RIVERS IN PREHISTORY

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Cover photo: Giant king fish (Caranx ignobilis) gather in preparation for a unique migration up the Mtentu river. The Mtentu river is one of few remaining pristine wildernesses in South Africa, so the Africa crew avoided using disruptive motor boats, instead paddling to the location each day in a canoe. Image elaborated by Cornelia Stancu.

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Bronze Age Barrow Complexes on the Lincolnshire Fen Margin

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In his influential review of Lincolnshire prehistory Jeffrey May noted the density of round barrows on the Lincolnshire Wolds, their presence on the marsh and along the eastern flank of the Northern Lincolnshire Edge and recounts Richard Gough's observation of 1789 that 'There are many in this county, and the lower rich part of it has scarce a village without them'. May's observation that aerial photography and fieldwalking had hardly begun to locate the remains of these barrows, has been redressed through field survey and excavation during the last thirtyseven years, particularly in the river valleys, on the fen and marsh edges (Field 1985; French 1994; Hayes & Lane 1992; Lane & Hayes 1993; Lane & Trimble 2010; May 1976; Simpson, Gurney, & Pryor 1993). Intensive campaigns of aerial photography by individuals (Everson, 1978), as part of survey projects (Hampton 1983; Phillips 1989), and the National Mapping Programme, have added many more examples to the record in areas susceptible to differential crop growth and ripening. Substantial complexes as well as individual ring ditches have been recorded, for example in the valley of the River Witham below Lincoln (Catney & Start 2003). This is largely the result of their exposure as peat in the river valleys and as fenland is eroded through drainage, shrinkage and agriculture (Fig. 1).

The focus of this paper is on barrows as monuments in a landscape that has been subject to marine and freshwater flooding, sedimentation, peat growth, the result of variations in sea level and changes in drainage patterns taking its current form in the 17th century. The development of remote sensing technologies such as light detection and ranging (LiDAR), and geographical information systems (GIS), are providing new insights on the relationships between round barrow complexes, ancient watercourses and wider patterns of movement and settlement. These relationships will be explored in three localities; on the western fen edge (1), in the valley of the River Witham at the Kyme Embayment (2) and just east of the Lincoln Gap (3).

It should be noted that much of the discussion below is based on aerial photographic and fieldwalking evidence and very few of the barrow complexes have been investigated by archaeological excavation. The ideas put forward are therefore speculative and open to a range of interpretations. Furthermore this paper forms part of a larger study that considers round barrows in the context of Lincolnshire prehistory (Chowne, forthcoming). An assumption is made in the paper that the majority of round barrows considered here were probably constructed in the first half of the second millennium cal BC and were in use for a considerable time.

1. The Western Fen Edge between Bourne and Horbling

The western fen edge is made up of river terrace sands and gravels that extend north from the Deepings in a narrow band 1.5 - 2.5km wide to Horbling. These overlay clays of the Kellaway series and Great Oolite Limestone that rise to the west before dropping down into the East Glen River valley. Parts of the higher ground are covered by till (Chalky Boulder Clay). There is a very gentle decline from Dowsby in a southerly direction visible as a lighter tone in the lower centre of the LiDAR image (Fig. 2). To the east of the gravel fen edge are alluvial deposits that cover the gravels as they slope down into the fen basin. In the north the surface silts are of marine origin and to the south are the remnants of peat fen. Within the silt and peat fen an extensive relict dendritic creek system (roddons) can be seen, often as raised areas where the underlying peats have shrunk as a result of drainage, initially in Roman times and then from the 17th century. The stratigraphy and palaeoenvironment of this part of the fenland has been the subject of a number of studies carried out as part of the work of the Fenland Research Committee (Smith 1970) and the Fenland Project (Waller 1994). Marine sediments mask the prehistoric land surface as it slopes to the east. A combination of shrinkage of underlying peats and intensive arable farming has resulted in the prehistoric land surface emerging through marine sediments several kilometres from the fen edge.

A series of west/east streams flow out of the limestone and clay upland and through the fen edge. Their courses have been altered as part of fenland drainage where they cross the gravels and are totally artificial in the silt fen. Through aerial photography and LiDAR it is possible to locate the ancient streams with some accuracy.

Four clusters of ring ditches have been recorded at Morton, Haconby, Dunsby/Rippingale and Hoe Hills, Dowsby, which is the most northerly group on the fen edge. A pair of round barrows is visible on aerial photographs at Pointon and two bowl barrows survive as mounds in pasture at Horbling. Possible barrows have emerged from the silt fen in Pointon and Pinchbeck. It is likely that more existed south of Morton in the area now covered by the town of Bourne.

The complexes of round barrows on the fen margin were placed close to the point at which the west/east watercourses enter the gravels. In Horbling the extant pair are adjacent to the Ousemere Lode, the Pointon pair are beside the Billingborough Lode, the Dowsby group (Hoe



Fig. 1. Distribution of round barrows and study areas, B/S Barlings/Stainfield, T/TT Tattershall/Tattershall Thorpe, contours at 50 m.

CHOWNE :BRONZE AGE BARROW COMPLEXES ON THE LINCOLNSHIRE FEN MARGIN



Fig. 2. Western Fen Margin: the light tone at the bottom of the image marks lower ground as the land slopes down in to the fenland basin.

Hills) are beside a palaeochannel the former course of the Pointon Lode and the Rippingale/Dunsby group span the Rippingale Running Dyke. As fen edge gravels narrow to the south at Morton the ring ditches are on slightly higher ground. There is no obvious west/east stream at this point with water currently channelled along the Car Dyke although 2km to the west. There may well have been a watery association with the Morton barrow group as they are located on the glacial sand and gravel/Kellaway Clay interface, a spring line.

Hoe Hills, Dowsby is a group of nine round barrows aligned west/east. The Ordnance Survey map of 1864 shows six mounds. When C. W. Phillips visited the site in 1929 all six barrows had been destroyed. One of the round barrows was excavated as part of the Fenland Management Project in the early 1990s (Lane & Trimble 2010). Although badly plough-damaged it was possible to establish that the primary burial was a cremation in a Collard Urn placed on top of soil containing a turf line, suggesting that the mound was constructed before the burial was inserted, probably in a pit cut into the mound. A circular ditch which may have had an internal bank enclosed the mound. A secondary burial, probably another cremation in a collared urn, was placed in a pit with an accessory cup. Collared urns and accessory cups are considered to date to the early second millennium cal BC. The mound appears to have been deliberately levelled or ploughed in antiquity perhaps during the Iron Age or Anglo-Saxon times. Remains from both periods were found and aerial photographs show extensive activity nearby.

Two rows of double postholes were found during the excavations at Hoe Hills, Dowsby, possibly representing the remains of a building, perhaps a domestic dwelling or ceremonial structure. These are dated to the Middle Neolithic c.3000 cal BC on the basis of stratified Peterborough Ware pottery from several Mortlake Bowls found in pits/postholes. One vessel at least appears to have been a deliberately placed deposit and may represent a foundation deposit or an example of marking a special place in the landscape (Lane & Trimble 2010).

During excavations of a Bronze Age and Iron Age settlement and salt-working site at Billingborough 3km north-east of Hoe Hills, a severely disturbed inhumation was discovered. The feature contained a single sherd of Middle Bronze Age pottery, but the grave was so disturbed and shallow that it seems highly likely that the pottery is intrusive. Four barbed and tanged arrowheads, a fragment of jet spacer bead and a small number of sherds of food vessel and possibly Collared Urn found during the excavation are all redeposited but are likely to be Early Bronze Age finds were originally in one grave, and it would seem that some other transient activity or activities took place at the site during this period (Chowne, Cleal, & Fitzpatrick, 2001).

Discussion

From the available evidence it would seem that the fen margin north of the River Glen from Thurlby to Horbling was not utilised in the same way as the Welland Valley in the Neolithic (French 2005; Pryor 1998). There are no recorded long barrows, causewayed enclosures, henges or cursus monuments despite extensive aerial reconnaissance and soils receptive to cropmark formation. Monumentalisation of the fen margin may have begun at Hoe Hills, the subsequent use of the site as a cemetery during the Bronze Age perhaps reflecting memory of the significance of this place. The Fenland Survey located several flint scatters tentatively dated to the Late Neolithic/ Early Bronze Age and saw no reason to suppose that Early Neolithic sites of any significance occur on the fen margin and upland covered by the survey (Hayes & Lane 1992). The excavations at Dowsby suggest that pits and possibly post alignments may represent Middle Neolithic activity and these are unlikely to be visible on aerial photographs. Furthermore marine alluvium covers part of the land surface from this period and sediments may well mask sites.

The placing of round barrows adjacent to west/east watercourses on a spring line where they enter the fen margin was noted above. Hoe Hills lies on the south bank of one of the larger streams that is now routed to the north forming Pointon Lode. A palaeochannel visible on aerial photographs marks the original course indicating that this was a much more substantial feature before canalisation. Even in the 19th century the stream had sufficient water and velocity to support a corn mill in Little Dowsby (OS 1st edition 1890).

Why this location might have been significant in the Neolithic may have been linked to its topographical location. Dowsby Fen, 1km to the east, contains several 'fen islands' which were part of the prehistoric land surface that formed a low ridge, just too high to be buried by sediment when the sea flooded the area. Dowsby Fen was a small watershed and the pattern of the extinct creeks suggests that the ridge continued to act as a watershed when marine alluviation was taking place in the Late Bronze Age/Early Iron Age (Hayes & Lane, 1992). The west/east watercourses continued to be significant in the Late Bronze Age/Iron Age (Chowne, 1988).

2. Kyme Embayment and Slea Valley

The river terrace gravels of the western fen edge terminate at the parish boundary between Horbling and Swaton. From here the fen margin continues as till to Heckington where the gravels, partially overlain by alluvium, reappear in a slight west/east valley through which the Heckington Eau flows. Till and Kellaway Clay then form the western side of the Witham Valley to a point where the valley narrows at Heighington. Deposits of river terrace gravels overlay the clays in places and the lowest lying areas contain alluvium and peat. This can be clearly seen on the LiDAR image where a ridge of till extends from Timberland and Walcott to Billinghay where river terrace gravels continue to North and South Kyme which appear as islands (Fig. 3). Between the ridge and higher land to the west an embayment has formed. This low-lying area of peat fen is only just above sea level and was formerly more extensive (Miller & Skertchly 1878) with much of the peat being lost over the last sixty years (Robson, George, & Heaven 1974). The landscape history of the Witham valley between Lincoln and the Fen Basin is complex with localised episodes of flooding and alluvial deposition. Formation of the basal peat began in the increasingly wet conditions of the Late Neolithic in advance of marine/brackish water flooding and sedimentation (Valentine & Dalrymple 1975). An upper layer of peat that formed in the Late Bronze Age subsequently overlaid these sediments (Chowne 1980). The River Slea flowed into the embayment and probably through the gap between Billinghay and North Kyme with a branch possibly between North and South Kyme. At the north end of the embayment the New Cut and Old Dam watercourses define a slightly higher promontory of land on which Catley Abbey was built.

There are three major Early Bronze Age cemeteries on the edge of the embayment at Asgarby and Howell, Anwick Fen and Walcott with individual examples of ring ditches in North and South Kyme. It is likely that some of the artefacts which have been found in the area were originally placed in round barrows, for example the Beaker from Billinghay (Trollope 1872).

The Asgarby and Howell cemetery is located on the north edge of a shallow west/east valley on river terrace gravels between two till deposits. West of the till the gravels open out around Sleaford where they are overlain by freely draining calcareous loamy soils nowadays used, for cereal, sugar beet, potatoes, flowers and field vegetables. These soils are good quality agricultural land and from aerial photographic evidence they were densely settled and farmed in the Iron Age and Roman periods. They would have also been attractive to earlier farmers. The barrows were visible as slight mounds on a raised area overlooking a palaeochannel when the cemetery was fieldwalked in the 1970s. This location is similar to that of Hoe Hills, Dowsby. Several struck flints and two very abraded sherds of Bronze Age pottery were found on the mounds. The barrows are visible on aerial photographs taken in 1947 but can be seen most clearly on DigitalGlobe historic satellite imagery (dated 23/04/2004 and as accessible in Google Earth).

The cemetery in Anwick Fen was initially identified from soil marks appearing on vertical aerial photographs taken in the early 1970s for non-archaeological purposes. The barrows appeared as light coloured spreads of mound material sometimes with the peat filled surrounding ditch clearly visible in contrast to the humic topsoil. When fieldwalked in the late 1970s it was clear that the mounds had been reduced in height by ploughing and peat only survived in the surrounding ring ditches and adjacent palaeochannels. Flint and stone artefacts and one pottery sherd were found on and between the mounds. Retouched pieces could be assigned to two main groups: a Mesolithic group containing microliths and related forms, and a later Neolithic/Early Bronze Age group consisting of a barbed and tanged arrowhead, a leaf-shaped arrowhead, stone axe flake, a pottery sherd and several bifaces. Some of the finer objects may have been ploughed out from burial deposits in the barrows (Chowne & Healy 1983).

From the LiDAR image it can be seen that the barrows are on sand banks or levees on a bend in the ancient course of the River Slea whose channel can be traced into the embayment where it merges with the creek system that flowed out between Billinghay and North Kyme. An even earlier channel appears to have flowed east between North and South Kyme. This cuts through slightly higher land that may have appeared as islands. The embayment would always have been low lying marginal land prone to flooding from the rivers and streams discharging water from the higher land to the west and periodic incursions from the River Witham.

At the northern end of the embayment in Walcott lies another round barrow cemetery marking an inlet through which flows a canalised watercourse the New Cut. The Gilbertine monks at Catley Priory probably modified the natural drainage in this area. Oliver noted the presence of barrows at Walcott Commons and White's Directory of Lincolnshire 1856 has a reference to "several tumuli, or barrows in the township, and in two of them several coffins and human bones were found in 1817" (Oliver 1846). There may be some confusion here with burials from Catley Priory. Trollope remarked in 1872, "On the edge of the higher ground of this hamlet were formerly several tumuli, probably marking the graves of British chiefs but these have now all been levelled" (Trollope 1872). The number of barrows counted ranges from twenty to twenty-four of which eighteen can be identified today with some certainty. Although these barrows have been known of for some time the first investigation of them did not take place until 1978 when a recently cleaned and re-cut small drain sliced through one of the mounds. The barrow underlay a layer of peat the upper surface of which was being ploughed. On top of the barrow the peat was 0.25m thick and the plough had cut into the mound material dragging clay and sand to the surface. Windblown sand had accumulated on the north-east side of the mound. Below the mound the ancient land surface could be recognised. There was no trace in the section of a surrounding ring ditch and no artefacts were recovered. Wood from the lowest level of the peat provided a radiocarbon date of 820-515 cal BC (HAR-3362) suggesting a Late Bronze Age date for the formation of peat in this part of the embayment (Chowne, 1980; Lane & Hayes 1993).

In 1988 a trench was cut through one of the barrows and salvage recording took place over a one-week period. Before disturbance the barrow had appeared in the peat as a slight mound of off-white sandy soil some 6m across.



Fig. 3. Kyme Embayment: the ancient course of the River Witham is the lighter tone running diagonally across the top right corner of the image.

The excavation reached the pre-Flandrian ground level at approximately 1.5m below the top of the mound. Overlying most of the mound was almost 1m of mottled sandy sediment covered by peaty topsoil. The excavated section, which was cut approximately across the central area of the barrow, showed the diameter at the former land surface to be some 10m. The material of which the mound itself was composed to be chiefly sand and gravel. More varied deposits lay immediately above the main burial which appeared to have been in a wooden coffin. In the general spoil were the fragmentary remains of other burials, one of a child aged between one and five years and the other of a very young or new-born infant. Unstratified artefacts included eighteen flints, including a fragment of leaf-shaped arrowhead, twenty fragments of bone (some identified as pig) and several sherds of pottery. An almost complete food vessel, with an external row of herringbone cord decoration and further cord impressions on the inner rim, is likely to have formed part of a burial, although it cannot with certainty be associated with the main inhumation. The remaining pottery appears to date from the Early/Middle Bronze Age and includes a Beaker sherd and Deverel-Rimbury type bucket urn sherds. From elsewhere on the surface of the field an archer's brace of polished stone was found (Healey & Hurcombe 1988/9). This intervention provides a tantalizing insight to the complexity and stratigraphic potential of this cemetery.

As part of an investigation into Catley Priory a fieldwalking survey was undertaken in 2004. Although this was confined to an area adjacent to the precinct it did extend to the east of the earthworks and incorporate two mounds. Three concentrations of prehistoric pottery can be discerned from the gridded fieldwalking plot. These may have derived from barrows levelled during construction of the priory or post-monastic farm buildings (Hunt & Brown 2005).

Discussion

The monuments at Anwick Fen mark the boundary between the wetland and dry land at a point of access to the fertile land around Sleaford which became an important place in the Iron Age (Elsdon 1997). The builders of the round barrows at Anwick Fen would probably have been aware of the earlier presence of Mesolithic groups who visited the levees. Certainly their artefacts would have come to the surface during barrow construction and this earlier activity might have been influential in the placing of their monuments to the dead.

The siting of these three complexes of funerary monuments at strategic locations on riverine routes that provide access to the flat fertile landscape around Sleaford and the heathland appears to be significant. They may have served as markers in the landscape defining territorial land rights making a powerful signal to outsiders that there is a prior claim on the landscape linked to the ancestors. Their placing on riverine routes may also have had a ritual significance connected with the passage from a dry landscape to a wet marginal one with the monuments marking a liminal zone between the living and the dead.

3. Lower Witham Valley between Lincoln and Heighington

The lower Witham valley was formed by the glacial River Trent (Posnansky 1960; Straw 1958). Around 13,000 years ago melt water from the receding ice sheet scoured a deep broad channel along the valley floor. The River Witham flows in a narrow channel through a gap in the limestone scarp at Lincoln where it is less than 1km wide at Canwick opening out to 1.5km at Heighington where the valley curves from its west-east alignment to the southeast reaching a width of 5km at Billinghay. Rising sea level throughout the Holocene has resulted in the gradual landward advance of marine and fen environments and an accretion of sedimentary deposits within the fen basin. Peat accumulated in the areas of freshwater influence at the western landward edge of the basin extending up to Lincoln. Clays, silts and sands were deposited in marine environments towards the Wash (Waller, 1994).

LiDAR images of the Witham Valley show that the surface topography of the study area is characterised by sinuous sand banks or levees on both sides of the present canalised river. These were probably created by melt-water from the Devensian ice sheet Fig. 4). Auger survey has shown that the levees may be dunes formed by reworking of the sparsely vegetated glacio-fluvial sands on the valley floor by strong wind probably in periglacial conditions following the last de-glaciation (French & Rackham 2003). The subsequent course of the river was constrained by the levees with the dunes forming the higher ground that became favoured for human activity from the Mesolithic prior to their inundation by peat in the Middle/Late Bronze Age.

In the Early Mesolithic the river flowed in a channel through an initially open dry landscape. Mixed deciduous woodland, mainly oak, hazel and elm, colonised in the Late Mesolithic. At Fiskerton, possibly re-deposited organic sediments at the base of a palaeochannel south of the village are dated to 9110-8600 cal BC (OxA-12917). The first indication of waterlogging of the adjacent floodplain to the south of the early prehistoric channel also comes from Fiskerton where the development of reed fen and alder carr in auger sample locations is dated to the Mesolithic and the early Neolithic (Rackham, Powlesland, & Marshall 2004). Waterlogging was restricted to the postglacial channel and the floodplain beyond this remained dry. Farther south at Dogdyke peat was forming over land previously in cultivation around 2920-2651 cal BC (Valentine & Dalrymple 1975).

Radiocarbon dates from Fiskerton (2860-2470 cal BC OxA-12915) and 2880-2570 cal BC OxA-12916) indicate that the river had become estuarine by the Late Neolithic. The river was flanked by mud flats and possible salt marsh with reed beds and alder woodland fringing the



tidal estuary. The floodplain beyond the levees remained dry and accessible for occupation and agriculture. Plough marks of possible Neolithic date have been recorded in an archaeological investigation at Washingborough (M. Allen 2006). During the Early Bronze Age wet alder woodland began growing beyond the post-glacial levees on the formerly dry floodplain and peat developed in Fiskerton (1870-1620 cal BC OxA-12198) and later in Washingborough (1430-1260 cal BC Beta-228379) (C. Allen, 2009). By the Middle Bronze Age all but the highest topographical features in this part of the Witham valley were buried by organic sediments (Rackham *et al.* 2004).

None of the round barrows in the lower Witham valley have been archaeologically excavated and an Early Bronze Age date for their construction is not proven. A collared urn discovered during railway works at Canwick may have come from a burial (C. W. Phillips 1933). Similarly the complete Beaker found in 1982 at Cherry Willingham may have been deposited in a round barrow (Field 1983). Some of the flint artefacts recovered during field survey in Washingborough are also of a type found accompanying burials in round barrows. A fine edge ground knife and two plano-convex knives were found within a metre with a fresh body sherd from a Collard Urn suggesting that ploughing has disturbed a burial. These artefacts are of a different character to the Mesolithic and Early Neolithic utilitarian assemblages that probably represent seasonal exploitation of the river valley. Although such activities would have continued in the Late Neolithic and Early Bronze Age the finer objects were possibly made by specialist craftspeople and usually associated with ceremonial activities.

Round barrows can be identified at ground level as slight mounds of sandy material surrounded by darker humic soil. In dry periods they are visible from the ground as ring ditches. On aerial photographs they appear as ring ditches or soilmarks. The LiDAR map combines evidence from this range of sources and archaeological investigations in advance of the proposed Lincoln Eastern Bypass. This should not be considered as a definitive distribution as the peat is still eroding and further mounds will become visible in arable areas. It is also difficult to be certain when a raised area of sandy soil is a round barrow or a sand dune particularly using LiDAR which records elevation. Round barrows have been identified north and south of the current course of the river which is a modern cut. To the west where the valley is at its narrowest the river is approximately in its natural position. Farther east between Cherry Willingham and Washingborough it flows between the levees discussed above but as the valley curves to the south-east at Heighington the original course is less easy to define being masked by peat. Higher ground is shown on the LiDAR map as lighter blue merging to green. For ease of reference the barrow complexes will be discussed as groups from west to east.

Canwick/Washingborough group

This is a complex of at least seven barrows clearly visible on aerial photographs and at ground level in certain conditions. Their location on the parish boundary adjacent to the railway line suggests that the primary series collared urn said to have been found in a sand borrow pit during construction of the railway comes from a destroyed barrow (C. W. Phillips 1933). Usually such vessels are dated to the early second millennium cal BC (Needham 1996). During archaeological evaluation works in advance of the Lincoln Eastern Bypass a section of curvilinear ditch was recorded in one of the evaluation trenches perhaps defining the perimeter of one of these barrows. The high water table prevented full excavation within the narrow evaluation trench (Rylatt 2004).

Greetwell group

Situated north of the river there is a group in Greetwell of at least three barrows with two further possibilities. A resistivity survey in advance of the Bypass located a 14m diameter circular anomaly that may be a round barrow. A small quantity of worked flint of Late Neolithic to Early Bronze Age date was recovered from the latest pre-peat deposits in this location (Rylatt 2004).

Cherry Willingham/Fiskerton/Washingborough group

Nine barrows have been identified north of the river and two to the south mainly on the sand banks of the levees. The complete Beaker found between an eroding sandbank beneath peat on the edge of the North Delph is probably from a round barrow or ritual associated with their construction or use (Field 1983). On the sand bank south of the river a concentration of fire-cracked pebbles, flint waste and abraded pottery sherds were found during field survey (unpublished information from APS).

Washingborough/Heighington group

Within this group are two alignments extending from the edge of the floodplain towards the river. The western line is formed of seven barrows with outliers; the eastern line adjacent to the Heighington parish boundary contains five barrows and an outlying example. These are the only linear cemeteries in the Witham valley and appear to represent a different constructional history to the other groups that form clusters as at Canwick/Washingborough, or were placed on the linear sand banks. These linear cemeteries are reminiscent of Hoe Hills, Dowsby. A food vessel was found at a considerable depth in a bed of sand close to an old course of the River Witham in 1868 (C. W. Phillips 1933). As with the Cherry Willingham Beaker this pot may have come from a barrow or be associated with related ritual activities. Both of these vessels are unusual in their decoration and form.

Discussion

The lower Witham valley has long been recognised as a socially significant place perhaps most widely known for the deposition of Late Bronze Age metalwork and Iron Age metalwork that has been recovered from the river (Davey 1973; May 1976) and the votive deposits at the Iron Age timber causeway at Fiskerton (Field & Parker-Pearson 2003). Recent investigations have shown that the Late Bronze Age ceramics and antler cheek-piece from

Washingborough (Coles, Orme, May, & Moore 1979) were not isolated finds and although the valley floor was no longer suitable for agriculture it was being used for other purposes (C. Allen 2009). Over twenty log boats have been found in the lower Witham valley, one from Short Ferry dating to the Late Bronze Age. This demonstrates the importance of the river for communication although log boats may serve a ritual as well as practical use (Palmer-Brown & Rylatt 2004).

At Anwick Fen we saw that the round barrows were situated on sand banks formed as part of the levee system of the River Slea and that these were visited in the Mesolithic. A similar situation exists at Washingborough where there is considerable evidence for regular visits to the sand banks (Rylatt 2004, 2006). Similar riverine resources were being exploited from the higher ground of the sand banks. Placing of the round barrows in the same location may have been for practical reasons but they may also have been sited in reference to the most socially significant places from the past. In the western fen edge study area there was discussion of the possibility that barrows may have marked territorial rights or memory of early settlers. It is likely that the fertile summer meadows of the Witham valley floodplain would have been equally attractive to herders perhaps functioning as meeting places between different territorial groups during the summer grazing season. Could the Washingborough linear cemeteries mark ritualised routes onto the floodplain and across the river? The western cemetery points towards a location 200m east of the Iron Age timber causeway suggesting the tantalising possibility that the placing of the causeway may have been related to memory of the sacred significance of the barrow cemetery and passage across the water.

The linear nature of the two cemeteries at Washingborough marks them as different from the large nucleated cemeteries at Walcott and Barlings/Stainfield both of which became the chosen locations for monastic houses (Everson & Stocker 2003; Stocker & Everson 2003). Whether this was the result of geographical convenience or through recognition of the ancient sacred nature of these places is uncertain. In discussing the location of monastic sites and the causeways across the fens leading to them, Stocker and Everson noted the clustering of archaeological evidence along and around all ten of the causeways (Stocker and Everson 2003). The evidence is mainly in the form of votive deposits of Late Bronze Age, Iron Age, Romano-British and medieval metalwork often of a military nature. The deposits do not appear to be random as they cluster around the terminal ends of the causeways. They suggest that the sacred significance of these locations may have been recognised through the votive deposition of metalwork in wet places, an act that was widespread in the Late Bronze Age and Iron Age (Bradley, 1998). This raises the possibility of the causeways having their origin in the Late Bronze Age or Iron Age. This can only be established through archaeological excavation. For now we can simply note the pre-medieval origin of nine of the causeways.

Conclusion

In the concluding part of this paper we will look at the wider distribution of round barrows and consider the monumentalisation of the landscape beyond the study areas beginning with the cemetery at Barlings/Stainfield (Fig. 1: B/S). The barrows are located on Kimmeridge Clay at the confluence of the Stainfield Beck with Barlings Eau. There are at least thirty-five barrows in the group, some surviving as slight mounds, although three ring ditches are within an enclosure and may be the remains of structures related to later use of the site. Several of the barrows are complex monuments that appear to feature stake circles and additional ring ditches suggesting the mound has been enlarged (Everson & Stocker 2003). A central pit can be seen in at least two of the barrows. The cemetery has not been excavated and the chronology and order of barrow construction, which may have gone on over centuries is unknown. It is possible that the larger complex barrows are earlier in date, perhaps Early Bronze Age as at Deeping St Nicholas and Tallington, with the smaller simple outlying barrows being of a later date. This is speculation but what we can be more certain of is the monumental scale of this cemetery and the significance of its placing at the head of an inlet in the most northerly part of the Witham valley. The Barlings Eau in a canalised form flows through the inlet to join the River Witham at Short Ferry. Several streams discharge into the Barlings Eau fed by springs on the Limestone Edge north of Lincoln and the till that caps the western slope of the clay Central Lincolnshire Vale. The heavy, seasonally waterlogged, soils on the till were densely wooded in antiquity and a considerable amount of ancient mainly lime woodland still survives. There is little recorded evidence for early prehistoric use of the Central Lincolnshire Vale although the soils are not ideal for cropmark formation and there has been limited archaeological field survey. It would appear that this was a wooded area, no doubt exploited for its resources, but not utilised for arable agriculture or funerary purposes. The placing of the Barlings/Stainfield cemetery appears to relate more to the River Witham than Central Lincolnshire Vale or the Wolds beyond. Similarly we can note the complex at Tattershall/Tattershall Thorpe that lies adjacent to the River Bain close to its confluence with the River Witham. This group of ring ditches record on aerial photographs has not been investigated by fieldwalking or excavation (Fig. 1: T/TT).

In addition to the concentration of round barrows at Anwick Fen individual examples are known in South Kyme and North Kyme on the higher land and also at a lower elevation on the edge of the Witham valley. The ridge of land that extends from Walcott to South Kyme and the slightly higher ground between South Kyme and Anwick create the effect of a low-lying basin that would often have been flooded and always been marginal land, ideal for summer grazing. By the end of the second millennium peat was forming in the basin covering some of the round barrows. When the round barrow complexes went out of use is uncertain. Their importance as monuments may have declined as part of the wider cultural changes that took place in the mid-second millennium. Finds of Late Bronze Age metalwork around the embayment suggest that the significance of the area may have been recognised by later communities (Davey 1971, 1973)

There are considerable differences in the nature of the archaeological evidence for Neolithic monumentalisation between the southern and northern parts of Lincolnshire. The valley of the River Welland with causewayed enclosures, henges and cursus monuments has affinities to the Neolithic farther south and west. Pryor suggested that the Welland valley was a possible cultural boundary zone from Mesolithic/Neolithic times, until at least the Iron Age (Pryor 2002). Whilst this may have been the case at certain periods of time recent research on the fen margin, particularly at Dowsby, suggests that the interpretation of a cultural boundary zone may need to be refined. Pryor's observation that the various barrows, ring-ditches and henges located there may have reflected social groupings and perceived hierarchies of power and influence, in both this and the next worlds, can be applied to the Witham valley in the Early Bronze Age. This can be construed as a ritual, perhaps liminal, landscape where members of different kin-groups and communities could come together to communicate with the world of their ancestors as they probably once did generations earlier at long barrows on the Wolds. It is not suggested here that the valley of the River Witham formed a cultural boundary zone indeed it is more likely to have been a contact zone.

The barrow complexes in each of these study areas are related to watercourses but in different ways. On the Western Fen Margin the round barrows are placed adjacent to streams and/or palaeochannels fed from the higher ground to the west and through springs. Clearly there was a relationship between the complexes and watercourses but this may have been more connected with the exploitation of riverine resources and communal pasturing. The animal bones from the Middle Bronze Age enclosure at Billingborough suggest that the economy was based on cattle and sheep husbandry with herds and flocks grazing on the coastal marshes. Could these clusters of round barrows represent the burial places of individual kin groups placed at the boundary of a traditional grazing area? These watercourses also appear to be significant as land divisions in the Iron Age and historic times (Chowne, forthcoming).

The limited evidence suggests these round barrow complexes were constructed as part of a widespread monumentalisation of the landscape in the Early Bronze Age. Their positioning in the landscape appears to have been influenced by springs, watercourses and possibly the availability of pasture. Areas of heavy clay and woodland appear to have been avoided. Although in the three study areas there is no evidence for Neolithic monument construction there does appear to be a relationship between the placing of the complexes and earlier activity as indicated by the pit deposits at Dowsby and Mesolithic artefact scatters at Anwick Fen and Washingborough. It is tempting to link the demise of these low-lying monuments with environmental change in particular increasing waterlogging as evidenced by the growth of peat. This is too simplistic as peat may have been forming in parts of the Witham Valley in the late Mesolithic (Rackham *et al.* 2004). Alternatively it could be argued that the barrows went out of use as part of cultural changes that took place in the middle part of the Bronze Age.

In this paper an attempt has been made to consider the relationships between round barrow complexes, ancient watercourses and wider patterns of movement and use of the landscape on the fen margin. The availability of LiDAR data helps us to understand the nature of the fenland environment and provides new insights on the location of round barrow complex in relation to the ancient landscape. However, a landscape as complex as the Witham Valley can only be understood by further investigation of sedimentation linked with exploration of cultural sites. If, as Bradley and Fraser have suggested, round barrows marked the boundary between the living and the dead, the changing form of them gives us clues about attitudes to death and the importance of the past (Bradley & Fraser 2011). We need to be able to investigate cemeteries where mounds survive, examine the spaces between the mounds and reconstruct the contemporary environment within a framework of precise radiocarbon dating (Bradley, 2007). Last has asserted that to understand barrows in a holistic way requires 'situating them properly not just within a history of mortuary practice but also within a history of monumentality' (Last 2007). The low-lying Lincolnshire barrow cemeteries, some of which are partially covered by later deposits of alluvium and peat, would be an ideal place for such research.

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