

NB: Olivia, we have had to cut a date (the earliest) so there was a little cutting...

NB2 – SAIR vols – how do you want to refer to them Olivia, forthcoming or in press, I have tried to make all forthcoming as it is not technically in press?

Scotland's First Settlers: The study of an archaeological seascape.

Karen Hardy & Caroline Wickham-Jones

Introduction

Scotland's First Settlers (SFS) was set up in 1998 as a small scale regional study of the Mesolithic around the Inner Sound and Sound of Raasay, between Skye and the west coast of Scotland (Figure 1; Finlayson *et al* 1999a; Hardy & Wickham-Jones 2000a). Given the importance of the sea in the Mesolithic, both as a resource and for transport, the project was conceived and organised as a seascape project. This means that work was targeted around the varied coastline and many islands. This paper will first outline briefly the results of work so far, before looking in more detail at the rationale behind the choice of the Inner Sound seascape as the geographical basis for the project.

Aims

The project is concentrating on issues of local mobility, resource exploitation, and climate in the early Holocene (Hardy & Wickham-Jones 2002a, 2003). It is hoped to shed light both on the initial incursions of people into the area and on the transition to farming.

Fieldwork

SFS fieldwork involves three main strands:

- coastal survey, to identify potentially Mesolithic sites, both rockshelters and caves as well as open sites;
- test pitting to assess preservation and dating of sites;
- detailed examination through excavation of a few selected sites.

Survey Results

To date, coastal survey has recorded 193 new sites, of which 90 have been test/shovel pitted (Figure 2; Finlayson et al 1999 a & b, Hardy & Wickham-Jones 2000a, b & c, 2001a, 2002b). While it is too early to identify how many sites date to the Mesolithic, 77 contain flaked lithics, including 39 lithic scatter sites. Many of the newly found sites are rockshelters (Figure 3) though some open middens and lithic scatters have been recorded (Figure 4). One site is particularly interesting, an inter-tidal site in the bay of Clachan Old Harbour on Raasay (Figure 5). It comprises tree stumps and roots lying in peat just below the high tide line. There is local information that lithics were once visible here (and in 2001 one flake was recovered from the peat at the base of a stump) and current work at Coventry University will provide detailed information on early Holocene sea-level change in the Inner Sound.

Although many of the surveyed sites contain material that dates to more recent times than the Mesolithic, over one third have visible lithic material suggesting the widespread use of caves and rockshelters in earlier prehistory. A wide spread of human activity has been supported by a series of radiocarbon dates (*Olivia – do you want a list of C14 dates from the survey sites? – it would be more for completeness than anything, does not add or detract from the argument, I can send one if you do and it could be a table here - C*) and the final publication of the project will, of course, include information on the more recent sites. For the purposes of this paper, however, we have chosen to concentrate on the Mesolithic material which forms the focus of our attention.

Excavation at Sand

One major excavation, at Sand in the Applecross peninsula, has been carried out (Figure 1; Hardy & Wickham-Jones 2000b, 2000c, 2002a). Sand is a rockshelter site, where an extensive midden lay just below the turf (Figure 6). The excavations looked not only at the midden itself, but also at the areas beside the midden in an attempt to examine changing levels of preservation and the differences between the contents of the midden and

its surroundings. Organic preservation in the midden was very good and the finds included bevel ended and pointed bone tools (Figure 7), a fragment of antler harpoon, ochre, haematite, and worked shell, as well as a narrow blade microlithic assemblage (Figure 8).

There are 2 clusters of radiocarbon dates from Sand. One, 7855 - 7500 bp, is surprisingly early and shows it to be the earliest known shell midden and earliest occupied rockshelter in Scotland. The second, 6600 - 6400 bp shows a recurrence of activity after some 1000 years. The association of a small flaked and ground axe with the second group of dates suggests that it may represent early Neolithic activity. The earlier dates are very interesting in view of similar dates from other Inner Sound sites such as An Corran (Figure 1; Saville & Miket 1994) and Loch a Sguirr (an SFS site), as well as Camas Daraich further south in Skye (Wickham-Jones & Hardy forthcoming) and Kinloch on Rum (Wickham-Jones 1990).

SITE	Lab code	Sample	Age BP	dC13	Cal Date BC 1 sigma	Cal Date BC 2 sigma
Sand	OxA-10384	bone, mammal (bevel ended tool)	7855±60	- 21.1	6980-6590	7050-6500
Sand	OxA-10175	bone, mammal (bevel ended tool)	7825±55	-21.1	6750-6510	7050-6450
Sand	OxA-9343	charcoal (<i>Betula</i>)	7765±50	-24.6	6650-6500	6680-6460
Sand	OxA-9281	bone, deer (bevel ended tool)	7715±55	-21.3	6600-6460	6650-6440
Sand	OxA-9282	bone, deer	7545±50	-20.8	6460-6260	6470-6240

		(bevel ended tool)				
Sand	OxA-9280	antler	7520±50	-21.8	6440-6260	6460-6240
Sand	OxA- 10176	bone, deer (bevel ended tool)	6605±50	-20.9	5620-5480	5630-5470
Sand	OxA- 10177	bone, deer (bevel ended tool)	6485±55	-21.8	5490-5360	5540-5320
Loch a Sguirr	OxA-9305	charcoal (<i>Betula</i>)	7620±75	-26.6	6590-6390	6640-6250
Loch a Sguirr	OxA-9255	bone, deer (bevel ended tool)	7245±55	-21.6	6210-6020	6230-6000
Camas Daraich	OxA-9782	hazelnut shell	7670±55	-24.2	6590-6440	6640-6420
Camas Daraich	OxA-9783	hazelnut shell	7985±50	-25.1	7060-6820	7060-6690
Camas Daraich	OxA-9784	hazelnut shell	7545±55	-25.4	6460-6260	6470-6240
Camas Daraich	OxA-9971	hazelnut shell	7574±75	-27.2	6480-6260	6570-6230
An Corran	OxA-4994	bone, red deer (bevel ended tool)	7590±90		6490-6246	6551-6188
Kinloch	GU-1873	hazelnut shell	8590±95	-24.9		8000-7350
Kinloch	GU-2040	hazelnut shell	8560±75	-25.1		7780-7480
Kinloch	GU-1874	hazelnut shell	8515± 190	-23.8		8200-7000
Kinloch	GU-2150	hazelnut shell	8310± 150	-25.7		7650-6800

Kinloch	GU-2146	hazelnut	8080 \pm 50	-25.0		7310-6820
		shell				
Kinloch	GU-2039	hazelnut	7925 \pm 65	-25.3	7060-6569	7050-6650
		shell				
Kinloch	GU-2147	hazelnut	7880 \pm 75	-25.1	7050-6493	7050-6500
		shell				
Kinloch	GU-2145	hazelnut	7850 \pm 50	-25.0	7026-6495	7050-6500
		shell				
Kinloch	GU2149	charcoal	7570 \pm 50	-25.3	6554-6230	6500-6250

Table 1: Radiocarbon dates relating to Sand, Loch a Sguirr and nearby Mesolithic sites. (*Editor: we have the data to present this as a figure if you prefer*) *Olivia, I have included it as a sep file on the CD you can decide if you wish to use it. C*

The lack of fish bone in great quantity in the midden at Sand suggests to the excavators that the shellfish were eaten directly (as opposed to used as bait), though the precise interpretation of the deposits is as yet unclear. It is possible that shellfish were used as a famine resource, but on the other hand a glut of shellfish may be represented (Claassen 1991). The two interpretations are not, of course, mutually exclusive. Recent work on midden sites and shellfish suggests a wide variety of explanations for midden deposits and this is something that the project will be looking at in more detail (Bailey & Milner 2002; Claassen 1991; Hardy in prep; Stiner *et al* 2003; Wickham-Jones 2003; Woodman 2001).

Initial interpretation of the finds from the midden shows the value of the sea to the occupants of this site, with a wide range of marine resources represented. Shells made up the body of the midden, in particular limpet shells which constitute around 90% of the total. Both inter-tidal and coastal resources were obviously important, as there were many bird bones and crustaceans in the midden, as well as the shells. Fish bones show that deep sea species were caught as well as shallow water fish; species identified so far include cod, saithe, pollack, wrasse, mackerel and herring. Further evidence of the exploitation of the sea is provided by the fragment of antler harpoon, also an indication that land-based resources were included. A large assemblage of bone and antler,

the majority of which is from red deer, and a substantial number of burnt hazelnuts, emphasise the variety of habitats utilised by the population at Sand.

Within the midden itself, there was also evidence of activities unrelated to food. There was a substantial amount of lithic debitage, and this, together with the harpoon fragment that appears to have broken during manufacture, suggests tool production. There were several pieces of worked scallop shell (Figure 9), and the presence of perforated cowrie shell beads suggests information about clothing and decoration. The harvesting of inedible dog whelk (from which a purple dye can be extracted) and the recovery of ochre and haematite from within the midden are indicative of the use of colour and the decorative arts.

With regard to the wider context of the site, geomorphological work around Sand has identified three new paleo-shorelines. These suggest that at 7700 BP the sea-level had risen to just below the rockshelter with a brackish marsh leading to exposed rock pools at a walking distance of some 30m (Figure 10; Cressey 2000).

Landscape/seascape

During the Mesolithic the sea was unquestionably of great importance, both as a resource provider and as a means of transport, and the traditional archaeological emphasis on the view from the land is not necessarily an accurate reflection of the world of the inhabitants of Mesolithic Scotland. Archaeological work is usually land-based, but to view the world only from the land outwards is limiting. Indeed, to view the sea as a boundary rather than an opportunity is a very twentieth-century point of view. The coastline itself has much to offer in terms of small islets, bays and promontories, and the combination of these means that in most places around the west coast of Scotland the vistas across the water make the sea a cohesive rather than a divisive element.

For SFS, the Inner Sound provided a compact, almost enclosed area of sea interspersed with islands. This gave the project an excellent opportunity to turn around traditional landscape-based research in a way that may be

particularly appropriate for analysis of the detailed picture of Mesolithic exploitation. In addition, further afield within the general region lie other Mesolithic sites which are also oriented towards the water, such as Kinloch on Rum (Wickham-Jones 1990) and Camas Daraich to the south on Skye (Figure 1; Wickham-Jones & Hardy forthcoming). These sites can be loosely linked by both finds and dates to the sites in the Inner Sound, allowing us to examine the wider world of the Mesolithic hunter-fishers, emphasizing just how fluid this was.

For the people of the west coast in the Mesolithic, the presence of the sea was clearly one of the most important factors in their lives. It was a basic provider in two main ways.

Transport

To those with no wheeled transport, journeys over land are arduous and difficult. In Mesolithic Scotland this was compounded by the nature of the land. Much of Scotland is mountainous and during this period it would also have been forested with virgin woodland very different to the cultivated and managed tree-rich landscapes of today. While the growth of living trees made sight-lines difficult, abundant dead-wood and undergrowth impeded traffic through the forests. Movement inland would have been difficult, dangerous and slow.

The sea, in contrast, while not without its own dangers, offered the option of fast and easy transport. The open seascape provided general inter-visibility, thus allowing the inhabitants of the Inner Sound a clearer knowledge of the world through which they travelled. Coastal topography meant that this extended to easier access into the hinterland, through deeply indented sea lochs and up many rivers and lochs. Although no water-craft survive in Scotland from this time (Mowat 1996), remains elsewhere (Andersen 1986) show that a variety of craft must have been available. Weather conditions and local currents could all combine to assist the seafarers on their way, though it is also true that they could combine to mitigate against them. The travellers of the Mesolithic were skilled seafarers.

Resources

The land and seascapes of the Inner Sound presented a variety of resources to its Mesolithic inhabitants. It is an area of deep and volatile sea speckled with islands of varying sizes. The coastal topography is varied: there are stretches of steep-sided, mountainous and rocky coast which slope quickly down into deep water (Figure 11); but there are also areas of more gentle coast, and in many places rocky foreshores are exposed for long periods. Today, the Inner Sound is a fertile area, both for fish and shellfish, and this was clearly the case in the past, despite considerable sea-level change. The volatile environmental conditions of the early Holocene may well have contributed to this with constant changes through erosion and sedimentation in the shallower waters. Meanwhile, the deep sea lying so near much of the coast was also well used, as shown by the presence of deep water fish remains in the middens. Along the shores this variety continued on to land. In addition to the Mesolithic woodland and forest, there were pockets of open land, both lower down and on the high moors. There were both fresh-water and brackish wetlands. These combined to provide access to many different resources, both near to and further away from the coast.

Many of the marine resources were seasonal, just like those of the land, but they had one important advantage: many offered a higher energy return for less outlay than the resources of the land. Shellfish and other coastal products such as fish, seals, birds and eggs were, between them, important sources of both protein and fats.

Other resources of the coast are, perhaps, less obvious today. Stone was important in the Mesolithic, not so much as a building material but rather for tools. The coasts of the Inner Sound and its immediate environs provided an abundant variety of silica-rich rocks that could be flaked to create fine edges and these occurred both *in-situ* and as eroded pebble nodules. These could be collected and they were to play an important part in the local material culture (see below).

Distribution of sites

The distribution of sites recorded around the Inner Sound seems to concentrate in three specific areas (Figure 2): around the site of An Corran at Staffin in the north, where a series of lithic scatters lies between the sources of two different lithic raw materials; along the central island belt, including the small islands of Pabay and Scalpay and the larger island of Raasay, where lithic scatters and several large middens have been recorded; and on the Applecross peninsula, where over 80 sites, of various types, have been recorded. Other stretches of coast, though surveyed, have revealed few sites. In some cases this may be due to the local topography – for example, along the Skye coast to the north of Portree; in other cases it is more likely to be due to the destruction of archaeological sites by more recent developments such as farming and building, for example, along the coastal plains around Broadford. Resources also played a part: the island of Rona has very little evidence of prehistoric activity and this may be due, at least in part, to the lack of fresh water on the island. Finally, survey along the three adjacent sea lochs – Loch Torridon, Loch Carron and Loch Kishorn – suggests that these areas were not so intensively occupied as the outer coastlines, though prehistoric activity was attested by a number of lithic scatter sites.

The Mesolithic Around the Inner Sound: the Wider View

Despite the relatively small size of the study area, in European terms, it is clear that there is considerable variation in the way in which its coastal areas were used throughout the Mesolithic. SFS survey has revealed various types of early site along the coastal strip and these go together to form the suite of Mesolithic activity: there are rockshelter sites, some with and some without midden material; and there are open sites, some of which contain midden while others comprise lithic scatters. Midden sites clearly formed only part of the settlement suite of the Inner Sound in the Mesolithic, but it is worth looking at their role in more detail.

Despite the number of sites around the Inner Sound, verified Mesolithic middens are, so far, relatively rare – surprisingly so given the length of time during which the Mesolithic took place. Even given that some lay

below the present high tide, or under rockfall on land, the traditional simple equation between midden sites and the Mesolithic is clearly misleading (and this is backed up by research elsewhere, eg Woodman 2001). It is likely that the picture is more complex and this is supported by closer study of the three known Mesolithic shell middens in the Inner Sound, which reveals that each was very different. Each midden appears to have answered different needs, though at this stage they can only provide clues as to the varied uses of the study area that need to be explored further.

An Corran is a large, deep midden, which appears to have been occupied on and off over a long time, at least into the Neolithic (Figure 12; Hardy *et al.* forthcoming). It is located beside two particularly good lithic sources (baked mudstone and chalcedonic silica), and this may have given it a role of central importance in the Inner Sound. Preliminary analysis of the use of lithic raw materials around the Inner Sound has shown that both baked mudstone and chalcedonic silica were commonly used, even when they had to be transported over some distance (Wickham-Jones & Hardy forthcoming). SFS survey has revealed a cluster of lithic scatter sites of varied date (Figure 13) very close to An Corran, and these clearly merit further examination.

In contrast, the midden at Sand may relate to a much more short-lived burst of activity. Although Sand, too, appears to be related to a particularly advantageous local environment, the occupants were making use of different things. Apart from local cherts and quartz of varying quality, there is no good stone in the immediate vicinity, but the site has other things to offer. The rockshelter is east-facing (Figure 14) and affords good protection from the wind and weather. It lies adjacent to a sandy bay with a long tidal range and a large inter-tidal area. Today, the rocks below Sand offer a rich supply of shellfish; during the Mesolithic, the tidal range and inter-tidal zone are likely to have been at least as large as they are today, so that the site was ideally located for the harvesting of marine resources. In addition, higher sea-levels meant that the sea would have been nearer to the site, reaching into a small inlet immediately below the rockshelter to provide a protective environment

for the use of small boats. Both Sand and An Corran are well placed at the head of various routes into the mountainous hinterland.

Loch a Sguirr, on Raasay, is a very different type of site to both Sand and An Corran. It lies at the top of a cliff (20 m OD; Figure 15), well away from shallow water deposits. The midden deposits at Loch a Sguirr are neither so dense nor so deep, and it is unlikely to have been an intensive shellfish processing site. There are, however, clear signs of Mesolithic activity -- indeed Loch a Sguirr may provide an idea of the more common type of Mesolithic midden, where the midden does not represent the central focus of activity. On most Mesolithic sites poor organic preservation would destroy remains such as those preserved here, but at Loch a Sguirr particularly good organic preservation has led to the survival of material such as that which has disappeared on many other sites (as at Kinloch, Wickham-Jones 1990, or Camas Daraich, Wickham-Jones & Hardy forthcoming). Loch a Sguirr is also a spectacular site; no one can deny the grandeur of the rockface and its geographical setting (Figure 15), and this may well have been an important factor in its use. Another element must surely have been its central location in the Inner Sound. From the hill above the site there are clear views across the Inner Sound on all sides. Whether the central island chain, where Loch a Sguirr is situated, provided a hindrance to travel across the Inner Sound in the Mesolithic or facilitated it has yet to be determined, but the site at Loch a Sguirr is a clear indication that the Mesolithic seafarers made use of it.

Why the Inner Sound?

So far, SFS has demonstrated a remarkable density of sites in the Inner Sound area. Whether or not this is representative of Mesolithic Scotland as a whole, it opens up certain issues for study. What were the attractions of this area in the early Holocene? How far did people range? What were the bases for the necessities of life? How was the area affected by contemporary climate change and how did its inhabitants cope with this?

The advantages of the marine topography with its numerous islands have already been touched upon. Travel and settlement were central to the nomadic hunter-gatherer way of life, as commonly envisaged for the Scottish

Mesolithic, and both were facilitated by the Inner Sound environs. This topography also provided a rich resource base from which various niches could be exploited, including salt and fresh water, shallow and deep water, coastal, lowland and upland land units. There were also good routes both by sea and overland outwith the area.

Movement is central to our interpretation of the way of life in the Inner Sound in the sixth to eighth millennia BP, but movement is a notoriously difficult thing to document archaeologically. Luckily for SFS, one of the other resources of the Inner Sound comes into play here, not only as an important resource in the Mesolithic, but also as an important resource for the archaeological researcher of today. This resource is stone. Stone, suitable for tools, was vital to the Mesolithic population of Scotland, but a general lack of good quality flint deposits meant that they had to search for and use a variety of other materials. The Inner Sound offered several potentially useful lithic resources and SFS has shown that many of these were exploited. Although very local types of stone were used, the Mesolithic inhabitants of the area preferred better quality material, even if it was restricted in source and only to be found further away. This has meant that on most sites there are raw materials that can be traced back to their source, and thus a detailed picture of a complex web of stone location, transport and use is building up (Hardy & Wickham-Jones 2003).

It is one thing to document imported stones, another to interpret the ways in which they were obtained and transported. Natural movement has been ruled out, but the picture of lithic exploitation across the Inner Sound needs considerable refinement. In the past, a lack of data has meant that analysis of the transport of stone in the area remained largely conjectural (Clarke & Griffiths 1990). New information on artefact types, the presence or absence of knapping debris and variation in cortex is being collected with the same rigour for each individual site (Wickham-Jones & Hardy forthcoming). This should eventually provide more detail on the movement of stones, and therefore of people, around the Inner Sound.

The Future

There are limitations to the project and we are very aware of these. The world below present high tide has yet to be investigated, and this is an important factor for a seascape study in an area that has been subject to considerable sea-level change. The inter-tidal site at Clachan Old Harbour on Raasay is an indication that such remains do exist here, and an important reminder of the value of this zone (Figure 5). Further analysis should provide information on both environmental change and widen the picture of Mesolithic activity across the Inner Sound.

Another limitation lies in the seascape bias. The coastal /sea based round comprised only a part of the annual cycle of the Mesolithic. In this respect, the Inner Sound offered many links to the wider world for its inhabitants. In future, we hope to link up with land-based survey, for example of the upland areas of Skye or the nearby mainland.

In this way we hope to expand the range of sites, information and activity bases in order to present a wider picture of the Inner Sound in the Early Holocene.

Conclusion

SFS has tried to avoid the traditional archaeological approach by which the sea was turned into a barrier that defined an area of archaeological survey. Instead, the sea is viewed as a cohesive entity that holds an area together. It may well have provided a focus for those living in its vicinity during the Mesolithic, and it has certainly provided a fruitful focus for the archaeologists working around its shores in the early twenty-first century.

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