

A DRY DEATH FOR WETLAND ARCHAEOLOGY IN SOMERSET?

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The Somerset Levels and moors are famous for wetland archaeological sites, from the Neolithic Sweet Track to the Iron Age Lake Villages of Glastonbury and Meare. What makes these sites so special is the remarkable preservation of organic materials for thousands of years – their survival is both rare and incredibly important for providing our most complete understanding of past material culture. Their preservation relies on the maintenance of waterlogged conditions, excluding oxygen and preventing decay. Such fragile sites have been at risk for decades across the UK from development and dewatering but now climate change is creating an even greater risk.



Excavation of a sequence of six collapsed palisades at the edge of Glastonbury Lake Village. Small-scale excavation has provided information on the condition of the monument and answered key research questions. Credit: South West Heritage Trust

Over the last two decades projects have been undertaken in Somerset examining the condition of specific wetland monuments and the wider wetland archaeological resource. These have identified a landscape-scale threat to the survival of the known, and yet to be discovered, waterlogged archaeological sites in the lowland Somerset peat moors. This threat comes from the gradual desiccation and wastage of peat where it exists close to the ground surface. Fortunately, there is as yet relatively little arable farming of the peat soils, which can lead to 1–2cm of peat loss over just one year. But even in areas of permanent pasture the peat loss is estimated to be between 4.4–7.9mm per year, due to the inability of the widely spaced rhynes (field ditches) to maintain a high summer infield water table. Over a century this will lead to the loss of 0.44–0.79m of peat.

The effect of this slow wastage has been seen on monuments such as the Neolithic Abbot's Way trackway and the Meare Lake Village, where the wooden remains have almost disappeared because of gradual desiccation, shrinkage and decay. Other prehistoric trackway sites, such as the Bell, Godwin's and Chilton tracks have proved unexpectedly resilient despite being near the ground surface, but the wooden remains are gradually degrading, with the consequent loss of archaeological information, such as the ability to identify the tree species or to accurately measure toolmarks.

Monitoring work at Glastonbury Lake Village is showing how this threat is being heightened by climate change. This wetland settlement had been the focus of detailed monitoring, which concluded that the site was relatively

safe from desiccation. However, the very dry summer of 2018 proved that this was not the case, as the infield water table dropped below the top of the in-situ organic remains for several months during the summer.

The UK climate predictions for the South West of England encompass a range of outcomes for the coming decades, reflecting the inherent complexity of the world's climate and



Godwin's Track, a middle Bronze Age brushwood trackway, typical of the many such structures which lie within 70cm of the ground surface in Somerset's peatlands. Credit: South West Heritage Trust



A roundwood stake from a roundhouse wall at Glastonbury Lake Village. Loss of water from the surrounding peat has caused severe shrinkage and cracking of the wood. Such damage could occur in just one period of severe drought. Credit: South West Heritage Trust



Excavation of part of the Sweet Track (built 3806 BC) in Shapwick Heath National Nature Reserve to assess its condition. Credit: South West Heritage Trust

the uncertainty of the human response to the crisis. All the scenarios agree on the basic trends, however, which are that there will be more extreme events, the winters will generally be wetter, and the summers will generally be both warmer and drier. The latter factor is probably the key one because it means that very dry summers like 2018 will become both more frequent and more extreme.

What can the archaeological response be in the face of such a widespread threat? All the waterlogged sites designated as Scheduled Monuments in the Somerset peatlands exist, in part or completely, within 90cm of the ground surface. Although they have survived for thousands of years in remarkable states of preservation, it seems clear that most, if not all, will be destroyed by increasingly extreme occasional summer droughts over the next 20–100 years.

Two archaeological responses are possible. One is to undertake a series of carefully targeted excavations to obtain the maximum information from these ‘doomed’ sites to answer key research questions before they are lost forever. The other is to work with nature conservation organisations, the Environment Agency, the Internal Drainage Boards, the farming community and Defra to create a more resilient use of the floodplain, which protects both the wetland archaeological resource, the

nature conservation interest, the livelihoods of the landowners and the 3.33M metric tons of organic carbon in the top 1m of peat.

Monitoring of the Sweet Track has shown a glimmer of hope in this respect, as the water table in the part of the trackway under study did not fall significantly in the drought of 2018. This was probably because the local water table was more resilient due to its location at the edge of the Shapwick Heath Nature Reserve, which contains extensive reedbeds. West Sedgemoor, predominantly owned and managed by the RSPB, has also shown to have had virtually no peat wastage as it is managed with high water tables all year. These sites show a sustainable way forward, if economics will allow their application on a wider landscape scale. Here climate change will also play a key role because other predictions for greater and more extreme rainfall events in future winters may force us to treat the floodplain as a real wetland again.



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Further reading

Brunning, R, 2012 Partial solutions to partially understood problems – the experience of in situ monitoring and preservation in Somerset’s peatlands. *Conservation and Management of Archaeological Sites*, 14(1–4), 397–405

Brunning, R, 2013 *Somerset’s Peatland Archaeology. Managing and investigating a fragile resource.* Oxbow Books

A simplified summary of climate change predictions can be found online at

<https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18-fact-sheet-derived-projections.pdf>