

## The Vale of Pickering in the Mesolithic: uncovering the early post-glacial landscape

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*Since 1954, when Grahame Clark published the results of his excavations at Star Carr in northeast Yorkshire, the site has been recognized as a key to understanding early Mesolithic hunter-gatherer settlement and subsistence in northwest Europe. In 1976, archaeological and palaeoenvironmental research in the area was resumed – since 1986 under the auspices of the Vale of Pickering Research Trust – and it is now possible to set Star Carr and nearby Mesolithic sites in the wider context of the early post-glacial landscape.*

During the past 25 years, research on the Vale of Pickering in the Mesolithic has focused particularly on the area east of Star Carr. The main aims of the research currently being undertaken in the vicinity of Star Carr in the eastern vale are:

- to relate the site to its environment by reconstructing the surface topography and superficial geology around the shores of the lake that existed during the early Mesolithic period between 10 000 and 7500 years ago (palaeolake Flixton)
- to examine systematically the shoreline of the former lake by means of regularly spaced test pits and to identify and interpret areas of Mesolithic activity
- to integrate palaeoenvironmental, topographical and archaeological data in order to understand how the landscape was occupied and exploited in late-glacial and early post-glacial times.

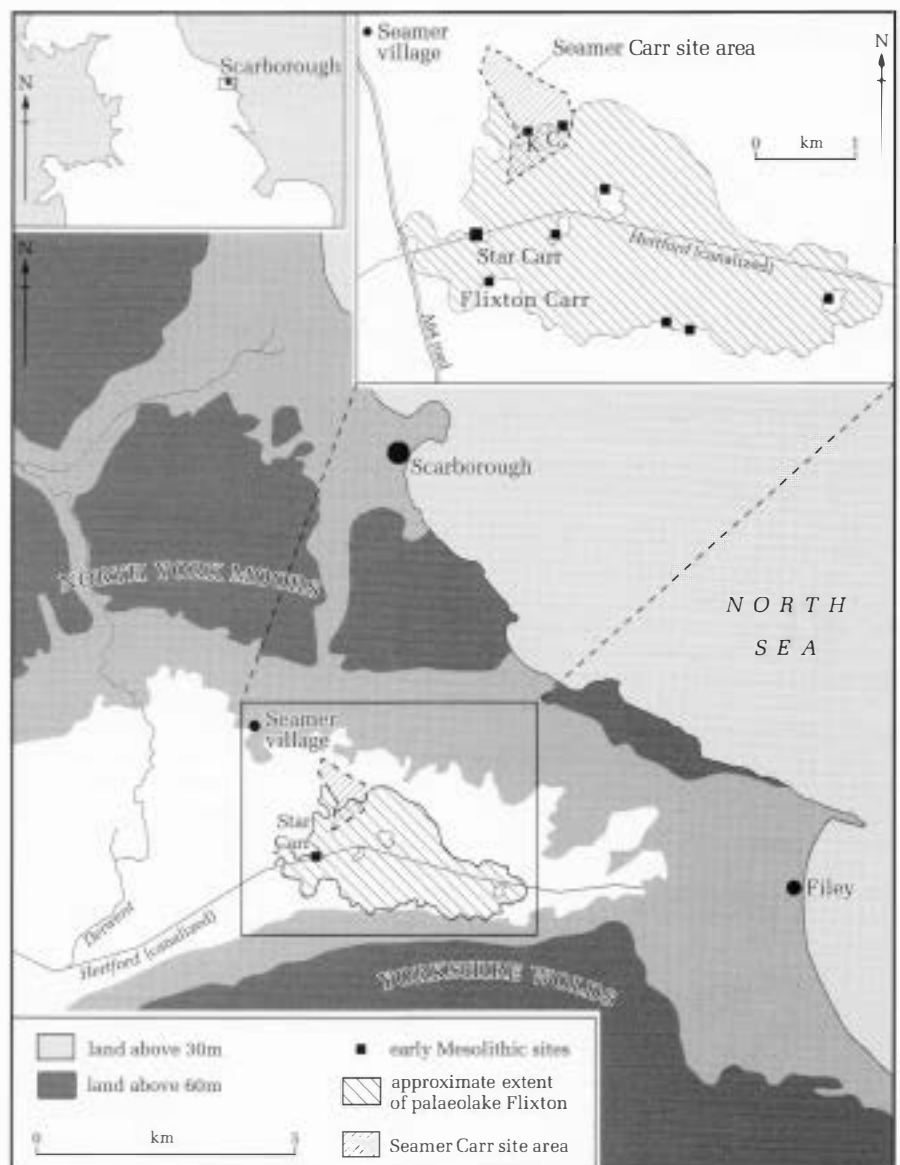
### The environmental history of the Vale of Pickering

The Vale of Pickering is a broad flat-floored valley approximately 40 km long and 5–7 km wide, bounded to the south by the chalk scarp of the Yorkshire Wolds and to the north by the dip slope of the Jurassic limestone of the North York Moors (Figs 1, 2). It is underlain by soft deposits of clay that were eroded during the most recent major glaciation. When the ice retreated about 14 000 years ago, a lake some 10 km<sup>2</sup> in extent was formed at the eastern end of the vale<sup>1</sup> (Figs 1, 2) and a series of late- and post-glacial gravels and sands were deposited across the valley floor. Between 11 500 and 5000 years ago these deposits (especially in the eastern vale) were in turn covered by peat. It is significant that, despite the length of the vale, all the important early Mesolithic deposits and sites appear to be concentrated at its eastern end. This is almost certainly because palaeolake Flixton was, from the late-glacial period until it ceased to exist as an open water between 6000 and 5000 years ago, a relatively stable element in the landscape of the vale, located at the head of the catchment area of the River Derwent and

fed predominantly by springs from the Wolds. Thus, it was little affected by the seasonal variations in the flow of the Derwent and its tributaries, which affected the

rest of the vale and made the environment to the west of the lake far less predictable.

The site at Star Carr, which was discovered in 1948 by a local archaeologist, John Moore, was located on the edge of palaeolake Flixton and had subsequently been covered by the post-glacial deposits of peat. The original discovery was made as a result of Moore's careful observations of drainage ditches that were being progressively deepened in areas of shallower peat deposits. Drainage began to accelerate during the agricultural enclosures of the early nineteenth century,<sup>2</sup> and since the 1950s both drainage and arable cultivation have increased, and the permanent pasture that formerly covered most of the eastern vale has given way to arable fields. At the same time, the peat has increasingly dried out and begun to shrink, in some areas by over 2 m since the 1960s, with the result that the late-glacial and post-glacial land surfaces,



**Figure 1** The eastern Vale of Pickering, showing the location of Star Carr and eight other early Mesolithic sites around the margins of palaeolake Flixton. C and K mark the main areas of Mesolithic activity at Seamer Carr.



**Figure 2** Part of the eastern Vale of Pickering: view north from the Yorkshire Wolds towards the North York Moors across the area of palaeolake Flixton (enclosed by dashed lines) and sites C and K at Seamer Carr; August 1977.

previously protected by the peat, are now closer to the surface and increasingly threatened by arable cultivation.

### Star Carr

The Mesolithic site at Star Carr was excavated by Grahame Clark in 1949–51. What made it so important for our understanding of the early post-glacial period was the fact that, in Clark's monograph on the site, he combined the results of archaeological excavation with those of detailed pollen analysis by Walker & Godwin and of detailed faunal analysis by Fraser & King.<sup>3</sup> He also set the site in the wider context of the northwest European Mesolithic, and subsequently published a condensed and revised account of the project, emphasizing its methodology and proposing a model of early Mesolithic settlement and land use, which enhanced the significance of the site.<sup>4</sup> As a result of Clark's pioneering studies, Star Carr came to be regarded as unique in the context of the British Mesolithic, and this led to his results, and the site itself, being re-evaluated in several subsequent publications.<sup>5</sup>

One of the most thorough re-analyses of data from Star Carr was carried out by Legge & Rowley-Conwy,<sup>6</sup> who studied the remains of large mammals and reconsidered the question of the season(s) in which the site had been occupied. They concluded that there was strong evidence for seasonal occupation, but, whereas Clark had suggested that the site was occupied during the winter months, they inferred that it was used only in late spring and summer, probably as a hunting camp.

Despite the continuing discussion and re-interpretation of Star Carr, and the fact that drainage of the peat deposits in the eastern vale continued, no further archaeological work took place there for over 25 years after the discovery of the site.

### Seamer Carr

In 1976, excavations began on the site of a proposed waste-disposal plant at Seamer Carr, about 1 km northeast of Star Carr (Fig. 1). These excavations, funded by North Yorkshire County Council and English Heritage, took place over ten years and involved the excavation of test pits and the sampling of deposits by boring with augers along part of the margins of the palaeolake.<sup>7</sup> During the course of this work, two extensive areas of early Mesolithic activity (sites C and K, Fig. 1) were excavated (Fig. 3), resulting in the recovery of over 20 000 worked flints and a large assemblage of animal bones. One late Upper Palaeolithic open-air site was also found. These investigations showed that the early post-glacial land surfaces were well preserved along the edges of the peat, which, although degraded, contained quite well preserved organic remains.

Sites C and K at Seamer Carr do not resemble Star Carr in terms of the diversity and density of material recovered. Site C produced a total of approximately 11 150, and site K over 10 000, worked flints, but in both cases the flints were spread over an extensive area, suggesting repeated but chronologically distinct episodes of activity. Likewise, although nearly 200 fragments of bone were recovered from the two sites, they came from over 2000 m<sup>2</sup> of excavated area. The finds of flint and bone show a pattern of scattered clusters of activity, and radiocarbon dates indicate that these areas were re-occupied at intervals over at least 200 years. Thus, although sites C and K were clearly occupied in the early Mesolithic, their diffuse nature, and the remains recovered from them, bear no resemblance to the dense occupation evident at Star Carr.

In addition to the excavations at sites C and K, over 80 test pits, each 2×2 m, were excavated at 15 m intervals to sample more of the margin of the palaeolake, which, as

a result of the earlier palaeoenvironmental investigations by Cloutman & Smith,<sup>8</sup> could confidently be predicted to lie 25.5–24.5 m above sea level. The test pits produced evidence of thinly dispersed Mesolithic activity along the lake edge, represented by the presence in almost half of them of occasional flints and bone fragments (often only one flint or bone fragment per pit) that can be dated to the early Mesolithic only on general stratigraphic grounds.

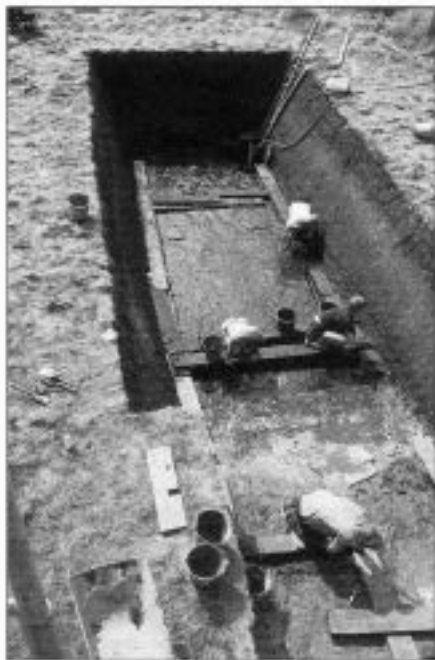
### Further investigations of the early Mesolithic landscape

These results demonstrated that there was greater variation in the early Mesolithic in the superficial geology, topography and types of archaeological site in the eastern vale than had hitherto been considered likely, and they strongly suggested that Star Carr should be seen in a wider environmental context. Cloutman & Smith<sup>8</sup> also demonstrated the complexity of the palaeolake itself and showed for the first time that Star Carr lay at its western end close to its outfall into the vale (Fig. 1). It also became clear that since the excavations by Clark in 1949–51 extensive drainage had caused many of the areas of peat to shrink by well over 1 m and in some cases by more than 2 m, with the result that many of the archaeological deposits previously protected by the peat have probably been damaged or destroyed.

As a result of the work that took place between 1976 and 1986, the Vale of Pickering Research Trust was set up to fund and continue investigations into the nature and extent of the early post-glacial occupation and exploitation of the palaeolake and its surroundings. This initiative was also a response to the amount of environmental damage that had occurred over the previous half century as a result of drainage and related agricultural activities.

One of the first new investigations was carried out in the vicinity of the original excavations at Star Carr. New excavations exposed a much more extensive spread of early Mesolithic activity than had previously been revealed; indeed, as a result of subsequent fieldwalking in addition to the excavations, it now appears that Clark uncovered only part of a much more extensive site area. The new excavations<sup>9</sup> also led to the discovery of an early Mesolithic plank platform that has shed new light on prehistoric woodworking.

However, the main aim of the Trust has not been to carry out extensive excavations but to try to comprehend the larger landscape by undertaking a series of auger surveys, involving painstaking measurements of the subsurface geology below the peat, and by continuing the series of 2×2 m test pits at 15 m intervals along the margins of the palaeolake. After 12 seasons of fieldwork, the southern, western and northwestern margins of the lake have been identified and its basic hydrological



**Figure 3** Excavating site C at Seamer Carr on the peat-covered margin of palaeolake Flixton; view south, August 1981.

regime worked out. It was fed from groundwater springs and by streams mainly flowing from the Yorkshire Wolds, some of which continued as surface flows into the nineteenth century.

The fieldwork also revealed a further six sites of early Mesolithic activity on the shores of the lake (Fig. 1), all of which are broadly contemporaneous with Star Carr. None of them has been fully excavated, but their presence indicates that the lake edge was more extensively occupied in the early Mesolithic than was previously realized. The results from this new programme of fieldwork up to 1999 are now being prepared for publication,<sup>10</sup> and the Trust aims to complete the survey of the margins of the palaeolake by 2003.

A particularly interesting aspect of this recent phase of research has been the demonstration by Simmons & Cummins of a pattern of limited burning associated with early Mesolithic activity,<sup>10</sup> which suggests that the hunter-gatherer inhabitants of the eastern vale manipulated vegetation over prolonged periods. Other palaeoenvironmental research by Innes has revealed evidence of earlier burning in late-glacial times (although this may have been caused by lightning-set fires) and extensive burning in the later Mesolithic.<sup>10</sup>

### Conclusion: Star Carr in its landscape

Within the vale, Star Carr remains an exceptional site in terms of its size and the nature of the material remains found. For example, only one red-deer antler point has been recovered from the 200 test pits along the edge of the palaeolake and only two fragments of red-deer antler have been

recovered from the sites discovered since 1976, whereas Star Carr produced 191 antler points and well over 100 antler fragments, as well as 21 red-deer antler frontlets.<sup>11</sup> However, we now know that Star Carr is only the most impressive site among at least eight others clustered along the shores of the palaeolake (Fig. 1). The mapping of the margins of the lake has shown that Star Carr existed not in isolation but as part of a complex of lake-edge sites. Their frequency, evidence for which will probably increase as fieldwork progresses, demonstrates the former importance of the lake within the wider landscape. Indeed, surveys by fieldwalking away from the lake edge have not yet revealed any early Mesolithic sites and there is little evidence, despite further fieldwork to the west of the lake area, of early Mesolithic activity elsewhere in the vale. All the evidence suggests that not only was Star Carr itself an atypical and exceptional site but that the lake area was an exceptionally important regional focus for settlement and subsistence activities in the wider early Mesolithic landscape of northeast Yorkshire.

### Notes

1. J. W. Moore, "Mesolithic sites in the neighbourhood of Flixton, north-east Yorkshire", *Proceedings of the Prehistoric Society* **16**, 101–8, 1950; and *Lake Flixton: a late-glacial structure* (Publication 1, Scarborough and District Archaeological Society, 1951).
2. B. Loughborough, "Some geographical aspects of the enclosure of the Vale of Pickering in the eighteenth and nineteenth centuries", MA thesis, University of Hull, 1960.
3. J. G. D. Clark, *Excavations at Star Carr, an early Mesolithic site at Seamer, near Scarborough, Yorkshire* (Cambridge: Cambridge University Press, 1954); and, in the same volume, D. Walker & H. Godwin, "Lake stratigraphy, pollen-analysis and vegetational history", 25–69, and F. C. Fraser & J. E. King, "Faunal remains", 70–95.
4. J. G. D. Clark, *Star Carr: a case study in bio-archaeology* (Reading, Massachusetts: Addison-Wesley, 1972).
5. For example, S. Caulfield, "Star Carr – an alternative view", *Irish Archaeological Research Forum* **5**, 15–22, 1978; M. Pitts, "Hides and antlers: a new look at the gatherer-hunter site at Star Carr, north Yorkshire, England", *World Archaeology* **11**, 32–42, 1979; J. M. Andresen, B. F. Byrd, M. D. Elson, R. H. McGuire, R. G. Mendoza, E. Staski, J. P. White, "The deer hunters: Star Carr reconsidered", *World Archaeology* **13**, 31–46, 1981; and J. M. Coles & B. J. Orme, "Homo sapiens or Castor fiber?", *Antiquity* **57**, 95–102, 1983, who questioned Clark's interpretation of a birch branch from the remains of a platform at the lake edge as having been cut with a stone tool, and showed that it had been gnawed off by beavers.
6. A. J. Legge & P. A. Rowley-Conwy, *Star Carr revisited: a re-analysis of the large mammals* (Centre for Extra-Mural

Studies, Birkbeck College, University of London, 1988).

7. R. T. Schadla-Hall & E. W. Cloutman, "One cannot dig at random in a peat bog: the eastern Vale of Pickering and the archaeology of a buried landscape". In *Archaeology from the ploughsoil*, C. C. Haselgrove, M. Millett, I. M. Smith (eds), 77–86 (Department of Archaeology and Prehistory, University of Sheffield, 1985); R. T. Schadla-Hall, "Recent investigations of the early Mesolithic landscape and settlement in the Vale of Pickering, north Yorkshire". In *Mesolithic northwest Europe: recent trends*, P. Rowley-Conwy, M. Zvelebil, H. P. Blankholm (eds), 46–54 (Department of Archaeology and Prehistory, University of Sheffield, 1987).
8. E. W. Cloutman, "Palaeoenvironments in the Vale of Pickering, part 1: stratigraphy and palaeogeography of Star Carr, Seamer Carr and Flixton Carr", *Proceedings of the Prehistoric Society* **54**, 1–19, 1988; E. W. Cloutman & A. G. Smith, "Palaeoenvironments in the Vale of Pickering, part 3: environmental history at Star Carr", *Proceedings of the Prehistoric Society* **54**, 37–58, 1988.
9. P. Mellars & P. Dark, *Star Carr in context: new archaeological and palaeoecological investigations at the early Mesolithic site of Star Carr, north Yorkshire* (Monograph, McDonald Institute of Archaeological Research, Cambridge, 1988).
10. The results of the recent multidisciplinary fieldwork in the eastern vale will be published in *Archaeological and environmental investigations of the early Mesolithic in the Vale of Pickering, north Yorkshire 1976–1997*, P. J. Lane & R. T. Schadla-Hall (eds) (Monograph, McDonald Institute of Archaeological Research, Cambridge, forthcoming). The publication will include contributions from many specialists on whose collaboration the success of the project depends: palaeoenvironmental work by Ian Simmons, Gaynor Cummins and Jim Innes, analysis of the animal remains by Juliet Clutton-Brock and Peter Rowley-Conwy, analysis of the flints and other stone artefacts by Chantal Conneller, and a detailed re-analysis of the site of Star Carr by Paul Mellars and Petra Day (see n. 9). Undergraduates from the Institute of Archaeology have also played an important role in the field investigations, particularly in surveying the margins of the palaeolake.
11. The term frontlets refers to the part of the skull that carries the antlers of red deer stags. The frontlets found at Star Carr had been artificially perforated with small holes, and parts of the antlers, which had been modified to reduce their weight, were still attached to them. The frontlets were interpreted by Clark as masks that may have been used both in stalking deer and as head-dresses worn in ceremonial dances; see pp. 168–75 and plates 22–24 in Clark 1954 (n. 3 above).