Chapter 24

Bronze Age perceptions of wetlands: recent archaeological work on the Humber estuary

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Introduction
This paper addresses the perception of different wetlands in and around the Humber estuary in the Bronze Age. Combining past and current research, it will be argued that the perception of intertidal wetlands was nearly diametrically opposed to the perception of riverine floodplains. This contrasting perception is reflected in the material culture of the Bronze Age, and may be explained through the particular manner in which landscapes changed following marine transgressions. This work was largely undertaken within the framework of the Humber Wetlands Survey, an integrated archaeological and palaeoenvironmental research programme funded by English Heritage since 1992.

The Humber estuary
The modern Humber estuary comprises about 30,000 ha of water, sandbanks, mudflats, some islands and an ever decreasing amount of salt-marsh. The River Humber commences at the confluence of the rivers Ouse and Trent in the west, and flows into the North Sea between Spurn Point and Donna Hook in the east (Fig. 1). Through its many tributaries, including the rivers Ancholme and Hull, about 20 per cent of the landmass of England is drained through the Humber (Pethick 1990).

The Holocene development of the Humber as an estuary commences only after c.8000 cal BC, with the first evidence for a tidal regime developing in the lower estuary. From c.6000 cal BC, the run-off of this catchment is impeded by the continuing rising sea level, while the more extensive wetland development commences from about 3000 cal BC, when marine base-levels reach current levels, that is around Ordnance Datum (OD) (Gaunt and Tooley 1974; Berridge and Pattison 1994, Shennan and Andrews 2000). A wide variety of wetlands develop, including the raised mires of Thorne and Hatfield Moors and extensive river floodplain mires in the many rivers in the lowlands around the Humber estuary (Buckland and Sadler 1985; Gaunt 1994; Dinnin and Lillie 1995; Dinnin 1997; Long et al. 1998; Neumann 1998; Lillie 1999).

The process of wetland development in the river floodplains has been described in detail elsewhere (see for example Long et al. 1998; Neumann 1998), and can be summarised as follows. Marine transgression (during periods of sea-level rise) results in an impeded run-off of the tributaries of the Humber as the hydraulic gradient is reduced. This impeded run-off results in more frequent and increased longevity of overbank floodings and rising groundwater tables. This in turn favours the growth of species that tolerate a high groundwater table, especially Alnus (alder), in areas which previously were typically meadows (within the river floodplains) or deciduous forests (on higher ground). The high groundwater table and frequent floods inhibit the humification of plant material, resulting in the development of floodplain peats or mires.

Where the floodplains are unconstrained, as is the case for many of the rivers in the Humber wetlands including the rivers Trent, lower Ouse,
Figure 1 Location of the Humber estuary

Foulness, Hull, and Ancholme, a landward expansion of the floodplain mires is observed during marine transgression. On the side of the river or estuary, reed swamps, saltmarsh and mudbanks may develop, resulting in peat and clastic sediments overlying the basal peats. In periods of marine regression, a seaward expansion of the floodplain mire can be observed, resulting in an intercalated or upper peat. The maximum lateral extent of floodplain mire development is reached at c.1000 cal BC.

The existence of a basal peat in the floodplains throughout much of the Humber wetlands outside the river channels has formed the basis for much work there, including the development of a simple mathematical model in which altitude, position in the estuary and date of basal peat are linked (Shennan and Andrews 2000). Using this model, it is possible to determine whether floodplain mire development had commenced at a certain time in a certain place. This model can be used to determine the full extent of wetland development in the Humber wetlands at any point in time from c.5000 years BC.

Bronze Age remains on the Humber estuary

The archaeological resource of the Humber estuary has long been recognised as of great importance, with the finds from North Ferriby being particularly significant. The North Ferriby intertidal foreshore includes up to 2m of post-glacial deposits overlying glacial till, first noted in 1930 and published by Bisat (1932). Frequent visits to the foreshore by Christopher and Edward Wright, initially for the study of faunal remains, led to the identification of archaeological structures, including hurdles, of which one example was excavated at a later date and dated to the Middle Bronze Age (McGrail 1998 and pers. comm.). In 1937, the remains of a prehistoric boat, Ferriby-1, were found and in the following decades, remains of two additional Bronze Age and one Iron Age boats were discovered (cf. Wright 1990).

The remains of Ferriby-1 comprise a near-complete bottom structure, including remains of two keel planks, outer bottom planks and part of the lowest side-strake, together with an ‘inserted piece’ in one of the outer bottom planks, representing a major repair in antiquity. All planks were fashioned from Quercus (oak). The overall dimensions of the in situ boat remains were 13.32m by 1.67m. The main characteristics include the fastening of the planks by ‘sewing’, using withies of twisted yew, at an interval of 0.2 to 0.3m. The seams of the planks were grooved, and made watertight with moss. A second characteristic was the use of transverse timbers which were passed through integral cleats which had been carved out of the solid planks, giving the hull the required stiffness. Recent radiocarbon assay
aimed at providing more accurate dates for the Ferriby boats, which included the complete removal of contaminants including waxes that had been used in conservation, provides a date of 1880-1690 cal BC for Ferriby 1 (Wright et al. 2001).

The design of Ferriby-2 and Ferriby-3, as can be ascertained from the fragmentary remains, closely resembled that of Ferriby-1. The recent research redated Ferriby 2 to 1920-1770 cal BC and Ferriby 3 to 2020-1780 cal BC (Wright et al. 2001). Most interestingly, the fragments of Ferriby-3 were found resting on a platform of Alnus (alder) posts and a worn Quercus (oak) plank, suggesting that the boat-planks had been put aside, presumably for some sort of repair. This find, and the concentration of boat remains, form the basis for the suggestion that the North Ferriby foreshore was a Bronze Age boatyard.

Parts of the estuary were surveyed between 1994 and 1997 as part of the Humber Wetlands Survey, but the acquisition of a rigid inflatable boat in 1997 provided opportunities for the more extensive survey of the intertidal wetlands of the Humber foreshore. During 1997-98, over 40 archaeological sites were discovered, the majority of which were dated to the Bronze Age, the Roman period and the post-medieval period. Sites of the Bronze Age and Roman period relate to landscapes which were subsequently buried by sediments following marine transgressions, but the post-medieval sites have never been fully buried and timber structures and alignments remain visible at low tide.
Among the Bronze Age finds was a fragment of a plank-built boat, which was found on the North Sea coast at Kilnsea, but which must be attributed to the Kilnsea Fleet, a relatively small tributary of the Humber (Van de Noort et al. 1999). Although only a single plank was recovered, it shows the characteristic integral cleat, through which transverse timbers were put to provide stiffness to the hull. The fragment was dated to 1870-1670 cal BC, or Early Bronze Age. It has been argued that the sewn or plank-built boats of the Bronze Age were used for communication with Lincolnshire, south of the Humber, and continental Europe, thereby playing a role in exchange and the maintenance of elite networks which were well established by this date (Van de Noort et al. 1999).

Sites dated to the period c.1800 cal BC to 400 cal BC include individual stakes, a platform and stake alignments. The majority of these sites survive only as the bottom ends of the stakes driven into the peat, with the contemporaneous surface levels desiccated and eroded. On the basis of corresponding structures from the Essex coast and the Solent, the majority of these sites are thought to have been fish traps and weirs, hides and platforms for the hunting of wildfowl (cf. Wilkinson and Murphy 1985; Loader et al. 1997).

Furthermore, a number of trackways of Bronze Age date were identified and two were partly excavated. The excavated trackways display a number of common characteristics. The woven panels were constructed on dryland from mainly coppiced hazel, in the same way wattle fencing is made, before being transported to the estuary. The hurdles of the earlier of the two trackways, which has been dated by radiocarbon assay to c.1400 cal BC, were laid directly on the saltmarsh, and held in place by stakes driven or hammered into the muds (Fletcher et al. 1999; Fig. 2). The second of the two trackways, which has been dated to c.1400-c.900 cal BC, was also made of hurdles, but its construction lacked the finesse of the other trackway. The hurdles were laid upon roundwood timbers, with one end resting on a cross-piece which in turn was supported by the verticals (Fig. 3). The hurdles themselves were again held in place by stakes driven into the saltmarsh.

Both trackways were built in a saltmarsh environment, and were found to have been constructed across tidal creeks. Although such trackways may have been used in fishing and water fowling, it is more probable that they were primarily built to maximize or maintain the exploitation of the saltmarsh as pasture for cattle, and possibly sheep. The rationale for this interpretation comes partly from the location and design of the trackways. The trackways did not provide access to the waterfront, but rather were positioned alongside the river, and the method by which the hurdles were secured into their place suggests some sort of ‘heavy traffic’. Furthermore, the remains of aurochs have been found on the North Ferriby foreshore, while the practice of saltmarsh exploitation as pasture for cattle and sheep is well known from the medieval and post-medieval periods (see for example Rippon 1997). It may be postulated that the trackways were constructed during a marine transgressive phase, during which tidal creeks typically extend landwards. This would evidently have restricted the exploitation of the saltmarsh, unless access to saltmarsh across tidal creeks could have been provided.

In short, the Bronze Age archaeological resource of the Humber includes nautical finds, making the estuary a gateway for communication and exchange, and also a large number of structures illustrating the high biological productivity of the estuary. Its exploitable resource potential was high and included fish, waterfowl and rich pasture land, although a certain inventiveness and determination was required from anyone who wished to exploit this resource.

Bronze Age remains from the river floodplains
While the wetlands in the Humber estuary played an important role in Bronze Age subsistence and exchange, the wetlands which developed in the tributaries of the Humber, such as the rivers Trent, Ancholme, Hull and Foulness, offer a very different picture. The systematic survey of selected areas of these rivers shows a particular close spatial association between the late Mesolithic and
early Neolithic wetlands but the distance between the material culture of the late Neolithic and Bronze Age periods to the nearest river is considerably greater. In areas where the survey was undertaken unhindered by modern land use, for example in the Humberhead Levels or the Ancholme valley, the mean distance of sites to the nearest contemporary river was c.100m for the late Mesolithic and early Neolithic periods, but nearing c.500m in the late Neolithic and Bronze Age periods (Van de Noort et al. 1997, Van de Noort and Neumann et al. 1998). No spatial correlation between sites of Iron Age date with their nearest rivers was established during these surveys.

The growing distance between archaeological material and wetlands has been mainly attributed to the increasing importance of agricultural activities, and a decreasing role of hunting, fishing and gathering within the subsistence strategies. Evidence for small-scale forest clearance and limited agricultural activity from pollen analysis has been dated to c.2500 cal BC (cf. Neumann 1998), but evidence for larger-scale agricultural activity is not recorded in the region until the later Bronze Age, around 1000 cal BC (see for example Taylor 1995). The pollen analysis from the region suggests a pastoral-dominant subsistence between c.2500 and 1000 cal BC, and the widespread introduction of arable agriculture only after 1000 cal BC. Nevertheless, settlement locations from c.2500 cal BC are considered to have been selected primarily for their proximity to the arable production units, and this consideration was growing in importance over time.

Thus, few Bronze Age archaeological sites are known from the wetlands in the river floodplains of the Humber wetlands. Settlements appear to be concentrated on the drylands or on the wetland margins. The only recorded trackway from a river floodplain, at Brigg in the Ancholme valley, provides access across, rather than access into, the floodplain mires, and the Brigg 'raft' has similarly been described as a ferry for transport across the Ancholme valley (McGrail 1998).

However, Bronze Age activity in the river floodplains of the Humber wetlands is represented by metal objects, especially axeheads, weapons and ornaments, which have been recorded since the eighteenth century. About 30 locations of Bronze Age gold or bronze finds from the region are recorded, concentrated in the floodplains of the rivers Trent, Ancholme, Hull and Foulness (Dudley 1949; Davey and Knowles 1972; Davey 1973; Loughlin and Miller 1979; Van de Noort and Fenwick et al. 1998). At several locations, for example at Burringham on the Trent floodplain, at Appleby on the Ancholme floodplain and at Leven on the Hull floodplain, concentrations or hoards of metalwork were found, but other finds remain isolated (cf. Van de Noort and Davies 1993). There can be little doubt that these were votive deposits, and the practice has been described for much of modern, western and central Europe as metal deposition in 'wet places' (see for example Bradley 1990).

The antiquarian dates of the majority of these discoveries precludes detailed information on stratigraphy, but where such information was noted, the context of the gold and bronze objects is invariably on top of the clay but beneath the peat, pertaining to the early stages of mire development at the find location (see for example Davey and Knowles 1972). The use of the mathematical model in which altitude, position in the estuary, and date of basal peat are linked, confirms a broad correlation between the dated objects and the contemporaneous onset of wetland development at the find spot. Furthermore, the type of wetland was always a floodplain mire, particularly alder-dominated fen. In contrast, only a single bronze object of Bronze Age date has been found on the foreshore of the Humber itself. This is a knife from the North Ferriby foreshore (Wright 1990).

Bronze Age perceptions of wetlands
This illustrates the varying perceptions of wetlands in the Bronze Age in the Humber area. On one hand, the intertidal wetlands of the Humber foreshore can be characterized by their high biological productivity and exploitable resource, with abundance of fish and waterfowl, and extensive
opportunities for pasture and exchange. This is reflected in the archaeological record - boats, trackways, fishweirs, fishtraps and a platform which may have been used for wildfowling. On the other hand, the expanding alder-dominated fen mires in the river valleys have a lower biological productivity, and a more limited exploitable resource. Most significant in the pastoral economy of the Bronze Age, the replacement of former meadowland by fen-type mires, which are unsuitable for use as pasture, must have been a significant landscape change from a human perspective. Here, the archaeological record is one of metal deposition and sites which offer a route across wetlands, such as the trackway and boat from Brigg.

If we consider the role of these votive deposits as 'gifts to the gods', and an association of human burials with these votive deposits, which has been observed outside the Humber wetlands in the Thames estuary and in the East Anglian Fens (see for example Bradley and Gordon 1988; Bradley 1990; Hall and Coles 1994), a fundamental division can be noted in the perception of these different wetland types. The intertidal wetlands of the Humber estuary were perceived as living wetlands, central to subsistence and exchange activities, and devoid of religious or ideological activity. The mires of the river floodplains were perceived as 'lifeless' wetlands, peripheral to subsistence activities but central to religious activity.

Although votive depositions in 'wet places' outside the Humber wetlands are dated from the early Neolithic through to the late Iron Age (see for example Bradley 1990), a bias in the wetland archaeological record in the Humber wetlands prevents detailed investigations of perceptions of wetlands for these periods. This bias is the result of marine transgressions and regressions and recent erosion and desiccation (Van de Noort and Ellis 2000). Nevertheless, although Neolithic-period wetland landscapes remain overwhelmingly buried by deep sediments of later date, the spatial distribution of polished stone axeheads on the floodplain of the River Ancholme appears closely associated with the lateral wetland expansion in the Neolithic period (cf. Van de Noort and Davies 1993). This distribution has been interpreted as representing a very considerable amount of forest clearance (May 1976), but this does not explain the occurrence of axeheads on the floodplain, which would have been unsuitable for agriculture. Landscapes of Iron Age date have suffered extensively from desiccation and erosion, and few metal finds of this period are recorded from the Humber wetlands, despite the fact that throughout western and central Europe the frequency of metal deposition appears to increase in Hallstatt D (from c.600 cal BC).

Conclusions
Few attempts have been made to understand the environmental context of the phenomenon of votive deposits in 'wet places'. However, on the basis of closely integrated research by archaeologists and palaeoenvironmentalists within the framework of the Humber Wetlands Survey, where we have been able to compare the perception of different types of wetlands, it was concluded that possibly as early as the Neolithic, and certainly by the Bronze Age, mire-type wetlands were perceived as radically different from the intertidal wetlands. The intertidal wetlands of the Humber estuary were perceived as living wetlands, central to subsistence and exchange activities, and devoid of religious or ideological activity. The mires of the river floodplains were perceived as 'lifeless' wetlands, peripheral to subsistence activities but central to religious activity.
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