role in determining the nature of settlement and access to the sea. Although submerged site histories require a different set of explanatory models than terrestrial contexts taking into account factors such as site formation processes, preservation and taphonomy, they also need to be linked to contexts on land and the intertidal zone to be understood within a larger cultural framework.

The case studies also serve as a reminder that the coastal / island settlements involved would not have existed without the abundant marine resources upon which they depended. Much of the previous archaeology at both Borg and Storvågan has focused on terrestrial aspects of settlement. The extensive excavations at Borg in particular have emphasized the agricultural basis for settlement and underplayed the essential role of maritime activity to the existence of the chieftain center. The importance

of the natural harbor at Borgpollen with its dense cluster of boathouses as a critical node for land-sea interactions is revealed by the negative impact that restricted harbor access due to sea level change had on settlement. The potential abandonment of boathouses due to worsening harbor conditions in the early medieval period may also be linked to the increasing importance of Borgvær as an alternative harbor location and binds the two sites together as part of a maritime cultural landscape.

In keeping with the theme of the conference and focus on the potential of coastal archaeological sites, it is worth reiterating that submerged, intertidal and shoreline site contexts are critical for understanding coastal settlement as components of the maritime cultural landscape. The traditional boundary (and barrier) between land and sea archaeology that is often drawn at the shoreline must be erased if we are to make progress towards achieving a holistic framework for histories of coastal settlement. Projects which systematically investigate archaeological contexts on both sides of the dividing line are the key to unlocking the potential of a genuine maritime perspective.

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ÉPREUVE

THE POTENTIAL OF SHORELINE AND SHALLOW SUBMERGED IRON AGE AND MEDIÉVAL ARCHAEOLOGICAL SITES IN THE LOFOTEN ISLANDS, NORTHERN NORWAY

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KEY-WORDS:

Northern Norway, Lofoten Islands, Iron Age, medieval period, fishing settlements, submerged cultural deposits, maritime cultural landscape

ABSTRACT:

Three case studies involving coastal archaeological sites from the late Iron Age and medieval period (AD 570-1537) are presented. These sites illustrate the potential and challenges of contexts physically linking land and sea and demonstrate the importance of integrating submerged and terrestrial site contexts. The Iron Age chieftain center of Borg illustrates the potential of an integrated approach where waterborne geophysical surveys were combined with documentation of Iron Age boathouses to trace the transformation of a maritime landscape. Archaeological investigations on the nearby offshore island of Borgvær provide insights into the development of a fishing settlement from the 8th century up until the recent past viewed in relation to Borg. The third case study is from Vågar, the only medieval urban settlement known from northern Norway. Maritime trade linked to commercial cod fishing and stockfish production led to the growth of this settlement from the 12th through the 14th century when it returned to its former status as small coastal fishing settlement. Excavation of a submerged medieval cultural deposit in the shallow harbor at Storvågan produced well preserved organic remains that complement evidence from land excavations to provide broader insights into the role of maritime activity at Vågar.

LE POTENTIEL DES SITES ARCHÉOLOGIQUES CÔTIERS ET SUBMÉRÉS EN EAUX PEU PROFONDES DE L'ÂGE DU FER ET DE LA PÉRIODE MÉDIÉVALE, DANS LES ÎLES LOFOTEN, NORVÈGE SEPTENTRIONALE

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MOTS-CLÉS :

Norvège septentrionale, îles de Lofoten, Âge du Fer, période médiévale, village de pêcheurs, dépôts culturels submergés, paysage culturel maritime

RÉSUMÉ :

Trois études de cas concernant des sites archéologiques côtiers de l'Âge du Fer et de la période médiévale (AD 570-1537) sont présentées. Ces sites illustrent le potentiel et les défis des contextes qui relient physiquement la terre et la mer, et démontrent ainsi l'importance de combiner ces contextes de sites submergés et terrestres. Le centre de chefferie datant de l'Âge du Fer situé à Borg illustre le potentiel d'une approche combinée entre des prospections géophysiques marines et la documentation sur les abris de bateaux de l'Âge du Fer, pour retracer la transformation d'un paysage maritime. Les investigations archéologiques sur l'île avoisinante de Borgvær donnent un aperçu du développement d'un village de pêcheurs depuis le 8ème siècle jusqu'à récemment en comparaison avec le site de Borg. La troisième étude de cas, représentée par Vågar, est le seul habitat urbain médiéval connu dans le nord de la Norvège. Le trafic maritime lié à la production commerciale de pêche à la morue et de poisson séché a conduit au développement de ce site du 12ème au 14ème siècle, quand il est revenu à son statut initial de petit village de pêcheurs côtier. La mise au jour d'un dépôt culturel submergé de la période médiévale dans le port peu profond de Storvågan, a fourni des restes organiques bien préservés qui viennent compléter des fouilles terrestres livrant des indications plus amples sur le rôle de l'activité maritime à Vågar.