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Intertidal Prehistoric Peat Beds at Redcar, North-east England

Axe Marks the Spot?

by **Spencer D Carter**

Overview

This article places recent archaeological observations made at the intertidal peat beds at Redcar-in-Cleveland into their regional context.

While the extensive peat beds in Hartlepool Bay are better understood and recorded, those at Redcar periodically reveal evidence for prehistoric activity in the form of lithics and a stone axe (now lost), as well as occasional faunal remains. Observations made during Summer 2013 offer possible evidence for coppicing or copparding and a tentative example of stone axe marks on a betula *trunk.*

A fuller report by the author has been accepted for the Historic Environment Record (HER) by Redcar & Cleveland Borough Council (Planning).

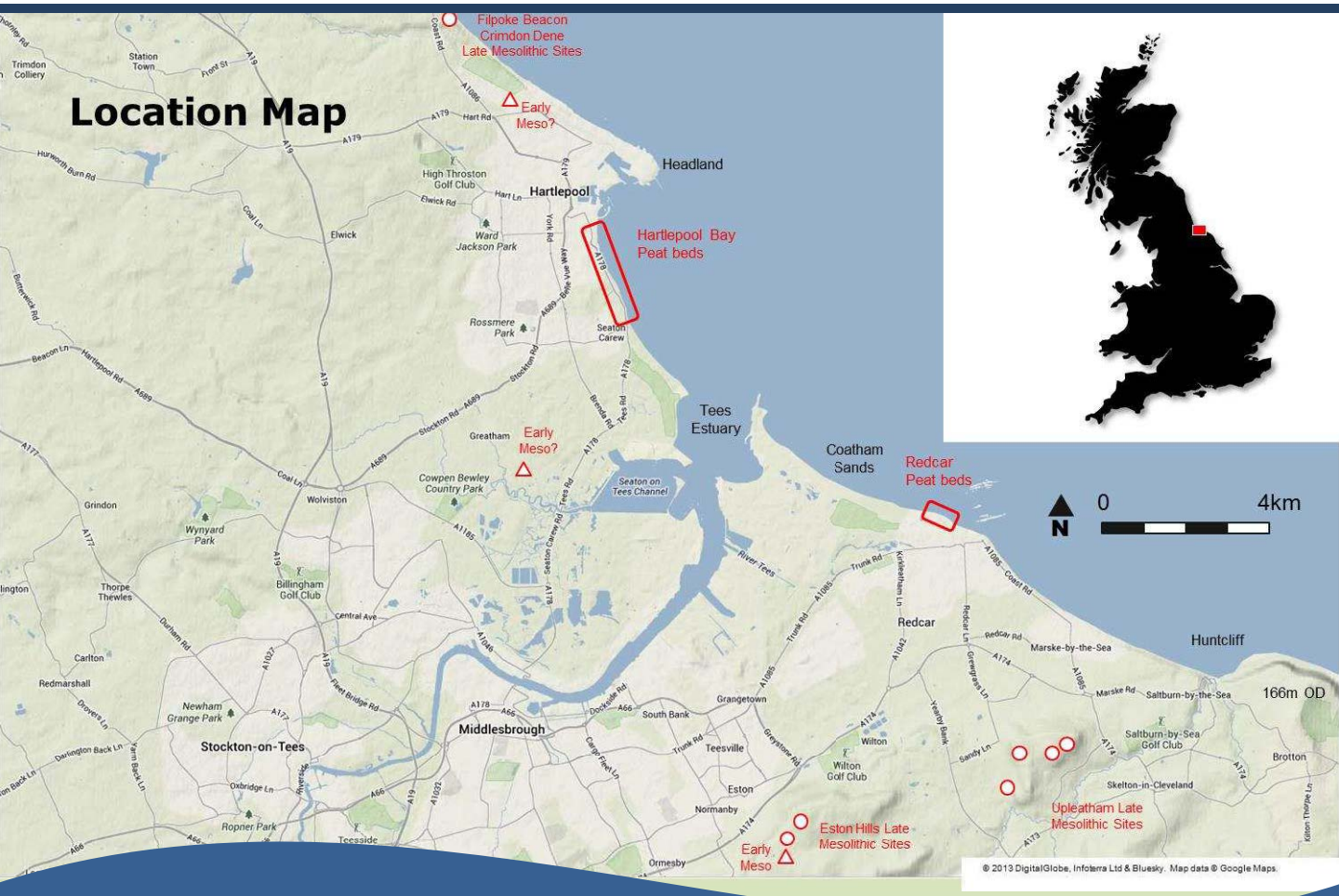
Intertidal Prehistoric Peat Beds at Redcar, North-east England

Introduction

North Tees | Hartlepool Bay

Hartlepool and Seaton Carew
Submerged forests and intertidal peat beds have long been known and explored, notably by Trechmann (see Waughman 2005) in the first half of the last century, to the north of the Tees estuary around Seaton Carew. The beaches to the south of Hartlepool headland reveal broad tracts of peat at times of exceptional low tides and low sand coverage.

Watching briefs, associated palaeo-environmental sampling and excavation during coastal protection works post-1995 have further added to the record (Waughman 2005). A number of intertidal areas are now designated as SSSIs. Table 1 provides a chronological summary of dated archaeological and palaeo-environmental findings, including marine transgressions and storm events.



Palaeolandscape

The early Holocene (post-glacial) record is not preserved in the intertidal zone but may exist farther offshore. Three water channels, two of which are palaeochannels, seem to have attracted transient Late Mesolithic hunter gatherers from time to time with increasing evidence in pollen records for woodland/fenland clearances. Throughout the mid- to late Holocene, sea levels fluctuated resulting in a complex changing environment, vegetation cover and faunal presence in landscape that always seemed to be reasonably close to the sea through the Late Mesolithic. Evidence from sediments, pollen cores and diatoms indicate the presence of woodland/forest, fenland and saltmarsh conditions at various stages, interspersed with marine transgressions. At least one storm surge event is attested and may have precipitated or accelerated the eventual silting of the palaeochannels and sufficient environmental changes to influence human behaviour. Charcoal and burning events, in the context of disturbances in the local pollen record, may suggest degrees of management as has been suggested for the North York Moors and elsewhere. There is a switch from *Quercus sp* (oak) to *Betula* (birch) dominance around 7208±49 BP (6210-5920 cal BC at 95% probability, Wk-13596) which may be of interest in considering the apparent *Betula* dominance (macro remains) at Redcar. The Elm (and Lime) decline is well evidenced from an early date, as well as the appearance of grasses and open taxa later in the Neolithic in a coastal catchment where resource gathering and pastoral activities perhaps endured longer than in other ecotones.

Archaeological Record

The presence of Early Mesolithic lithics can be called into question, more so in light of the general lack of diagnostic artefacts throughout the Mesolithic and Neolithic. The evidence suggests expedient flint usage from local till and beach sources, with an array of informal tools indicating a ready supply of raw material. While Late Mesolithic tool forms and debitage (cores) are present, the absence of more diagnostic pieces—blades and microliths in particular—suggests a picture of raw material selection, testing and removal for further working elsewhere in the landscape. It is in the very Late Mesolithic and Early Neolithic, a largely indiscernible transition, that a wattle construction (possibly part of a fish weir, and also possibly displaced by storm activity) and stake configurations enter the record, with stakes extending, by radiocarbon AMS dating, into the early Bronze Age.

Neolithic lithic evidence is similarly scanty, if difficult to discern from Late and so-called Terminal Mesolithic technologies in this location—perhaps significantly. However, isolated finds of axe sharpening flakes and two axes of Langdale Tuff and Borrowdale Volcanic Series raw materials are present and, since evidence of extensive woodland clearance does not appear until the Bronze Age, are suggested as possible votive depositions. A single human skeleton, with associated flints, is interpreted as a Neolithic bog burial and dates to the time that the palaeochannels became more terrestrial. Pottery is an exceptional occurrence with only sherds from a single pot, itself possibly a ritual deposition in a fresh water pool. The earlier Bronze Age brings more secure evidence for pastoral activity involving cattle and pig and commensurate woodland clearances on a greater scale. Cereal and associated weed pollen appears late in the regional sequence. The later Bronze Age sees a reduction in the range and quantity of material recorded, likely related to the increasing wetness and habitat change, but with pollen and charcoal evidence for increasing areas of managed pasture and fen-edge marsh.

Faunal Evidence

Chance finds of animal bones and antlers are numerous but usually out of context, the result of tidal scouring and erosion. Footprints (none human) infrequently occur, with adult red deer, juvenile elk and small/immature cattle but without discernible trails. A concentrated area of hoof prints was noted in a Bronze Age context.

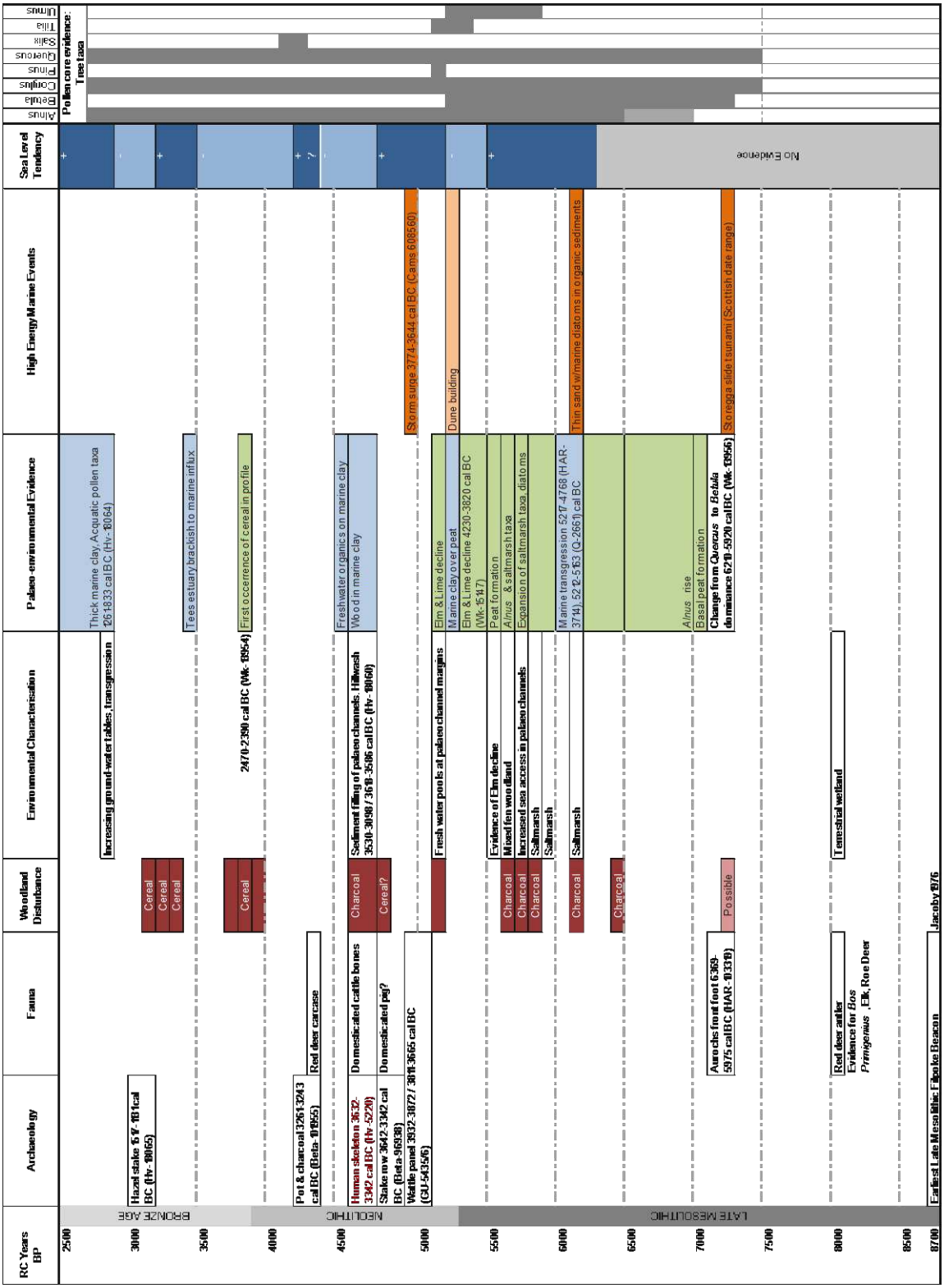


Table 1 | *Summary of archaeological, faunal, palaeo-environmental and marine evidence from Hartlepool Bay investigations with radiocarbon dates BP at 1σ (68% confidence) and calibrated dates BC to 2σ (95%).*
Extrapolated from Waughman 2005 *passim* & Appendix 3.

South Tees | Redcar in Cleveland

The peat beds at Redcar are not as extensive, well-known or studied as those around Hartlepool Bay. They are only infrequently exposed (Fig. 1) for varying periods with those closest to the sea wall suffering from mechanical scouring and raking. The present exposure endured through much of the summer of 2013 and was frequently visited by Stephen Sherlock, and accompanied by the author on 31 July (Fig. 2). Each tide was noted to alter the surface topography to varying degrees with significant surface change between periodic exposures over longer cycles with notable fragmentation, including exposure and separation of clay blocks from beneath the peat at the margins of the peat bed area.

Archaeological Evidence

Prehistoric archaeological finds are largely absent from the peat beds and neighbouring coastline. Redcar seafront has been artificially constructed (from the late 19th century and reinforced more recently). Extensive dunes exist to the north-west at Coatham towards South Gare, and to the east towards Marske and Saltburn where the high cliffs of Jurassic mudstones and shale then rise towards Huntcliff. Chance finds at Redcar and Coatham include a purported stone axe from the peat beds area, undiagnostic flints and a human skull fragment of Neolithic date from Coatham beach, perhaps the remains of a burial in or under the dune system—a phenomenon known along the Northumbrian coastline[1] (e.g. Low Hauxley and Howick). See appendix for HER records.

Summary of Observations 31 July 2013

The following observations result from a 45 minute inspection of the peat beds at low tide between 17:15 and 18:00 in bright, cloudy conditions.

- The peat beds seem to be dominated by *Betula* trunks (fallen), stumps and root bowls *in situ*, branches and twigs. Trunk segments are generally between 10 and 20cm diameter, some occasionally larger.
- The peat surface is firm and compressed but soft enough to scratch (e.g. dog claws, see Fig. 4) with some evidence of mechanical scoring as straight cuts or parallel 'rake' marks in some areas (see Fig. 6).
- Wood varies in condition from segments that retain bark (Fig. 3) to degraded and decomposing fragments of soft material. Larger fragments are relatively firm but spongy to touch. Smaller fragments and branches are extremely soft and friable with little or no internal strength.
- Dense grey clay (marine or glacial till/lacustrine) is occasionally evident in pools and at the edge margins of the peat (Fig. 7), especially to the east. There are no visible inclusions although they may, as at Hartlepool, occasionally exist.
- The palaeo-vegetation coverage seems to be relatively dense over the exposed area.
- No human footprints were visible.
- No animal or bird prints were visible except for one isolated pair of depressions that had an appearance of a single cloven hoof, if rather widely spaced (not photographed). The collective opinion of those present was that it was unlikely to be a print.
- There were no lithics, no charcoal nor any visible macroscopic evidence for burning.

1] Remains of an adolescent male in the sand dunes at Crimdon Dene, County Durham, have subsequently been radiocarbon dated to the Medieval period (R. Graham, Tees Archaeology *pers comm*).

Fig. 1 | *Location with SMR (HER) records*

NGR | NZ 60190 25465 (Centre)

Fig. 2 | *Photograph taken at low tide. Sand covering and surface topography are extremely variable. The peat surface is firm but easily marked by sharp objects (e.g. dog claws).* Betula *stumps, timbers, branches, twigs and bark are frequent.*

Positive Evidence?

- One stump and shaft in particular was noted in that the shoot and branch terminations all displayed 'straight' terminations and a possible coppice stool (Fig. 4).
- A long, narrow 'rod' could be seen lying beneath a trunk and was devoid of bark (Fig. 5).
- The same trunk had an indented segment and possible cut marks within that area (Fig. 6). These were parallel, slightly curved in profile, blunt/rounded, and appeared to have been struck at a downward angle (when the trunk was upright). They were noticeably different to more recent damage and areas of decomposition. No similar marks were found on other trunks in the immediate vicinity.

Comparative pictures are included in Figs 8 and 9 for both animal damage (bear and beaver), experimental chopping (UCD Dublin), managed coppice, natural tree fall and notes from extensive experimental work conducted by John Coles (Coles & Coles 1986) at the Sweet Track, Glastonbury, in the 1970s-80s. Similar experimental work referenced in Oxford Archaeology North's interim report on the Carlisle Northern Development Route (CNDR) at Stainton West, Carlisle (Brown 2011) will be followed up.

Human Interventions

Do these finds provide evidence for human interventions?

- Coppicing (basal cropping) or copparding (elevated cropping)? Beaver activity is plausible too—inter-human and beaver exploitation is not without precedence (F. Pryor *pers comm*).
- Stone axe marks (unfinished felling)?
- Is the 'rod' the result of coppice growth or otherwise modified? Unfortunately it was too fragile to inspect any more closely and lay beneath the larger trunk.

Conclusion

The existing archaeological record for the inter-tidal peat beds at Redcar demonstrate at least some anthropogenic activity during the Neolithic period. Like the artefactual, faunal and palaeoenvironmental evidence from Hartlepool Bay, that from Redcar suggests a liminal wetland zone with only sporadic and opportunistic human activity prior to inundation. The stone axe, small lithic clusters and posited axe marks at Redcar would therefore not be out of place with such a regime. An anthropogenic agency for the coppicing remains equivocal in that beaver activity may also be a factor.

While evidence so far does not appear to extend back into the Late Mesolithic (or earlier) most likely due to taphonomic factors, exploitation of coastal and estuarine resources is attested at Greatham Creek in the north Tees flood zone (P. Rowe, Tees Archaeology and R. Fraser, Northern Archaeological Associates, *pers comms*) and by proxy in the extensive occurrence of speckled and translucent flint raw materials in regional later Mesolithic assemblages (Carter 2013). Such flint nodules, of large size, are still present in quantity along the north-east coast and, to a lesser extent, in glacial boulder clay deposits.

Continuing erosion of the peat beds, exacerbated by rising sea levels, means that the long-term survival of the intertidal and offshore deposits both north and south of the Tees Estuary remains uncertain. One hopes that chance finds from this finite archaeological and environmental record will continue to be declared and recorded appropriately. It is indeed regrettable that the stone axe find in the 1980s (see Appendix) was not more fully recorded or donated by the finder.

Acknowledgements

Thanks are extended to Francis Pryor and Maisie Taylor for commenting on this document and the images (September 2013). The peat beds are presently re-covered with sand and are not available for inspection. Access to the HER and the addition the author's subsequent report were kindly provided by the Planning department of Redcar & Cleveland Borough Council.

References

Brown, F. 2011. *Stainton West, (Parcel 27) CNDR, Cumbria: Post-excavation Assessment*. (Wood: pp 91-3). Lancaster: Oxford Archaeology North unpublished report. **http://tinyurl.com/ll98zps**

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Coles, B. & Coles, J. 1986. *Sweet Track to Glastonbury. The Somerset Levels in Prehistory*. London: Thames & Hudson.

Waughman, M. 2005. *Archaeology and Environment of Submerged Landscapes in Hartlepool Bay, England*. Hartlepool: Tees Archaeology Monograph Vol 2.

Fig. 3 | Betula *trunk, branches and twigs.*

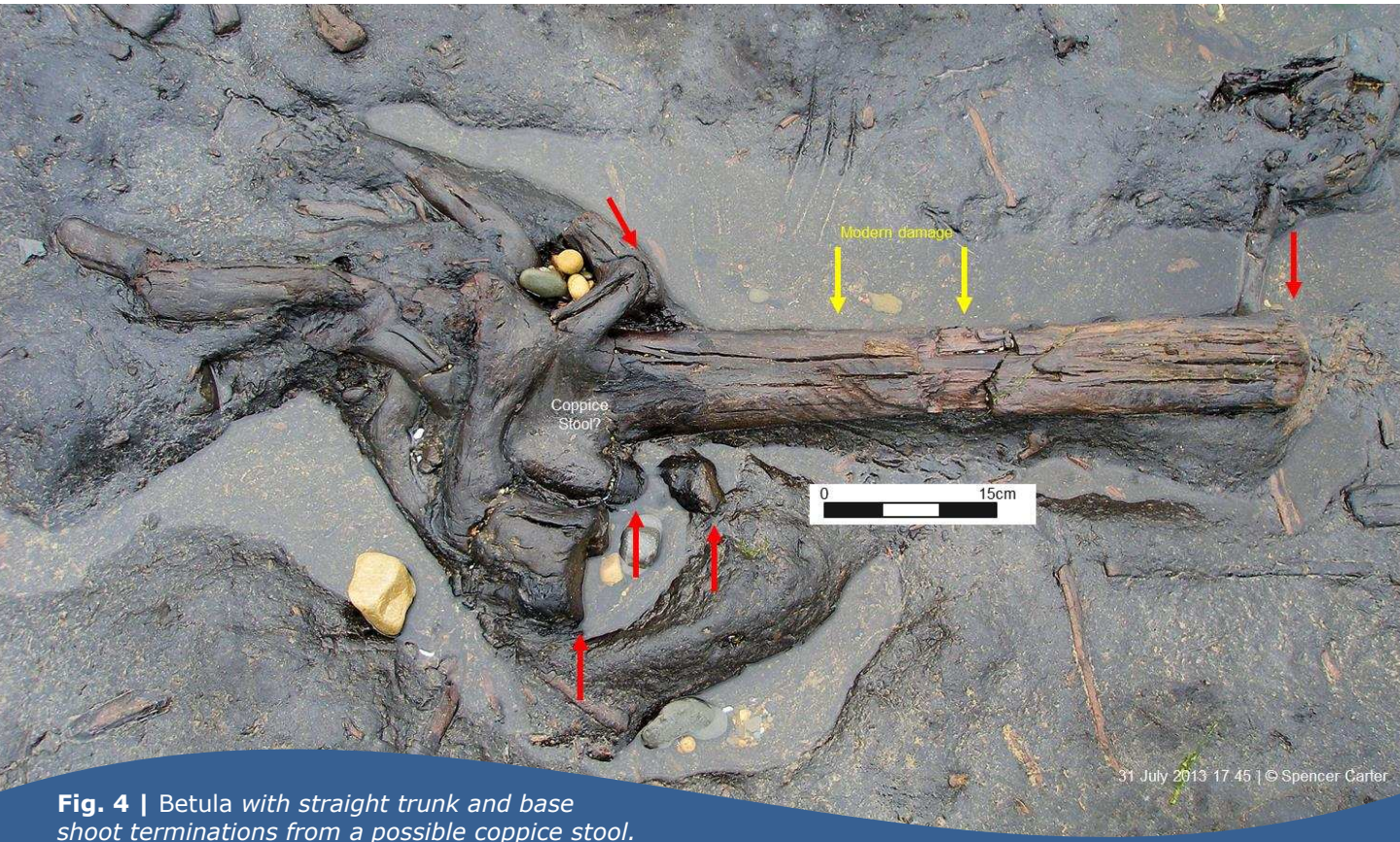


Fig. 4 | Betula *with straight trunk and base shoot terminations from a possible coppice stool.*

Fig. 5 | Betula *rod without bark underlying a tree trunk.*

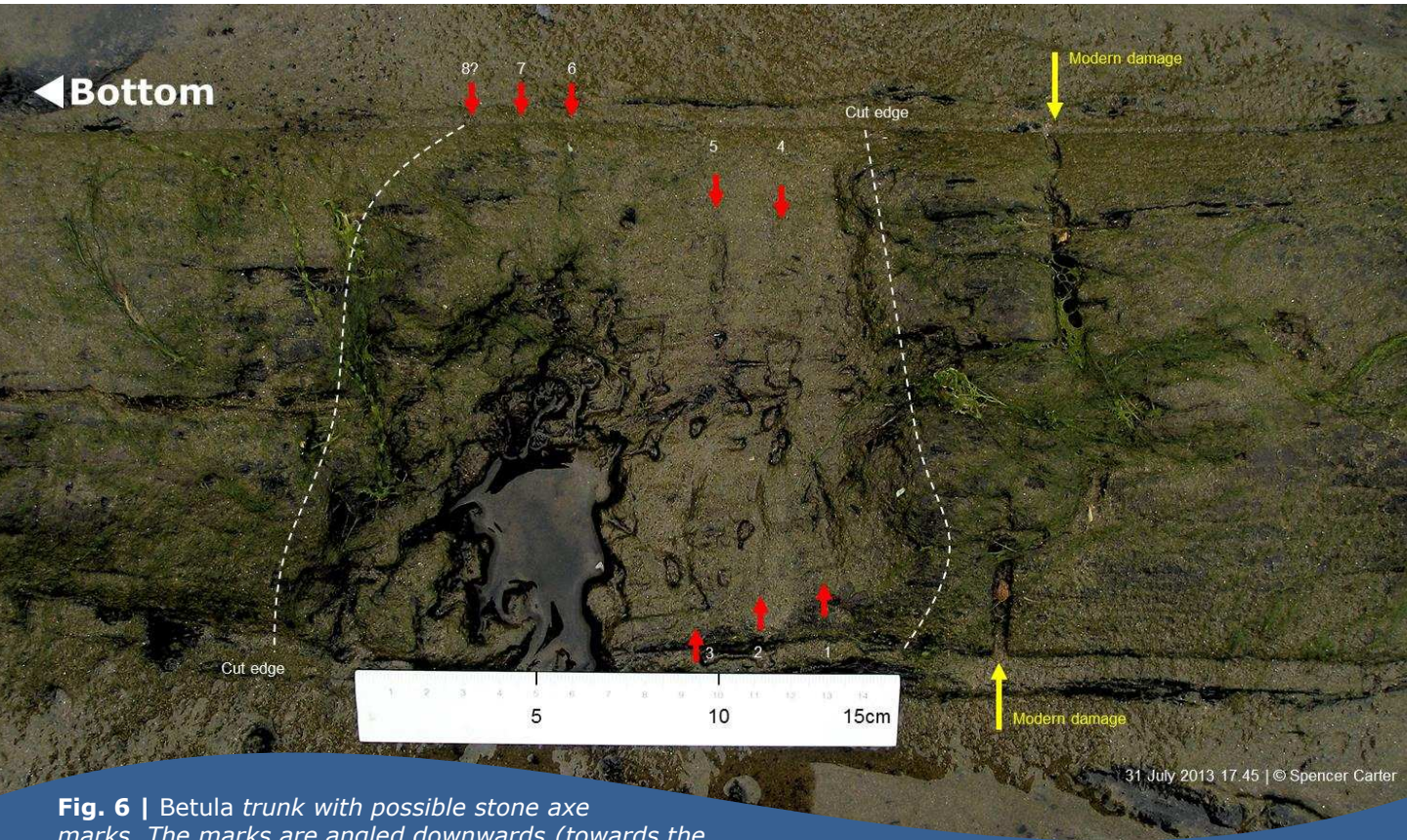


Fig. 6 | Betula *trunk with possible stone axe marks. The marks are angled downwards (towards the left in picture) and slightly concave in profile (e.g. no. 3).*

Experimental Woodworking

Sweet Track, Glastonbury, Somerset

Coles & Coles (1986)

‘Felling of alder, hazel and birch trees was easy with most of the [stone and bronze] axes, although stone axes tended to bounce off the fibrous birchwood in particular, rather than making a clean cut. The stone axes were much thicker than the bronze axes, and it was necessary to chop a wide notch into the trees as otherwise the blade jammed.’
(p. 110).

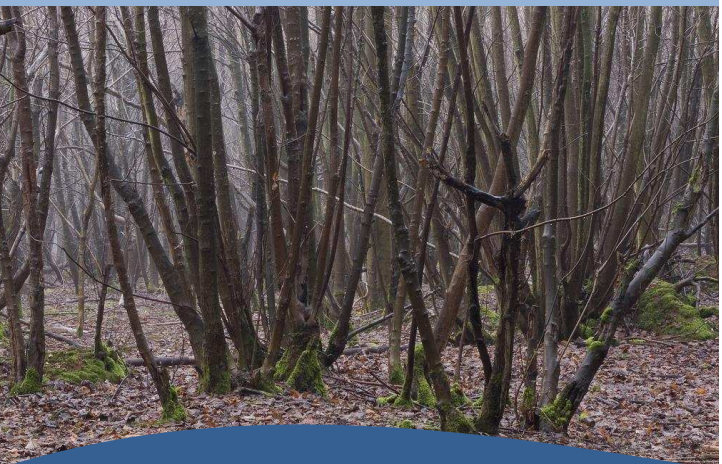
‘Stone axes tend to leave slightly dished facets if the latter are viewed across their width.’
(p. 111).

‘The angle at which the blade entered and left the wood varies according to whether it was stone or metal. Axemen of the Neolithic knew their tools well, and knew their blades were rarely sharp enough, and that most were too fat to try to make very long, shallow-angled facets on a piece of roundwood. Instead they would chop at a steeper angle, to form a sharp but thick point.’
(p. 111).

Coles, B. & Coles, J. 1986. *Sweet Track to Glastonbury. The Somerset Levels in Prehistory*. London: Thames & Hudson.

Fig. 7 | *Block of clay underlying the peat beds. Scale: 15cm.*

Fig. 8a and 8b | *Coppiced woodland.*



Comparative images

Fig. 8c | *Coppiced woodland during rod removal.*

Fig. 8d | *Tree felled with stone axe.*
Courtesy of Aidan O'Sullivan, University College Dublin.

Fig. 9a | *Natural splintering.* CC BY 2.0 Mike Pepler.

SMR/HER records courtesy of Redcar & Cleveland Borough Council Planning Department [23/08/2013]

SMR 248 | NZ 460000 525630 | *Axe head*

In March 1986 the Evening Gazette reported on the find of an ancient axe head from Redcar's Submerged Forest. The find had been made by Mr. A. Johnson whilst walking his dog. He also mentioned an 'interesting jaw'. The finds were reported to the Dorman Museum.

No further information is currently available on the material, date, find spot or whereabouts of the axe head. Evening Gazette. 15/03/1986. 'Treasure among the deadwood'.

SMR 1263 | NZ 460400 525480 | *Submarine Forest*

Peaty deposits were first reported at Redcar by a correspondent to The Redcar and Saltburn-by-the-Sea Gazette in 1871 (Ref. 1) who described 'two very small patches…to the east of Redcar, nearly opposite the flagstaff which stands on the west end of the battery, and is distant from the latter place about four hundred paces, a little north of east'. This was followed up by an article the next week (Ref. 2) saying 'that from time to time, near the same place, and by the side of what is locally known as the first "water race", the existence of a buried forest has been recognized'.

Peat was also reported 'on the east side of Redcar' by the Rev. Tute in 1883 (Ref. 3). The deposits were more fully described in 1902 by Mr. Henry Simpson (Ref. 4). The remains were noted 'close to the east end of West Scar Rocks, immediately in a line with West Terrace, and also not far from the West end of the same rocks, almost opposite to the Convalescent Home' and were usually only visible for short periods, after which they were covered with sands. Simpson noted that the peat was often dug out and dried for fuel and observed that it contained 'large portions of trees, chiefly oaks and firs, and they included trunks as well as branches, but seldom roots. Hazel nuts, acorns and decayed leaves were plentiful, apparently well preserved. Antlers of the red deer and tusks of the wild boar were found. Small unworked flint noted by S. Sherlock 1986.

References

1. *The Redcar and Saltburn-by-the-Sea Gazette*, Friday September 22, 1871.
2. *The Redcar and Saltburn-by-the-Sea Gazette*, Friday September 29, 1871.
3. Tute, J.S. 1883. Some indications of a raised beach at Redcar. *Proc. Yorks. Geological Soc*. 8 (p. 220).
4. Simpson, H.S. 1904. Note on the Submerged Forest and Peat Beds at Redcar. *Proc. Cleveland Naturalists Field Club* 5 for 1902 (p. 274–275).

SMR 4869 | NZ 460270 525380 | *Lithic Scatter*

A small assemblage of four flints was found at Redcar Submerged Forest (SMR 1263) in 1996 by Mags Waughman. The flints were from a pale grey-brown silty clay between the peat and the weathered boulder clay, approximately 50-125 metres out from Leo's Public House on Newcomen Terrace. The flints are all stained black, which is a typical feature of material from Hartlepool's Submerged Forest, several miles north. The flints are undiagnostic and consist of two flakes, a piece of angular debitage and a small tested pebble (flint identification by Peter Rowe).

SMR 351 | NZ 461700 524480 | *Animal Remains*

Identified by Miss J.E. King, British Museum (Natural History). Found on beach opposite Hawthorne Road, Redcar in 1954.

Fig. 9c | Beaver-knawed wood.

Fig. 9b | Bear claw marks.