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The Mesolithic-Neolithic transition in the Channel Islands: maritime and terrestrial perspectives

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SUMMARY

This paper investigates the Mesolithic-Neolithic transition in the Channel Islands. It presents a new synthesis of all known evidence from the islands c. 5000-4300 BC, including several new excavations as well as find spot sites that have not previously been collated. It also summarises – in English – a large body of contemporary material from north-west France. The paper presents a new high-resolution sea level model for the region, shedding light on the formation of the Channel Islands from 9000-4000 BC. Through comparison with contemporary sites in mainland France, an argument is made suggesting that incoming migrants from the mainland and the small indigenous population of the islands were both involved in the transition. It is also argued that, as a result of the fact the Channel Islands witnessed a very different trajectory of change to that seen in Britain and Ireland c. 5000-3500 BC, this small group of islands has a great deal to tell us about the arrival of the Neolithic more widely.

INTRODUCTION

The processes by which Neolithic practices spread across the Channel from the near continent to Britain and Ireland have been much debated over the decades, and there has been a notable revival of discussion in recent years (see Thomas 2013 and Anderson-Whymark & Garrow 2015 for an overview). In relation to the Mesolithic-Neolithic transition in Britain and Ireland specifically, the two main issues under recent debate have been the character and extent of migration from the European continent and the origins and directionality of change (see for example Sheridan 2010, Whittle et al. 2011). A third key issue is the apparent delay that these broad-scale processes of change are subject to once 'the Neolithic' arrives at the English Channel. When investigated at a macro continental scale, Neolithic practices sweep across mainland Europe at a fairly constant rate (e.g. Gkiasta et al. 2003; Rowley-Conwy 2011), even if at a more detailed scale the picture inevitably becomes a lot more complicated. However, despite reaching north-west France around 5200 BC (see below), Neolithic things and practices do not take off in Britain and Ireland until c. 4050 cal BC (Whittle et al. 2011). This delay of approximately a millennium in the broad-scale process of transition is puzzling – especially given the relatively small distance that the Channel represents – and has thus been the cause of much discussion in recent years. It has been suggested by some that Britain and Ireland were culturally as well as physically isolated from continental Europe for much of the Late Mesolithic (e.g. Jacobi 1976; Sheridan 2010). However, increasingly, evidence is found to suggest that this was not (at least straightforwardly) the case, and that maritime mobility across the Channel may have been much more prevalent that previously realised (Garrow & Sturt 2011; Anderson-Whymark & Garrow 2015; Anderson-Whymark et al. 2015).

The Channel Islands today comprise seven inhabited islands (and several uninhabited islets around these) which form part of a larger archipelago strung out along the north-west French coast. The islands are located a minimum distance of 15km west of Normandy's Cotentin peninsula, 80km north of Brittany, and 140km from the south of England. Our main aim in this paper is to investigate the processes through which Neolithic practices and material culture arrived in the Channel Islands over the course of the fifth millennium BC, and the broader maritime and terrestrial context in which these

changes occurred. Whilst the Channel Islands-specific transition is certainly worthy of investigation in its own right, it is also intriguing for the light it sheds on the processes of change more widely. The Channel Islands represent, to put it colloquially, the other side of the coin to Britain and Ireland. Despite Guernsey (the most distant island from the coast) being located 38 km from Normandy c. 5000 BC, only 8km more than the distance from France to England across the Straits of Dover at that time, the islands appear to have been very much part of the broader set of changes that were occurring across mainland north-west France during this period. Equally, unlike Britain and Ireland, the earliest Neolithic in the Channel Islands does look similar to, and is roughly contemporary with, its equivalent in north-west France. The islands therefore offer an interesting alternative perspective on the transition in Britain and Ireland as well.

THE CHANNEL ISLANDS TRANSITION

The Mesolithic-Neolithic transition in the Channel Islands has been discussed at various times before (e.g. Kinnes 1982, Patton 1995, Bukach 2004, Guyodo & Hamon 2005, Sebire 2005, Sebire & Renouf 2010, Marcigny et al. 2010). Our intention in this paper is to provide an up to date synthesis of all of the evidence across all of the islands from the period c. 5000-4300 BC[1], including several new sites found in recent years; and to situate that evidence within a much broader picture of change across north-west France. In addition, in presenting new models of sea level change c. 9000-4000 BC, we directly address questions about connectivity and separation, and similarity and difference, which arise when investigating island life. The need to understand the shifting geography of this region, from continental landmass to archipelago, and how such changes may have impacted on people's social world, has featured in past discourse (e.g. Patton 1993, Figure 1; Sebire & Renouf 2010, 370-381). However, thus far the ability of researchers to quantify the timing, nature and rate of inundation has been complicated by a lack of specific sea-level data pertinent to the Channel Islands. Here, we make use of a glacio-isostatic adjustment model, combined with modern bathymetry (see below for definitions of these terms) via a geographical information system, to tell a more precise story of change within and around the islands than has been previously possible.

The paper is structured as follows. After a brief summary of the nature of the Mesolithic and Earlier Neolithic evidence from the islands, we outline how the transition there has previously been characterised. In the rest of the paper, in setting out our own perspective, we move from the broadest temporal and spatial scale of analysis inwards, starting with the changing character of the Channel seaways themselves, going on to consider processes of change during the fifth millennium BC in north-west France, before finally assessing the Channel Islands evidence within this broader picture.

LATER MESOLITHIC AND EARLIER NEOLITHIC EVIDENCE FROM THE CHANNEL ISLANDS: A BRIEF OVERVIEW

The Mesolithic evidence from the Channel Islands has previously been described as "slender" (Kinnes 1982, 14), "extremely sparse" (Patton 1993, 9), "at best ambiguous" (Patton 1995, 19) and "poor [*indigentes*]" (Guyodo & Hamon 2005, 391). It is probable that some coastal sites have since been lost to the sea as a result of sea level rise. However, as with the Mesolithic record from many other islands around Britain (Garrow & Sturt 2011; Garrow & Sturt in prep.), and indeed elsewhere on the mainland, it is likely that this bad impression was formed at least partly because there had been relatively little sustained effort to collate, evaluate or enhance the Mesolithic record there (although see Patton

[1] This time span covers the Early Neolithic and Middle Neolithic 1 periods in French terminology. In this paper, in order to evaluate the long-term process of transition, we cover both phases. We have therefore used the term 'Earlier Neolithic' as a short hand to capture both EN and MN1 together.

1993). Recent work by Conneller et al. (2016) has changed this picture to a considerable extent, identifying many more sites in the Channel Islands and drawing important comparisons with the near continental evidence. Patton (1993) noted around eight sites, mostly dating to the Middle Mesolithic (c. 8000-6000 BC). Conneller et al.'s study has increased the number of known sites to 23, but again the vast majority have been identified as Middle Mesolithic in date, with Late/Final Mesolithic sites still very rare. The significant decrease in site numbers in the Channel Islands for the Late Mesolithic appears puzzling, especially given the fact that the opposite appears to be the case on the French-owned islands off Brittany during this period (Marchand 2013; Conneller et al. 2016). We can probably assume that *activity* in the Channel Islands also decreased, but it is very difficult to know why this should have been the case.

In addition to the somewhat limited archaeological evidence, there are also tantalising glimpses of human activity during the Late Mesolithic from other proxy sources. Pollen evidence from sequences at Vazon Bay, Guernsey suggests anthropogenic disturbance of woodland during the Late Mesolithic (Campbell 2000, 171). In addition, Campbell (2000, 307) interprets "consistently high charcoal inputs" from records at Les Fouaillages as indicative of Late Mesolithic/Early Neolithic landscape clearance. On their own these records can only serve to hint at the presence of people, and the actions they took. However, when considered alongside the material record, they can more readily be used to infer more about the potential character of activity during the late sixth and early fifth millennia BC.

While the Neolithic of the Channel Islands is very well known for its monumental record, when dealing with the Earlier Neolithic the evidence from tombs does not feature much at all. With the single exception of the Les Fouaillages long mound (whose earliest phases date to c. 4940-4720 cal BC), the earliest tombs on the islands (passage graves) would probably have been constructed after c. 4300 BC (e.g. Schulting et al. 2010; Ghesquière & Marcigny 2011). Evidence prior to this consists mainly of relatively ephemeral settlement features (insubstantial structures, pits, post-holes and hearths), artefact scatters, stray finds (some of which may also originally have been associated with as yet unexcavated settlement features) and changes in the pollen record. The earliest signs of the Neolithic in the Channel Islands date to the first centuries of the fifth millennium BC; there is subsequently an increase in site numbers from around 4600-4500 BC. The character and chronology of this early fifth millennium evidence are discussed in much more detail below.

Given that the arrival of the Neolithic in the Channel Islands has been discussed by many different people before, it is in some ways surprising that there has been broad agreement about the processes through which the transition occurred there. People have generally argued that the Neolithic probably arrived through colonisation from the mainland, but that the indigenous population would inevitably have been involved in the process at some level. At one end of the spectrum, for example, Kinnes suggested that "the neolithic settlement of Guernsey seems to be an early example of sea borne colonisation ..." but added "... perhaps taking advantage of existing hunter-fisher networks" (1982, 27). At the other end of the spectrum, in making the case for a relatively substantial contribution on the part of the indigenous population, Bukach suggested a model "where indigenous adoption and colonisation are not mutually exclusive events, but instead act in tandem along the Neolithic frontier" (2004, 161). Ultimately, neither of these models is really very far away from the other. Patton perhaps best summarises the general feeling (up to the mid-1990s when he wrote the paper, and indeed since then) when he says that "it is difficult to assess the relative role of Neolithic colonists and indigenous Mesolithic communities ... since we know so little about the Mesolithic of the islands. It seems difficult to avoid the conclusion, however, that colonists were involved in the process of change at some stage ..." (1995, 21).

As we have suggested before (Garrow & Sturt 2011), and discuss again towards the end of this paper, the fact that it is difficult to establish whether 'The Neolithic' arrived in the Channel Islands (and

indeed in Britain and Ireland) through colonisation or indigenous adoption might actually be telling us that the terminology we tend to use, and the polarised way in which we often characterise people's lives when discussing these processes of change – Neolithic/Mesolithic, colonisation/indigenous adoption – might in fact not be the most productive way of engaging with the evidence.

SEA LEVEL MODELS

The Channel Islands as we see them today are located a minimum distance of c. 15km west of mainland France, c. 80km north of mainland France and c. 140km from the south of England (Figure 1), and form part of a larger archipelago of islands off the French coast. However, the maps of land and sea configuration that we most frequently engage with are simply a synchronic snapshot of a more complex history of sea-level rise and fall, and geographical reconfiguration. In order to understand the context within which the archaeologically evidenced social changes described above took place, and perhaps even to help explain them, it is necessary to account for the shifting land/sea boundaries in this region.

Sebire and Renouf (2010, 373-376) provide a detailed account of some of the problems inherent in doing this. Broadly, relative sea-level change is the product of two key drivers, eustacy and isostacy (Lambeck et al. 2010, 65). Eustacy relates to changes in the volume of water in the world's oceans and seas, with the primary driving factor being the amount of water locked-up in bodies of ice on land. As glaciers form, eustatic levels fall; then as they melt they begin to rise again. Isostacy refers to the impact of gravitational forces on the Earth's crust. Again glaciation plays a large part in changing isostatic trends, as the loading of an ice sheet on a landmass will at first depress it and then lead to a rebound of that surface as it melts. Thus, at the broad scale, understanding sea-level change requires knowledge of both changes in the volume of water in the world's oceans and seas, and the deformational history of the Earth's crust. Within the Holocene, reconstruction of these processes is often directly informed by analysis of site specific markers, known as sea-level index points. These proxy records are frequently drawn from radiocarbon dated peat sequences, charting the rise in fresh water levels as they are driven up or fall in response to changes in sea-water levels.

As Sebire and Renouf (2010) and Pailler et al. (2014) explain, the problem within the Channel Islands and surrounding region is that there are few chronologically robust sea-level index points available for analysis. As such, it has not been possible for researchers to create a relative sea-level curve specific to the islands. This has meant that people have had to refer to curves from more distant locations, such as Cherbourg and Roscoff, or broader regional studies (e.g. Ters 1986, Lambeck 1997, Allard et al. 2008) to create an understanding of landscape change. In reading off relative sea-level curves from other places it becomes difficult to quantify and account for impacts of isostatic differences between locations, reducing the potential accuracy of the models constructed. The reason why this is particularly significant is that the relatively shallow water that surrounds the Channel Islands, matched to our established knowledge of global eustatic sea-level trends, indicate that the separation of the islands from the mainland occurred during the early to mid-Holocene. As such, the landscape in which the social changes we wish to explore took place was as fluid as our understanding of Mesolithic and Neolithic has proved to be in recent years, moving from continental mainland to island configuration.

Figure 2 provides a graphical representation of sea-level and palaeogeographic change for the Channel Islands between 9000 and 4000 BC. Within the model presented in this paper, isostatic and eustatic data are combined, modelled and output at selected chronological intervals (see Sturt et al. 2013 for a full description of this process). This produces a time specific trend surface indicating elevation differences between past and present sea-levels. In order to create these palaeogeographic maps, we have used a geographic information system (GIS) to combine newly released bathymetric data from

EMODnet (http://www.emodnet-bathymetry.eu) and topographic data sets from GEBCO 2014 (www.gebco.net) to create a seamless, high resolution (50m) model of the region. This surface elevation model then provided the basis from which the GIA model trend surfaces could be subtracted to attain a modelled output of previous mean-sea levels. As such, within these models there is an attempt to account for both isostatic and eustatic change at a spatial and temporal resolution that has not been possible in previous archaeological accounts of the Channel Islands

Before commenting on the model outputs and the questions they raise it is worth reflecting on the nature of these images. The maps presented in Figure 2 cannot be seen as exactly accurate representations of the Channel Islands at each time step for three reasons. First, as Brooks et al. (2011) note, the use of modern bathymetry and topography as the basis for such reconstructions cannot account for the impact of coastal erosion and formation of sediment bed forms underwater on the output images. Second, the GIA model describes trends, smoothing curves to join data points, and thus may underestimate the suddenness of some changes. Third, and of particular importance in the Channel Islands, our models do not indicate how changes in mean sea level and associated sea-bed profiles impact on tidal ranges. The Channel Islands today are an incredibly dynamic marine environment, with very large tidal ranges in the region of 10m. As Sebire and Renouf (2010, 375) note, with lower sea-levels during the early to mid-Holocene the tidal range is likely to have been closer to 6m (3 above and below MSL); more work needs to be done to account fully for palaeotidal change and its impact on palaeogeography and seafaring. However, despite these caveats, the broad story presented is nevertheless still useful. It stands as our best current understanding of the changes that took place, their rate and potential magnitude. In a similar way, the archaeological record that we more commonly discuss is also not the totality of the past, and our understandings are certainly smoothed through interpretation.

Figure 2 indicates that the separation of Guernsey from the continental mainland may have occurred sometime between 9000 and 8000 BC, much in line with the estimates given by Sebire and Renouf (2010, 376). Similarly Sark and Guernsey are likely to have separated by c. 8000 BC, and Guernsey from neighbouring Herm at c. 5000 BC (although it is likely that it would still have been possible to walk across at low tide). Looking to the south, the island of Jersey presents a very different record, with a finger of land slowly transforming into an inter-tidal causeway and cluster of small islands, with full separation not indicated until perhaps c. 5000 BC, but again with a large, drying inter-tidal link persisting past 4000 BC.

While the specifics of our understanding of this shifting land and seascape will continue to change as new data are acquired, the broader story of differing physical histories of connectivity is likely to persist. Alderney and Guernsey split off as islands amongst a deepening sea (with complex currents and increasing tidal range) thousands of years prior to Jersey. Jersey remained 'connected' to the mainland via a slowly submerging peninsula, potentially forming large areas of shallow inter-tidal floodplain through the late Mesolithic and Early Neolithic. As such, as Evans (2003) would phrase it, the 'texture' of space within which this transition played out across the Channel Islands as a whole was potentially very different. Understanding this physical difference thus allows us to consider the implications and potential origins of similarities and differences evidenced in the archaeological record.

THE EARLIER NEOLITHIC IN NORTH-WESTERN FRANCE

Given the position of the Channel Islands in between Brittany and Normandy, it is perhaps unsurprising that the archaeological record of the islands shares elements with both mainland regions (at different times and in varying ways) throughout the Mesolithic and Earlier Neolithic. For example, some Mesolithic flint assemblages have been seen as having closer affinities with their Norman rather than

their Breton equivalents (Patton 1995, 19), whilst the Middle Neolithic 1 pottery from the islands has been described as more closely linked to Breton than Norman styles (Guyodo & Hamon 2005, 394; Pioffet 2013). Many other similar comparisons and contrasts have been noted in the past.

Intriguingly, the trajectories of change witnessed by these two adjacent mainland regions over the course of the fifth millennium BC are in some ways quite different to each other. Again, the Channel Islands, in between, can be viewed as sharing elements of both. In describing the French evidence in this section, we are very fortunate in being able to draw heavily on some excellent recent work on the region – two substantial papers in French (Pailler et al. 2008; Marcigny et al. 2010) and Scarre's book-length study in English (Scarre 2011) in particular.

The earliest signs of the Neolithic in the region are seen in north-eastern Normandy, right at the end of the sixth millennium (c. 5200-5000 BC). This phase, associated with 'Rubané récent du Bassin parisien'/'Blicquy/Villeneuve-Saint-Germain ancien' pottery is represented mainly by artefacts without good context (Marcigny et al. 2010, 124-128), with the exception of the probable longhouse settlement (defined by occasional post-holes and quarry pits which would have been dug alongside the houses) at Colombelles, Calvados (Billard et al. 2004). As the name of the pottery style implies, this phase is perhaps best viewed as the ultimate western extension of the Paris basin, post-LBK Neolithic.

Rubané récent du Bassin parisien (RRBP)	5200-5000 BC
Blicquy/Villeneuve-Saint-Germain (BVSG) ancien	5200-5000 BC
Blicquy/Villeneuve-Saint-Germain (BVSG) classique	5000-4500 BC
Blicquy/Villeneuve-Saint-Germain (BVSG) 'cordons'	4900-4700 BC
Cerny ancien (Néolithique Moyen 1a)	4700-4600 BC
Castellic, Pinacle-Fouaillages, Chambon (Néolithique Moyen Ib)	4600-4300 BC

Table 1. Early and Middle Neolithic 1 pottery typologies and their associated dates in north-western France (according to Marcigny et al. 2010)

The subsequent 'Blicquy/Villeneuve-Saint-Germain (classique/cordons)' phase (c. 5000-4500 BC) is characterised by a greater number of sites, whose distribution extends further west through Normandy into the extreme east of Brittany and, for the first time, the Channel Islands (Marcigny et al. 2010, 124-128; Scarre 2011, 51-53). The majority of these sites in France have more recognisable and substantial longhouse structures. Well-known examples include the multi-phase longhouse settlement at Poses, Normandy (Bostyn 2003), the six adjacent longhouses at Pluvignon, Brittany (Blanchet et al. 2007) and the single longhouse at Le Haut-Mée, Brittany (Cassen et al. 1998). Scarre has suggested that this phase might be viewed as one of 'mosaic colonisation' (2002, 41) with small-scale 'pioneer' Neolithic settlements being established within the contemporary landscape of Mesolithic activity, and perhaps co-existence of incoming farmers and indigenous hunter-gatherers for several centuries.

During this main BVSG phase, two distinctive artefact types/materials – polished stone rings and 'Cinglais' flint – become a key feature of the archaeological record (Fromont 2008; 2013; Fromont & Marcigny 2008; Marcigny et al. 2010; Scarre 2011, 49-53). Both of these materials appear to have been widely exchanged across the region during the first half of the fifth millennium, and have sometimes – given the general absence of recognisable longhouse settlements in the west – been seen as a key indicator of the spread of the Neolithic into Brittany at this time (e.g. Pailler et al. 2008). The movement of Norman stone rings westwards, and of Breton stone rings eastwards, certainly seems to indicate interaction between people in the eastern BVSG Neolithic zone and those living in the far west of Brittany. Whether the latter group is best defined as 'Neolithic' or 'Mesolithic' is difficult to

resolve (Scarre 2011, 52-53), again reminding us that either/or terminology such as this can sometimes cloud rather than clarify the human-scale processes involved. Similarly, the exchange of Cinglais flint (a high quality, fine-grained, brown/grey-coloured material, known geologically as 'Bathonian' flint) during this phase – westwards from mines located in the Caen plain of Normandy – also indicates contact across the region (Marchand et al. 2006; Desloges et al. 2011). Its presence on longhouse sites in the west might perhaps be seen as an indication that migrating farmers made sure to maintain social and technological links with their origin communities as they moved into Brittany. As with stone rings, however, whether its presence especially on other types of site can be taken as a direct indication of the presence of 'Neolithic' people rather than just Neolithic material culture remains an issue to be discussed (see below).

The subsequent Cerny phase (c. 4700-4300 BC) is seen as marking the start of the French Middle Neolithic, although it probably overlaps slightly (in radiocarbon terms and perhaps also in different geographical regions) with the end of the BVSG phase. Marcigny et al. (2010, 143-153) have suggested that the Cerny phase should be sub-divided into two sub-phases – 'Cerny ancien (NM1a)' and 'Néolithque Moyen 1b' (the latter including various Cerny-related pottery styles such as 'Castellic' in the west, 'Chambon' in the east and 'Pinacle-Fouaillages' in the Channel Islands). Overall, the Cerny phase sees an expansion in the distribution of sites. The earlier part (NM1a) at least is generally viewed as a period of relative cultural uniformity across the region, when previously disparate and very different groups of people (those using BVSG pottery, those using Cardial pottery south of the Loire, and those continuing to live a Mesolithic way of life) were perhaps drawn together and became more integrated (e.g. Scarre 2002, 55). The increased regionalisation of pottery styles seen during the latter sub-phase (NM1b) has been seen by some as a breakdown of these earlier links, but could equally be viewed as an inevitable by-product of the fact Neolithic practices had finally become fully established right across the region. It is probably during this phase that we see the first construction of monuments in the region, in the form of massive standing stones, stone rows and long mounds (Scarre 2011, 68-102; 2015). Scarre (2011, 95) has suggested that the emergence of monumental architecture in Brittany at this time may actually have been one notable consequence of the interaction between Mesolithic and Neolithic ways of life.

To summarise, in terms of general trends throughout the fifth millennium BC, the most obvious is perhaps the overall westward spread of things associated with the Neolithic (pottery, stone rings, Cinglais flint, visible longhouse settlements) over time. We also see the gradual introduction of monuments, in the form of standing stones, long mounds and possibly 'Passy'-type enclosures during the middle centuries of the millennium, and subsequently other long mounds and passage graves after c. 4300 BC (Scarre 2011; Ghesquière & Marcigny 2011, 173-183). Interestingly, the character of settlement sites changes substantially over time as well (see Hénaff 2002 and Marcigny et al. 2010 for reviews of the settlement evidence). This change is of particular relevance during the earlier centuries of the fifth millennium, since almost all relevant sites are settlements or occupation sites of some sort. The first signs of Neolithic occupation in the region are few in number, and varied (Figure 3). As we move into the full BVSG phase, sites with clearly-defined buildings (most of them post-built longhouses) dominate. However, this pattern completely changes once we move into the Cerny phase, where formal buildings of any sort are, by contrast, almost entirely absent and the record is dominated by pits, post-holes, hearths and other settlement-related features. The number of known sites then drops again substantially in the NM1b phase, but those that are known appear to be varied in character.

THE EARLIER NEOLITHIC IN THE CHANNEL ISLANDS

In this section, we consider the fifth millennium evidence from the Channel Islands (Figure 4 and Tables 2 and 3) alongside this picture from the mainland. The earliest Neolithic[2] on the islands is associated with BVSG 'cordons' pottery (Marcigny et al. 2010); Pioffet has recently suggested, on the basis of stylistic affinities with mainland assemblages, that this material most likely falls towards the end of the BVSG phase (Pioffet 2013). Three different sites have produced this material – Royal Hotel, St Peter Port, Guernsey (a probable settlement with a post-built structure); Les Fouaillages, Guernsey (a long mound); and L'Ouzière, Jersey (artefacts found in association with a preserved peat horizon) (see Tables 2 and 3 for full site references). In addition, Cinglais flint and polished stone rings have been found in various locations across Guernsey, Herm, Jersey and Sark (Table 3; see also Patton 1995, 31; Marcigny et al. 2010, 123; Fromont 2013). As discussed above, both of these materials are usually viewed as having predominantly BVSG associations, although they may extend slightly into the Middle Neolithic as well (Fromont 2008, 83).

Two additional sites have produced assemblages of Cerny ancien pottery (c. 4700-4600 BC), placing them perhaps a century or two later than these Early Neolithic sites: the 'dark occupation layer' found during excavations of the Medieval castle at Mont Orgeuil in Jersey, and two possible beam-slot features (potentially associated with a building) on Herm. Intriguingly, Cerny pottery is also reported to have been found on the small, now-uninhabited island groups of Les Ecréhous (7 km north-east of Jersey) and Les Minquiers (18km south of Jersey). The subsequent NM1b (Pinacle-Fouaillages) phase (c. 4600-4300 BC) sees a slight increase in the number of known sites, producing a total of four associated with features or 'occupation deposits' (Table 2). These include artefacts possibly associated with a midden at La Motte, the well-known occupation site and possible axe production centre at Le Pinacle, a later phase (1d) of the long mound at Les Fouaillages and the settlement site at L'Erée. Pinacle-Fouaillages pottery has also been found (without any clear contextual associations) at three additional find spots – Grosnez Hougue, Les Blanches Banques and Jethou.

We will now turn our gaze outwards, to situate this Channel Islands evidence in relation to that described above for Normandy and Brittany. It is interesting to note that certain elements stand out as being quite different to the mainland, whilst others fit fairly closely with the record there.

On the basis of the few sites we have, the character of the earliest Neolithic archaeology on the islands might be viewed as quite different. As we have discussed, the majority of BVSG (classique/cordons) sites on the mainland have produced buildings, mainly post-built longhouses and their associated quarry pits (Marcigny et al. 2010, 128-136). By contrast, only one of the three BVSG sites from the Channel Islands, Royal Hotel, produced a building (Figure 5), and as far as it is possible to tell the structure there was itself quite unusual in character, being seemingly quite small and irregular (Sebire 2012). The fact that the first mound phase at Les Fouaillages is associated with BVSG pottery is also unusual, placing the tomb extremely early, even in the context of north-western France as a whole[3]. It should also be noted that, as well as being very early, the tomb is also unusual in terms of its morphology (Marcigny et al. 2010, 145). It is difficult to say a great deal about the third site to have produced BVSG cordons pottery, at L'Ouzière, Jersey, since it has not been excavated; external

[2] Two sites in Guernsey – Camp Varouf, L'Erée and Royal Hotel, St Peter Port – have produced two unexpectedly early radiocarbon dates, both falling towards the end of the sixth millennium BC (Cunliffe & de Jersey 2000, 892; Sebire 2012, 253). However, as a consequence of the nature of the samples used – bulked charcoal and unidentified (possibly old) wood charcoal respectively – these must be viewed with some caution. Therefore, in this paper we have chosen to assign broad dates to sites primarily on the basis of the pottery styles found on them. The absolute dates we use are those associated with the relevant pottery styles in mainland France (following Marcigny et al. 2010).

[3] A radiocarbon determination recently obtained from residue on pottery from Phase 1b of the monument gave a date of 4940-4720 cal BC at 95% confidence (Pioffet 2013), confirming this very early attribution.

residues on the pottery produced a date of c. 5050-4850 cal BC (Anderson-Whymark et al. in prep.). However, if, as it seems, it is indeed an occupation deposit without any associated features, again this would place it in a minority category of site for this period on the mainland. Notably, alongside this apparently unusual evidence (in comparison to north-western France), one particular element matches especially the Breton record on the mainland very well. In the Channel Islands, as in Brittany, we see numerous find spots suggestive of BVSG contact – in the form of Cinglais flint (which definitely has to have come from Normandy) and polished stone rings (many of which are also likely to have come from the mainland – Fromont 2013, 207).

Once we move into the Middle Neolithic, the evidence from the islands becomes more similar to the mainland, although it must be admitted that the patterns being compared are predominantly ones of heterogeneity. Sites excavated in the Channel Islands, as in Normandy and Brittany, are seemingly quite varied in character, consisting predominantly of 'other settlement features' (post-holes, pits, hearths, etc.) or 'occupation deposits' but not post-built longhouses. The NM1b phase in the Channel Islands is, of course, also characterised by its own regional pottery style – 'Pinacle-Fouaillages' (Constantin 1985; Patton 1992; Pioffet 2013). While in some ways this might be viewed as a sign that the islands are set apart from the mainland at this time, in fact the emergence of a sub-regional sub-style of pottery also fits very well with broader patterns of regionalisation across north-western France in this phase (Marcigny et al. 2010, 143-144). It is also during this phase that the site at Le Pinacle, Jersey comes into use. Patton has made a convincing case that it should be viewed as an axe production site, suggesting that it was probably tied into what would have been amongst the first axe exchange networks in France (Patton 1995, 29). Given what we now know about the widespread exchange of other flint and stone objects during the BVSG phase, this might perhaps be seen simply as a natural extension of pre-existing patterns.

DISCUSSION: PROCESSES OF TRANSITION IN THE CHANNEL ISLANDS, BRITAIN, IRELAND AND NORTH-WEST FRANCE

During the first few centuries of the fifth millennium, when comparing the Channel Islands record to that of mainland France, intriguing similarities and clear differences are apparent. In the Channel Islands, as in Brittany and parts of western Normandy, we see only very occasional Neolithic sites with features, alongside more numerous findspots of material culture, with BVSG 'Neolithic' associations. As mentioned above, some have argued that the presence of these artefacts demonstrates that 'the Neolithic' did indeed spread into western Brittany during the BVSG phase, and that the character of settlement was simply different to (and much less visible archaeologically in comparison with) the longhouse sites we see further east (e.g. Pailler et al. 2008). This scenario is certainly plausible, and could also be applicable to the Channel Islands. However, we would like to stress that it is also important to consider the possibility that the presence of Cinglais flint, polished stone rings and even perhaps in some cases BVSG-type pottery does not necessarily or straightforwardly indicate the movement of 'Neolithic' people westwards. What they ultimately indicate is simply *contact* with the eastern 'Neolithic' world (where people mined this flint, valued stone rings and knew how to make pottery).

As others have stressed previously, given the undoubted presence of indigenous ('Mesolithic') populations in Brittany, and likely (if low level) populations in the Channel Islands at this time, it is vital to consider their contribution to these processes of change as well. Given the slightly unusual character of the earliest Neolithic (BVSG) Channel Islands sites in comparison to the mainland, it might be argued that these cannot be viewed as straightforward signs of direct colonisation by Neolithic communities from France. In raising questions about the direct colonisation model, however, we do not simply want to replace it with a straightforward 'indigenous adoption' one instead. It seems to us

quite possible that – just as Scarre has suggested in relation to the emergence of monumental architecture in Brittany several centuries later (2011, 95) – what we are seeing in the Channel Islands at this time is the *emergence* of change as a result of contact between (and perhaps fusion of) indigenous and external communities. Perhaps, given this interchange, we should hesitate to call either set of people 'Mesolithic' or 'Neolithic'. What they were doing, however, was gradually coming in with/passing on/exchanging/taking up, a variety of *things* (pottery, stone rings, post-built houses and even tombs) that we now see as being associated with the Neolithic. It is potentially because of this two-way interaction that the slightly atypical BVSG archaeology of the Channel Islands emerges.

The Channel Islands evidence from the Middle Neolithic onwards, by contrast, fits more closely with patterns seen on the mainland. During this time, we also see the emergence of a Channel Islands sub-style of pottery, suggesting the possibility of increasingly islands-specific patterns of interaction and identity (see also Pioffet 2013). It seems likely that by this phase, Neolithic practices were much more widely and universally established across Brittany, Normandy and the Channel Islands. This widespread uniformity at the macro scale may, ironically but perhaps also inevitably, have resulted in a lack of uniformity at the micro scale. Consequently, we see very different types of Neolithic site, and subtle differences in pottery styles.

As we noted at the start of this paper, there is also considerable value in looking at the Channel Islands that extends beyond their strict geographical boundaries. When attempting to understand the Mesolithic-Neolithic transition in Britain and along the Atlantic façade, too often we get stymied by an apparent mismatch between high-resolution regional accounts and broader, almost continental scale metanarratives. What we gain from examining the record along this stretch of coastline is an appreciation of the importance of connectivity, of histories of communication and exchange. When we reconsider the value we attach to material markers we can begin to reconfigure our understanding of the process of change.

In this light, it is important to remind ourselves that the sea-level models we discussed at the beginning indicated that the different islands would have had very different histories of connectivity with the mainland. The absence of any clear differences in the character of Earlier Neolithic evidence between the two main islands (Guernsey and Jersey), and indeed the appearance of Neolithic material on several other Channel Islands during the fifth millennium, is therefore particularly interesting. Jersey was perhaps connected with the mainland until c. 4000 BC, whereas Guernsey, Alderney, Sark, Herm and others had been islands for up to 5000 years longer. 'The Neolithic' apparently arrives no earlier in Jersey than elsewhere, not does it obviously share more similarities with mainland France in terms of the archaeological record. Despite their different levels of maritime and terrestrial connectivity, all of the Channel Islands appear to have been part of broadly the same process of transformation over the course of the fifth millennium. Importantly, this suggests that maritime connections by boat were very strong (just as strong as terrestrial ones) over the course of the late Mesolithic and into the Earlier Neolithic.

In terms of the issues that the transition in the Channel Islands raises about our understanding of the process more widely in Britain and Ireland, several points are worth highlighting. The above picture of substantial maritime connectivity between the Channel Islands and continental Europe could quite possibly be applicable to Britain and Ireland as well (Garrow & Sturt 2011; Anderson-Whymark et al. 2015). Of vital importance in these discussions is the fact that, as noted above, the distance from France to Guernsey c. 5000 BC would actually have been only 8 km longer than that from France to England. Yet the trajectory of transition played out in the Channel Islands is completely different to that in southern England (as well as the rest of Britain and Ireland). As we have seen, the archaeological record in the Channel Islands suggests that this region was very much included in the wider transformations which took place across north-west France at this time (c. 5000-4300 BC) – the

timing and character of the Earliest Neolithic there was comparable to that in the adjacent mainland regions. By contrast, Neolithic practices did not take off fully in southern England until much later (c. 4050 BC), nor did the Earliest Neolithic there clearly echo its contemporary continental counterpart in terms of character (see Anderson-Whymark & Garrow 2015 for an outline of the evidence).

It is very difficult to work out why things worked out quite so differently in these two island groups (one small, one much larger). It is possible that the apparently low levels of Late Mesolithic population in the Channel Islands had some effect, facilitating a different kind of transition there in comparison to southern England. It is also conceivable that potentially different (pre)histories of maritime connectivity between France and the Channel Islands, and between mainland Europe and southern England, set the two regions on very different courses from the start. We have also seen that in the Channel Islands the processes by which 'the Neolithic' arrived were complex and quite possibly bi-directional – an argument sometimes overlooked, but certainly possible to make in relation to southern England as well (Anderson-Whymark & Garrow 2015). It has also become clear from the Channel Islands evidence that we need to be careful not to assume too readily that 'Neolithic' material culture equals the arrival of 'The Neolithic' (including 'Neolithic' people). It can be more complicated than that, and indeed 'The Neolithic' itself appears to have been transformed as it moved into a new geographical area and new context (even if only 25km across the sea). Again, it is important to remember that the same is very likely to have happened in Britain and Ireland as well.

The smaller group of islands (the Channel Islands) cannot be viewed straightforwardly as a microcosm of the much larger collection of islands (Britain and Ireland) in this case – what happened in the two regions over the course of the Earlier Neolithic appears to have been quite different, as we have seen. Nonetheless, as a result of that difference, the Channel Islands are able to act as a lens or mirror on the broader region, providing a different perspective from which to approach an understanding of the transition 8 km further across the sea. In this paper, we therefore hope to have shed new light not just on the arrival of the Neolithic in the Channel Islands, but on the process more widely right around this part of the north-west coast of Europe.

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Figure captions

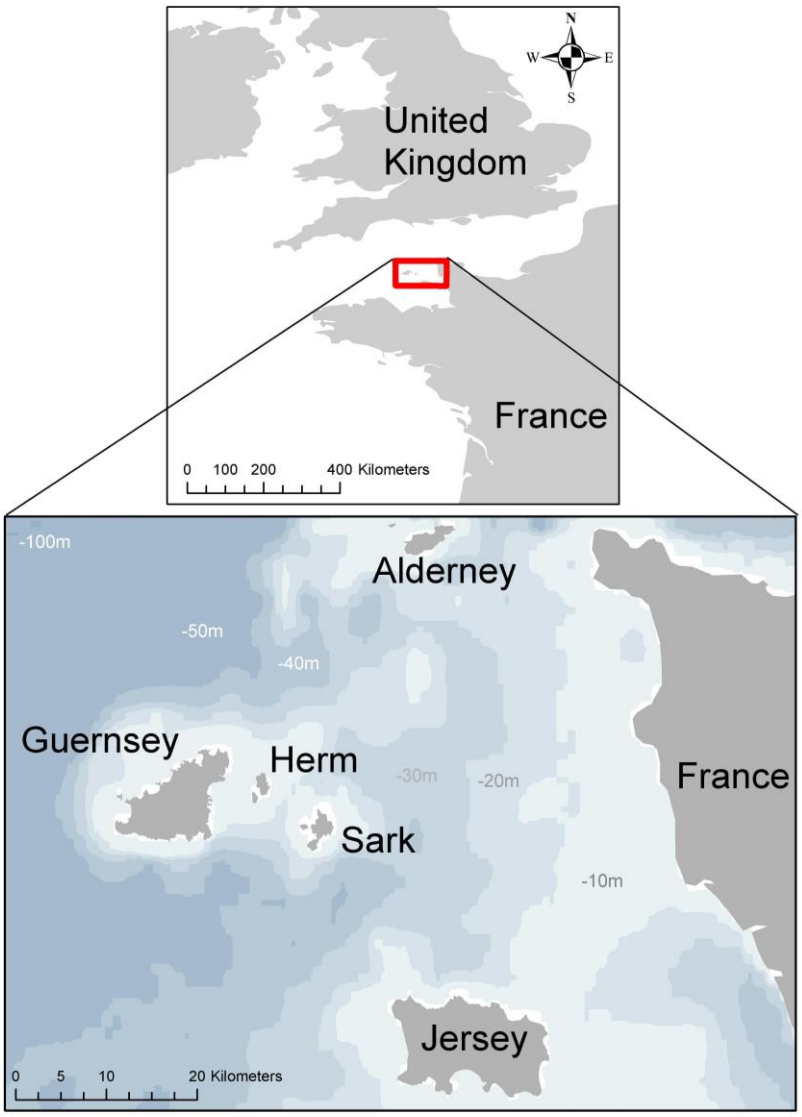
Figure 1. Location map of the Channel Islands (present day)

Figure 2. Graphical representation of sea-level and palaeogeographic change for the Channel Islands between 9000 and 4000 BC. Data from EMODnet (www.emodnet.eu) and GEBCO 2014 (www.gebco.net)

Figure 3. The character of Earlier Neolithic sites in Brittany and Normandy through time (data from Hénaff 2002, Marcigny et al. 2010 and Scarre 2011)

Figure 4. Earlier Neolithic sites and findspots in the Channel Islands, c. 5000-4300 BC. The numbers refer to sites listed in Tables 2 and 3.

Figure 5. The character of Earlier Neolithic occupation sites in the Channel Islands, c. 5000-4300 BC (sources detailed in Tables 2 and 3)



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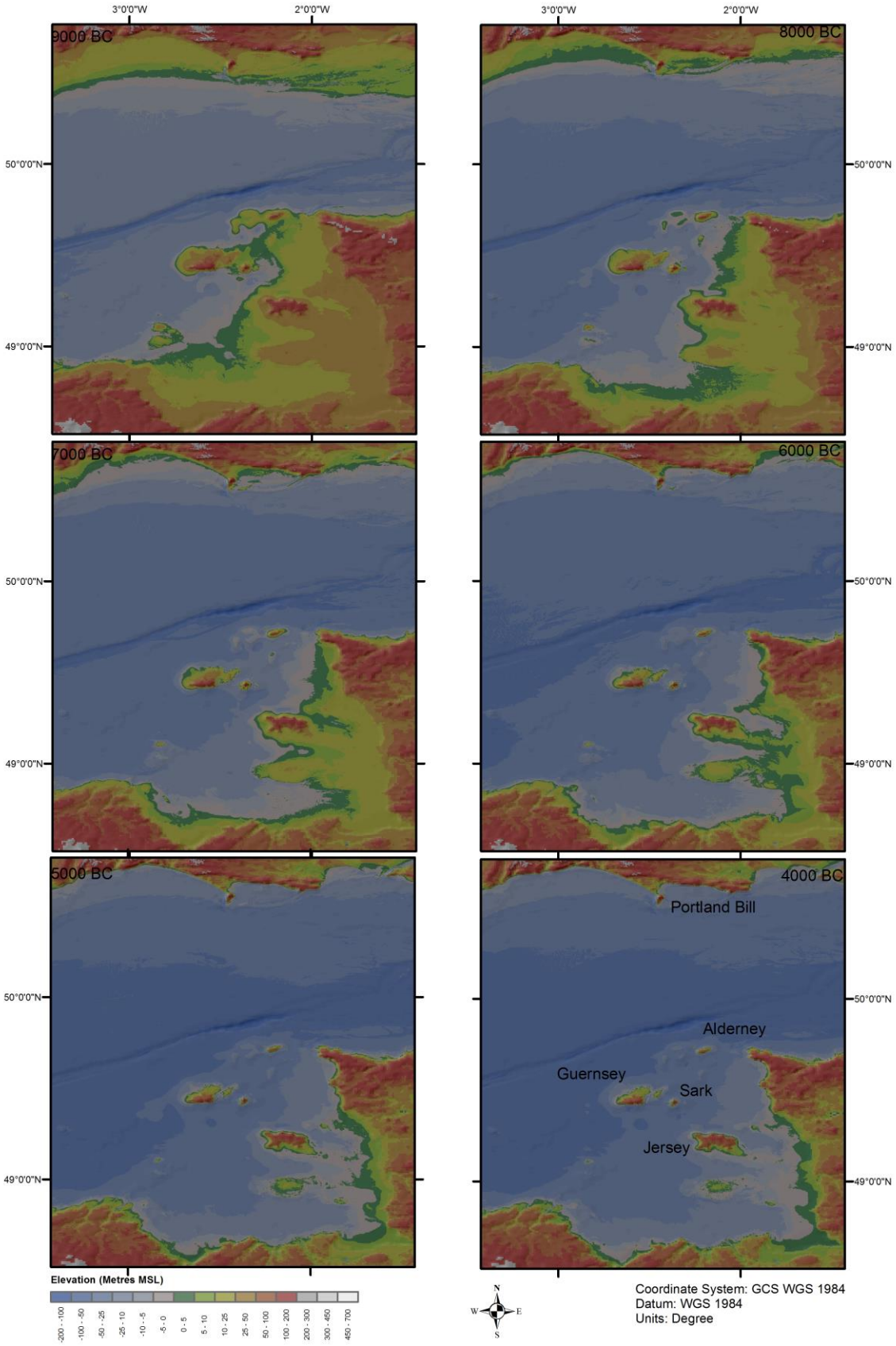

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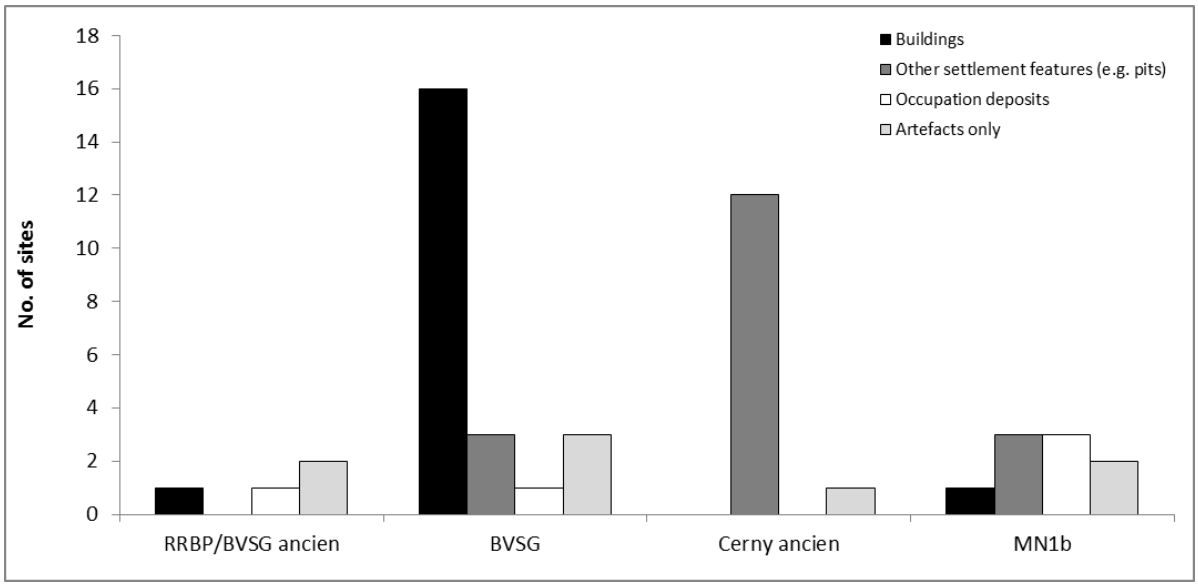

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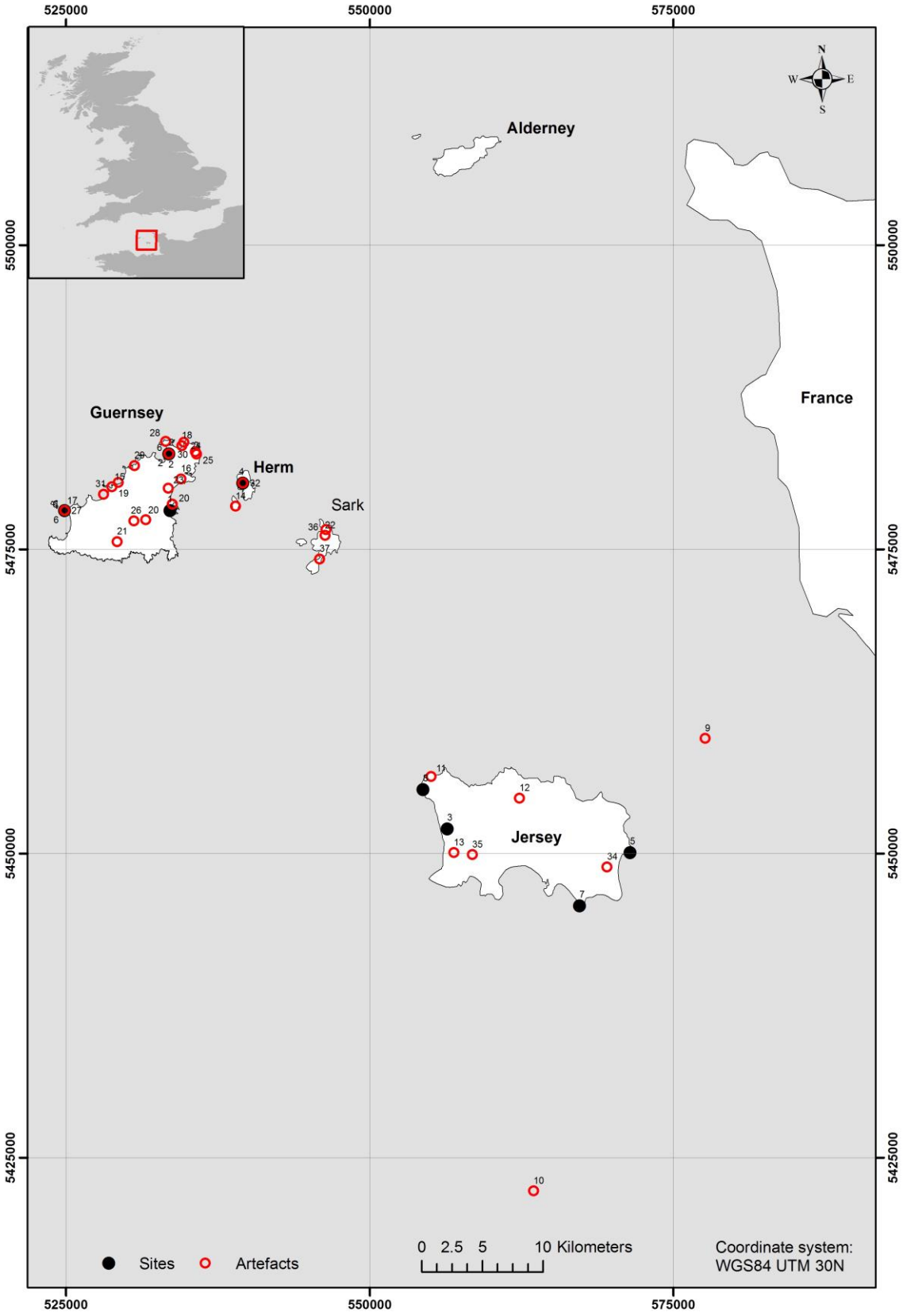

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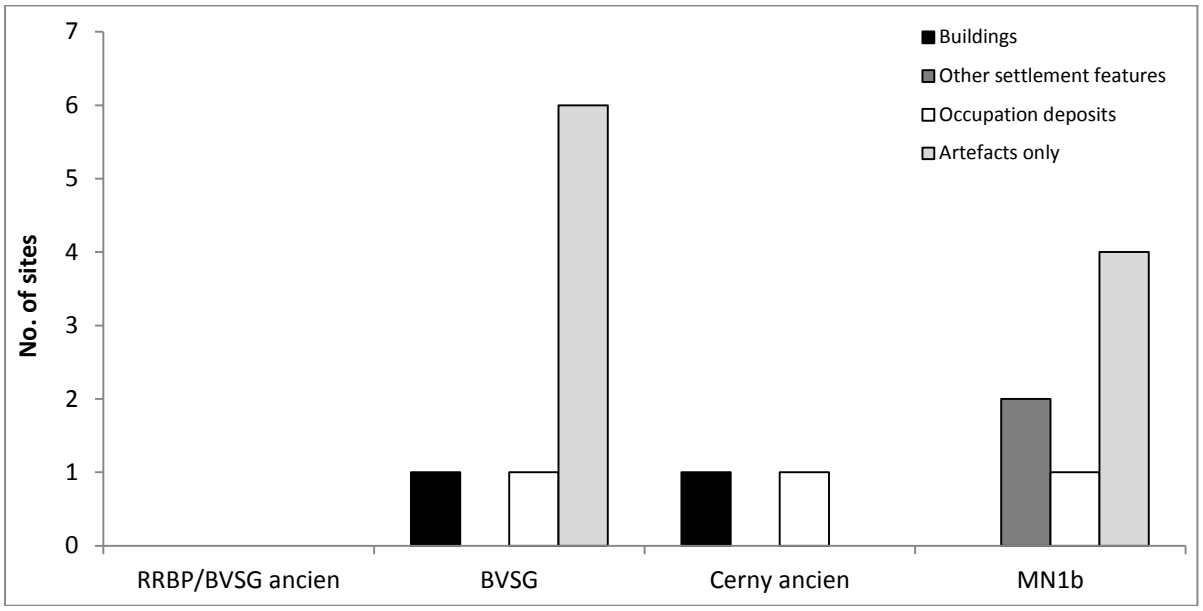

Figure 5. The character of Earlier Neolithic occupation sites in the Channel Islands, c. 5000-4300 BC (sources detailed in Tables 2 and 3)

Site	No. (in Fig 4)	Island	Phase	Approx. date	Site type	Description	Reference
Royal Hotel, St Peter Port	1	Guernsey	BVSG 'cordons'	4900-4700	Buildings	Post-hole structure; artefact-rich layers	Sebire & Renouf 2010; Sebire in prep.
Les Fouaillages (Phase 1b)	2	Guernsey	BVSG 'cordons'	4900-4700	Tomb	Artefacts associated with Phase 1b mound	Kinnes, Ghésquière & Marcigny in prep.
L'Ouzière	3	Jersey	BVSG 'cordons'	4900-4700	Occupation deposit	Artefacts associated with a preserved peat layer	Patton & Finlaison 2001
Herm	4	Herm	Cerny ancien	4600-4300	Buildings	Beam-slot structures (possible)	C. Scarre and H. Pioffet pers. comm.
Mont Orgeuil	5	Jersey	Cerny ancien	4700-4600	Occupation deposit	Artefacts associated with a dark 'occupation layer'	Barton 1984
L'Erée	6	Guernsey	Pinacle-Fouaillages	4600-4000	Features	Pits, post-holes, hearths	Garrow & Sturt in prep.
Les Fouaillages (Phase 1d)	2	Guernsey	Pinacle-Fouaillages	4600-4300	Tomb	Artefacts associated with Phase 1d cists	Kinnes, Ghésquière & Marcigny in prep.
La Motte	7	Jersey	Pinacle-Fouaillages	4600-4300	Occupation deposit	Artefacts possibly associated with a midden	Warton 1913; Marcigny et al. 2010
Le Pinacle	8	Jersey	Pinacle-Fouaillages	4600-4300	Features	Occupation layer on axe production site, assoc. with hearths/middens	Godfrey & Burdo 1949; Patton 1991

Table 2. Earlier Neolithic evidence from the Channel Islands (sites with features/deposits)

Site	No. (in Fig. 4)	Island	Phase	Approx. date	Site type	Description	Reference
Les Ecréhous	9	Other	Cerny	4700-4300	Artefacts (pottery)	Artefacts with no secure context	Patton 1995, 135
Les Minquiers	10	Other	Cerny	4700-4300	Artefacts (pottery)	Artefacts with no secure context	Patton 1995, 135
Grosnez Hougue	11	Jersey	Pinacle-Fouaillages	4600-4300	Artefacts (pottery)	Artefacts associated with a possibly later, destroyed tomb	Rybot 1924; Marcigny et al. 2010
Hougue Boëte	12	Jersey	Pinacle-Fouaillages	4600-4300	Artefacts (pottery)	Artefacts associated with a possibly later tomb	Deyrolle & Mauger 1912; Marcigny et al. 2010
Les Blanches Banques	13	Jersey	Pinacle-Fouaillages	4600-4300	Artefacts (pottery)	Artefacts with no secure context	Patton & Finlaison 2001
Jethou	14	Jethou	Pinacle-Fouaillages	4600-4300	Artefacts (pottery)	Artefacts with no secure context	C. Scarre pers. comm. (see Sebire & Renouf 2010, 370)
Albecq	15	Guernsey	BVSG (?)	5000-4500	Artefacts (Cinglais flint)	Artefact with no secure context	Guyodo & Hamon 2005, 393
Delancey Park	16	Guernsey	BVSG (?)	5000-4500	Artefacts (Cinglais flint)	Artefact with no secure context, in association with a later tomb	D. Hawley pers. comm.
L'Erée	17	Guernsey	BVSG (?)	5000-4500	Artefacts (Cinglais flint)	Artefact with no secure context	Garrow & Sturt in prep.
Les Fouaillages	6	Guernsey	BVSG (?)	5000-4500	Artefacts (Cinglais flint)	Artefact with no secure context	Audouard 2009
Le Dehus passage grave	20	Guernsey	BVSG (?)	5000-4500	Artefacts (Cinglais flint)	Artefact with no secure context	Guernsey Museum; D. Hawley pers. comm.
L'Ancresse	18	Guernsey	BVSG (?)	5000-4500	Artefacts (Cinglais flint)	Artefact with no secure context	Guernsey Museum; D. Hawley pers. comm.
Cobo	19	Guernsey	BVSG (?)	5000-4500	Artefacts (Cinglais flint)	Artefact with no secure context	Guernsey Museum; D. Hawley pers. comm.
Savoy Hotel , St Peter Port	20	Guernsey	BVSG (?)	5000-4500	Artefacts (Cinglais flint)	Artefact with no secure context	Guernsey Museum; D. Hawley pers. comm.
Guernsey airport	21	Guernsey	BVSG (?)	5000-4500	Artefacts (Cinglais flint)	Artefact with no secure context	Guernsey Museum; D. Hawley pers. comm.
Gaudinerie	22	Sark	BVSG (?)	5000-4500	Artefacts (Cinglais flint)	Artefact with no secure context	Sark Museum; D. Hawley pers. comm.
Chateau des Marais	23	Guernsey	BVSG (?)	5000-4500	Artefacts (stone ring)	Artefact with no secure context	Patton 1995, 33
L'Ancresse peat deposits	24	Guernsey	BVSG (?)	5000-4500	Artefacts (stone ring)	Artefact with no secure context	Guernsey SMR; D. Hawley pers. comm.
Le Dehus passage grave	25	Guernsey	BVSG (?)	5000-4500	Artefacts (stone ring)	Artefact with no secure context	Patton 1995, 33
Le Trepied (field), St Andrew's	26	Guernsey	BVSG (?)	5000-4500	Artefacts (stone ring)	Artefact with no secure context	Kendrick 1928, Patton 1995
L'Erée	6	Guernsey	BVSG (?)	5000-4500	Artefacts (stone ring)	Artefact with no secure context	Garrow & Sturt in prep.
L'Erée	27	Guernsey	BVSG (?)	5000-4500	Artefacts (stone ring)	Artefact with no secure context	Patton 1995, 33
Les Fouaillages x 7	2	Guernsey	BVSG (?)	5000-4500	Artefacts (stone ring)	Artefact with no secure context	Patton 1995, 33; Fromont 2013
Mont Cuet, Vale	28	Guernsey	BVSG (?)	5000-4500	Artefacts (stone ring)	Artefact with no secure context	Guernsey SMR
Port Soif	29	Guernsey	BVSG (?)	5000-4500	Artefacts (stone ring)	Artefact with no secure context	Guernsey SMR

Tombeau du Grand Sarrazin	30	Guernsey	BVSG (?)	5000-4500	Artefacts (stone ring)	Artefact with no secure context	Kendrick 1928, Guernsey SMR
Vazon Bay peat	31	Guernsey	BVSG (?)	5000-4500	Artefacts (stone ring)	Artefact with no secure context	Kendrick 1928, Patton 1995
Herm	32	Herm	BVSG (?)	5000-4500	Artefacts (stone ring)	Artefact with no secure context	C. Scarre pers. comm.
Jersey (unknown provenance) x 4	33	Jersey	BVSG (?)	5000-4500	Artefacts (stone ring)	Artefact with no secure context	Patton 1990; 1995, 33
Longueville	34	Jersey	BVSG (?)	5000-4500	Artefacts (stone ring)	Artefact with no secure context	Patton 1990; 1995, 33
Quennevais	35	Jersey	BVSG (?)	5000-4500	Artefacts (stone ring)	Artefact with no secure context	Patton 1990; 1995, 33
"North of the island"	36	Sark	BVSG (?)	5000-4500	Artefacts (stone ring)	Artefact with no secure context	B. Cunliffe, pers. comm.
Le Coupee x 3	37	Sark	BVSG (?)	5000-4500	Artefacts (stone ring)	Artefact with no secure context	B. Cunliffe, pers. comm.

Table 3. Earlier Neolithic evidence from the Channel Islands (find spots)