Madla Sør in Rogaland, Southwest Norway – a settlement with long continuity?

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Abstract

This article discusses the continuity/discontinuity in Iron Age settlements in Norway. The article presents finds and research at the site of Madla Sør in Stavanger, Rogaland county, Southwest Norway, and particularly the series of ^{14}C-datings from its features, and argues that they point towards a continuous occupation throughout the Iron Age. Traditionally such continuity has not been seen as likely in Norwegian settlements, but, as more and more sites with traces from both the Early and Late Iron Age have been excavated and studied, the likelihood of long continuity within a settlement starts to look stronger, especially in southwestern parts of the country. In many cases it is possible to observe continuity within and/or around a settlement, especially when larger areas have been excavated. The often subtle changes in the organisation of settlements and their placement in the landscape can reflect changes in society and landownership. Although such processes with respect to Iron Age settlements and societies are similar across large parts of Scandinavia, there are local variations in when and how they occur. Work at Madla Sør, with its comprehensive radiocarbon dating-series, amplified by other evidence from Rogaland county presented briefly in the article, contributes to the ongoing discussion of settlement continuity in Norway.

Keywords: Iron Age, settlements, house-sites, continuity, Rogaland

Introduction

In 2018, the Museum of Archaeology, University of Stavanger, excavated a settlement at the site of Madla Sør, Rogaland county, southwest Norway (fig. 1). Sixteen buildings and other settlement traces from the Bronze Age throughout the Iron Age and into the medieval period (c. 2000 BC–AD 1050) were excavated. With its possible continuity throughout the Iron Age the site differs from most Norwegian settlements, which are often in use either in Early or Late Iron Age and seldom in both. The radiocarbon dates from the site cover a long period, however: was it continuous occupation or were there different phases of abandonment and re-occupation? This will be studied based on the traces of buildings and their dates, and their spatial organisation at the site will be discussed.

Madla is located approximately 5 kilometres southwest of the city centre of Stavanger (fig. 1). The district of Madla forms a natural unit, both as a geographical area bounded by Hafrsfjord in the south and west, lakes Hålandsvatnet and Store Stokkavatnet to the north, and a river in the east, and as a historic administrative district. The district consists of four historic farms: Madla, Revheim, Nordre and Søre Sunde. The area has

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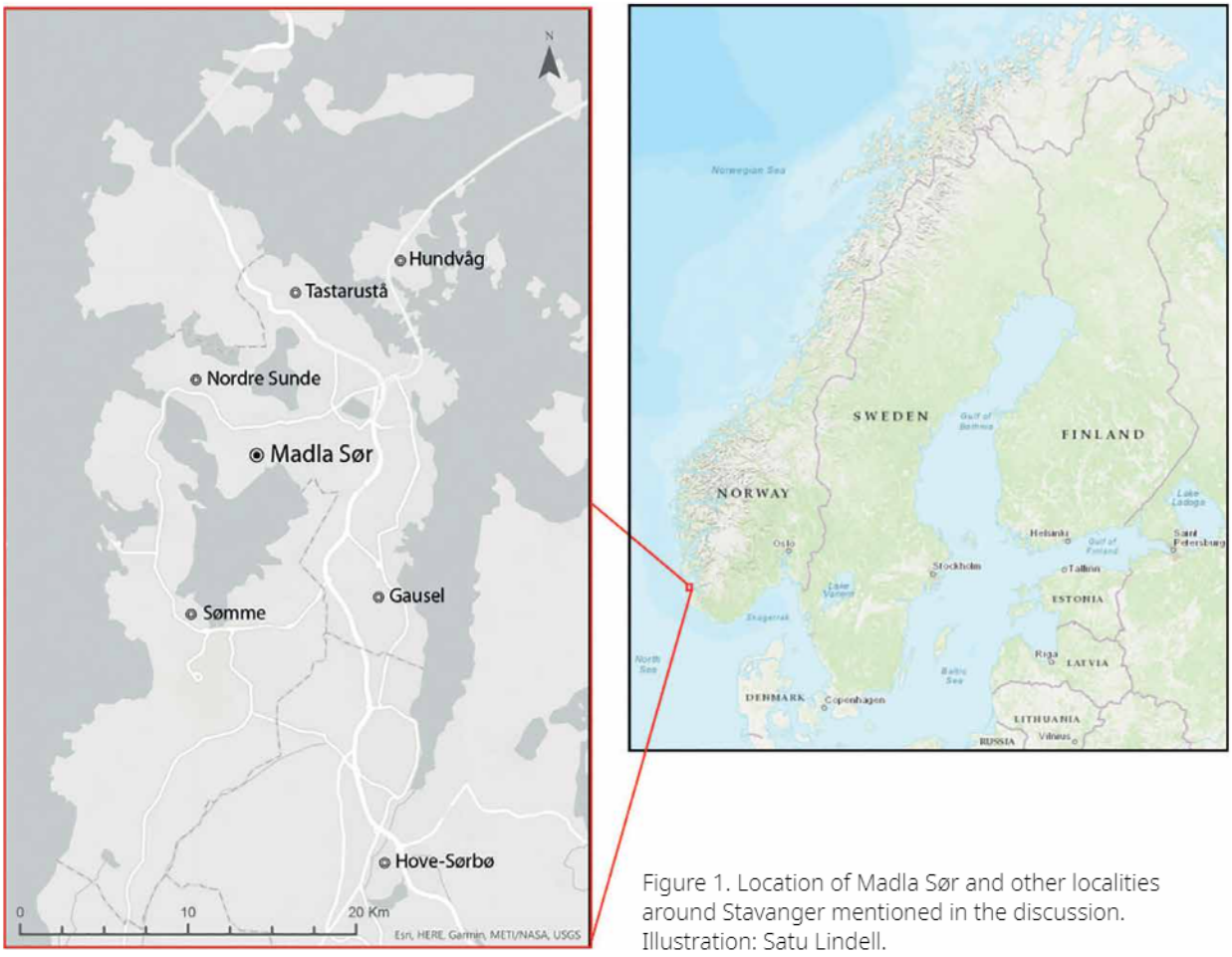


Figure 1. Location of Madla Sør and other localities around Stavanger mentioned in the discussion. Illustration: Satu Lindell.

good soil for cultivation (Soltvedt 2000; Høgestøl and Prøsch-Danielsen 2006) and historically rich farms, attested by extensive archaeological finds and sites from all time periods, and a small church in the medieval period (Lindanger 1983; Skadberg 1996). It is commonly seen in Norwegian archaeological material that even large settlements with continuity from the Late Neolithic/Early Bronze Age to the Early Iron Age are seemingly deserted in the end of Migration Period (c. 550 AD). Nonetheless, in Rogaland county and even in the district of Madla, there are other sites with signs of continuity from the Early (500 BC– AD 550) to Late (AD 550–1030) Iron Age. In the article, I will address the discussion of continuity or discontinuity of the site of Madla Sør related to other sites in southwestern Norway.

The research background: settlement continuity or discontinuity?

Continuity or not is a classic question in the research of settlement organisation in Norwegian archaeology. Continuity is often divided into different types, where *point continuity*, *place continuity* and *area continuity* are the most relevant for this study (Pilø 2005:7–8; Gjerpe 2017:130–151). Simplified, point continuity is used when buildings are repeatedly built on the same location, in place continuity when the buildings stay within the settlement but not in the same spot, while in area continuity a wider area is continuously in use, but the settlement/buildings move.

A common feature for the Late Neolithic, Bronze Age and Early Iron Age settlements in northwest Europe is a certain movement of the houses within a wider area. With intervals of one or two generations the houses were demolished, and new ones raised close by, often with the same infields. This phenomenon of "wandering settlements" seems to have been common in Norway until the Roman Iron Age, when complete settlements with all the main farm elements appear (Myhre 2004:45; but see also Meling this volume; Ødegaard et al. this volume). This type of settlement has area continuity due to its constant movement in the landscape. In Denmark the shift to more permanent settlements starts a bit earlier, in the Pre-Roman Iron Age. The change from the "wandering settlement" of the Bronze Age to (more) permanent settlement is thought to result from changes in landownership and inheritance, but also changes in cultivation methods and technologies (Webley 2008:40–44).

From the Roman Iron Age onwards settlements often had place continuity – in some cases also point continuity and they developed into farmyards with at least one multifunctional longhouse, and an infield-outfield system with fences (Myhre 2004:50–51). The restructuring of the agrarian landscape led to a new, more permanent settlement pattern with individual farms, multi-yard farms and possibly small villages developing. This change has often been explained with reference to population growth, but changes in the social and political organization of the society and developments in cultivation methods must also be considered (Myhre 2004:50–51).

The more permanent settlements of the Roman Iron Age/Migration Period seem to lose their point continuity in the mid-6th century when many of them were abandoned (see also Loftsgarden and Solheim this volume). Grave material and stray finds from both eastern and western Norway, indicate that the areas were inhabited in the Late Iron Age and early medieval period, nevertheless, relatively few buildings have been uncovered (Sørheim 2009:53–57; Gjerpe 2016:207). The reason for the "missing" Late Iron Age buildings and farms has caused debate, and explanations vary from the downturn from the AD 536 volcanic event, changes in building traditions and the fact that the buildings are located beneath the medieval and historic farms (e.g., Myhre 2004; Diinhoff 2009; Martens 2009; Sørheim 2009; Bjørdal 2016; Gjerpe 2016; Iversen 2016; Gundersen 2016; Rødsrud 2016; Løken 2020).

Until recently it has been almost an accepted truth that the Migration Period culture was considerably weakened after AD 550 by a general crisis leading to a near population-void in the Merovingian Period. With new excavations and research this hypothesis has been questioned, as more proof of continuity and even expansion of both settlements and agricultural activity form the 6th century to the Viking Age has been found (Myhre 2004:60–63).

Methods and sources

When evaluating the continuity/discontinuity of a settlement, it is quite natural to use a series of ^{14}C-datings from the archaeological features as the "backbone" of the study. Although widely used in archaeology, the ^{14}C-method has some challenges and limitations. One significant factor for errors is the "own age" of the sample material, mostly associated with long-lived species of trees, in which dates can be significantly older than the feature itself (Gjerpe 2008:85–94; Løken 2020:40). The ^{14}C-calibration curve also has flat plateaus, which may lead to inaccuracy (Gjerpe 2017:64; Ystgaard *et al.* 2019:28–30).

When it comes to dating archaeological features one of the main challenges is that charcoal can be redeposited in later structures. This problem is very clearly demonstrated in Madla Sør where two pieces of charred grain from the same posthole have been dated, one giving a result of 1700–1607 BC and the other AD 860–988 (see also Gustafson 2005:54–55; Diinhoff and Slinning 2013:65–75).

From Madla Sør we have calibrated 124 ^{14}C-dates using oxCal 4.4, with 2-sigma standard deviation (see tab. 1). The number of dates per house varies from 2 to 13; however, only 4 of the 12 buildings have less than 5 dates each. The longhouses 1, 2, 65 and 26 have 11–13 dates each and the rest 2–6 each. All the dated material is of short-lived species, such as birch or charred grains, mostly barley (Bjørdal and Lindell *in prep.*), which minimizes at least some uncertainties connected to the use of radiocarbon method. Samples collected from central fireplaces in the buildings were preferred for dating since they are considered less likely to suffer contamination – this applies to the samples themselves and to redeposition processes. In addition, charcoal probably represent the last use phase of the fireplace and thus the last phase of the building (Løken 2020:40–41).

In addition to the ^{14}C-material from the buildings I have evaluated the constructional details of the buildings with reference to previous research: for Bronze Age and Early Iron Age, Løken (1997, 2020); for Late Iron Age, Olsen (2013), Eriksen (2015) and Bjørdal (2016).

The site of Madla Sør

The site of Madla Sør is located on a small hill overlooking Hafrsfjord to the south. To the north the site is delimited by a peat bog, in the east by a stream running from the lake Store Stokkavatnet to the fjord, and towards west the landscape rises partly to another hill, and partly continues as open, relatively flat fields. There has been a Bronze Age mound within the area that was demolished in the 1860s, most likely located on the highest part of the field where no archaeological features were discovered during the excavation in 2018 (Bjørdal and Lindell *in prep.*).

During the excavation approximately 25.200 m^2 of farmland was stripped of topsoil and over 6000 archaeological features were uncovered, mostly postholes, fireplaces/cooking pits and miscellaneous pits (Bjørdal and Lindell *in prep.*). Based on the analysed macrofossils, pollen material and ^{14}C-dates from the agricultural layers, the cultivation in the area was first established around the transition from Late Neolithic to the Early Bronze Age and it was continuous from the Pre-Roman Iron Age onwards (Bjørdal and Lindell *in prep.*).

The excavation site consisted of four areas. In this study the focus will be on the largest one, field 1. Within this area the features form clear concentrations on the east and west of the hilltop, forming two main settlement areas (fig. 2). So far, a minimum of 16 buildings have been interpreted in field 1(fig. 3). Nine buildings were three-aisled longhouses, one (house 13) was a single-aisle building, and the rest

Beta no	House	Feature type	Material	Art	C14 2-sigma	Period *	BP	St.dev.
524242	1	Cooking pit	Grain	*Hordeum vulgare*	410-546 AD	MiP	1580	30
524244	1	Cooking pit	Charcoal	*Betula sp.*	86-242 AD	RIA	1840	30
524245	1	Cooking pit	Charcoal	*Alnus sp.*	248-391 AD	RIA	1720	30
524249	1	Pit	Charcoal	*Alnus sp.*	222-384 AD	RIA	1750	30
524253	1	Cooking pit	Charcoal	*Corylus avellana*	**133-264**/274-330 AD	RIA	1790	30
524257	1	Cooking pit	Charcoal	*Corylus/Alnus*	222-384 AD	RIA	1750	30
524261	1	Cooking pit	Charcoal	*Corylus avellana*	521-398 AD	RIA	1710	30
524263	1	Cooking pit	Charcoal	*Betula sp.*	251-398 AD	RIA	1710	30
524271	1	Cooking pit	Charcoal	*Alnus sp.*	325-430 AD	RIA/MiP	1660	30
524272	1	Cooking pit	Charcoal	*Betula sp.*	118-252 AD	RIA	1830	30
553865	1	Floor layer	Grain	*Hordeum vulgare var. vulgare*	0-130 AD	RIA	1940	30
524259	2	Cooking pit	Charcoal	*Corylus/Alnus*	118 BC-26 AD	PRIA/RIA	2040	30
524254	2	Cooking pit	Charcoal	*Alnus sp.*	124-258 AD	RIA	1820	30
524248	2	Cooking pit	Charcoal	*Corylus avellana*	137-334 AD	RIA	1780	30
553884	2	Ditch	Charcoal	*Corylus/Alnus*	206-345 AD	RIA	1770	30
524268	2	Cooking pit	Charcoal	*Alnus sp.*	211-383 AD	RIA	1760	30
524256	2	Cooking pit	Charcoal	*Betula sp.*	222-384 AD	RIA	1750	30
524269	2	Cooking pit	Charcoal	*Betula sp.*	325-430 AD	RIA/MiP	1660	30
524252	2	Cooking pit	Charcoal	*Salix/Populus*	**377-474**/484-535 AD	RIA/MiP	1630	30
524262	2	Cooking pit	Charcoal	*Betulaceae*	410-546 AD	MiP	1580	30
553879	2	Pit	Grain	*Cerealia*	410-546 AD	MiP	1580	30
524243	2	Cooking pit	Grain	*Hordeum vulgare*	765-895 AD	MerP/VA	1200	30
553883	2	Floor layer	Charcoal	*Betula* sp.	776-971 AD	VA	1150	30
553870	3	Posthole	Grain	*Cerealia*	106 BC-58 AD	PRIA/RIA	2020	30
524231	13	Posthole	Charcoal	*Salix/Populus*	**940-1021**/895-928 AD	VA	1070	30
524232	13	Posthole	Charcoal	*Corylus Avellana*	862-994 AD	VA	1120	30
524233	13	Posthole	Grain	*Cerealia*	887-1013 AD	VA	1100	30
553866	13	Posthole	Grain	*Hordeum vulgare var. Vulgare*	**940-1021**/895-928 AD	VA	1070	30
524238	14	Posthole	Charcoal	*Betula sp.*	776-971 AD	MerP/VA	1150	30
524239	14	Posthole	Charcoal	*Betula sp.*	962-1041 AD	VA	1030	30
529319	15	Posthole	Grain	*Hordeum vulgare*	768-900 AD	MerP/VA	1180	30
529320	15	Posthole	Grain	*Hordeum vulgare*	**940-1021**/895-928 AD	VA	1070	30
529321	15	Posthole	Grain	Cerealia fragmenter x2	950-1032 AD	VA	1040	30
529322	15	Posthole	Charcoal	*Betula* sp.	776-971 AD	MerP/VA	1150	30
529323	15	Posthole	Grain	*Hordeum vulgare*	892-1014 AD	VA	1090	30
529324	15	Posthole	Grain	*Hordeum vulgare*	968-1046 AD	VA	1020	30
529328	15	Pit	Charcoal	*Corylus avellana*	**259-107/358-279 BC**	PRIA	2160	30
529329	15	Pit	Charcoal	*Corylus avellana*	**259-107/358-279 BC**	PRIA	2160	30
529330	15	Pit	Charcoal	*Tilia* sp.	3639-3515 BC	EN	4760	30
529325	17	Posthole	Grain	*Hordeum vulgare* var. *vulgare*	962-1041 AD	VA	1030	30
529327	17	Posthole	Grain	*Hordeum vulgare*	428-599 AD	MiP	1530	30
529326	17	Posthole	Straw frag	Cerealia x2	862-994 AD	VA	1120	30

Table 1. List of ^{14}C-dates from Madla Sør. * EN=Early Neolithic, LN= Late Neolithic, EBA= Early Bronze Age, LBA= Late Bronze Age, PRIA= Pre Roman Iron Age, RIA= Roman Iron Age, MiP= Migration Period, MerP= Merovingian Period, VA= Viking Age, MP= Medieval Period. Illustration: S. Lindell.

Beta no	House	Feature type	Material	Art	C14 2-sigma	Period *	BP	St.dev.
553875	18	Posthole	Charcoal	*Betulaceae*	2031-1887 BC	LN	3600	30
524247	20	Cooking pit	Charcoal	*Betula sp.*	124-258 AD	RIA	1820	30
553880	20	Cooking pit	Charcoal	*Tilia* sp.	85-235 AD	RIA	1850	30
553882	20	Cooking pit	Charcoal	*Betula* sp.	66-222 AD	RIA	1880	30
524258	21	Layer	Charcoal	*Alnus sp.*	86-242 AD	RIA	1840	30
529294	23	Posthole	Charcoal	*Betula* sp.	776-971 AD	VA	1150	30
529293	23	Posthole	Nutshell	*Corylus avellana*	**133-264 AD** 274-330	RIA	1790	30
553877	23	Posthole	Charcoal	*Betula sp.*	860-988 AD	VA	1130	30
524237	23	Posthole	Charcoal	*Betula sp.*	1751-1619 BC	EBA	3390	30
529295	23	Posthole	Charcoal	*Betula* sp.	**1700-1607**/1742-1717 BC	EBA	3360	30
524225	26	Posthole	Grain	*Hordeum vulgare*	**774-906**/916-968 AD	MerP/VA	1160	30
524226	26	Posthole	Grain	*Hordeum vulgare*	768-900 AD	MerP/VA	1180	30
524227	26	Posthole	Grain	*Hordeum vulgare*	765-895 AD	MerP/VA	1200	30
524228	26	Posthole	Grain	*Hordeum vulgare*	**762-887**/692-748 AD	MerP/VA	1220	30
524229	26	Posthole	Grain	*Triicum aestivum*	**684-780**/787-876 AD	MerP/VA	1240	30
524230	26	Posthole	Grain	*Hordeum vulgare*	765-895 AD	MerP/VA	1200	30
524240	26	Fireplace	Grain	*Hordeum vulgare*	765-895 AD	MerP/VA	1200	30
529313	26	Posthole	Charcoal	*Maloideae*	**774-906**/916-968 AD	MerP/VA	1160	30
529314	26	Posthole	Charcoal	*Corylus avellana*	**774-906**/916-968 AD	MerP/VA	1160	30
529315	26	Posthole	Charcoal	*Corylus/Alnus*	661-774 AD	MerP	1280	30
529316	26	Posthole	Grain	*Hordeum vulgare*	768-900 AD	MerP/VA	1180	30
529317	26	Posthole	Charcoal	*Betula* sp.	1256-1306 AD	MP	710	30
529318	26	Posthole	Charcoal	*Betula* sp.	668-778 AD	MerP	1260	30
529297	41	Posthole	Charcoal	*Betula* sp.	1028-1184 AD	VA/MP	920	30
529308	41	Posthole	Charcoal	*Corylus avellana*	**1980-1868**/1847-1775 BC	LN/EBA	3560	30
529310	41	Posthole	Charcoal	*Betula* sp.	1643-1504 BC	EBA	3300	30
529311	41	Posthole	Charcoal	*Betula* sp.	878-1013 AD	VA	1110	30
529312	41	Posthole	Grain	*Hordeum vulgare* var. *vulgare*	943-1024 AD	VA	1060	30
529296	41	Posthole	Charcoal	Betulaceae	766-898 AD	VA	1190	30
529298	41	Posthole	Charcoal	*Betula* sp.	128-258 AD	RIA	1810	30
529307	41	Posthole	Charcoal	*Betula* sp.	**377-474**/484-53**5 AD**	RIA/MiP	1630	30
529309	41	Posthole	Charcoal	*Corylus/Alnus*	22-170 AD	RIA	1910	30
553858	41	Posthole	Grain	*Hordeum vulgare var. vulgare*	660-770 AD	MerP	1300	30
553859	41	Posthole	Grain	*Cerealia*	236-385 AD	RIA	1740	30
553864	44	Posthole	Grain	*Hordeum vulgare var. vulgare*	**590-405**/750-683 BC	PRIA	2430	30
553881	44	Posthole	Charcoal	*Betula* sp.	**651-543/797-731 BC**	YBA/PRIA	2530	30
524234	56	Posthole	Charcoal	*Betula sp.*	**774-906**/916-968 AD	MerP/VA	1160	30
524235	56	Posthole	Charcoal	*Betula sp.*	878-1013 AD	VA	1110	30
524236	56	Posthole	Charcoal	*Corylus/Alnus*	860-988 AD	VA	1130	30
524260	65	Cooking pit	Charcoal	*Alnus sp.*	892-1014 AD	VA	1090	30
529299	65	Posthole	Charcoal	*Betula* sp.	887-1013 AD	VA	1100	30
529300	65	Posthole	Charcoal	*Betulaceae*	**760-882**/688-751 AD	MerP	1230	30

Table 1. continued.

Beta no	House	Feature type	Material	Art	C14 2-sigma	Period *	BP	St.dev.
529301	65	Posthole	Grain	*Hordeum vulgare*	**940-1021**/895-928 AD	VA	1070	30
529302	65	Cooking pit	Charcoal	*Alnus* sp.	892-1014 AD	VA	1090	30
529303	65	Posthole	Charcoal	*Alnus* sp.	**938-1018**/894-930 AD	VA	1080	30
529304	65	Posthole	Charcoal	*Alnus* sp.	**854-981**/802-848 AD	VA	1140	30
529305	65	Posthole	Charcoal	*Alnus* sp.	950-1032 AD	VA	1040	30
529306	65	Posthole	Charcoal	*Alnus* sp.	943-1024 AD	VA	1060	30
553868	65	Stone layer	Grain	*Hordeum vulgare var. vulgare*	**595-411**/754-681 AD	LBA/PRIA	2450	30
553869	65	Cooking pit	Grain	*Avena*	768-900 AD	VA	1180	30
529331	66	Fireplace	Charcoal	*Salix/Populus*	118 BC-26 AD	PRIA/RIA	2040	30
529332	66	Fireplace	Charcoal	*Alnus* sp.	45 BC-77 AD	PRIA/RIA	1980	30
529333	66	Fireplace	Charcoal	*Corylus avellana*	80-230 AD	RIA	1860	30
529334	66	Cooking pit	Charcoal	*Betula* sp.	50-180 AD	RIA	1900	30
529335	66	Cooking pit	Charcoal	*Betula* sp.	22-170 AD	RIA	1910	30
529336	66	Stone structure	Charcoal	*Betula* sp.	45-85 AD	RIA	1970	30
529337	Activity	Layer	Charcoal	*Corylus/Alnus*	411-357 BC	PRIA	2310	30
529338	Activity	Layer	Charcoal	*Corylus avellana*	137-334 AD	RIA	1780	30
529339	Activity	Layer	Charcoal	*Corylus avellana*	**556-402**/748-685 BC	LBA/PRIA	2420	30
529340	Activity	Cooking pit	Charcoal	*Betula* sp.	106 BC-58 AD	PRIA/RIA	2020	30
529341	Activity	Pit	Charcoal	*Corylus/Alnus*	321-428 AD	RIA/MiP	1670	30
524265	E of h 65	Cooking pit	Charcoal	*Corylus avellana*	862-994 AD	VA	1120	30
524246	N of h 1	Cooking pit	Charcoal	*Betula sp.*	118-252 AD	RIA	1830	30
524251	N of h 44	Cooking pit	Charcoal	*Betula sp.*	1131-973 BC	EBA/LBA	2880	30
524264	Field 6	Cooking pit	Charcoal	*Corylus avellana*	80-230 AD	RIA	1860	30
524241	S of h 1	Cooking pit	Nutshell	*Corylus avellana*	**130-260**/279-326 AD	RIA	1800	30
524250	S of h 1	Cooking pit	Charcoal	*Betula sp.*	80-230 AD	RIA	1860	30
524255	S of h 1	Cooking pit	Charcoal	*Betula sp.*	251-398 AD	RIA	1710	30
524267	S of h 2	Cooking pit	Charcoal	*Betula sp.*	22-170 AD	RIA	1910	30
524270	S of h 2	Cooking pit	Charcoal	*Maloideae*	45 BC-85 AD	PRIA/RIA	1790	30
524274	S of h 2	Layer	Skjell	*Littorinidae*	332-576 AD	RIA-MerP	1990	30
524273	S of h 26	Layer	Skjell	*Cerastoderma edule*	355-590 AD	RIA-MerP	1970	30
524266	S of h 56	Cooking pit	Charcoal	*Alnus sp.*	197-47 BC	PRIA	2100	30
553862	Profile 1		Grain	*Hordeum*	768-900 AD	VA	1180	30
553861	Profile 1		Grain	*Avena*	321-428 AD	RIA/MiP	1670	30
553878	Profile 1		Charcoal	*Corylus avellana*	206-345 AD	RIA/MiP	1770	30
553873	Profile 2		Grain	*Hordeum vulgare var. vulgare*	360-156 AD	RIA	2170	30
553874	Profile 2		Charcoal	*Betulaceae*	1929-1753 BC	EBA	3520	30
553871	Profile 4		Grain	*Hordeum vulgare var. vulgare*	4-130 AD	RIA	1930	30
553863	Profile 5		Grain	*Avena*	206-345 AD	RIA	1770	30
553876	Profile 5		Charcoal	*Corylus avellana*	128-258 AD	RIA	1810	30
553867	Profile 6		Grain	*Hordeum*	375-203 AD	PRIA	2220	30

Table 1. continued.

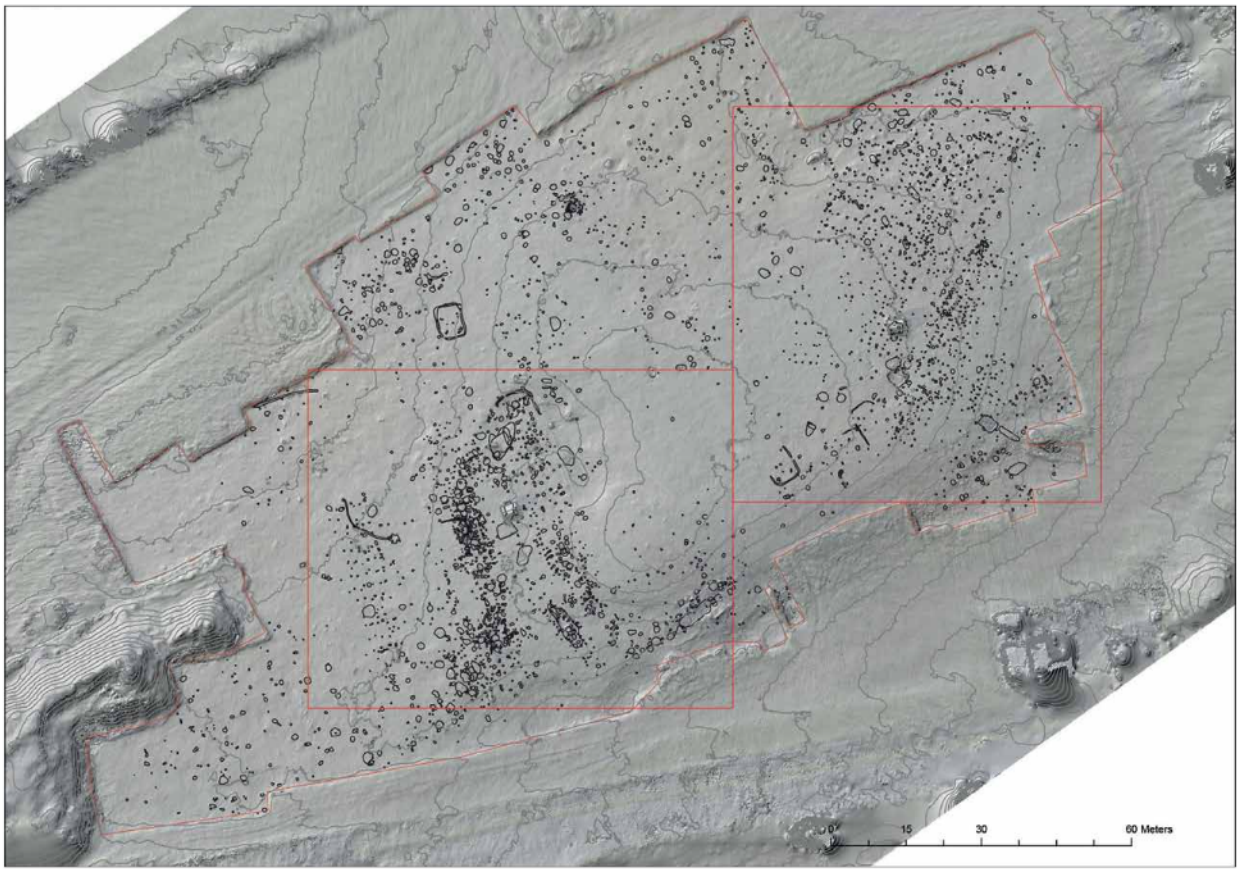


Figure 2. Overview of the features in field 1 with the settlement clusters marked. Illustration: Satu Lindell.

small buildings consisting of 4–6 posts and/or a wall ditch. Most of the small 4–6 posthole buildings were not excavated due to time constraints and are thus not dated (Bjørdal and Lindell *in prep*.).

Only two of the longhouses (houses 1 and 2) have clear central fireplaces/cooking pits. In the eastern cluster of buildings hardly any fireplaces/cooking pits were discovered. The situation is similar with house 26. This can partly be due to preservation but can also indicate chronological differences in building traditions, i.e., the structures connected to warmth/cooking may have been built on the surface rather than dug down into the subsoil. Only one longhouse, house 1, had a wall ditch (Bjørdal and Lindell *in prep*.).

At the bottom of the steepest incline of the hill, south of the hilltop, was a cluster of fireplaces and an activity/floor layer. A similar fireplace and activity layer complex has been found in Moi in Bygland, Agder county in southern Norway, where it has been interpreted as a kiln for secondary iron working (Reitan 2011:169–176), and a similar use in Madla Sør is not unlikely. Five ^{14}C-dates from the complex range from the start of the Pre-Roman Iron Age to the end of Roman Iron Age/start of Migration Period (556 BC – 428 AD). Other features include pits, ovens/possible kilns, fireplaces/cooking pits, and postholes that can belong to unrecognised buildings or fences (Bjørdal and Lindell *in prep*.). All ^{14}C-dates from the excavation are included in this article to give a more complete picture of the activity on site, and they are presented in table 1.

The buildings

As mentioned above, the building remains in the main excavation field concentrate in clusters in the west and east. In the western cluster the buildings' orientation is northwest/southeast, whereas in the eastern cluster they are mainly northeast/southwest oriented. This is probably due to the landscape, in which the buildings are placed along the height curves of the slope rather than across them (Bjørdal and Lindell *in prep*.). Here, I will present the buildings by cluster rather than chronologically for ease of reading.

In the western part of the settlement there are four buildings: 1, 2, 26 and 66 (fig. 4). Based on the ^{14}C-dates, the smallest one, house 66, is the oldest and dated to the Pre-Roman/Roman Iron Age. House 66 is oriented northwest/southeast and comprises two large fireplaces. It

Figure 3. Overview of the building interpretations. Illustration: Satu Lindell.

is considered as a workspace instead of a dwelling and its use should possibly be seen in connection with the cooking pit/activity area to the southeast. There was likely at least one more building from the same period south of house 2, but due to the density of postholes and other features it was not possible to identify any other buildings.

Buildings 1 and 2 date to the Roman Iron Age and Migration Period and have been repaired and/or rebuilt repeatedly during their use time. They are relatively northwest/southeast oriented, three-aisled longhouses with length of approximately 40 meters. The courtyard between the two buildings is partly stone covered. This kind of farm site formed by two parallel longhouses is somewhat typical for the period in Rogaland county (Myhre 2004:50–52). The ^{14}C-dates for these two buildings cover a long period: from approximately 50 BC to 900 AD. The oldest dates, from the Pre-Roman Iron Age, are likely to derive from earlier settlement activity and/or buildings. Both buildings have their main use-time approximately AD 200–400, and around AD 500 at the latest they went out of use. House 2 has three additional dates from central fireplaces to AD 800–900, which would indicate that the building may still have been standing and re-used in the Viking Age, or that a new building was erected in the same place. Construction details of the southern end of the building also support the later dates.

House 26 is an approximately 35 meter long three-aisled longhouse. It is parallel to the previous buildings and located west of house 2. It is dated to the Merovingian Period/Viking Age. One sample is dated to the medieval period, but this probably reflects later activity in the area and not the use of the building. The constructional details of the building, especially the more convex shape of its long walls, support the Viking Age date (Bjørdal 2016). The placement and orientation of the building make it plausible that it was erected while house 2 was still visible, forming again a courtyard between the buildings.

In the eastern part of the settlement there are nine buildings, mostly dating to the Merovingian Period and the Viking Age (fig. 5; tab. 1). This part of the field is complex with high density of features, thus errors in the house interpretations are more likely than in the western part. It is also very likely that there have been other, possibly older, buildings present that despite our vigorous efforts we have not managed to identify.

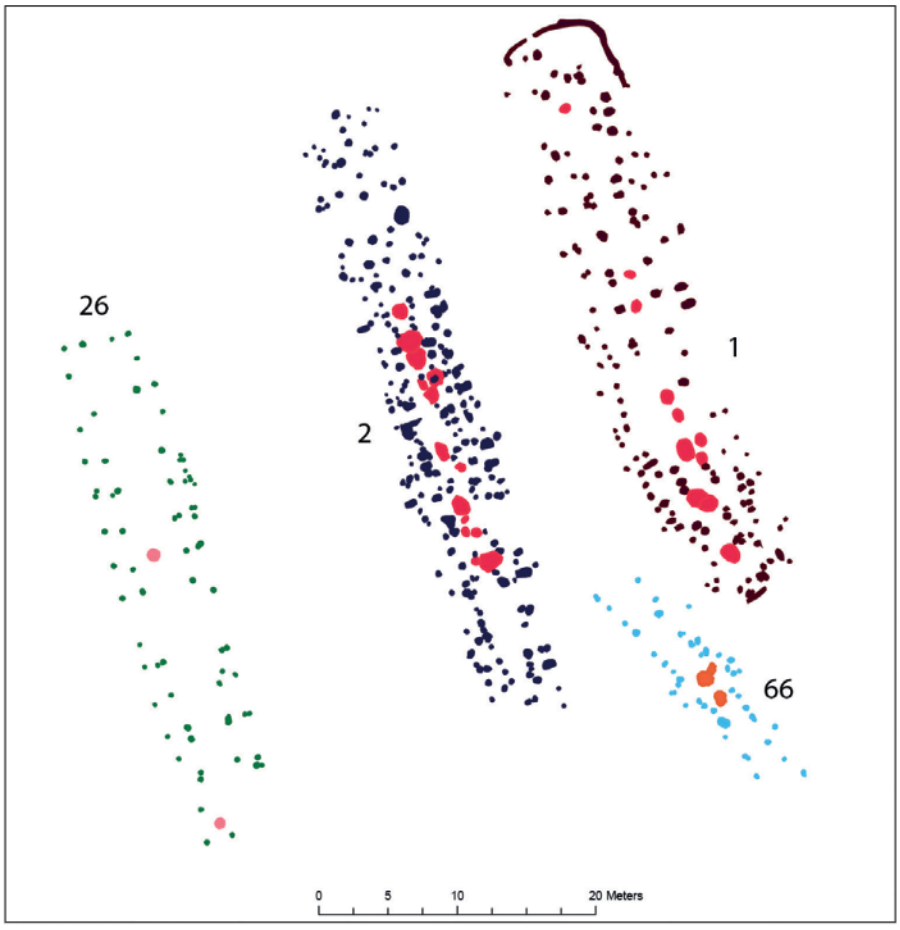
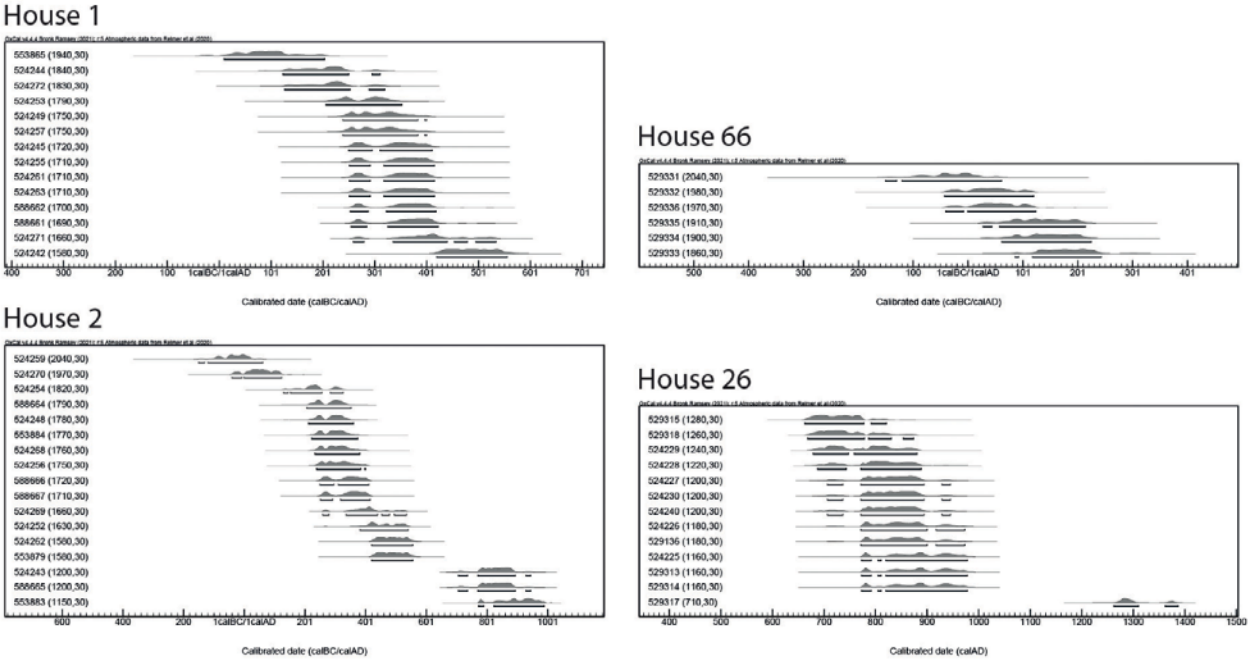


Figure 4. The house interpretations in the western cluster. Illustration: Satu Lindell.



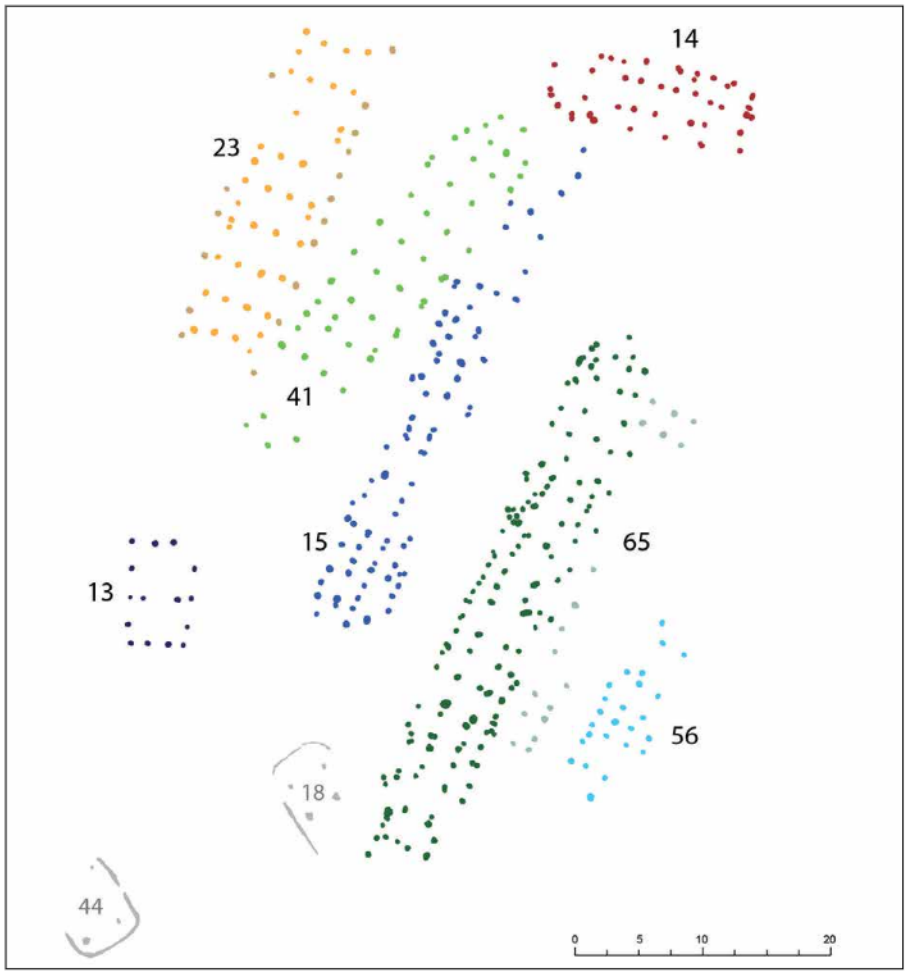
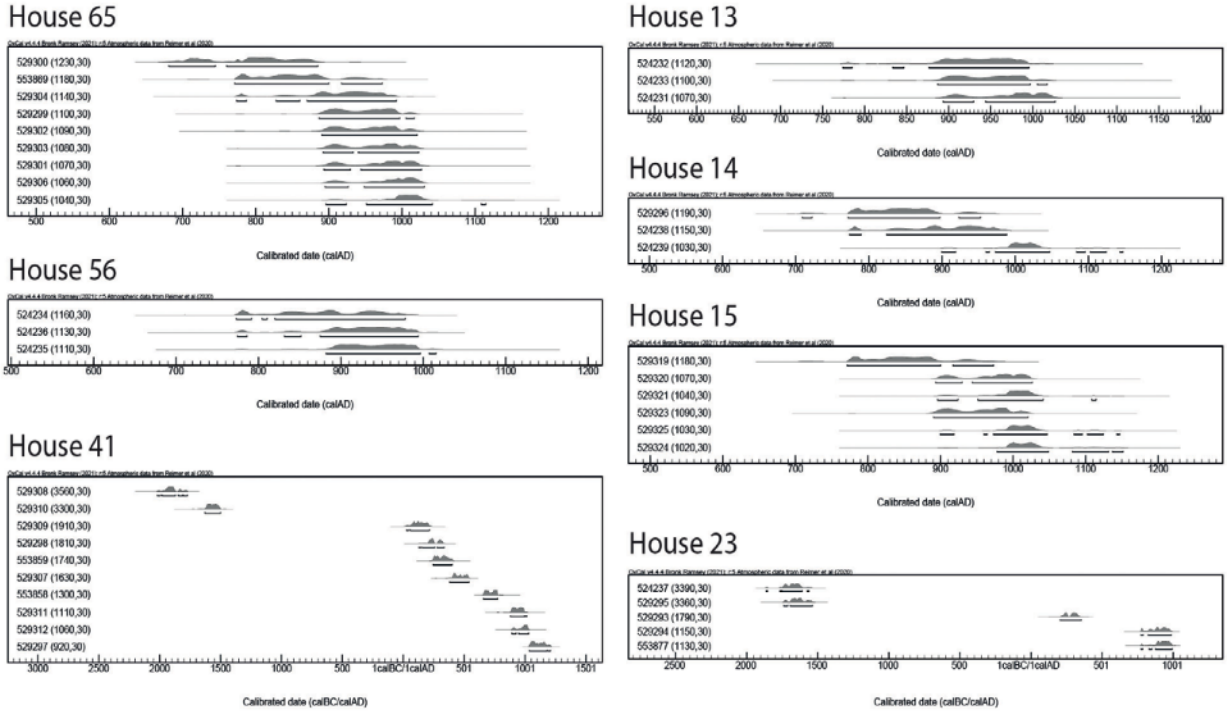


Figure 5. The house interpretations in the eastern cluster. Illustration: Satu Lindell.



The biggest building is house 65, a 40-meter-long three-aisled longhouse dated to the Viking Age, with a possible older phase from the Merovingian Period (fig. 5). The building is northeast/southwest oriented and has signs of repairs/re-building.

Building 15 is parallel with building 65 and they may have formed a similar courtyard as the earlier houses 1 and 2 did. House 15 has been repaired and/or rebuilt. It has possibly been in use already in the Merovingian Period, but its main use-time is in the Viking Age.

Building 14 is also dated to the Merovingian period/Viking Age. It is a small three-aisled building with a nearly east/western orientation. Very similar buildings have been uncovered for example in Hjelle in Stryn, and Sandane in Gloppen, both in Vestland county, western Norway, where they have been interpreted as a transition to the timber framing constructions instead of the traditional post-built longhouses (Olsen 2013:156–157).

House 13 is a small one-aisled building with an inner wall dividing it into two rooms (fig. 5). It is dated to the Viking Age and its constructional details support the date. There are no fireplaces within the building, and it was probably a storage building.

House 56 is a small, poorly preserved three-aisled building (fig. 5) and is dated to the Viking Age.

Parts of houses 41 and 23 have a poor level of preservation. These two buildings have no clear signs of repairs and may have been one-phased. The southern end of both buildings has been destroyed by later land use and therefore the total length of these buildings is not known; however, it is at least 25 metres. The buildings are likely overlapping in this end and therefore cannot be contemporaneous. House 41 has a slightly different orientation from the main trend in this area and it cannot have been standing with house 15 either. Dating house 41 is somewhat challenging; it has two Bronze Age dates, four that place it to the Roman Iron Age, one to the Merovingian Period, two to the Viking Age and one to the medieval period (fig. 5; tab. 1). The oldest dates are likely to derive from older activity in the area. Based on the differing orientation and slight overlapping with other buildings the house was probably in use in the Roman Iron Age or the Merovingian Period/Early Viking Age.

House 23 also has variating dating results: two from the Bronze Age, one from the Roman Iron Age and two from the Viking Age. As the Late Neolithic/Early Bronze Age longhouses generally are two-aisled, the constructional characteristics support a later date of this building. As the orientation of the house is nearly identical with the other Viking Age buildings in the cluster it is likely that this building too belongs in that period. A near-identical building has been excavated in Tastarustå, approximately 4 kilometres north-northeast of Madla, and dated to AD 770–1020 (Armstrong and Kjedsen 2008). House 23 is most likely younger than house 41 and they can represent different phases of the same building.

Building 18 has two ^{14}C-dates to the Bronze Age; however, these do not overlap (2031–1887 BC and 1692–1536 BC). House 44 also has two ^{14}C-dates (590–405 BC and 651–543/797–731 BC) and is likely to be from the Pre-Roman Iron Age. Both are small, approximately 9x5,5 metres, and their interpretation is based mainly on the wall-ditch. Such small "U-shaped" buildings can be seen in the archaeological material in Rogaland throughout the Bronze and Iron Ages and cannot therefore be dated based on their construction (Løken 2020:103).

Summarized, in the earlier settlement phase, in the Roman Iron Age and Migration Period, the dwellings were in the west and only some activity took place in the eastern part. In the following phase, in the Merovingian Period and Viking Age, the main settlement activity had moved east, although at least one new longhouse was built in the western part as well. It is possible that one or both older houses (houses 1 and 2) were still standing and had a secondary use as storage space or workshop. Based on the very similar dates for the buildings in the eastern cluster, they must have been in use at least partly simultaneously, forming a larger farm unit with one or two longhouses surrounded by economic buildings. In the western part of the settlement, we can see point continuity with the longhouses 1 and 2 through their series of repairs and rebuilding. Here there is also clear place continuity at least from the Pre-Roman Iron Age to the end of Migration Period and again in the Viking Age. In the east we have traces of area continuity already from the Late Neolithic/Early Bronze Age onwards, place continuity possibly from Pre-Roman Iron Age, and point continuity latest from the Merovingian Period to the Viking Age.

Continuity or discontinuity?

The site of Madla Sør stands out from most of the Norwegian settlement material with its possible continuity throughout the Iron Age, as indicated by the ^{14}C datings. However, as figure 6 shows, there is a small gap in the dates in the first half of the 7th century, indicating either a possible brief abandonment with a reoccupation relatively soon after, or changes in the settlement structure. Although, as the dated samples are collected nearly exclusively from features within the most prominent buildings, it is possible that other buildings/features would have filled the gap in the dating series (Bjørdal and Lindell *in prep.*). As indicated by figure 6, the decrease starts already before the 6th century. This thus corresponds to the aforementioned settlement changes, reorganisation and abandonment that can be traced throughout southern Norway (e.g., Myhre 2004; Myhre 2013; Iversen 2016; Gundersen 2016; Rødsrud 2016; Loftsgarden and Solheim this volume).

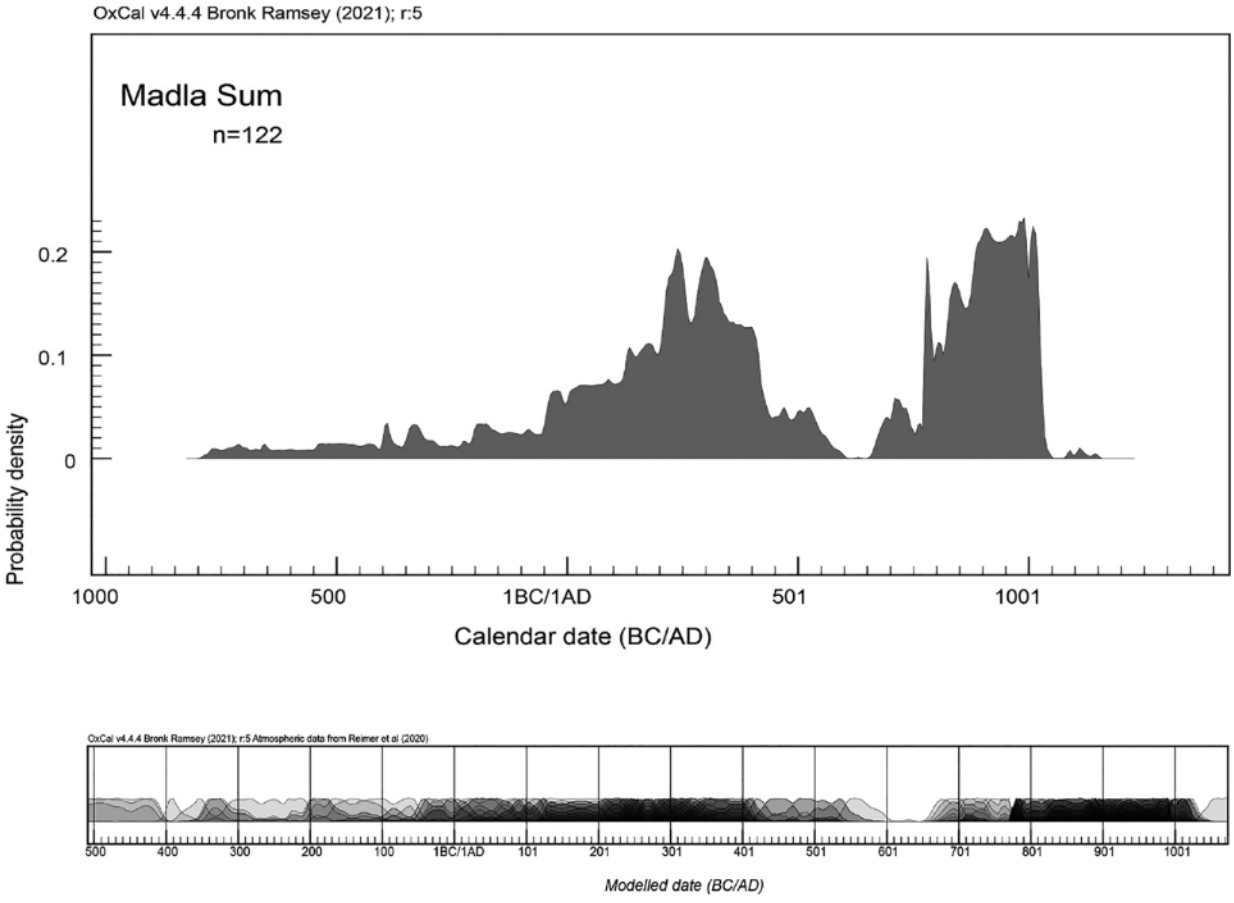


Figure 6. The distribution of the Iron Age ^{14}C-dates. Illustration: Satu Lindell.

The changes are likely to be resulting from a combination of several circumstances. They may be partly explained by a collapse in mid-6th century society after a volcanic eruption, often referred to as the 536-event, which caused a climate change, resulting in a population decrease (Iversen 2016:69–71; Løken 2020:283–289). Another explanation is a societal restructuring, starting already in the Migration Period, since the decline seems to start earlier at Madla, as can also be seen in eastern Norway (Loftsgarden and Solheim this volume). In Forsandmoen, Rogaland county, the large settlement that was in use from the Late Neolithic/Early Bronze Age became drastically smaller in the Merovingian Period and was completely abandoned at the end of the period. This is thought to have been caused by a combination of overexploitation and colder and wetter climate (Løken 2020:83–289). Similar development can be seen in Vik, Ørland county, in central Norway, where the abandonment of the settlement around the middle of the 6th century may have been caused by the local bay drying up and leading to the settlement losing its strategic location (Ystgaard *et al.* 2019:44–45). However, this settlement decline cannot be traced everywhere. In Sweden at the transition from Early to Late Iron Age, some areas even went through an expansive period as a result of intensification of production and higher population density (Pedersen and Widgren 2011:60–71). Also, in Rogaland county we can see traces of the settlements concentrating, from small settlements to more central ones, in the Merovingian Period (Myhre 2013:291–301).

Thus, the settlement reorganisation and decline do not seem to happen at the exact same time everywhere and they are most likely not even always caused by the same processes. At Madla Sør, after the reorganisation and/or possible decline of the settlement, already within a generation or so the settlement continues with even larger numbers of houses than before. This makes the site differ from the general Norwegian picture where the settlements of the Merovingian and Viking Age are generally thought to be located away from sites of the Early Iron Age. There are other examples of settlements with long continuity in Rogaland county, including Nordre Sunde, Hundvåg, Gausel, Tastarustå, Hove-Sørbø and Sømme (locations shown in figure 1) (see Armstrong and Kjeldsen 2008; Meling 2016, 2020; Bjørdal 2016; Bjørdal and Wilson 2018). The question remains as to what makes Madla Sør, and the other Rogaland sites, stand out with their long settlement continuity.

All the settlements mentioned above, apart from Hundvåg, are situated between the fjord and a larger lake, in areas with soils well suited for cultivation. Hundvåg, an island of 4,7 km^2, seems to have been settled continuously from the Late Neolithic to the Viking Age and medieval period (Meling 2016:151–161). Like Madla, Hundvåg also has four historic farms and a medieval church. In the Late Iron Age, the settlements in Hundvåg are concentrated in the central part of the island and there is some evidence that the boundaries of the historic farms were established at that time (Meling 2016:151–161). In Tastarustå there are house remains from the Pre-Roman Iron Age, Migration Period, and Viking Age. The two Viking Age buildings were located higher up the slope, but there seems to be continuity in the settlement organisation from the Migration Period (Armstrong and Kjeldsen 2008; Bjørdal 2016:260). The farm of Gausel, mostly famous for its rich graves, had a total of 18 buildings dated throughout the Iron Age (Børsheim 2007). Here, the settlement also moved gradually up in the landscape during the Iron Age. Even though there are graves and small buildings that date to the Viking Age, there is no clear settlement phase from this time. It is speculated that the Viking Age longhouses could be outside the excavated areas, close to the Merovingian Period buildings (Børsheim 2007; Bjørdal 2016:261).

In Gausel and many other settlements seemingly abandoned in the Migration Period, there are Viking Age burials placed inside or over the buildings, suggesting that these "deserted farms" were still known and possibly in use ritually (Dahl 2016:108; see also Eriksen 2016; Dahl this volume). The re-use of older settlement sites suggests some form of "community knowledge" of the history of the area and wish for continuity and closeness to ancestors.

One common thing of the sites with longer continuity, and especially continuity from the Early to the Late Iron Age, seems to be that the excavated areas are larger, and the "missing phases" could perhaps be found outside the excavated areas, which is an important point to remember when studying the organisation of settlements in a time perspective (Gjerpe 2017:71). This may also be the case in Madla Sør. Had the excavated area been smaller, the long settlement phase we can trace could have been lost. Further, it is possible that the "missing" 7th century phase might be located outside the excavated area.

Another reason that may explain continuity of the Rogaland sites is that the topography of Norway makes the sedentary settlements small and separated from each other. Until the present day hardly more than 3% of the total land mass has been cultivated (Øye 2004:80). The area's best suited for cultivation have been preferred and are likely to have had the highest population densities. The scarcity of arable land and the divisive topography – mountains, marshes, rivers etc. – may explain the fact that many settlements in the most fertile areas go back to the 6th century, if not earlier (Skre 2001:4). These areas might also have created possibilities for a local aristocracy to develop and collect wealth (Skre 2001). The sites with long continuity in Rogaland county all have the best agricultural land with mostly strategic locations by the fjords and lakes.

An Iron Age building was most likely in use for a generation, while some could perhaps stand up to 200 years (Herschend 2009:169–171; Løken 2020:195–206; Haue this volume; Ødegaard *et al.* this volume). The old house may still have been standing, while the new house was erected close by (see also Myhre 2004:107–108; Webley 2008:34–36; Herschend 2009:140–141; Eriksen 2015:186). This dynamic development of farmyards is likely to be behind what we see in Madla Sør and some of the other sites like Gausel and Tastarustå, where new houses were being built while the old one was still in use or visible in the landscape.

The settlement at Madla Sør has area continuity throughout the settlement period, from the Bronze Age onwards towards the Viking Age, possibly excluding the period in the 7th century when, as mentioned, there is a gap in the dates. From at least the Roman Iron Age to the end of the Viking Age, the settlement also has place continuity in which we can see that the main settlement stops moving within the area and stays in one fixed point. The pattern from Madla Sør fits with the overall picture where in the early agrarian settlements the buildings are mainly in use for a shorter time, most likely for one generation. In the Roman Iron Age and Migration period the buildings are often longer lasting, and stay in the same location for several generations, demonstrated by repairs, re-building, and extensions/changes in their layout (see Eriksen 2015:188). For the Merovingian Period and Viking Age, the picture is not yet quite as clear at Madla Sør, as there seem to be both single-phase and multi-phase buildings in use. Some of this variation of types might be caused by functions that previously took place inside the longhouse or out in the courtyard being moved to a small separate building, as also seen elsewhere in Norway (Myhre 2004; Sauvage and Mokkelbost 2016:275–289; Gjerpe 2016; Ystgaard 2019).

The settlement pattern at Madla Sør thus fits the overall settlement pattern of the Iron Age, where the houses are fixed on the same plot from the Roman Iron Age onwards and towards the Viking Age (see Eriksen 2015:188–191). In the later part of the Early Iron Age and in the Late Iron Age, there seems to be a shift towards, at least for certain strata of society, physically incorporating the older house into the new by building on top of it. When the house became a permanent construction, there seems to have been a shift in the way people reflected on land and the ancestors – a shift in mentality – expressing new ways of considering land ownership and inheritance (Webley 2008; Herschend 2009:392–393; Ødegaard *et al.* this volume). In

addition, a new thought is emerging about what the house may express. Eriksen (2015:191) explains this as the house becoming, in itself, a monument of inheritance, household, and ancestors. A similar process of reorganising plots into more fixed spatial structures can be found through large parts of Scandinavia, indicating that there were large-scale social, economic, and mental developments happening more or less at the same time. In addition, this attests that the settlements in Norway were following a general pan-Scandinavian tradition of building houses and organising settlements (Eriksen 2015:192). The site of Madla Sør fits well with this general picture, indicating that the people here were following the same general ways of organising settlements as the rest of Scandinavia.

Conclusion

Traditionally it is thought that there is very seldom, if ever, settlement continuity from the Early to Late Iron Age. However, there is growing evidence of continuity and complexity of different settlement organisations in Norway. In Jæren, the coastal part of Rogaland county, the continuity from the Early to the Late Iron Age is almost a norm already and more evidence pointing into the same direction is now coming to light in other parts of the country too. Madla Sør adds to this emerging picture of settlement continuity with its area continuity from the Bronze Age onwards and place continuity at least from the Pre-Roman Iron Age. In the Roman Iron Age at the latest the houses become fixed in one place, and this continues to the end of the Viking Age, when the settlement seems to be abandoned/moved.

As can be seen in the case of Madla Sør, there can be long continuity even in relatively simple settlements. In many cases where we can see longer continuity within and/or around a settlement it seems to be at least partly due to larger or more excavated areas making it possible to follow the settlement as its buildings move short distances within its boundaries. Therefore, it would be beneficial to investigate the areas as a larger entity rather than focusing only on individual sites. This would give us a better possibility to trace and understand the changes in location and continuity in area usage, especially in cases where the individual sites do not have continuity on their own.

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