

<b>Institution:</b> University of York
<b>Unit of Assessment:</b> 17, Geography, Environmental Studies and Archaeology
<b>Title of case study:</b> Impact on Mesolithic heritage preservation, conservation and presentation
<b>1. Summary of the impact</b> (indicative maximum 100 words)

The site of Star Carr (c. 9000 BC) is internationally renowned in the archaeological world yet, until now, has been virtually unheard of in the public sphere. Research at York has enhanced the preservation and conservation of this important site, securing its status on the Schedule of Monuments, and informed the management, protection and restoration of wetlands across Europe. Alongside this, research into the public perception of the Mesolithic has guided a comprehensive range of public engagement activities which have enhanced Mesolithic heritage presentation and raised global awareness of this undervalued period of human prehistory.

<b>2. Underpinning research</b> (indicative maximum 500 words)
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There are two avenues of research: '*The archaeology and preservation of the heritage*', and '*The public perception of the Mesolithic*'.

*Excavations* at Star Carr between 2004 and 2007 showed that rare organic archaeological remains had seriously deteriorated within the last couple of decades. Research on the conditions of the peat demonstrated that it was drying out and had become extremely acidic. This work prompted funding from English Heritage in 2008 in order to understand why this process was happening and in 2010 to establish the evidential value of the archaeology that remained<sup>1,2</sup>. The excavations revealed (i) the site was much larger than imagined; (ii) the earliest known 'house' in Britain; (iii) an extensive platform of worked wood at the lake edge – the earliest evidence of carpentry in Europe. This resulted in a paradigm shift from believing that Mesolithic people lived in small, nomadic groups, to evidence that Mesolithic people created large settlements and had the capability for building structures<sup>3</sup>. Following widespread consultation, which included non-archaeological stakeholders such as Natural England, the RSPB and County Councils, it was concluded that the archaeology was of international importance but that it was at risk, that it could not be preserved *in situ*, and what remained should be preserved "by record" through further excavation. In 2011 Milner won an ERC grant to enable this to happen.

*The Meso-what?* Star Carr was first excavated in the 1940's by Clark and again in the 1980's by Lane and Schadla-Hall. It is internationally renowned in the archaeological world yet both Star Carr and the Mesolithic are relatively unheard of in a wider context. Discovering at university that she had grown up only five miles from this landmark site, no one was more acutely aware of the disparity in knowledge than Milner, and addressing this divide became an integral part of her research aims.

This was the driver underpinning:

- An AHRC CDA supervised by Milner *The Meso-what? Public Perception of the Mesolithic* (2012–). The results are demonstrating significantly low public awareness of the Mesolithic and little attempt to present this period of prehistory within UK heritage tourism: local surveys in 2009–2011 showed only 8% of people had heard of Star Carr; the British Museum has one small display case for the whole of Mesolithic Europe and most other museums do not feature the Mesolithic at all. This is in contrast to the significance afforded to this period elsewhere in Europe, e.g. in Denmark where the 'Golden Age' of the Mesolithic features heavily in school education and museums.
- Improving the presentation of the Mesolithic. This includes a series of exhibitions and the creation of an online, publically available archive bringing together the artefacts from current and past excavations in a single place. This research aimed to locate, catalogue and photograph as much as the material as possible in order to create a "virtual museum archive" for the public and researchers. In addition, the research suggests how the site may be imaginatively interpreted for a range of users.

### Key Researchers

- Nicky Milner (Lecturer, Senior Lecturer, Professor), co-director of excavations with Conneller (University of Manchester) and Taylor (University of York). Milner has overseen fundraising (£1,700,000 as sole PI and £72,500 as Co-I), managed grants, site management and logistics and currently is PI on an ERC grant with full budgetary and managerial responsibility for a team of 20+. She is responsible for all the public outreach.
- Barry Taylor (Post-doc York, June 2012–Sept 2013, to be seconded a further 16 months over the next 3 years).
- Hayley Saul (Research Assistant, part time 2011, 2012)
- Ben Elliott (PhD until 2012, IfA workplace bursary Oct 2012–2013)

### 3. References to the research (indicative maximum of six references)

1. Boreham, S., Conneller, C., Milner, N., Needham, A., Boreham, J. & Rolfe, C.J. (2011) Geochemical indicators of preservation status and site deterioration at Star Carr. *Journal of Archaeological Science* 38 (10), 2833–2857 <http://dx.doi.org/10.1016/j.jas.2011.01.016>. International peer-reviewed journal, highest Thomson-Reuters Impact Factor for the discipline; REF2 publication.
2. Milner, N., Conneller, C., Taylor, B., Koon, H., Penkman, K., Elliott, B., Panter, I. & Taylor, M. (2011) From Riches to Rags: organic deterioration at Star Carr. *Journal of Archaeological Science* 38 (10), 2818–2832 <http://dx.doi.org/10.1016/j.jas.2011.02.015>. International peer-reviewed journal, highest Thomson-Reuters Impact Factor for the discipline.
3. Conneller, C., Milner, N., Taylor, B. & Taylor, M. (2012) Substantial settlement in the European Early Mesolithic: new research at Star Carr. *Antiquity* 86, 1004–1020. Available at: <http://antiquity.ac.uk/ant/086/ant0861004.htm>. Research funded by EH and NERC Urgency Grant; international peer-reviewed journal; shortlisted for the Antiquity Prize 2012; highlighted by the BBC's review of 2012's archaeology (<http://www.bbc.co.uk/news/science-environment-20795347>); the research received substantial global media interest and appeared in over 100 media outlets worldwide; UK Universities and Science Minister, David Willetts, remarked how "This exciting discovery....will change our perceptions forever"; Journal Editor, Martin Carver, highlighted the article for "rewrit[ing] the character of Early Mesolithic settlement in Europe"; REF2 publication.

### Grants: the research at Star Carr has been funded through the following selected grants

- Milner, Penkman, Panter, 2010-2013 'Rate of deterioration of peat deposits at Star Carr', NERC Collaborative Doctoral Award, c. £50,000.
- Milner, 2010–2011 'From riches to rags: rapidly deteriorating wetland archaeology at the internationally renowned site of Star Carr', NERC urgency grant, £65,000.
- Milner, 2010–2012 'Star Carr: excavations to inform a management strategy', English Heritage, £29,000.
- Milner, 2011–2013 'The Meso-what? Public Perception of the Mesolithic', AHRC collaborative doctoral award (with York Archaeological Trust) c. £50,000.
- Milner, 2012–2016 'POSTGLACIAL: After the Ice, hunter-gatherer postglacial lifeways', European Research Council, c. £1,300,000.
- Milner, 2013–18 'Project Manager for Star Carr', English Heritage, £170,000.
- Milner, 2013–18 'Lease agreement', English Heritage, £75,000.
- Milner, 2012–13 'Creating and promoting archives for the Star Carr Project', IfA/HLF Workplace Learning Bursary, £20,880.

### 4. Details of the impact (indicative maximum 750 words)

The research at Star Carr has demonstrated significant impact on creativity, culture and society. A management plan, written by Milner and approved by the English Heritage Advisory Committee (2012), is now in place which presents a strategy for (i) the preservation by record of the site and (ii) its relationship to the public [1].

### Preservation and conservation of Mesolithic wetland sites

## Impact case study (REF3b)

As a direct impact of the research the site was granted Scheduled Monument status (19 December 2011) and was added to English Heritage's 'Heritage At Risk Register' [2, 3]. Scheduling is the only legal form of protection available to a site in the UK and highlights the research findings as 'Nationally Important' [4]. Unlike other Mesolithic sites, Star Carr, was scheduled without relying upon structures from a later period for designation. It was scheduled in order to encourage a dialogue with stakeholders over best management practices, including further excavation, and to support funding applications by official recognition of the importance of the site. Announcing its Scheduling, John Penrose, Heritage Minister, said "*The diversity of finds on offer at Star Carr and its history which goes back to 9000 BC are unequalled in British Archaeology and it remains one of the most important Mesolithic sites in Europe*".

As a result of our research, Star Carr has been used as a model for the national and international importance and vulnerability of wetland heritage in the National Heritage Protection Plan [5] (section 3A5) and prompted further funding of £350,000 for other wetland projects. Milner has given lectures and talked to colleagues working in related agencies involved in wetland management and policy in Germany, Finland, Ireland, Denmark and the Netherlands. The European Stone Age Bogs network, which Milner established, now draws members from 12 countries. Research at Star Carr has directly informed two of the key aims of this network: evaluating the risks to the resource and enhancing impact [6].

**Enhancements to Mesolithic heritage presentation**

Star Carr is generating unprecedented public and media interest for Mesolithic archaeology locally, nationally and internationally. Milner has engaged audiences at over 30 local societies, hosted site visits, open days and festival events; the immediate audience engaged by this research is conservatively estimated at 3,000. The mediated audience is greater than the 12-14M that the BBC estimate were reached in the UK by news coverage of the "*oldest house in Britain*" [7] – the research has featured in 6 television and radio programmes, Milner has been interviewed for over 30 television and radio news broadcasts and contributed to over 100 media outlets around the world. The team has produced Mesolithic packs for Young Archaeologists Club and published 5,000 copies of a booklet "*The Story of Star Carr*" (2012), sold for public outreach funds and given to local schools. A "virtual museum archive" housed in ADS was launched May 2013 [8].

A key media event featuring the research was a *Time Team* special on the submerged Mesolithic landscape of Doggerland (2007, repeated 2009). In response to this programme Science City York established a partnership with the Yorkshire Museum and the Star Carr team to produce a creative response to the Mesolithic period by four artists for a short exhibition entitled, *Artists in the Archives*, (April/May 2010). Continuing this partnership, research at Star Carr now underpins a major exhibition, *After the Ice*, at the Yorkshire Museum (05/2013-04/14, expected footfall 110,000) (9). For the museum the incorporation of multimedia to translate the underpinning research and immerse visitors in the Mesolithic landscape is groundbreaking and will influence the design of future exhibitions, two of which are planned to focus on pre-history. It includes, for example, a Mesolithic soundscape, a digital flythrough, and films all produced by University staff and students from their research.

An evaluation of visitors to the exhibition revealed that 81% would recommend it to others, and 96% were more informed about Star Carr.

Impacts of the exhibition include:

- Drawing in visitors to the museum and its region (29% of visitors sampled had visited the museum because they had an interest in prehistory, Star Carr and/or this exhibition in particular);
- Developing cultural benefit for visitors (the exhibition prompted 43% to want to learn more about Star Carr); benefiting community cohesion by encouraging visitors to value local links and connections;

