POTENTIAL AND RECOMMENDATIONS: AGRARIAN BOTANICAL DATA FROM WESTERN NORWAY

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ABSTRACT

Palaeobotanical sampling in relation to legally required rescue excavations from agrarian contexts, has been carried out for half a century, with increased effort since the introduction of mechanical top-soil stripping from the 1990s. Development instigated excavations have increased our knowledge of the agricultural history of Western Norway, and highlighted the importance of systematic palaeobotanical sampling. Samples with charred seeds and other macroscopic plant remains, as well as in-context pollen samples, are only available through archaeological excavation. These data represent the primary data set for understanding the development of farming, cultivation and land-use practices.

Each site is a step towards greater knowledge of the development of agrarian societies. In this paper we present samples from house remains, cultivated fields and clearance cairns found in the collections of the University Museums of Bergen and Stavanger. The time periods covered are the Late Neolithic/Early Bronze Age (2200–1100 BC), Late Bronze Age (1100–500 BC), Early Iron Age (500 BC–AD 550) and Late Iron Age (AD 550–1030/50). In Rogaland, samples from house structures dominate the record, whereas samples from cultivated fields are more numerous further north. This is discussed in relation to natural resources and collection strategies, and gaps of knowledge related to archaeological periods and geographical distribution are identified. Effort has been made to highlight the potential of botanical sampling.

INTRODUCTION

The *Agrarian Network* is one of three subprojects associated with the *Joint Research* project, conducted by the University Museums of Norway. One of the aims of the *Joint Research* project was the activation of material/data collected during rescue excavations, as suggested by the Ministry of Education and Research (2008). Another aim was to strengthen the collaboration between the University Museums of Norway and emphasize the potential of the existing material. The *Agrarian Network* was designed to focus on the traces found within settlement areas. Specific focus has been placed on house structures, cultivation layers/soil profiles, and clearance cairns. Botanical samples from these contexts contain information on economy, land-use practices and environment of people in the past. The data produced from these samples are presented in publications, reports, or as lists in topographical archives at the respective museums together with lists of unprocessed samples. This paper, as a product of the *Agrarian Network*, will focus on samples collected from different agrarian contexts and their potential for future research by:

- Presenting a compilation of botanical material (both macro- and microfossil remains) sampled and stored from archaeological contexts in western Norway

- Giving a brief review of the differences in botanical sampling strategy and methods between the University Museums in Stavanger and Bergen

- Identifying knowledge gaps in western Norway related to the actual archaeological contexts, either geographically or chronologically

- Presenting the potential of the botanical material and providing some ideas and recommendations for the future

Archaeological data has been protected by law, and stored at the responsible institutions/museums, since the implementation of the Cultural Heritage Act in 1905. Samples for botanical analysis have, on the other hand, not automatically been collected and stored. At the University Museums of Bergen and Stavanger, interdisciplinary collaboration between archaeology and palaeobotany has been distinct and a broad competence within pollen analysis and plant macrofossil analysis in relation to archaeological excavations has developed. This has resulted in a large amount of samples in the storerooms of the respective museums available for further research.

Holmboe's (1927) analysis of plant macrofossil remains recovered during the excavation of the Oseberg ship in Vestfold was the first archaeobotanical investigation in Norway. His work was ahead of its time. In the late 1960s, sampling of charred seeds from the prehistoric farm at Ullandhaug demonstrated the potential of integrating archaeological and botanical data for investigating the agrarian economy (Lundberg 1972; Myhre 1980; Rindal 2011). In contrast to plant macrofossil analysis, pollen analysis became an important method for understanding the development of agriculture already by the 1940s and 50s.

Knut Fægri, one of the pioneers in developing the method, collaborated with archaeologists and contributed to our understanding of human impact on vegetation history, using pollen diagrams from lakes and bogs (Fægri 1940; 1944). The importance of integrated archaeological and palynological studies, although still based on peat and lake sediments, became clear through the work on early farming in Hordaland by Egil Bakka and Peter Emil Kaland (1971). With the excavation of the farm at Lurekalven in the 1970's, the potential of pollen analysis of agrarian contexts was shown (Kaland P.E. 1979; Kaland S. 1979; Kvamme 1982).

From the 1980's, an increased focus has been on the collection of pollen samples from archaeological sites in addition to sampling from bogs or lakes in their vicinity (see Høgestøl 1985; Danielsen et al. 2000; Prøsch-Danielsen 2005; 2011; Kaland 2009, for more detailed history and references therein). With the exception of Ullandhaug and a few others, it was not until the 1980s that archaeobotanical sampling in general, gradually became a regular part of rescue excavations of prehistoric sites in Norway, strongly associated with the adoption of mechanical topsoil stripping. There are, however, considerable differences between the museum districts regarding sampling practices, which is also visible in the following presentation of data from the University Museums of Bergen and Stavanger.

The histories of the two University Museums are quite different. Stavanger Museum was founded in 1877, but it was not until 1909, with the hiring of archaeologist A. Brøgger, that the Department of Archaeology and Cultural History was established. Sampling of botanical material started in 1967. In 1975, Archaeological Museum in Stavanger (AmS) was established as a separate museum which, in 2009, was fused with the University of Stavanger (UiS/AM). Bergens Museum was founded in 1825, with focus on collections both within cultural history and natural history from the very beginning. In 1914, the museum got five professorships, one of these being awarded to archaeologist H. Shetelig, another to botanist Jens Holmboe. With roots in Bergens Museum, the University of Bergen (UiB) was established in 1946, and the museum departments included in the faculties. Bergen Museum (BM) was re-established as a faculty within UiB in 1993, and since 2002, BM has been an independent unit with two scientific departments – Cultural History and Natural History. The name Bergen Museum was changed to University Museum of Bergen (UM) in 2011.

Today, one basic difference exists in the organization of archaeology and botany at the University Museums in Stavanger and Bergen – in Stavanger archaeologists and botanists are organised in common units, whereas these disciplines are organizationally separated in Bergen.

STUDY AREA AND ENVIRONMENT

Our study area covers the counties Rogaland, Hordaland, Sogn og Fjordane and Sunnmøre (southern part of Møre og Romsdal) (Fig. 1). This is the area for which the Museum of Archaeology/UiS and the University Museum of Bergen/UiB have administrative responsibilities. In the following we will use UiS/AM and UiB/UM for these institutions, independent of the institutional name at the time of sampling.

The bedrock is mainly of Precambrian age, both in the southern and northern study areas. Rocks of Caledonian orogeny constitute a broad field from the Boknafjord area to inner Hardanger and from the coast north of the Hardangerfjord to the inner Sognefjord. An area along the northwestern coast contains Devonian sedimentary rocks (Sigmond 1985; Moen 1999:Figs. 13 and 14). In the southern part of western Norway, areas with phyllite, mica schists and limestones contain nutrients valuable for plant growth while in the northern part the basement rocks are comprised of thrusted and folded gneiss and granites with poor nutrient value. However, it is the combination of the bedrock and overlying Quaternary deposits which determine the properties of the actual soil cover, and hence influence plant growth and suitability for agriculture. In our study area, thick Quaternary deposits are found especially in the Jæren region in Rogaland and western parts of Sunnmøre (Fig. 1) (Moen 1999:Fig. 15), areas that were ice-free during the Younger Dryas stage (Olsen et al. 2013:Fig. 22). Large terraces and moraines are also found within the fjord systems.

The data represent four climate sections; O3 (t and h), O2, O1, OC from west to east (Fig. 2) (Moen 1999:Fig. 88), where the inner part of the Sognefjord

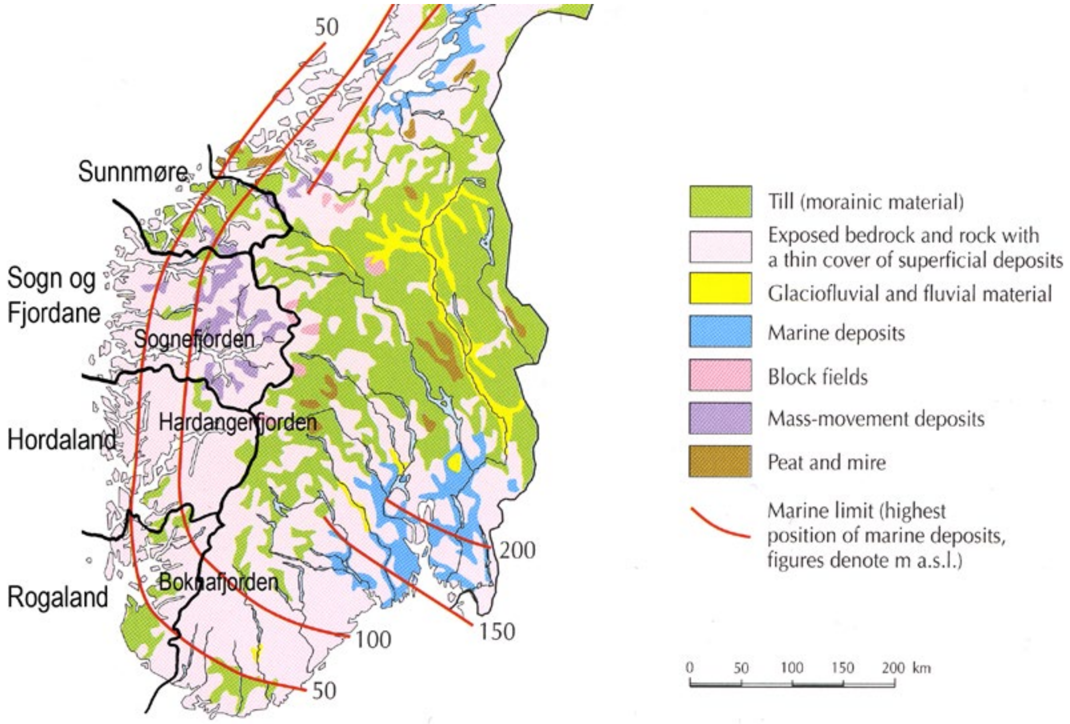


Figure 1. The study area in Norway (Sunnmøre, Sogn og Fjordane, Hordaland and Rogaland) with a coarse scaled map of the distribution of seven categories of superficial Quaternary deposits (from Moen 1999:Fig. 15). Note the areas with huge till moraines (green) along the coast of Jæren and Sunnmøre. The borders of the study area are outlined in bold.

belongs to the OC, indifferent section. These sections are mainly distinguished by differences in oceanity, where precipitation and winter temperature are decisive for the distribution of different plant species and vegetation zones, especially for plant species in the boreonemoral zone that occupy the coastal areas. The study area is further divided into five vegetation zones mainly corresponding to high summer temperatures. They are arranged from west to east and with rising latitudes and altitudes, the boreonemoral zone, southern boreal zone, middle boreal zone, northern boreal zone and the alpine zone (Figs. 3a and 3b) (Moen 1999:Figs. 70 and 71).

In Rogaland, the northern boreal and alpine zones constitute approximately 25 % of the area, rising to around 50 % in the counties further north. The vegetation zones define limits for where one can expect agrarian settlement. The most suitable areas for agriculture are found in Rogaland, where around 50 % of the area lies within the boreonemoral and southern boreal zones.

Our data set is restricted to the permanently settled lowland regions, containing houses, cultivated fields and clearance cairns, thus the summer farm/shieling region in the mountains and localities within the northern boreal (sub-alpine birch forest) and

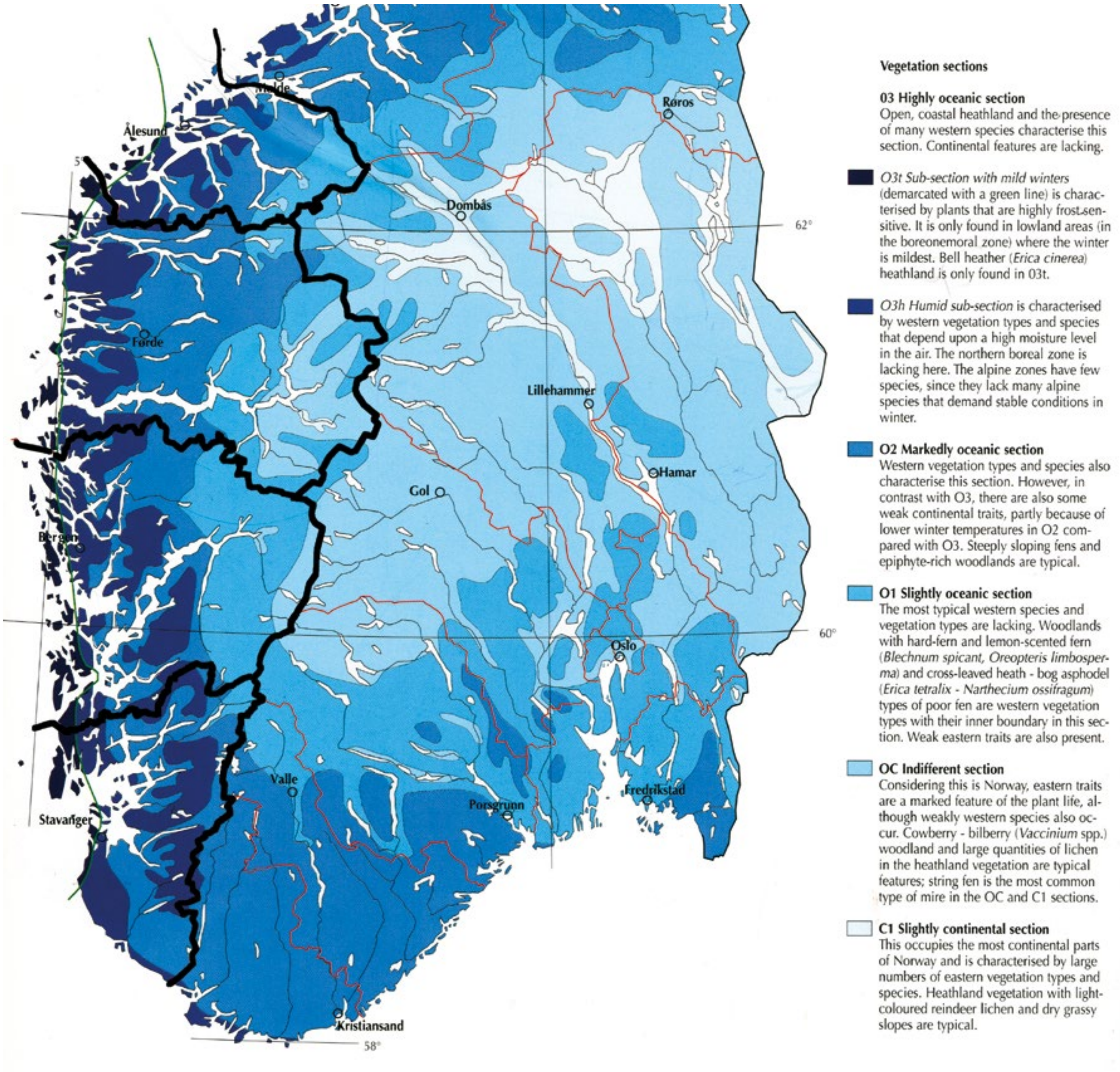
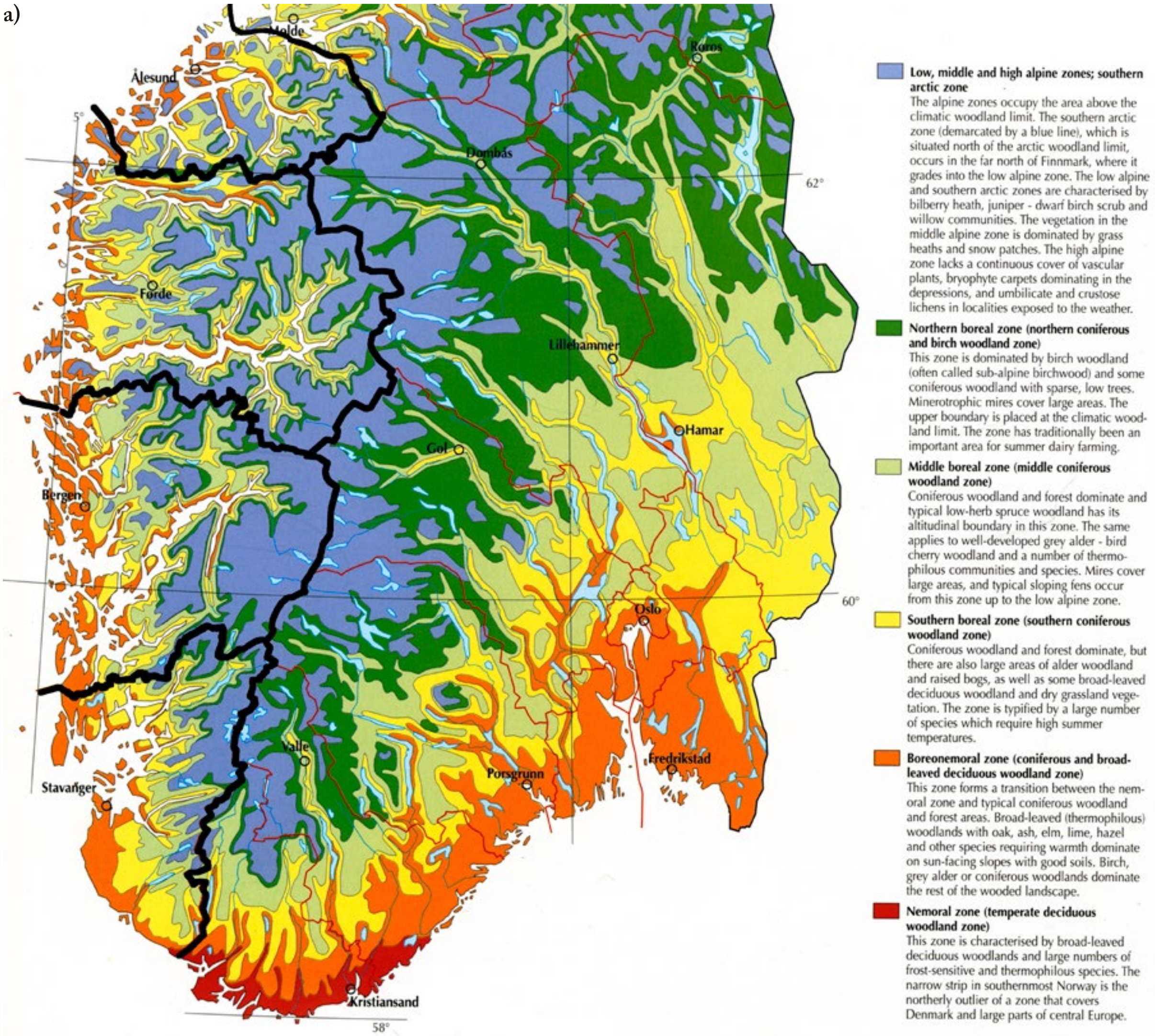


Figure 2. The distribution of the vegetation sections from the coast to inland in western Norway, primarily the result of differences in oceanity along a west-east gradient (from Moen 1999:Fig. 88). The borders of the study area are outlined in bold.

alpine zones are not included in this study. Fields from three localities in Suldal/Rogaland, today lying in summer farm areas, have, however, been included due to the likelihood that they were continuously settled in the Late Iron Age/Medieval Period.

MATERIAL AND METHODS

The data included are samples from agrarian monuments older than AD 1030/50 that are automatically protected by the Cultural Heritage Act (Act No. 50 § 4) (Ministry of Environment 1993), and include a)



b)

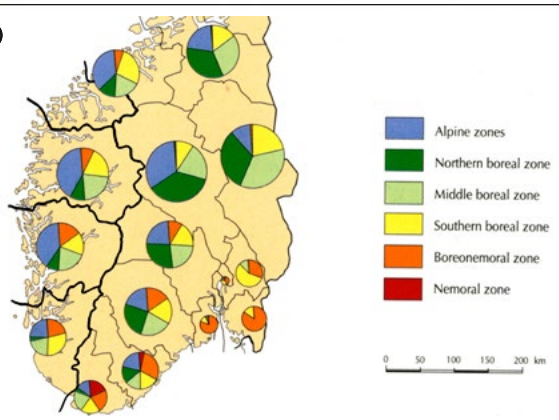


Figure 3. Vegetation zones in western Norway, depending on summer and winter temperature.

a) The distribution of the zones (from Moen 1999:Fig. 70).

b) The coverage of the different vegetation zones (from Moen 1999:Fig. 71). The borders of the study area are outlined in bold.

houses and traces of cultivation such as clearance cairns and fields, as well as lynchets and plough furrows. Fences and enclosures are omitted even though they define the limits between infield and outfield systems (*i.e.* Juhl 2002; Øye et al. 2002; Soltvedt et al. 2007). Pastoralism constituted an important part of agrarian subsistence, but is not included in this study. The topic, thoroughly described and compiled in Prøsch-Danielsen and Simonsen (2000a; 2000b); Hjelle et al. (2006) and in Høgestøl and Prøsch-Danielsen (2006), is one of the topics within the *Outfield Network* of the *Joint Research* project (Hjelle 2015).

The study covers palaeobotanical material, both micro- and macrofossil remains (Table 1, Fig. 4). For the Stavanger region all samples collected since 1968 have been included (see i.e. Bakkevig et al. 2002). With a few exceptions, the samples included from Bergen have all been collected since 1990. This covers the main period for excavations of agrarian contexts in the region (Diinhoff 2012). Samples collected by archaeologists and not included in the palaeobotanical collections may, however, be missing, meaning that the data presented from Bergen reflect a minimum.

The farm is traditionally seen as originating in the Iron Age, but indications of permanent agrarian settlements are found from the Late Neolithic/Early Bronze Age. The time interval studied in this paper is from 2200 BC to AD 1030/50. The data in Table 1 are separated into four periods and given as calibrated BC/AD:

Late Neolithic/Early Bronze Age (2200 – 1100 BC)
Late Bronze Age (1100 – 500 BC)
Early Iron Age (500 BC – AD 550)
Late Iron Age (AD 550 – 1030/1050)

SAMPLING STRATEGIES

Different strategies are used when sampling houses, cultivated fields and clearance cairns and sampling methods are not yet standardized.

Pollen and plant macrofossils supplement each other. Pollen provides information on the vegetation at the site and its surroundings, whereas plant macrofossil remains reflect plant species that have been present at the site. Herbs, cultivated plants and weeds are generally better represented by pollen than by seeds in prehistoric cultivation layers and clearance cairns. On the other hand, seeds can almost always be determined to species level and charred seeds may be the only preserved remains in sandy soils. Thus, using only one of the methods gives limited information – related to either the specific land-use activity on the site (e.g. cultivation, mowing and/or grazing) or the age of the monument/layers. In some cases, micro-morphological sampling has been included (Sageidet 2009; Fredh and Westling 2014), adding further information to the investigated deposit and insight into the activity which has taken place.

Houses

Though some examples have been typologically dated (marked x in Table 1 from Rogaland), the chronology of the houses in our data set is primarily based on radiocarbon dating of charred plant macrofossil remains (mainly cereals), charcoal or sheep/goat faeces from postholes, fireplaces, pits and floor layers (see also Bakkevig et al. 2002). In these features, plant macrofossil remains are often well preserved. At UiS/AM, material from all postholes in a house is generally sampled. This may occasionally be the case at UiB/UM, generally only a few postholes are sampled.

In the present paper, the numbers of samples taken from different features or from different parts of a posthole are not given. The number of samples from one house varies from a few to more than one hundred.

Cultivation layers, lynchets and clearance cairns

From clearance cairns, lynchets and other cultivation layers, sampling for either pollen analysis or a)

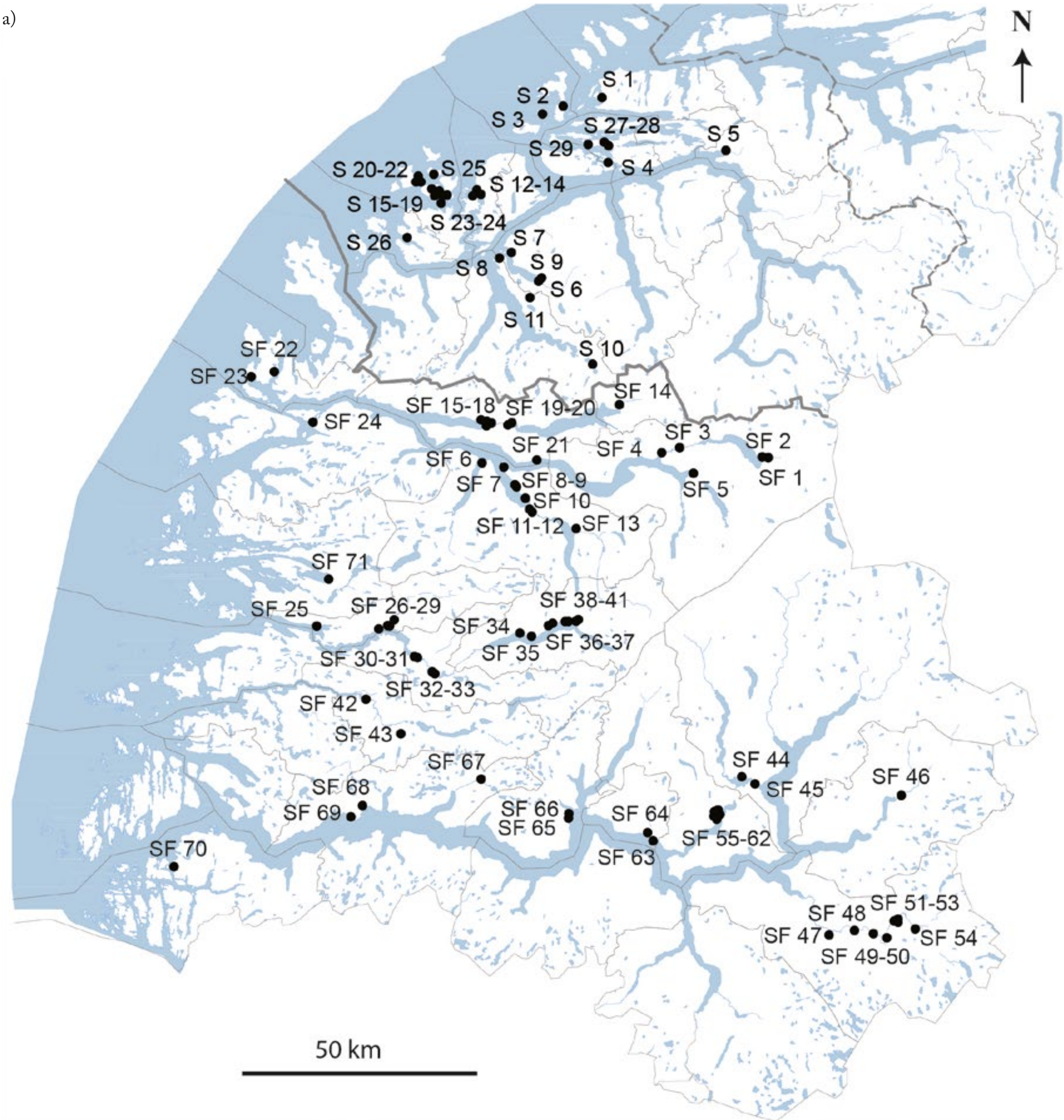
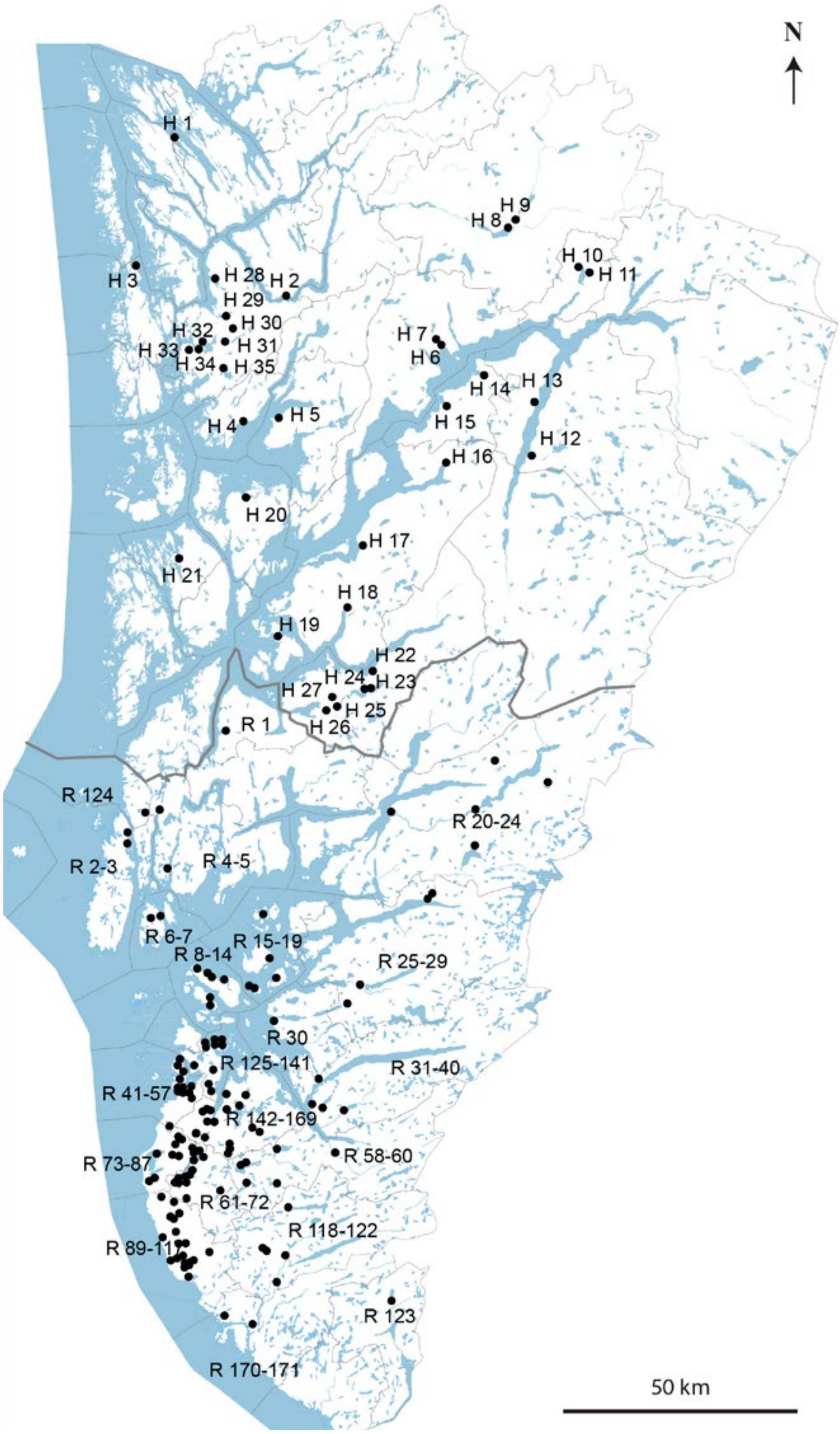


Figure 4. The four municipalities **a)** Møre og Romsdal (Sunnmøre, southern part), Sogn og Fjordane. **b)** Hordaland and Rogaland with all sites included in the investigation. Numbers refer to Table 1. Each site might represent one or several samples, and cover a specific or unknown archaeological period.

b)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R 6-7
R 15-19
R 8-14
R 25-29
R 30
R 125-141
R 31-40
R 41-57
R 142-169
R 58-60
R 73-87
R 61-72
R 118-122
R 89-117
R 123
R 170-171
50 km

radiocarbon dating began prior to the introduction of top-soil stripping. The preferred method today is to combine sampling for pollen and plant macrofossils (charcoal or seeds) (see Table 1). However, it still happens that only series of pollen samples are taken with the addition of a few macro samples for radiocarbon dating, or even that only samples for radiocarbon dates are sampled from a profile of prehistoric cultivation layers.

Samples are most commonly taken from vertical sections through soil profiles representing a sequence of stratigraphical layers and occasionally horizontally from a particular stratigraphical layer after the removal of the overlying soil (Diinhof 2005; Hjelle 2005a; Overland and Hjelle 2007; 2013; Soltvedt et al. 2007; Soltvedt and Jensen 2011). To obtain more statistically robust data, and to identify potential sources of error such as vertical pollen transport, it is preferable to take several samples from each layer. The number of pollen/plant macrofossil samples taken from a profile may vary from less than ten to more than one hundred, and in cases of large fields several vertical series are often taken in order to allow for the investigation of spatial patterning. For clearance cairns, the most commonly used sampling strategy today is to sample material beneath the cairn/bottom layer (representing the period before the cairn was made), the bottom part of the in-fill (the first period of activity), and in some cases through the cairn and above. Pollen and plant macrofossil samples from all these levels provide information on the vegetation and activity before, during and after clearance, bringing in both the local and extra-local land-use perspective. Radiocarbon dates from the same samples may represent the maximum *(terminus post quem)* age, the time of activity and the minimum *(terminus ante quem)* age of the activity.

Chronologies are constructed using either directly dated plant macrofossil remains or charcoal from cultivation layers, or indirectly through stratigraphic relationships. Small plant macrofossil remains have become increasingly important as the AMS-dating method has developed.

RESULTS AND COMMENTS

Late Neolithic/Bronze Age (2200 BC – 1100 BC)

Rogaland

With the exception of Forsandmoen, where a total of 254 houses have been archaeologically excavated, plant macrofossils were sampled from all the investigated LN/EBA two- and three-aisled houses in Rogaland (Table 1, Fig. 5a). At Forsandmoen, only a selection of EBA houses were investigated for plant macrofossil remains (Bakkevig 1998; Prøsch-Danielsen and Soltvedt 2011). The majority of two-aisled houses are dated to the LN and transition to the EBA. Three-aisled houses began to appear in the EBA. Plant macrofossil analyses from some sites are published, but many unanalyzed samples still exist.

The agrarian structures like fields, lynchets and clearance cairns have been documented through plant macrofossils as well as pollen samples (Fig. 5b). In Rogaland, both houses and fields have been found in areas with a continuous cover of Quaternary deposits (Fig. 1). Fields are often identified by traces of plough marks. They vary in thickness and their horizontal limits are not always well defined. The sampled clearance cairns (29 in all) from the LN/EBA show the same distribution pattern as the houses. Fields and clearance cairns are in many cases dated to the LN/EBA transition. Most of the sites are situated within the vegetation sections O3t, O3h and O2 in Rogaland.

Hordaland, Sogn og Fjordane and Sunnmøre

Samples for radiocarbon dating have been collected from excavated two- and three-aisled houses in

Hordaland, Sogn og Fjordane and Sunnmøre (cf. Diinhoff 2012; Olsen 2012); samples for plant macrofossil analysis have been collected from 20 sites (Fig. 5a). In most cases only a selection of postholes has been sampled. In contrast to the relatively low number of sampled houses, prehistoric fields from 59 sites have been sampled for pollen and/or plant macrofossil analysis (Table 1, Fig. 5b). Cultivated fields are found in all climate zones (cf. Fig. 2), mostly on Quaternary deposits and terraces, mainly along the fjords or, especially in Sunnmøre, on islands along the coast. Plough marks may be found, and have been sampled in some cases. At some sites both house remains and cultivation layers were found, whilst in the relatively small excavated areas at other sites only cultivation layers were identified. As in Rogaland, several fields have been dated to the LN/EBA transition.

Late Bronze Age (1100 BC – 500 BC)

Rogaland

All houses from the LBA are three-aisled. Of the c. 26 LBA houses identified at Forsandmoen, only one of these (no. 99) was sampled for plant macrofossils (Bakkevig 1992). At Sørbø-Hove, a total of 90 houses have been investigated and plant macrofossil samples taken from four LBA houses (Bjørdal, Westling and Jensen in prep.). Sampled botanical remains from LBA houses are given in Fig. 6a.

Plant macrofossils and pollen were only sampled from eight sites with cultivation layers dated to the LBA (Fig. 6b). As expected, some of these fields are close to known settlement sites. In the Boknafjord basin, only fields, and not their corresponding houses, have been found. From this period, botanical remains from clearance cairns are sampled from the eastern part of low-lying Jæren, with a concentration in mid-Hå municipality.

Hordaland, Sogn og Fjordane and Sunnmøre

In Sogn og Fjordane, LBA houses from nine sites have been excavated and sampled for plant macrofossils. Only a small number of LBA houses have been sampled from Hordaland and Sunnmøre (Fig. 6a). A large number of cultivated fields (57 sites in total) have been sampled from the region, documenting the agrarian economy in this time period (Fig. 6b). Many sites show continuity from LN/EBA (Table 1). In a few cases pollen samples have been taken without plant macrofossil samples, but samples for radiocarbon dating exist in all cases.

Early Iron Age (500 BC – AD 550)

Rogaland

The investigation of Early Iron Age house complexes has a long tradition in Rogaland (Petersen 1933; 1936; 1951). Prior to 1967, none of the postholes in these houses were investigated for plant macrofossil remains. In 1967–68 the farm complex at Ullandhaug was investigated by Myhre (1973; 1980). Natural scientists became involved in this research excavation and plant macrofossil samples were taken for the first time from a house complex in Rogaland (Lundeberg 1972; Rindal 2011).

Between 1980 and 2009, a total of 243 EIA houses were excavated in Rogaland. Of these, plant macrofossil samples were taken from 92 houses. By 2014, the number of sampled houses had increased to 135 (Table 1, Fig. 7a). With the exception of Ullandhaug and Gausel, macrofossil samples from stonewalled houses are underrepresented. The majority of houses with sampled plant macrofossils are from Forsandmoen and the island Hundvåg. More recently excavated sites with numerous botanical samples include Gausel and Tasta in Stavanger, and Sørbø-Hove in Sandnes. Plant macrofossils are sampled from 20 % of the EIA houses excavated since 1967. Houses are

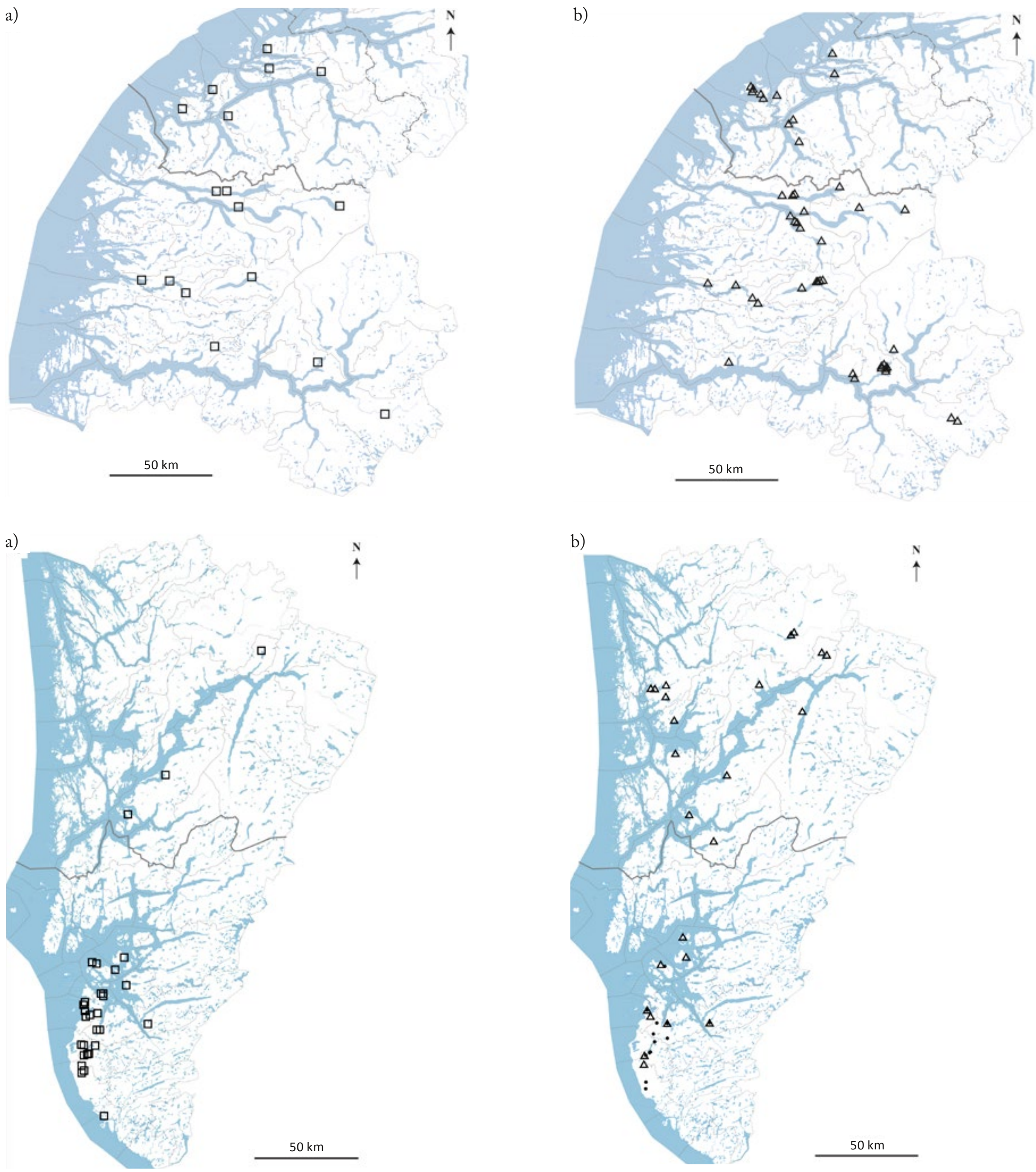

Figure 5. a) Collected botanical samples from house remains dated to Late Neolithic/Early Bronze Age (2200 BC-1100 BC). **b)** Collected botanical samples from fields (cultivation layers, open triangles) and clearance cairns (filled circle) dated to Late Neolithic/Early Bronze Age (2200 BC-1100 BC).

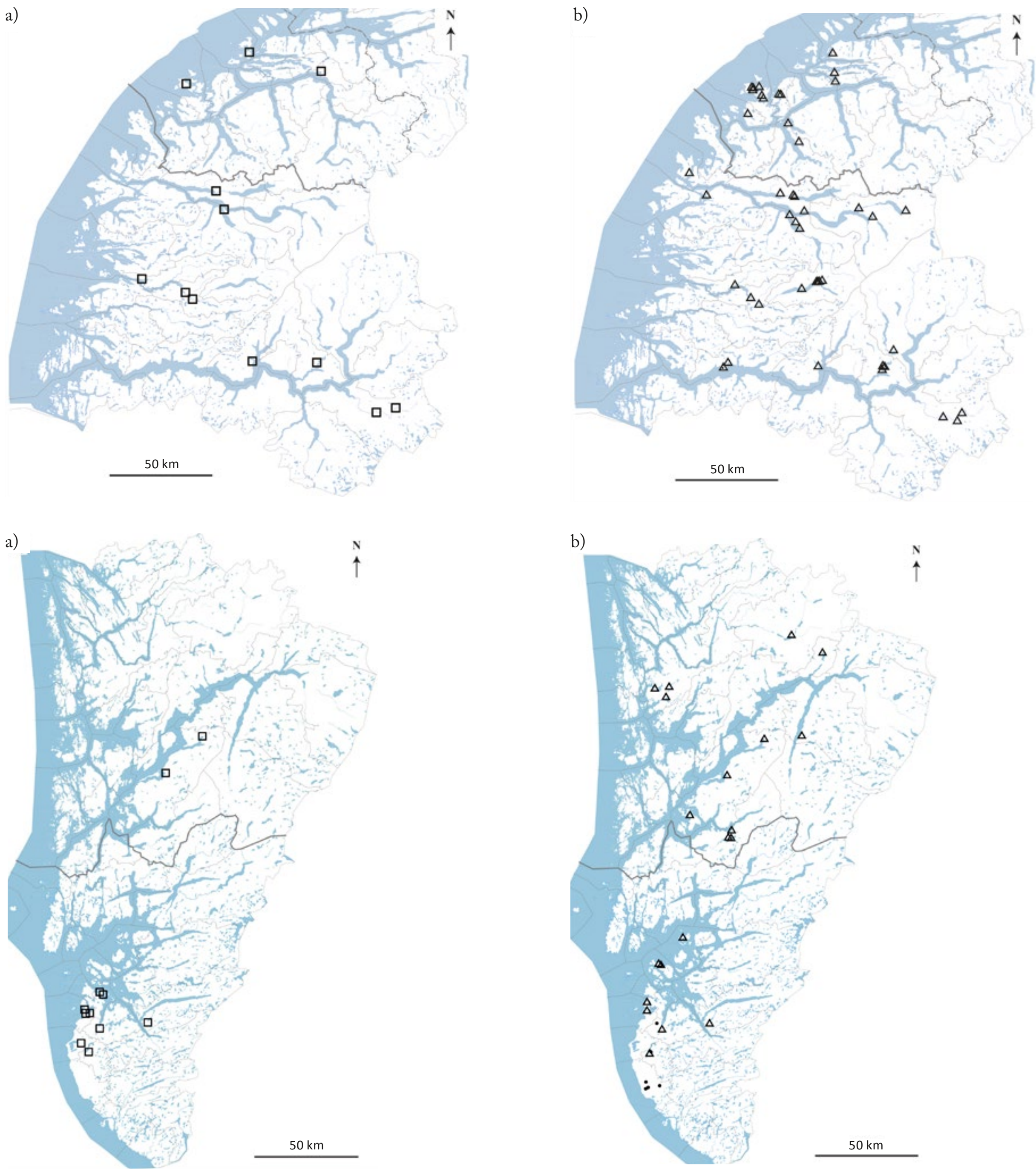

Figure 6. a) Collected botanical samples from house remains dated to Late Bronze Age (1100 BC-500 BC). **b)** Collected botanical samples from fields (cultivation layers, open triangles) and clearance cairns (filled circle) dated to Late Bronze Age (1100 BC-500 BC).

mostly found in the northern part of Jæren, close to urban areas.

Fields are distributed in the same areas as the houses (Fig. 7b), but have been detected at only some of the sites. Generally both pollen and plant macrofossils are sampled from each field. Investigated clearance cairns are concentrated to the southern part of Jæren, in Time and Hå municipality (Fig. 7b).

Hordaland, Sogn og Fjordane and Sunnmøre

In Hordaland, Sogn og Fjordane and Sunnmøre, the majority of palaeobotanical samples collected from house sites (32) belong to the EIA (Fig. 7a). Similarly, the majority of sites with cultivation layers (96) can be attributed to this phase (Fig. 7b). On many of the sites, multiple fields have been sampled, giving a more extensive sampling than the figures would otherwise indicate. In a few cases only pollen samples have been taken, but then supported by samples for radiocarbon dating.

Both houses and cultivation layers are documented by samples from the coast to the fjord region of Sunnmøre, whereas samples from the inland and fjord region dominate in Sogn og Fjordane and Hordaland. As in previous time periods, several samples come from the concentration of excavated sites in Sogndal in Sogn og Fjordane, the Nordfjord area (Eid and Gloppen), and from Herøy on the coast of Sunnmøre (Table 1).

Late Iron Age (AD 550 – AD 1030/50)

Rogaland

In Rogaland, plant macrofossil samples from this period have been taken from 50 houses distributed across 14 separate sites (Fig. 8a). Some of these sites show a continuity from the EIA to the LIA, i.e. at Skeie in Hundvåg, at Forsandmoen, at Gausel and Øvre Tasta in Stavanger and at Sørbø-Hove in Sandnes (Table 1). The number of buildings sampled per site varies. At some sites the number is around 4–6, while at Sørbø-Hove the number was increased to 14 buildings. They are mainly concentrated in the northern part of Jæren. A couple of sites, Marvikstykket in Sand and Førresbotn in Tysvær, are placed along maritime lines of communication north and northeast in the Boknafjord basin. No plant macrofossil samples from stonewalled houses are available for this period.

Botanical material (whether plant macrofossil samples, pollen samples or both) from fields related to the LIA has been sampled at seven sites (Fig. 8b). These sites are found throughout the region. Their find distribution seems to be more random and their distribution shows no trends. In 2001–2002, the Kvåle farm complex was studied in detail in order to reconstruct settlement, agriculture and land-use practises. During this investigation, several fields and lynchets were investigated. In total, seven fields or lynchets belonging to this time interval were recorded at Kvåle.

Hordaland, Sogn og Fjordane and Sunnmøre

The number of LIA sites with houses and cultivation layers sampled for plant macrofossil and/or pollen analysis is low compared to that of the Early Iron Age (Table 1, Figs. 8a and 8b). In Sunnmøre, only five sites with cultivated fields have been sampled, whereas house remains from three sites and cultivated fields from 14 sites have been sampled in Hordaland. In Sogn og Fjordane the data set is larger, and plant macrofossil samples exist from houses at 12 sites. Botanical samples from cultivated fields have been collected at 26 sites. The sites are spread east – west and north – south. Along the Sognefjord, sites are found from Gulen on the western coast to Lærdalen in the eastern fjord district, reflecting all climate regions.

SPATIAL DIFFERENCES IN NATURAL BOUNDARIES

The type of agriculture possible in a given area, as well as the visibility of cultural features in the landscape, are dictated by nature. The topography and climate as well as Quaternary deposits presented different challenges for agriculture within the study area. Climate has changed throughout the Holocene, with fluctuations both in precipitation and temperature, but with generally higher temperatures than today in the time period covered by this study, 2200 cal BC to AD 1030/50 (Nesje et al. 2005). Climate fluctuations influence where different crop species could have been cultivated and consequently where clusters of agrarian settlements are found. Today, the length of the growing season decreases northwards and eastwards (Moen 1999:Fig. 6), a pattern which likely applied in prehistory as well. The soil resources in Rogaland differs from those further north, as exemplified by the higher amount of Quaternary deposits (Fig. 1).

Late Neolithic two-aisled houses, and three-aisled houses of all periods, are connected to good soil/superficial deposits along the coast and on terraces along the fjords (Figs. 5a, 6a, 7a and 8a). In Rogaland, houses are found in regions with the strongest oceanic climate (O3 and O2), whereas further north they may also be found in areas of only slightly oceanic climate (O1, OC).

DIFFERENCES IN COLLECTION STRATEGIES BETWEEN THE TWO UNIVERSITY MUSEUMS

For both University Museums, the increased amount of botanical data from agrarian contexts since the 1990s can primarily be attributed to the introduction of top-soil stripping (Løken et al. 1996; Diinhoff 2012) where archaeological monuments not visible on the surface have been released for development. An additional factor is an increased number of excavations in centrally located areas with access to good topsoil. This is especially observed in expanding regions close to towns, due to house construction, road building and industrial development of areas formerly dedicated to agriculture. The sampling strategy and organization of the University Museums also play a significant role.

At UiS/AM, natural scientists have been members of the Ancient Heritage Committee in Rogaland since 1975, and have played a role in the planning of new development projects. Today natural scientists have an even more central role in the committee and comprise nearly half the staff. This has led to a focus on the sampling of natural scientific material. The situation in Rogaland stands in stark contrast to that which exists at UiB, where only archaeologists are members of the Ancient Heritage Committee and thus natural scientists have no formal input in the start of the planning process of new projects.

An additional factor which may influence collection strategies is distance. In Rogaland most archaeological sites are only a short distance from the museum in Stavanger. This is not the case in northern counties, where it can be both difficult and expensive to carry out one day fieldwork or *ad hoc* trips as one gets further away from the museum in Bergen.

Houses: An obvious difference between the University Museums is the higher number of houses sampled by Stavanger than by Bergen, as well as the higher number of samples from each house (not shown in Table 1). It must be highlighted that the data from Bergen is underrepresented in this paper. Without a specific budget for botany in the projects in question, collected samples have in some cases not been communicated to the botanists, and as a result are not included in the botanical data-bases. This will, however, not change the main pattern given by our study. There has traditionally been a higher focus on plant macrofossils in Stavanger, compared

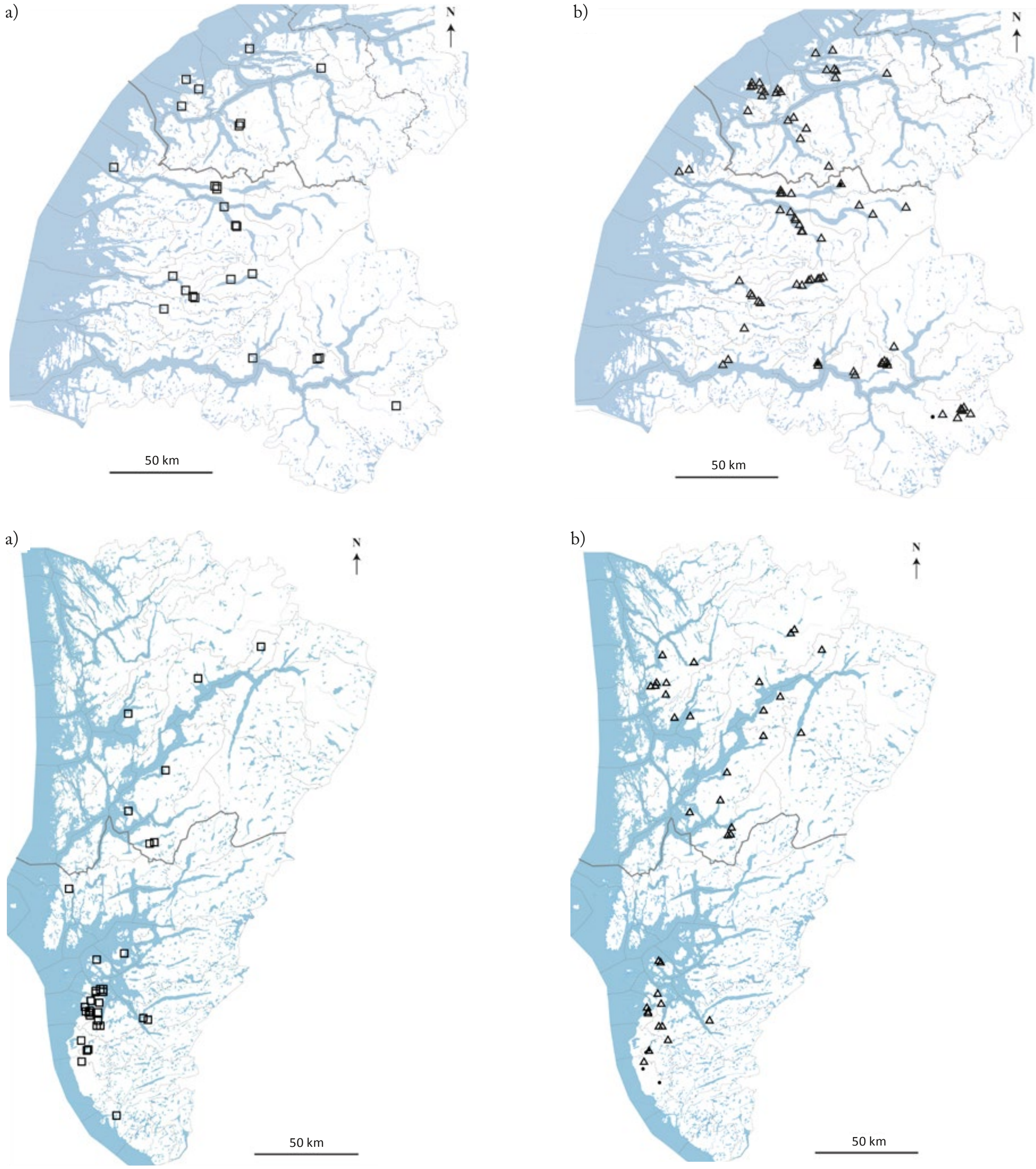

Figure 7. a) Collected botanical samples from house remains dated to Early Iron Age (500 BC – AD 550). **b)** Collected botanical samples from fields (cultivation layers, open triangles) and clearance cairns (filled circles) dated to Early Iron Age (500 BC – AD 550).

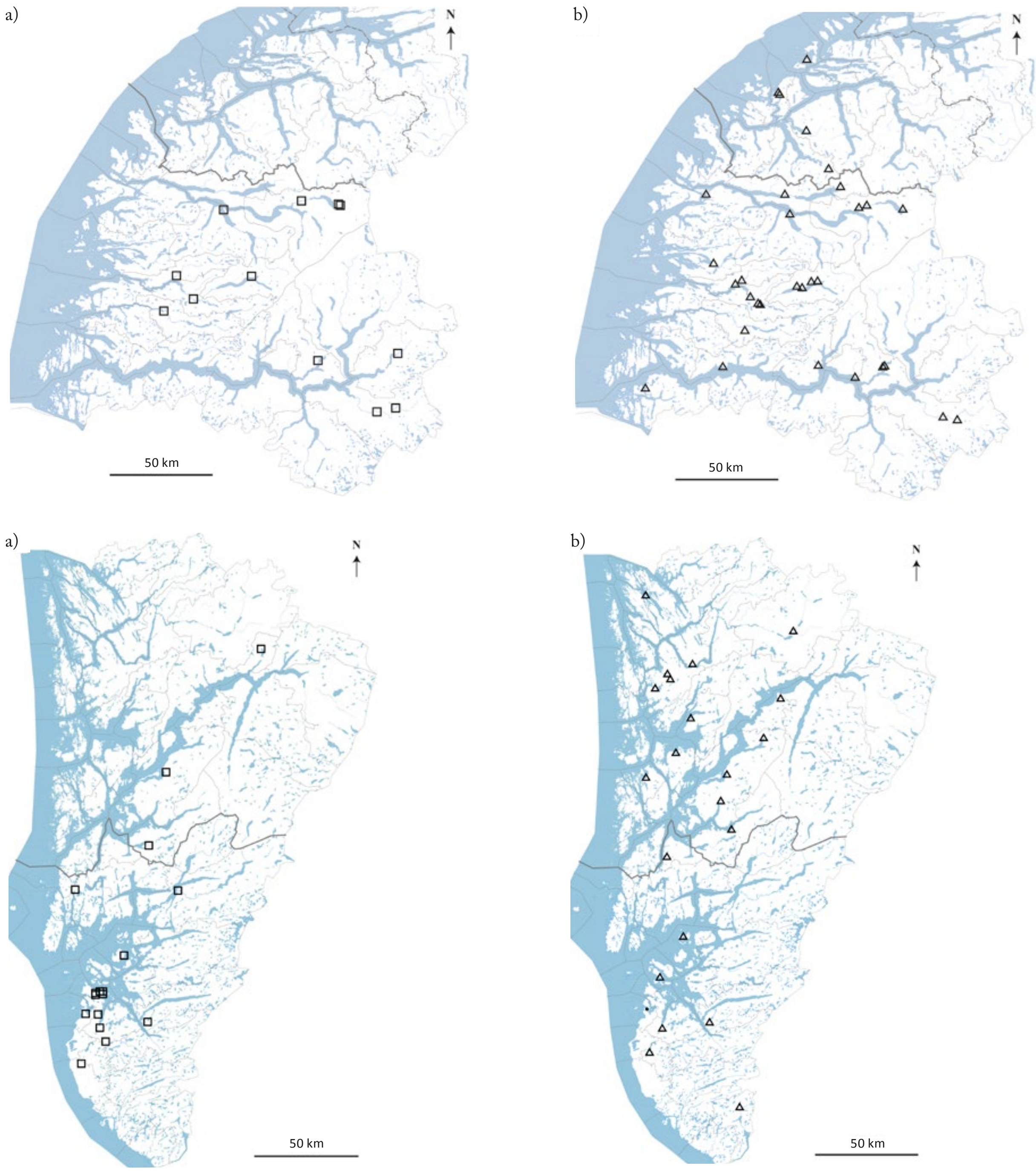

Figure 8. a) Collected botanical samples from house remains dated to Late Iron Age (AD 550 – AD 1030/50), **b)** Collected botanical samples from fields (cultivation layers, open triangles) and clearance cairns (filled circles) dated to Late Iron Age (AD 550 – AD 1030/50).

to the preference for pollen in Bergen. This can again be attributed to the different competences present at the institutions in the early 1990s.

In Bergen, all plant macrofossil remain fractions have been stored, whereas Stavanger stored only the large fraction (> 2 mm) until around 1989. This limits the potential of interpreting and comparing land-use practices, functions of houses etc. on samples sieved before 1990. At both institutions we have been facing a long process of development of sampling strategies and competence within palaeobotanical methodology and there is today no reason not to change towards a common strategy for the institutions.

Fields: There is a marked difference in topography from the flat low-lying Jæren in Rogaland to the spatially more limited areas of flat land and terraces suitable for cultivation along the fjords in Hordaland, Sogn og Fjordane and Sunnmøre. Continuous cultivation has, over time, resulted in the accumulation of ancient field layers. Due to steep terrain and heavy precipitation erosion often occur in the fjord areas of the northernmost counties. At several sites, especially along the Sognefjord, field layers have also been sealed by mass-movement deposits resulting in the isolation of cultivation phases. Thick layers are also found in flat areas by the coast, e.g. at Sunnmøre, reflecting different processes in building up these layers. Sampling from prehistoric cultivation layers have been more frequently carried out in the Bergen region than in Stavanger. However, intentional sampling from field layers has been practiced in Rogaland since 1980s (i.e. Line in Time from 1983), thus it appears that the differences in the number of sampled sites may reflect differential distribution of cultivated fields.

Clearance cairns: Visible fields of clearance cairns/ and or cairns are characteristic elements in the landscape of Rogaland. Cairns have therefore been a focus of investigation of past agricultural practices (Prøsch-Danielsen 1999). Early sampling in Rogaland included only pollen samples, with limited possibilities for radiocarbon dating. The value of these samples for further studies is therefore limited. The lack of cairn fields further north is partly due to the limited distribution of unsorted morainic material (Fig. 1). Scattered cairns are found at excavations (Table 1) and clearance cairn fields do exist (Holm 2007; Overland and Hjelle 2007), but the focus on these has naturally been rather limited at the museum in Bergen.

POTENTIAL OF OUR DATA AND RECOMMENDATIONS

The overview shows that there is a large research potential in the palaeobotanical data. Different contexts and proxies (plant macrofossil remains or pollen) may be investigated on different spatial scales from a local site to gradients north-south and east-west along the coast of western Norway (see i.e. Prøsch-Danielsen and Soltvedt 2011; Hjelle et al. 2013). The fact that many plant species have their northern limit in Norway, emphasize the value of this material. The compilation of data from two of the University Museum districts opens the possibility for future comparative studies between larger regions with longer geographic, climatic and topographic gradients.

Archaeological priorities fluctuate. Over the course of the second half of the 20th century and into the new millennium, periods emphasizing the importance of natural sciences (e.g. the 1970s) have alternated with periods focusing on theoretical perspectives. The data show that there is a need for systematic sampling to protect data which will be otherwise lost, irrespective of the theoretical perspective of the time. In archaeology, one continues to excavate so as not to lose data which may provide knowledge of the past. The same must be the case for botanical samples from archaeological contexts.

New methods have developed, such as analysis of phytoliths, isotopes, and ancient DNA, as well as micromorphology and geochemistry, which have the potential to contribute to research questions in the future and some of these can exploit archived botanical data. The availability of samples is therefore important. However, some of these methods are inherently destructive, and the material undergoing analysis will not be available for future research, thus the "old" methods — plant macrofossil and pollen analysis — should remain important parts of palaeobotanical studies. A long history of development (e.g. improved microscopes which increase the taxonomic resolution of pollen and plant macrofossil remains, increased knowledge of non-pollen palynomorphs in pollen samples, taphonomic processes in soil as well as new knowledge on pollen productivity and dispersal characteristics) has led to an increase in the potential of these methods. Developments in quantitative methods have further increased the potential of these proxy data, by enabling the analysis of much larger data sets (e.g. Prøsch-Danielsen and Simonsen 1998; Simonsen and Prøsch-Danielsen 2005; Hjelle et al. 2013), and increasing our understanding of land use practices in the past (e.g. Hjelle 1999a; 2005a).

With improved methods and an increased amount of data, it is inevitable that research questions will continue to evolve, in turn demanding even larger amounts of high quality data. It is thus essential that the botanical data is evaluated in line with archaeological data and that the University Museums take the responsibility to continue sampling – otherwise a priceless source will be lost. Botanical and archaeological data should thus be given the same weight and attention. By having comparable data the projects may be seen as part of larger research programs, instead of individual projects.

In sampling from archaeological contexts, collaboration between archaeologists and palaeobotanists is important. Samples for plant macrofossil analysis may well be sampled by archaeologists, whereas owing to the risk of contamination, pollen samples should be sampled by those trained in palynology.

Plant macrofossil remains such as cereals and seeds of weeds or other herbs have increasingly been used for radiocarbon dating. Seeds and plant remains deposited in archaeological house structures are supposed to reflect the time of occupation (i.e. Engelmark 1985; Viklund 1998; Ranheden 1996; Engelmark et al. 1997; Gustafson 2005; Prøsch-Danielsen and Soltvedt 2011), and the dating of plant macrofossils has even made it possible to detect several activity phases within a house (Table 1). The advantage of these is that they represent one season, narrowing the actual time interval. However, one must keep in mind that available calibration curves are based on decadal data. The potential of contamination (e.g. through bioturbation) must also be considered. Experience from excavations also report that postholes are reused (e.g. Børsheim and Soltvedt 2002; Gjerpe 2008). Independent of dating a house – finds of cereals and weeds can be used to date agricultural activity at the site.

There is little consistency in the number of postholes sampled when excavating house structures. To be able to interpret different functions within a house, a full scale analysis of all postholes is optimal. Alternatively sampling of all postholes along the long axis of a house may be sufficient (Viklund 1998) and is recommended when full scale sampling is not possible.

Plant macrofossil remains and pollen from cereals and weeds can provide information on cultivated species and land-use practices, e.g. cutting straw at the top or the bottom, fertilization of fields, soil quality, cultivation in a rotation system or permanent cultivation. Pollen samples from fields provide information about the vegetation at the site and in the area surrounding the fields and may contribute to identification of, for example, grazed and mowed grasslands (Hjelle 1999a, 2005a).

A combination of botanical sampling, stratigraphic investigation, and identifying the extent of cultivation layers is needed in order to obtain a full understanding of the land-use practices that took place at a site. Through this, botanical data may contribute to archaeological questions such as technological improvements, land-use practices and house function, and may indirectly inform on animal husbandry through the presence of grazed or mowed communities as well as stalling. This represents the primary means for building an understanding of the development of cultivation. The focus of the present paper is samples taken from agrarian contexts within archaeological sites, but pollen analysis of lakes and bogs are also important for understanding these data in the context of the larger landscape. Moreover, compilation of the different data-sets allows for quantitative reconstructions of landscapes on different spatial scales (e.g. Mehl and Hjelle 2016).

Based on our review, we observe significant differences between the geographical areas and time periods represented in available samples. It may be that these are an accurate reflection of prehistoric agricultural practices, but it also indicates that sampling from houses should have high priority in Hordaland, Sogn og Fjordane and Sunnmøre, whereas the Late Bronze Age should have priority in Rogaland compared to other time periods. Both museum districts seem to have had a higher focus on the periods earlier than the Late Iron Age, limiting the potential for new research into the Late Iron Age using the existing data. Plant macrofossil samples have been taken from nearly all two-aisled houses in Rogaland and altogether around 50 houses from the LN/EBA have been sampled. With samples from only three house remains in Hordaland, eleven in Sogn og Fjordane and six from Sunnmøre, comparisons between geographical regions may be difficult. It is therefore important in the future to collect samples from all archaeological house contexts. On the other hand, cultivated fields are intensively sampled in Hordaland, Sogn og Fjordane and Sunnmøre, and less thoroughly sampled in Rogaland. House structures are often not found in the northern counties, probably due to the size of the investigated area. When large areas are excavated, there is a strong relation between fields and houses. With this in mind some of the differences in data from agrarian settlement contexts between the regions decrease.

In line with the development of strategic management plans for different archaeological time periods at the University Museums (incl. Oslo, Trondheim and Tromsø), a plan for botanical sampling should also be developed. We have not included zoological/osteological data in the present overview, but these too need to be included in future management plans. In this, principles for the budgeting and recommendations for standardized sampling strategies should be given, e.g. the size of the samples and sampling within clear, preferably sealed stratigraphical units. This work is in progress both in Bergen and Stavanger. Another important aspect for the future will be to integrate the palaeobotanical databases into MUSIT (the IT-infrastructure of the University Museums), providing a great tool for connecting archaeological and palaeobotanical data.

The University Museums experience an increased interest, both nationally and internationally in objects in their collections for use in research projects. At UiB/UM, the large osteological collections are widely used and in recent times several inquiries have also been received at UiS/AM. There is no reason to believe that the development will be different within botany. Clear policies for destructive analysis on the stored collections are therefore needed. The palaeobotanical data from archaeological contexts are unique data that inform on plants growing in Norway and on the lives of people in the past. They generate potential research projects both within botany and across disciplines, between institutions, between local and international scholars, and by both experienced researchers and university students. Continued sampling is therefore extremely important.

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Table 1. Sites with collected palaeobotanical samples stored in the University Museums at UiB and UiS according to county and municipality. Botanical macrofossil remains are labelled M, while pollen samples are labelled P. Some house structures are dated typologically (marked x in Rogaland) and some are undated. Some houses with different phases might be defined as separate houses at some localities, some as one house with several phases. The number of sampled contexts (houses, fields) is given from UiS/AM, whereas the presence of samples (marked with 'x') is given from UiB/UM. The data are separated into four periods: Late Neolithic/Early Bronze Age (2200 – 1100 BC), Late Bronze Age (1100 – 500 BC), Early Iron Age (500 BC – AD 550), Late Iron Age (AD 550 – 1030/1050). Material given dates covering two time periods are placed in the most probable time period.

Site no	Municipality no	Municipality	Site	Farm no	Excavated year	LN/EBA	LN/EBA	LN/EBA	LN/EBA	LN/EBA	LBA	LBA	LBA	LBA	LBA	EIA	EIA	EIA	EIA	EIA	LIA	LIA	LIA	LIA	LIA	UNDAT	UNDAT	UNDAT	UNDAT	UNDAT	References
						Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	
Sunnmøre																															
S1	1534	Haram	Søvik	175	2009	x		x					x					x										x			Halvorsen 2010b; Åstveit and Zinsli 2011
S2	1532	Giske	Gjøsundneset	7	2006						x					x		x										x			Lotsberg and Halvorsen 2010; Slinning 2008
S3	1532	Giske	Giske	127/2,23	2011																	x	x				x	x			Hatling 2012; Halvorsen and Hjelle 2011
S4	1531	Sula	Solevågseidet	61	1994								x					x													Torske 1995
S5	1523	Ørskog	Lånemarka, Sjøholt	97	2000, 2001	x					x					x		x										x			Hjelle (manus); Johannessen 2002
S6	1520	Ørsta	Mo	18	1999											x															Diinhoff 2002; Hjelle 2002
S7	1520	Ørsta	Håvoll	5/23,2	2004	x	x	x									x	x								x					Berge 2005a; Halvorsen 2005b
S8	1520	Ørsta	Ytre Steinnes	63/1	2007		x	x				x	x				x	x									x	x			Halvorsen 2008b; Olsen 2008
S9	1520	Ørsta	Velle	15/14	2011											x	x	x				x	x								Halvorsen 2012c; Østebø 2012a
S10	1519	Volda	Hjellbakke og Nes	50/1,51/3	2008												x	x				x	x				x	x			Danielsen and Halvorsen 2009
S11	1519	Volda	Aurstad	43/2,44/1	2013		x	x				x	x				x	x													Overland and Halvorsen 2014

Site no	Municipality no	Municipality	Site	Farm no	Excavated year	LN/EBA	LN/EBA	LN/EBA	LN/EBA	LN/EBA	LBA	LBA	LBA	LBA	LBA	EIA	EIA	EIA	EIA	EIA	LIA	LIA	LIA	LIA	LIA	UNDAT	UNDAT	UNDAT	UNDAT	UNDAT	References
						Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	
S12	1516	Ulstein	Krusham-maren	97	2002	x						x	x				x	x								x	x	x			Halvorsen and Hjelle 2004; Johannessen 2004; Hjelle et al. 2010
S13	1516	Ulstein	Saunnes	25/5	2004-2005		x	x				x	x				x	x				x	x								Knutzen and Simpson 2005, 2006; Overland 2014h
S14	1516	Ulstein	Osnessanden	7/775	2006												x	x				x	x								Diinhoff et al. 2014
S15	1515	Herøy	Mjølsteinne-set, Espeset	22/1,24	1992																							x			Kvamme 1994; Narmo 1994
S16	1515	Herøy	Eggesbønes	38	2002								x																		Hjelle and Halvorsen 2014
S17	1515	Herøy	Hjelmeset lok 4	45	2001								x					x													Overland 2014a
S18	1515	Herøy	Nedre Berge	29	2009													x									x	x			Melle and Simpson 2005
S19	1515	Herøy	Mjølstadneset lok 1	175	2001			x					x					x													Overland 2014a
S20	1515	Herøy	Teige I	5/14,16	2009		x	x				x	x				x	x									x	x			Halvorsen 2010e; Zinsli and Olsen 2010
S21	1515	Herøy	Teige II	5/14,16	2012		x	x			x	x	x			x	x	x													Halvorsen 2013c; Aander-aa 2013
S22	1515	Herøy	Kvalsund	4/12; 192	2010			x										x										x			Zinsli and Olsen 2011a
S23	1515	Herøy	Myklebust	37/496	2013		x	x																			x	x			Overland 2014d
S24	1515	Herøy	Hjelmeset	31/189	2014											x										x					Overland 2015 (3)
S25	1515	Herøy	Sævik	11/6	2014							x	x				x	x									x	x			Dahlberg and Linge 2015; Helvik and Overland 2015
S26	1514	Sande	Ytre Hauge	12	2003	x						x	x			x	x	x													Halvorsen 2011b
S27	1501	Ålesund	Åse	50/17,35,85,183	1999			x										x										x			Hjelle 2002b; Diinhoff 2002b
S28	1501	Ålesund	Åse Vest	50/1	2002	x	x					x					x														Halvorsen and Hjelle 2006b; Olsen 2006
S29	1501	Ålesund	Ratvika	23	2002												x	x													Overland 2014f
Sogn og Fjordane																															
SF1	1448	Stryn	Hjelle	gbnr. 20/2	1994	x	x	x				x					x				x										Gundersen 1995; Soltvedt 1994
SF2	1448	Stryn	Hjelle	gbnr. 20/2	2002																x		x								Hjelle 2005c; Olsen 2005a
SF3	1448	Stryn	Kyrkjeeide	63/10	2005																x	x	x								Hjelle 2006c; Slinning 2006
SF4	1448	Stryn	Ytre Bø	59/1	2013		x	x				x	x				x	x				x	x								Aanderaa 2014a; Overland 2014e
SF5	1448	Stryn	Loen	70	2009							x	x				x	x									x	x			Halvorsen 2010f
SF6	1445	Gloppen	Eikenes	32/18	2000													x													Simpson 2004
SF7	1445	Gloppen	Hjelmeset og Sandane lufthavn	54/3	2007,2008		x	x			x	x	x			x	x	x			x	x	x						x		Halvorsen and Lotsberg 2009; Lotsberg 2009; Olsen 2010
SF8	1445	Gloppen	Vereide	59	1991-1993			x										x										x			Kvamme 1997
SF9	1445	Gloppen	Tystad	64/1	2009			x					x					x													Haugen and Diinhoff 2010b, Halvorsen 2010c
SF10	1445	Gloppen	Austrheim	69/5	2003		x	x				x	x				x	x													Halvorsen and Hjelle 2005; Olsen 2005b

Site no	Municipality no	Municipality	Site	Farm no	Excavated year	LN/EBA	LN/EBA	LN/EBA	LN/EBA	LN/EBA	LBA	LBA	LBA	LBA	LBA	EIA	EIA	EIA	EIA	EIA	LIA	LIA	LIA	LIA	LIA	UNDAT	UNDAT	UNDAT	UNDAT	UNDAT	References
						Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	
SF11	1445	Gloppen	Evebø	77/14,23	2000											x	x														Diinhoff 2006a
SF12	1445	Gloppen	Eide	76,77	2000											x	x	x													Diinhoff 2006b
SF13	1445	Gloppen	Reed	100/3	2014		x	x									x	x													Overland 2016a
SF14	1444	Hornindal	Lødemel	181/4,9	2009		x	x									x	x	x	x		x	x				x	x			Halvorsen 2012a
SF15	1443	Eid	Indre Skårhaug	42/1	2010, 2011		x	x				x	x				x	x													Halvorsen 2011a; Hatling and Olsen 2011
SF16	1443	Eid	Skaffarmarka, Lunden	44/4,330,530	2010											x		x													Zinsli and Diinhoff 2011
SF17	1443	Eid	Myklebust	44/31	1993											x															Olsen 1993; Soltvedt 1993
SF18	1443	Eid	Golvsengene	66	2007	x					x	x	x			x	x	x				x	x			x	x	x			Halvorsen 2009c
SF19	1443	Eid	Hjelle (Klokkar-garden - Hjelle)	52/7,4	2012		x	x				x	x				x	x									x	x			Halvorsen 2013a
SF20	1443	Eid	Hjelle	52/6,8	2004	x		x																							Halvorsen 2005c; Slinning 2005b
SF21	1443	Eid	Indre Henne	147/1	2003	x	x	x				x	x																		Hjelle and Halvorsen 2007; Olsen 2012
SF22	1439	Vågsøy	Amon-damarka	117	2011								x					x										x			Flogenfeldt and Diinhoff 2012; Halvorsen 2012e
SF23	1439	Vågsøy	Våge	136/6	2013											x		x													Diinhoff 2014; Halvorsen 2014
SF24	1438	Bremanger	Kolset	86/1	2009							x	x									x	x				x	x			Halvorsen and Overland 2010
SF25	1433	Naustdal	Engebø	31/1,2,3	1991	x	x	x			x																x	x			Hjelle 1992: Johnson 1992
SF26	1433	Naustdal	Sæla	96/2,4	2007	x		x														x	x				x	x			Halvorsen 2008d; Olsen and Tellefsen 2008
SF27	1433	Naustdal	Mallasvika	96/6	2009							x	x				x	x									x	x			Halvorsen 2010g; Zinsli 2010
SF28	1433	Naustdal	Gardsbøen	99/1	2006											x															Halvorsen 2007c: Johan-nessen 2010
SF29	1433	Naustdal	Løken	99/36	2007																x	x	x								Halvorsen 2008c; Olsen and Tellefsen 2009
SF30	1432	Førde	Hornesvika	gbnr. 20/2	2005												x	x				x	x								Berge 2006a; Hjelle 2006b
SF31	1432	Førde	Hornnes	gbnr. 20/7	1996	x	x	x			x	x	x			x	x	x													Diinhoff 1997; Kaland 1996
SF32	1432	Førde	Vie	43/7,8,18,..	2013		x	x			x	x	x			x	x	x			x	x	x				x	x			Aanderaa 2014c; Overland 2014b
SF33	1432	Førde	Sunde	58/2	2008											x	x	x				x	x				x	x			Halvorsen 2009a; Tellefsen 2009
SF34	1431	Jølster	Hegrenes, Ålhus	73/2	2009											x	x	x				x	x								Haugen and Diinhoff 2010a; Halvorsen 2010d
SF35	1431	Jølster	Bjørset	74/3	2014		x	x				x	x				x	x				x	x				x	x			Overland 2016b
SF36	1431	Jølster	Ytre Årdal	3/2,5	2014												x	x									x	x			Overland 2016b
SF37	1431	Jølster	Indre Årdal	4/1,3,6	2014												x	x				x	x				x	x			Overland 2016b
SF38	1431	Jølster	Helgheim	gbnr. 6/4	2014		x	x				x	x																		Overland 2016b
SF39	1431	Jølster	Hus	7/1,2,3,4	2014	x	x	x				x	x			x	x	x			x	x	x								Overland 2016b

Site no	Municipality no	Municipality	Site	Farm no	Excavated year	LN/EBA	LN/EBA	LN/EBA	LN/EBA	LN/EBA	LBA	LBA	LBA	LBA	LBA	EIA	EIA	EIA	EIA	EIA	LIA	LIA	LIA	LIA	LIA	UNDAT	UNDAT	UNDAT	UNDAT	UNDAT	References
						Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	
SF40	1431	Jølster	Fyglastrand	gbnr. 8/1	2014		x	x				x	x				x	x													Overland 2016b
SF41	1431	Jølster	Haugen	9/1,15	2014		x	x				x	x				x	x									x	x			Overland 2016b
SF42	1430	Gaular	Osen gard	94/1	2001,2002											x					x										Diinhoff 2008
SF43	1430	Gaular	Birkeland, Sande	58/1	2012												x	x				x	x								Halvorsen and Overland 2013; Aanderaa and Olsen 2013
SF44	1426	Luster	Beheim	149/1,97	2012		x	x				x	x				x	x									x	x			Overland 2013a
SF45	1426	Luster	Solvorn	172	2009																						x	x			Halvorsen 2010h
SF46	1424	Årdal	Ytre Moa	9	2002																x										Hansen et al. 2003
SF47	1422	Lærdal	Rikheim	8	2002														x												Holm 2007; Overland and Hjelle 2007
SF48	1422	Lærdal	Bjørkum	gbnr. 3/2	2009							x	x				x	x			x	x	x			x	x	x			Halvorsen 2012b
SF49	1422	Lærdal	Fremre Øygarden	49/2	2000	x	x	x			x																x	x			Diinhoff 2007b; Hjelle and Overland 2008
SF50	1422	Lærdal	Kyrkjevoll	56/1	2005		x	x				x	x				x	x				x	x								Berge 2006b; Hjelle 2006a
SF51	1422	Lærdal	Berge	64/1	2005						x					x	x	x								x	x	x			Halvorsen 2007a; Knagenhjelm 2008
SF52	1422	Lærdal	Russland	62/2	2004-2005												x	x									x	x			Halvorsen 2007a; Knagenhjelm 2008
SF53	1422	Lærdal	Nygård	61/3	2005							x	x				x	x			x										Halvorsen 2007a; Knagenhjelm 2008
SF54	1422	Lærdal	Eråker	77/4	2004												x	x									x	x			Halvorsen 2007a; Knagenhjelm 2008
SF55	1420	Sogndal	Gurvin	gbnr. 25/2	2007							x	x				x	x									x	x			Halvorsen 2009b
SF56	1420	Sogndal	Bondevik	23/14	2007	x	x	x																			x	x			Halvorsen 2009b
SF57	1420	Sogndal	Kvålslid	23	1999			x					x					x													Hjelle 1999b; Hjelle 2005a
SF58	1420	Sogndal	Kvålslid Aust	23/4, 5	2004			x																			x	x			Hjelle 2005b; Slinning 2005a
SF59	1420	Sogndal	Kvåle	23	2003		x	x				x	x				x	x				x	x				x	x			Diinhoff 2005; Diinhoff and Hjelle in prep.
SF60	1420	Sogndal	Fosshagen	gbnr. 19/1	2013											x	x	x			x		x								Halvorsen and Overland 2014
SF61	1420	Sogndal	Rutlin	gbnr. 22/4	1997,1998		x	x			x	x	x			x	x	x	x	x							x	x			Diinhoff 2003; Hjelle 2003, 2005a
SF62	1420	Sogndal	Nedrehagen	gbnr. 64/4	2006			x																				x			Halvorsen 2008a; Olsen 2007b
SF63	1419	Leikanger	Njøs	24/20	1999		x	x									x	x				x	x								Hjelle 2001, 2005a; Johannesen 2001
SF64	1419	Leikanger	Henjum	17	2001			x										x								x		x		x	Overland 2016c
SF65	1418	Balestrand	Fjørestad	gbnr. 8/1	2000													x										x			Diinhoff 2001
SF66	1418	Balestrand	Bala	gbnr. 10/36	2010						x	x	x			x	x	x	x	x		x	x								Hjelle 2011; Zinsli and Olsen 2011c
SF67	1416	Høyanger	Ekrene	62/3,4	2011	x																									Bjørkli et al. 2013
SF68	1416	Høyanger	Norevik	gbnr. 26/3	2006		x	x				x	x				x	x													Halvorsen 2006; Tellefsen 2007

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						Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	
SF69	1416	Høyanger	Torvund	101/1,4	2006							x	x	x	x		x	x				x	x								Halvorsen 2006; Tellefsen 2007
SF70	1411	Gulen	Mjåneset	gbnr. 15/9	2005																		x					x			Hjelle 2007a; Slinning 2007a
SF71	1401	Flora	Eikefjord	55/1,2	1998																		x								Diinhoff 2000; Hjelle 2000
					Hordaland																										
H1	1263	Lindås	Lurekalven	57	1975-1979																		x					x			Kvamme 1982
H2	1253	Osterøy	Havrå	68	1991, 1996													x					x					x			Hjelle 1999a; Øye et al. 2002
H3	1246	Fjell	Høybøen	26	1977																							x			Berge et al. 1978; Berge unpubl.
H4	1243	Os	Lurane	63/1	2012		x	x									x	x													Dahl and Ramstad 2013; Halvorsen 2013d
H5	1241	Fusa	Oppsal	34	2003											x	x	x				x	x			x	x	x			Halvorsen and Hjelle 2006a; Kristoffersen 2006
H6	1238	Kvam	Mikkjelsflaten	44/620	2002																						x	x			Overland and Halvorsen 2013
H7	1238	Kvam	Øvre Øystese	44/746	2013		x	x								x	x	x									x	x			Overland 2014c
H8	1235	Voss	Bavallsveien	54/1	2010		x	x				x	x				x	x									x	x			Halvorsen 2010i; Zinsli and Olsen 2011b
H9	1235	Voss	Gjerde	54	2012		x	x									x	x				x	x				x	x			Overland 2013b
H10	1234	Granvin	Seim	94/3, 95/1	2006	x	x	x				x	x			x	x	x			x					x	x	x			Halvorsen 2007b; Olsen 2007a
H11	1234	Granvin	Hollve	96/2	2012		x	x																			x	x			Halvorsen 2013f
H12	1231	Ullensvang	Segelgjerd	85/8	2000								x					x													Hjelle and Overland 2001
H13	1231	Ullensvang	Aga	64/3	2005			x																				x			Berge 2008
H14	1227	Jondal	Samland	5	2008												x	x				x	x				x	x			Mehl and Hjelle 2016
H15	1227	Jondal	Vik	31	2000													x										x			Randers and Hjelle in prep.
H16	1224	Kvinnherad	Flatebø	54/2	2005						x		x					x					x					x			Halvorsen and Hjelle 2007; Slinning 2007b
H17	1224	Kvinnherad	Jensajordet	82/5,183,202	2008	x	x	x			x	x	x			x	x	x			x	x	x				x	x			Halvorsen 2009d, unpubl.
H18	1224	Kvinnherad	Indre Matre	250	2003-2006													x					x					x			Hjelle 2007c; Zehetner 2007
H19	1224	Kvinnherad	Kvitevoll	198/1,2	2004	x	x	x				x	x			x	x	x								x	x	x			Engedal, Handeland, Kristoffersen 2006; Halvorsen 2007d
H20	1223	Tysnes	Nedre Gjerstad	95/57	2007			x															x								Danielsen 2008; Slinning and Simpson 2010
H21	1222	Fitjar	Fitjar innmark	65	1997																	x	x				x	x			Overland 1999; Overland and Hjelle 2009
H22	1211	Etne	Sævareid	117/5	1996								x					x										x			Hjelmtveit 1996; Hoftun 1996
H23	1211	Etne	Håland	52/4,53/4	1996								x					x					x								Hjelmtveit 1996; Hoftun 1996
H24	1211	Etne	Stordalstun-nelen	50/1	2012							x	x				x	x									x	x			Halvorsen and Helvik 2012a; Østebø 2012b
H25	1211	Etne	Etne sentrum	6/3	2013											x															Flognfeldt and Diinhoff 2014; Overland 2014g

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						Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	
H26	1211	Etne	Etnesjøen	9, 6	2013											x					x										Overland 2014i
H27	1211	Etne	Etne, Sørheims-moen	36/10	2001			x																							Overland and Hjelle 2001
H28	1201	Bergen	Vollane-Haugane	211, 216	2013												x	x													Aanderaa 2014b; Overland 2013c
H29	1201	Bergen	Årstadgeilen	163/103	2005																	x	x								Hjelle 2007b
H30	1201	Bergen	Indre Sædalen	7/2	2009																	x					x				Olsen and Olsen 2009
H31	1201	Bergen	Nattland	11/728	2009		x	x				x	x				x	x									x	x			Halvorsen 2010a
H32	1201	Bergen	Straume	21/4	2011-2012												x	x													Halvorsen 2012d; Melvær and Åstveit 2013
H33	1201	Bergen	Dolvik	34/2 mfl.	2004		x	x									x	x									x	x			Berge 2005b; Halvorsen 2005a
H34	1201	Bergen	Søreide	35,36,156,442	2012		x	x				x	x				x	x				x	x								Flognfeldt and Åstveit 2013; Halvorsen 2013b
H35	1201	Bergen	Hatlestad	82/21,225	2011		x	x				x	x				x	x									x	x			Halvorsen and Helvik 2012b
Rogaland																															
R1	1154	Vindafjord	Nedre Vik	331	2010																		1								Meling 2010
R2	1149	Karmøy	Avaldsnes	86	2011																										Not finished yet
R3	1149	Karmøy	Gunnarshaug (Torvastad)	143	2011																						3	3			Westling 2012a, 2012g
R4	1146	Tysvær	Odland	1	1998																						1	1	1	1	Journal nat.science UiS/AM
R5	1146	Tysvær	Førde	79	1978+2011																2									1	Westling 2012c; Bjørlo 2012
R6	1145	Bokn	Gunnarstad (Ulvågshau-gane)	24	1998																								3	3	UiS/AM Top. Arch.
R7	1145	Bokn	Sæbø (Føresvik)	9	2012																						1	1			Rogaland County Council
R8	1142	Rennesøy	Askje (Der Vest)	46	1981																		1							2	Journal nat.science UiS/AM
R9	1142	Rennesøy	Vaula	47	1985																									2	Høgestøl 1995
R10	1142	Rennesøy	Askje (Der Vest)	46	1989																									4	Høgestøl 1995
R11	1142	Rennesøy	Voll	4	1990	1																									Prøsch-Danielsen 1993; Soltvedt 2000
R12	1142	Rennesøy	Ertenstein	13	1990			1					1					1								x					Høgestøl 1995
R13	1142	Rennesøy	Sørbø	12	1990	1						1				2	1													1	Høgestøl 1995
R14	1142	Rennesøy	Austbø	22	1991					1																					Høgestøl 1995
R15	1141	Finnøy	Opsal (Storås-dalen/Fogn)	30	1977																							1			Journal nat.science UiS/AM
R16	1141	Finnøy	Østabø (Talgje)	43	1993	1																									Hemdorff 1993; Soltvedt 2000
R17	1141	Finnøy	Meling (Talgje)	42	1997																						2	2			UiS/AM Top. Arch. (Olsen 1997)

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						Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	
R18	1141	Finnøy	Hauskje, Haga (Judaberg/ Finnøy)	25,26	2011	1	1	1								1					1						1	1			Westling 2012b; Njøs Storvik 2012
R19	1141	Finnøy	Eik	67	2014		1	1				1	1									1	1								Jensen, Ahlqvist and Fredh 2015
R20	1134	Suldal	Vetrhus (Håvestølen)	57	1971																							1			Simonsen 1971
R21	1134	Suldal	Stråpa (Sandsa I)	31	1972																							1			Journal nat.science UiS/ AM
R22	1134	Suldal	Austarå (Øystøl, Ham-rabø)	52/2	1983																							1			Selsing et al. 1991
R23	1134	Suldal	Sand (Mar-vikstykket)	103	1999																4					2					UiS/AM Top. Arch. (Lia 2000)
R24	1134	Suldal	Kolbeinstveit	36	2002																					x					UiS/AM Top. Arch. (Meling 2002a)
R25	1133	Hjelmeland	Måland	133	1985																									4	Journal nat.science UiS/ AM
R26	1133	Hjelmeland	Nedre Hauga	30	1991																									3	Journal nat.science UiS/ AM
R27	1133	Hjelmeland	Øvre Hauge (Litlamo)	32	1998																								2	2	Journal nat.science UiS/ AM
R28	1133	Hjelmeland	Soppaland	138	2011																						1				Westling 2012d; Gil Bell 2012; Bjørdal 2007
R29	1133	Hjelmeland	Tjentland	137	2011																								1		Westling 2012d; Gil Bell 2012
R30	1130	Strand	Prestegarden (Løbrekk)	31	1986+87	2																					1	1	3	3	Løken 2009
R31	1129	Forsand	Forsand (For-sandmoen)	41	1979																							1			Journal nat.science UiS/ AM
R32	1129	Forsand	Forsand (For-sandmoen)	41	1983																							1			Hjelle 1984
R33	1129	Forsand	Berge (Laudal)	37	1990																					1					Journal nat.science UiS/ AM
R34	1129	Forsand	Berge	37	1994																					1					Journal nat.science UiS/ AM
R35	1129	Forsand	Forsand (For-sandmoen)	41	1995					1																					Prøsch-Danielsen 1996
R36	1129	Forsand	Levik	9	1997																								1	1	Journal nat.science UiS/ AM
R37	1129	Forsand	Løland	47	2007																					6					Gil Bell 2008
R38	1129	Forsand	Berge (Ber-gevik)	37	2013											1										6					Soltvedt in prep.
R39	1129	Forsand	Forsand (For-sandmoen)	41	1980-2007	3					1					32					4		1								Løken 1984, 1992; Løken et al 1996; Dahl 2008, 2009;Prøsch-Danielsen and Soltvedt 2011; Bakkevig 1991, 1992, 1995, 1998
R40	1129	Forsand	Forsand (For-sandmoen)	41	1985+86																							20			Prøsch-Danielsen 1988; Prøsch-Danielsen and Simonsen 1988
R41	1124	Sola	Litle Risa (Snøde)	8	1980																									2	Journal nat.science UiS/ AM
R42	1124	Sola	Byberg (By-bergsletten)	25	1983																									1	Journal nat.science UiS/ AM
R43	1124	Sola	Sømme	15	1985												1	1													Prøsch-Danielsen 1993
R44	1124	Sola	Røyneberg (Kidlings-berget)	35	1997	3					1																				UiS/AM Top. Arch. (IVAR); Hulth 1997a, 1997b

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						Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	
R45	1124	Sola	Skadberg (east)	32	1998																								2		Journal nat.science UiS/ AM
R46	1124	Sola	Utsola	16	2001																					x	x				Journal nat.science UiS/ AM; Tansøy 2001
R47	1124	Sola	Utsola	16	2007																					1	1				Rogaland County Council
R48	1124	Sola	Tjora (Baker-tomta)	10	2008	9	6	6			1	2	2			2	5	5								3	7	7			Fyllingen and Armstrong 2012a, 2012b; Soltvedt and Jensen 2011
R49	1124	Sola	Røyneberg (Forus)	35	2009											x										4					Berge 2009
R50	1124	Sola	Skadberg (II)	32	2010											7											2	2			Soltvedt 2011; Bjørlo 2011a
R51	1124	Sola	Myklebust	3	2010	6				1	1	2	2			5									1	4					Overland 2012; Sandvik in prep; Dahl 2014
R52	1124	Sola	Skadberg (II)	32	2011																						2	2			Overland and Westling 2012a; Soltvedt 2011
R53	1124	Sola	Sømme (IV)	15	2013	1					2					4					2					3	1	1			Meling and Bel Gill in prep.
R54	1124	Sola	Sømme (I)	15	2013																						2	2			Ahlqvist and Fredh in prep.
R55	1124	Sola	Sømme (II)	15	2014												1	1													Fredh and Westling in prep.
R56	1124	Sola	Sande (Ein-argården)	33	2014		1	1								1															Ahlqvist and Fredh 2015; Aanderaa 2015
R57	1124	Sola	Jåsund	1	2010-2011	1																				x	1	1			Soltvedt and Jensen 2012; Fyllingen 2012, 2015b.
R58	1122	Gjesdal	Ytre Lima	9	1968																									1	Prøsch-Danielsen 1999
R59	1122	Gjesdal	Dirdal	78	1986																								1	1	UiS/AM Top. Arch.
R60	1122	Gjesdal	Eidland (Langevatn)	2	1996																									3	UiS/AM Top. Arch. (IVAR)
R61	1121	Time	Sæland (Lyngaland)	43	1974																									1	Journal nat. science UiS/ AM
R62	1121	Time	Litle Oma	12	1979																							1		3	Journal nat. science UiS/ AM
R63	1121	Time	Line	5	1983			1																							Journal nat.science UiS/ AM
R64	1121	Time	Tegle	25	1986																									1	Journal nat.science UiS/ AM
R65	1121	Time	Søra-Kalberg	29	1996																									2	Journal nat.science UiS/ AM
R66	1121	Time	Mauland	63	2001																						1				Journal nat.science UiS/ AM
R67	1121	Time	Norheim (Kvåle)	19	2001	4			7	7		1	1			x	1	1	2	2		7	6				15	11	4	4	Soltvedt et al. 2007
R68	1121	Time	Frøyland (Stemmen)	28	2007	2																									Bjørdal 2009
R69	1121	Time	Serikstad	20	2007																								2	2	Berge 2008
R70	1121	Time	Håland (Hålands-marka)	4	2008				1	1									1	1									4		Dahl in prep.
R71	1121	Time	Håland (Re-Sverting-stad)	4	2012	x																									Kvæstad 2012b; Westling 2012h
R72	1121	Time	Norheim	19	1996-1998	x			4	3	x			2	1	x													2	2	Juhl 1999, 2002; Bade 1997
R73	1120	Klepp	Stangaland (Håbakken west)	6	1969																									1	Prøsch-Danielsen 1999

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						Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	
R74	1120	Klepp	Erga	30	1970																									1	Journal nat.science UiS/ AM
R75	1120	Klepp	Orstad	9	1978																									3	Journal nat.science UiS/ AM
R76	1120	Klepp	Gruda	3	1978																									3	Journal nat.science UiS/ AM
R77	1120	Klepp	Øvre Åse	36	1979																									1	Journal nat.science UiS/ AM
R78	1120	Klepp	Orstad (Håbakken)	9	1983					1																				2	UiS/AM Top. Arch. (Bysveen 1984)
R79	1120	Klepp	Orstad (Håbakken 13)	9	1986																									1	Journal nat.science UiS/ AM
R80	1120	Klepp	Øvra Øks-nevad	8	1996																								1	1	Journal nat.science UiS/ AM; Fyllingen 2008
R81	1120	Klepp	Orstad	9	1996				3	3																				x	Sageidet 2005a, 2005b, 2009
R82	1120	Klepp	Engelsvoll	10	2002																					x					Journal nat.science UiS/ AM
R83	1120	Klepp	Kleppe (Kleppe-varden)	1,6	2006						2					2												1	1	1	Dahl 2007; Bakkevig 2007a
R84	1120	Klepp	Kleppe (Kleppe-stemmen)	1	2007	2																									Berge 2007; Bakkevig 2008
R85	1120	Klepp	Nedre Øksnavad	7,1	2008																					2					Journal nat.science UiS/ AM
R86	1120	Klepp	Kleppe (kleppevarden west)	1	2013																										Ahlqvist and Fredh in prep
R87	1120	Klepp	Erga	30	2014																						1	1			Ahlqvist and Fredh in prep
R88	1119	Hå	Stavnheim	70	1970																									3	Journal nat.science UiS/ AM
R89	1119	Hå	Torland	24	1970																							1			Journal nat.science UiS/ AM
R90	1119	Hå	Høyland	5	1970																							1			Journal nat.science UiS/ AM
R91	1119	Hå	Vigrestad (Øygard)	77	1972																								1	1	Journal nat.science UiS/ AM
R92	1119	Hå	Nord-Hadland (Ødegård)	80	1972																									2	UiS/AM Top. Arch. (Danielsen 1984)
R93	1119	Hå	Nord-Hadland (Ødegård west)	80	1972																									1	UiS/AM Top. Arch. (Danielsen 1984)
R94	1119	Hå	Stavnheim	70	1970-1978																									6	Journal nat.science UiS/ AM
R95	1119	Hå	Bø	26	1979																									1	Journal nat.science UiS/ AM
R96	1119	Hå	Odland	57	1980																									1	Journal nat.science UiS/ AM
R97	1119	Hå	Voll	76	1981																									1	Journal nat.science UiS/ AM
R98	1119	Hå	Høyland	5	1981																									2	Journal nat.science UiS/ AM
R99	1119	Hå	Stavnheim	70	1981																							1			Journal nat.science UiS/ AM
R100	1119	Hå	Høyland	5	1981-1982																									3	Journal nat.science UiS/ AM

Site no	Municipality no	Municipality	Site	Farm no	Excavated year	LN/EBA	LN/EBA	LN/EBA	LN/EBA	LN/EBA	LBA	LBA	LBA	LBA	LBA	EIA	EIA	EIA	EIA	EIA	LIA	LIA	LIA	LIA	LIA	UNDAT	UNDAT	UNDAT	UNDAT	UNDAT	References
						Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	
R101	1119	Hå	Nord-Hadland/ Rugland (Krånå)	81,82	1983																									4	Journal nat.science UiS/ AM
R102	1119	Hå	Skretting	59	1983																									1	Journal nat.science UiS/ AM
R103	1119	Hå	Bø (Dalabekken9	26	1985																							1			Journal nat.science UiS/ AM
R104	1119	Hå	Bø	26	1995	x																				x	x	x			UiS/AM Top. Arch. (Soltvedt in prep.)
R105	1119	Hå	Auda-Motland	18	1996																							1			UiS/AM Top. Arch. (Lillehammer 1996, 2004)
R106	1119	Hå	Kvia	19	1996														1	1								1			Prøsch-Danielsen 2001
R107	1119	Hå	Ånestad	45	2007																								1		Bjørdal 2006
R108	1119	Hå	Bjorhaug	25	2007																								1	1	Journal nat.science UiS/ AM
R109	1119	Hå	Aniksdal	83	2008									1	1				←1?	←1											Prøsch-Danielsen and Fyllingsnes 2013
R110	1119	Hå	Mæland	68	2010				1	1				1	1																Jensen and Soltvedt 2011; Kjeldsen 2011
R111	1119	Hå	Kvia, Motland	19,2	2011	1																					1	1			Westling and Overland 2012; Bjørlo 2011b
R112	1119	Hå	Sæland	63	2012									1	1→																Overland and Westtling 2012b
R113	1119	Hå	Søyland	3	2012																										Ahlqvist and Fredh 2014; Dahl 2015
R114	1119	Hå	Bjorhaug/ Bøhagen	25, 26	2013	1	1	1								2	1	1			1										Fredh and Westling 2014; Fyllingen 2015a
R115	1119	Hå	Tjemsland Nordre (Tjemslands-marka)	53	2013				2	2				1	1													1			Fredh and Soltvedt 2014; Bortheim and Dahl 2014
R116	1119	Hå	Kverme (om-kjøringsvei Brusand)	108	2013																						1	1			Rogaland County Council
R117	1119	Hå	Hobberstad (Graødaland-Brattland R44)	40	2013																						1	1			Westling and Fredh 2014
R118	1114	Bjerkreim	Lakssvela	61	1978																									3	Journal nat.science UiS/ AM
R119	1114	Bjerkreim	Sagland	3	1983																									6	Journal nat.science UiS/ AM
R120	1114	Bjerkreim	Store Byrkjeland	1	1997																									1	Journal nat.science UiS/ AM
R121	1114	Bjerkreim	Slettabø	60	1996																								4	2	Journal nat.science UiS/ AM
R122	1114	Bjerkreim	Gjedreim	30	1999																									1	Journal nat.science UiS/ AM
R123	1112	Lund	Steinberg	38	1980																		1							1	Journal nat.science UiS/ AM
R124	1106	Haugesund	Fedjedalen	3	2010											1															Bjørdal 2011b; Jensen 2011
R125	1103	Stavanger	Ullandhaug	24	1968											3		1													Simonsen 1968; Lundeberg 1972; Myhre 1980; Rindal 2011
R126	1103	Stavanger	Jåttå	16	1997	1																				1					UiS/AM Top. Arch. (IVAR), Hulth 1997a, 1997b; Soltvedt 2005
R127	1103	Stavanger	Gausel (south)	14	1997											5										2					Børsheim and Soltvedt 2002

Site no	Municipality no	Municipality	Site	Farm no	Excavated year	LN/EBA	LN/EBA	LN/EBA	LN/EBA	LN/EBA	LBA	LBA	LBA	LBA	LBA	EIA	EIA	EIA	EIA	EIA	LIA	LIA	LIA	LIA	LIA	UNDAT	UNDAT	UNDAT	UNDAT	UNDAT	References
						Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	
R128	1103	Stavanger	Gausel (north)	14	1999											8					4					1	3	3	3	3	Børsheim and Soltvedt 2002; Solem 2001
R129	1103	Stavanger	Austbø (Krosshaug-Loen, Hundvåg)	7/26, 1049	1999	2					1→					5										1					Tsigaridas 2000; Tsigaridas and Skjelstad 2001; Sandvik 2001; Griffin 1999
R130	1103	Stavanger	Husabø (Hundvåg)	6/4	2000																					3					Aakvik 2000, 2001
R131	1103	Stavanger	Austbø (Hundvåg)	7/1	2002											2															Hemdorff 2006
R132	1103	Stavanger	Revheim	39	2004											1										x	x				Bakkevig 2007b; Bertheussen 2008
R133	1103	Stavanger	Tasta Nedre	29	2005																						1				Rogaland County Council
R134	1103	Stavanger	Tasta Øvre	28	2006											4	1	1			6					x	1	1			Armstrong and Kjeldsen 2008; Soltvedt and Enevoll 2009
R135	1103	Stavanger	Jåttå	16	2007																								3	3	UiS/AM Top. Arch. (IVAR)
R136	1103	Stavanger	Tasta nedre	29	2010											4					1					5					Sandvik et al 2011, 2012; Bjørdal 2012
R137	1103	Stavanger	Lunde nordre (Austre Åmøy)	2	2010											1										x					Bjørdal 2011a
R138	1103	Stavanger	Lunde (Hundvåg)	4	2013	2										1					1										Pedersen 2013; Soltvedt 2014
R139	1103	Stavanger	Austbø (Hundvåg)	7	1987-1990	2					1										1					1					Gjerland 1989; UiS/AM Top. Arch (Sandvik 1999); Juhl 2001
R140	1103	Stavanger	Skeie (Hundvåg)	5	1997-1998	1					2					4					4										Skare 1998; Tsigaridas 1997a, 1997b,1998; Griffin and Sandvik 2000
R141	1103	Stavanger	Austbø (Hundvåg)	7/ 2	2000-2001											2											1				Meling 2006
R142	1102	Sandnes	Krågedal (Heiavodl)	18	1974																									1	Journal nat.science UiS/AM
R143	1102	Sandnes	Tjessem	27	1976																									2	Journal nat.science UiS/AM
R144	1102	Sandnes	Stokka (Stokkaheia)	67	1978																									1	Journal nat.science UiS/AM
R145	1102	Sandnes	Stokka	67	1978																									5	Journal nat.science UiS/AM
R146	1102	Sandnes	Hove	44	1978																									1	Journal nat.science UiS/AM
R147	1102	Sandnes	Bjelland	103	1980																									3	Journal nat.science UiS/AM
R148	1102	Sandnes	Hogstad	105	1980																									1	Journal nat.science UiS/AM
R149	1102	Sandnes	Lura (Ripsbærstraen)	69	1981																									7	Journal nat.science UiS/AM
R150	1102	Sandnes	Stokka	67	1983																									4	Journal nat.science UiS/AM
R151	1102	Sandnes	Lura (Rossaland)	69	1985																							2		1	Journal nat.science UiS/AM
R152	1102	Sandnes	Lura (Fridtun)	69	1986																								2	2	Journal nat.science UiS/AM
R153	1102	Sandnes	Sporaland	15	1988																									3	Journal nat.science UiS/AM
R154	1102	Sandnes	Soma	65	1996				5	4																					UiS/AM Top. Arch. (IVAR)
R155	1102	Sandnes	Skjæveland	52	1996				2	2				1	1														10	5	Gunnarsdottir 1997; UiS/AM Top. Arch. (IVAR)

Site no	Municipality no	Municipality	Site	Farm no	Excavated year	LN/EBA	LN/EBA	LN/EBA	LN/EBA	LN/EBA	LBA	LBA	LBA	LBA	LBA	EIA	EIA	EIA	EIA	EIA	LIA	LIA	LIA	LIA	LIA	UNDAT	UNDAT	UNDAT	UNDAT	UNDAT	References
						Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	Houses M	Fields M	Fields P	Clea. cairns M	Clear. cairns P	
R156	1102	Sandnes	Årsvoll	64	1996																									3	UiS/AM Top. Arch. (IVAR); Sageidet 1997
R157	1102	Sandnes	Sørbø (Sørbøtunet)	45	1998	1						1	1			3	1?	1?									1	1			Sandvik 1999a
R158	1102	Sandnes	Skeiane (Sandve)	40	1998	1					1					2	1									1					Pilskog 1998a, 1998b; Berntsen and Pilskog 1998; Sandvik 1999b
R159	1102	Sandnes	Figgve Rossåsen)	29	2002												1				x								1	1	Meling 2002b
R160	1102	Sandnes	Figgve	29	2003																						1	1			Meling, Sandvik and Nærøy 2004
R161	1102	Sandnes	Lura	69	2003											2										3	3	3			Berge 2004
R162	1102	Sandnes	Espeland (Vindheia)	26	2004				1	1																			3	3	UiS/AM Top. Arch.
R163	1102	Sandnes	Lunde	47	2004																					4					Hafsaas 2005
R164	1102	Sandnes	Vatne	37	2008		1	1	2	2																					Jensen et al. 2009
R165	1102	Sandnes	Sørbø	45	2009	x										1	1	1								1			1	1	Dugstad 2011; Soltvedt and Jensen 2010
R166	1102	Sandnes	Dale	95	2010																						x				Rogaland County Council
R167	1102	Sandnes	Hove, Sørbø	44/45	2011						4					26					14	1	1			8	1	1			Bjørdal 2014; Bjørdal, Jensen and Westling in prep.
R168	1102	Sandnes	Aase (I and II)	46	2012	x																									Kvæstad 2012a; Westling 2012e, 2012f; Overland and Westling 2012c
R169	1102	Sandnes	Vagle	51	2012																						2	2			Rogaland County Council, Journal nat. Science UiS/AM
R170	1101	Eigersund	Hafsøy (Høgevollen)	46	1995											6															UiS/AM Top. Arch. (Soltvedt)
R171	1101	Eigersund	Hellvik	60	2008	1																									Zinsli 2009; Sandvik and Jensen 2009

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