CONFERENCE REPORT
Fen and River in Lincolnshire
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Held jointly by the Society for Landscape Studies and the University of Lincoln

*Prepared by **Hadrian Cook** and **Simon Draper** (Society for Landscape Studies) and **Carenza Lewis** (University of Lincoln), January 2022*

WELCOME AND INTRODUCTION

Charles Watkins, Chairman of the Society for Landscape Studies.

Charles Watkins welcomed the participants and reviewed some of the difficulties involved with getting this programme to the point of online delivery. The conference, originally planned for 2020, had been postponed due to the COVID-19 pandemic, and everyone had been patient, given a gestation period of two years! SLS is especially grateful to Professor Carenza Lewis of the University of Lincoln for putting together such an interesting range of presentations and Dr Mark Riley of the University of Liverpool for making online delivery possible. The focus on wetlands and rivers in past landscapes is extremely important, as is their importance in future conservation, particularly in acting as a sink for sequestrating atmospheric carbon. There were 66 attendees at the start of the day.

SESSION 1

Chair: Carenza Lewis, University of Lincoln

KEYNOTE PAPER - Farmers, Floods and the Ferrell Cell: UK rivers and environmental change

Mark Macklin

Mark Macklin reviewed the evidence for the impacts of environmental change on UK river systems in the Holocene. First, he explained how a link between sedimentation and climatic variation was only established in the late 1980s and 1990s, through the work of Martin Bell. Evidence emerged for synchronous alluviation taking place across the UK and its correspondence to known past climatic events, especially in the mid-Holocene. Since the 1980s, the link has become even clearer thanks to more data: by 2021, 844 radiocarbon dates from 174 sites were available, compared with only 63 radiocarbon dates from 25 sites in 1989. This has enabled a diagram to be created showing the varying rates of flooding and alluviation across the UK over time, linking climate change to land use.

In 2006, this UK diagram was compared to others from Spain and Poland, showing a remarkable coincidence in the periods of flooding stretching back long into prehistory. Another paper in 2012 compared the UK to New Zealand, where, again, there was remarkable similarity in episodes of flooding/alluviation and climatic events, particularly over the last 1000 years. In the UK there was an explosion in sedimentation and the formation of river terraces in the medieval period caused by greatly increased arable farming, whilst in New Zealand there was a similar change visible when humans began practising farming on the islands.

A strong climatic signal can now be seen within flooding and alluviation records across the globe. Links have been made between individual flood units and erosion, river incision (although not in Lincolnshire specifically) and river terrace formation. This climatic signal may be linked to the North Atlantic Oscillation affecting the Ferrel Cell (the pattern of air circulation in middle latitudes of the Earth).

Finally, the impacts of specific flood events on individual river systems were explored, showing how boulder berms (datable from lichen growing on the rocks) have formed in short episodes of exceptional flooding. In the Yorkshire Dales flood magnitudes were greater in the 18th and 19th centuries, than has been detected for the in the 20th, but there has been a kick-up again since 2000. In Lincolnshire there were no radiocarbon dates from the Witham in 2012, but significant flood events were detectable from sedimentary cores in the lower-energy river systems of Lincolnshire. The conclusion is that human impacts make river systems more sensitive to climate change, with agriculture, especially arable cultivation, the most impactful. Ominously, Professor Macklin noted that changes in flood events observable in the data to date cover only half a degree of climate heating, and gave a stark warning that in the future they may increase flood magnitudes in some river systems by more than 100%.

Medieval landscape and land use in the Lincolnshire fenlands

Mark Gardiner

Mark Gardiner explored medieval land use in the Witham valley of Lincolnshire between Lincoln and Boston. First, he introduced us to the region. The River Witham drains a large area but has a very shallow gradient, only falling 2m in height across more than 50km of river. LiDAR (Light Detection And Ranging - also knowing as laser scanning) data has shown up ridges in former creeks (or 'roddons') formed when sea water flows up into the valley, depositing sediment in channels which are left standing higher than the peatland through which the channels originally cut as the drying peat shrinks. The Witham today hugs the eastern bank of a much wider valley floor in which the river formerly meandered, before being diverted towards its modern straighter course from as early as the Roman period.

At Wildmore Fen, much more recent diversion is seen in the straight cut carrying the river down towards Boston, which was only dug in 1762 following alluviation and flooding. Langrake Cut is another artificial channel of the Witham that can be dated by documentary evidence to before *c.* 1150, whilst Haven Bank is a medieval embankment made to stop the river flooding into Wildmore Fen. To the west of the Witham, LiDAR data has shown the former courses of the River Slea, which pre-dates the current one certainly by 1325.

Returning to the Witham valley, it was demonstrated how it is possible to reconstruct the medieval landscape and land use using a combination of LiDAR data, historical maps, documentary evidence and place-names. Areas of common marshland pasture in the valley was divided up systematically between tenants into long narrow strips (or 'dales') running perpendicular to the river to provide land for grazing and arable, probably by 1086 and certainly by the 12th century. A series of fishing booths (one per strip) was located along the river itself. Behind the meadow was open peatland providing fuel, common grazing for cattle and reeds for thatching. In some places the valley was divided up between various monastic cattle farms or 'vaccaries', the boundaries of which could be reconstructed in some detail. In conclusion, Professor Gardiner noted that the medieval Witham valley was very far from the 'barren waste' described by the 18th and 19th century agricultural improvers, with intensive use made of the fens for grazing, fishing, fowling and cutting of peat, reeds and rushes.

Draining and undraining the fens: revisiting Sir Joseph Banks' role in Lincolnshire agriculture

Simon Pearson

This paper continued the theme of land use in Fenland and gave a multimedia sense of momentous developments from the time of Sir Joseph Banks (1743–1820) into the future of Fenland. Banks was raised at Revesby Abbey, on the edge of the Lincolnshire Fens, and as a landowner, botanist and influencer (especially in agriculture) and sometime President of the Royal Society, he was one of the most influential men in Georgian England.

The 'challenge' to Banks involved the strong customary rights of commoners of the Fenlands (whose origins were discussed later in the day by Susan Oosthuizen). Land-use practices were entrenched, with attempts to drain fenland prior to the English Civil Wars having failed. Banks focussed on the area around Freiston, close to the outflow of the river Witham to the Wash. Compensation was due for loss of rights of turbary (the ancient right to cut turf, or peat, for fuel on a particular area of the fen) and others including the right to extract reed for thatch as well as grazing rights. It was noted that a good living could be made from the Fenland managed in a more 'traditional' way, even when 'improvement' towards a more modern agriculture was deemed desirable.

Banks' credentials as an 'agricultural improver' arose from his close association with Arthur Young FRS, and he probably

influenced Young's authorship of *View of the Agriculture of Lincolnshire* (1799). Both men were of similar mind: Banks had a great desire to 'improve' Fenland agriculture, Young described the Fens as 'horrid'. This reflected contemporary landowners' perspectives, not to established land uses and practices, for (as noted above and in Mark Gardiner's paper) the region was by no means unproductive.

Given the dramatic changes proposed through improved drainage and enclosure (including a loss of common rights) it is not surprising that the 'improvers' were not popular. Plans to drain East, West and Wildmore Fens by Banks caused death threats to be made to the surveyors involved. Similar opposition had been met elsewhere in eastern England when drainage was proposed. This point was memorably illustrated by Prof Pearson with audio extracts of folk songs decrying fenland drainage.

It was Banks' abilities as a networker that would make him successful where others had failed. His main method was to throw expensive fishing parties for the rich and powerful, and Banks' fishery book of the River Witham in Lincolnshire by Sarah Sophia Banks (his sister) detailed these events between 1784 and 1796. Staying in Boston, Banks with the Mayor employed the best fishing equipment of his day, including drag nets (not very skilful but capable of capturing tons of fish), rounded off with social events including the consumption of fish beside the river. These events were beautifully illustrated in the book. Other associates of Banks were Captain James Cook, Jenny Bligh (wife of William Bligh of 'Mutiny on the Bounty' fame), John Linton of Freiston (Chair of the Witham General Drainage Board), Charles Greville (founder of the Royal Horticultural Society), and industrialist Matthew Boulton, an associate of the engineer James Watt. Drainage of the East and West fens was overseen by the engineer John Rennie around 1810.

All in all, the interests of the commoners were not central to the agenda of the improvers and resulting yields of wheat from drained land were typically around a respectable four tons per acre.

Professor Pearson next looked at modern environmental policy, which is leaning strongly towards 'un-draining' the Fens, with objectives for replacing agricultural production, including ecosystem improvement, restoration of peat formation, tourism and new public goods. The South Lincolnshire Water Partnership and Lincolnshire Wildlife Trust have the restoration of ecosystem services, landscape and environment as key objectives, including improved biodiversity. These developments are important today, with sequestering atmospheric carbon through peatland restoration a high priority as some 4% of UK's 'greenhouse gas' emissions are from drained peatlands. The multimedia presentation included a video from the Lincolnshire Wildlife Trust.

Mineral from the marshes: coastal salt-making in Lincolnshire

Tom Lane

Salt making is an ancient practice with place-names containing the element 'hal-' commonplace across Europe. The salt industry in Lincolnshire was active over three millennia, from approximately 1500 BC to AD 1700, and was focussed in coastal areas as saltmarshes provided raw materials at low cost: saline water, peat fuel and clays for ceramics. Salt production sites are generally characterised by loose ashy material, from the burning of organic material to provide heat for evaporation, and by distinctive coarse pottery or 'briquetage' used to make evaporation vessels and supporting pillars, used in extracting salt from brine or seawater. Sites investigated include Cowbit and Morton in Lincolnshire, and Middleton in Norfolk

The salt industry was sophisticated and its technology evolved. Originally, hearths were made that operated an oven-like heating system. Buried soils dating from the Bronze Age near the river Welland contain much briquetage dating to around 1400 BC and continuing into the Iron Age. By then, gutter-shaped troughs were employed, and radiocarbon dates were given as 195-180 BC. These troughs were essentially settling tanks enabling sediment settlement, thereby improving the purity of the sea salt thus produced. They were made from clay cylinders that were cut longitudinally. This technology persisted into the Romano-British period.

Tom Lane's presentation reviewed both the economic and symbolic significance of salt to human society worldwide. With manufacture likely from the Neolithic onwards, salt could be referred to as 'white gold', and aside from its purely economic significance as a preservative it has been prominent in medical practice as an antiseptic, and in religious belief and folklore. The list of economic uses of salt include preservation of meat and fish, cheese and milk production and tanning processes, while as a commodity salt itself was widely traded.

The organisation of the prehistoric salt industry has attracted speculation. It has been suggested that salt making was a part-time occupation and perhaps dominated by women. The industry would actually have required specialist individuals originally operating 'water entrapment ditches', sourcing peat for burning, and manufacturing ceramics. People thus engaged are likely to have worked full-time in salt making.

Morton Fen is a Romano-British site dated to *c.* AD 100. Aerial photography reveals a roddon cut by a Roman canal with buried silt deposited by post-Roman flooding. 246ha have been mapped, including turbaries (peat cutting) in the peat surrounding salterns (pools of saline water left to evaporate). Although coastal changes make geographical reconstruction difficult, it is suspected the Romano-British trading port called *Salinae* 'place of salt making' (included on Ptolemy's Itinerary) was located on the Lincolnshire coast. Although there is a debate

as to whether this was in Cheshire, where the salt industry was based on rock salt; in the 1500s John Leland believed *Salinae* to be near to Skegness in Lincolnshire.

The post-Roman history of the salt industry in Lincolnshire is unclear, but it appears to have picked up once more in the middle Saxon period (that is after the 6th and 7th centuries). Ash is found in middle Saxon ditches. Later filtration systems employed lead pans. There are saltern mounds around Kings Lynn in Norfolk arising from sand washing and mud scraping. These are taken to indicate desalination sites. Production continued here well into the middle ages, surviving the damaging effects of competition from French imports in the 14th century.

Ultimately, however, salt making in eastern England ceased around AD 1600. There are several likely explanations including flooding, peat depletion and competition from production further north around Newcastle and Scotland. All things considered, the archaeology of salt making is complicated and leaves little above-ground trace, often difficult to find and interpret in the record. The ashy material is attractive to burrowing animals, who are capable of destroying the archaeological context of the sites. Nonetheless, until the early modern period, coastal salt making was a very important coastal industry in Lincolnshire and adjacent areas, as demonstrated by this research.

SESSION 2

Chaired: Hadrian Cook, Society for Landscape Studies

Managing early medieval wetlands in Eastern England

Susan Oosthuizen

The 'Fenland' region of Eastern England links the counties of Norfolk, Suffolk, Cambridgeshire, Huntingdonshire and Lincolnshire. Topographically the Fens occupy a large basin with the Wash almost at its centre, into which drain the main rivers of the region: the Witham, Welland, Nene and Ouse. Areas below 4m AOD are prone to serious flooding. Geologically there is a belt of silt surrounding the north, south and west sides of the Wash, elsewhere within the basin there is abundant peat. Islands within the former wetland include Ely. Professor Ooshuizen's paper focussed on the southern half of the Fenland basin, mostly in Cambridgeshire.

The Fens were continuously populated and managed since Romano-British times. Until about AD 1700 they were predominantly under grass. Prior to widespread regional drainage, the landscape was prevented from making a natural progression from wetland to reedbeds to woodland by selective mowing and cropping as well as grazing. For example, reeds that require submersion of their root zone were cut every year, while sedges that require less immersion typically were cut every four or five years. Both have traditionally been used for thatching. Consequently, there is no evidence of a natural succession to woodland in the region.

Much of Fenland was for much of its history a common resource. Commoning may have originated in the Neolithic period, when people and animals would have come together on a seasonal basis. Later, settlement location and commons coincided, and this pattern may have originated in the post-Roman period. From then, the manorial system evolved. Before widespread draining in the 17th century, the main economic use of the landscape was for cattle rearing (sheep are less tolerant of wet conditions). Differences in geology (including gravels, peat and clays) meant that land capability was matched to the cattle economy with some success: dairy cows and calves enjoyed the richest pastures, while bulls grazed the poorest land, with grazing rotated to prevent animal parasites. Rationing of pasture was achieved through Rights of Common, in which shared rights of common among elite groups of freeholders were strong, and even permitted peasants to challenge manorial lords through the manorial courts. Professor Oosthuizen suggested these rights are of ancient origin, predating the development of the medieval manor and possibly extending as far back as the Neolithic.

The Fenland peasantry enjoyed relative prosperity, and in the 13th century one individual typically had four to eight cattle, more than in the surrounding 'upland' areas. Dairy was more important than beef production, with cheese production still important in the 18th century with exports through King's Lynn. At Rampton, for example, four acres of common was grazed between March and September with dairy cows always allocated the first bite of grass.

Nutrients and sediment from floodwater would fertilise the pastures on a seasonal basis ('warping'). In winter a covering of water protects the sward from frosts during cold periods, and oxygen levels can be maintained below 5°C, hence winter submersion is beneficial. Summer flooding however is bad for the grass as more than a few days immersion damages roots. Artificial drainage accordingly developed a hierarchy of channels for moving water around the Fenland: 'lodes' are embanked watercourses that run across a Fen, canals run along contours (catchwaters) and divert flow to the lodes, and ditches remove water at the field scale. While this became particularly manifest from the 17th century, artificial drainage had increased after the 10th century restoration of the monasteries led to a number of new initiatives in Fenland, and some lodes predate even this early development.

Rights and duties associated with drainage were ancient in origin, and developed separately from the manorial customs, governing farming practice between the 5th and 18th centuries. This stability may be attributed to rights not associated with an individual's lifetime, to the point that commoners were freemen able to attend the Hundred Court, and a Fen Court system operated separate from that of the manors. Apart from responsibilities for drainage and rights of commons, other similar rights included fishing and the gathering of wood. By the 17th

century, the governance of pre-regional drainage had become most complicated (as discussed earlier in the day by Simon Pearson).

Latest work on the evolution of the Witham-Trent river system

Josephine Westlake, Mark Macklin and John Lewin

Of the two rivers draining Lincolnshire, the Witham drains by far the smallest catchment. Rising at South Witham near Grantham, the river Witham flows northwards to Lincoln, then bends east, then south-east to Boston before entering the sea. The geology is complicated, and was very different around 300ka BP, when a lake was located to the north and the river flowed out through the Lincoln gap to the sea via the river Trent, which followed a different route to the Humber estuary. Around 28ka BP, this river was constrained by an ice sheet to the west and a series of river terraces were formed along the Witham valley, and the river drained towards the area of the North Sea. By 19ka BP, overflow from the North Sea Ice deflected the flow southwards and by 10ka BP the flow of the Witham was towards the present outfall near to the Wash.

Lincoln is located in a gap in the Lincolnshire limestone ridge, the Witham valley being vulnerable to fluvial flooding. The Fossdyke canal is first documented in 1129 but is likely to have been constructed in Romano-British times (although opinions vary) and may have been intended to link the Roman city of *Lindum Colonia* with the river Trent. The canal, which was further improved in the 12th and 18th centuries, acts as a catchwater for streams, making the Fossdyke part of a complex hydrological network requiring interdisciplinary study, but unlike the city of York, Lincoln's records are poor in respect of its history and built features. Maps are extant for 1762, 1772 and 1804, showing 'pools' around Lincoln that have since largely vanished. Sediment records indicate channel activity in the Iron Age, Bronze Age and Romano-British periods, while down-cutting and re-filling of the river Till between river terraces provides further evidence. However, exactly where the water flowed remains unclear, as does the role of the Fossdyke.

Finds of prehistoric and Romano-British date have been made near the Witham in palaeochannels that are cut by the Fossdyke, providing a date before which the canal must have been cut, but these are out of context so do not provide a close date for construction. Seven cores from sediments in the palaeochannels around the Pyewipe (west of Lincoln), which went out of use when the Fossdyke was constructed, showed sequences of peat deposits and colluvial soil but not alluvium, implying active flow away from the site, and indicated that these channels stopped flowing before *c.* 880BC. A 20cm peat horizon indicating a wetland watered from somewhere else was dated to 650 BC and a second core suggests organic deposition continued from the early Holocene into the Bronze Age. However, dating the Fossdyke in this chronological context does not help understand its Romano-British development.

Palaeoenvironmental information such as from boreholes from Lincoln city centre is difficult to access and interpret because of urban development obscuring earlier land surfaces. However, a peat surface with sand islands is indicated beneath the settlement, with rivers active 8-9,000 BC. Organic deposits suggest channels filling up, with a rapid increase to around 1000 BC. West of the Lincoln gap the rate of sedimentation was steady from around 10,000 BC, while east of the gap it was rapid between 5,000 BC and 1,000 BC. These findings suggest Bronze Age human activity, especially increased agriculture along with a wetter climate, increased sedimentation from 3,000 BC to 1,000 BC. More recent flooding in 1795 and 1947 produced flood depths to about 3m, demonstrating that the Environment Agency's flood outline protocols produced a poor fit with historical information.

It is concluded there were anabranching channels in the early Holocene that enabled peat accumulation between channels. Peat accumulation commenced around 9000 BC. Information for active channels is otherwise limited. Between 1,000 BC and the 18th/19th centuries, interconnecting palaeochannels, flood basins and wetlands occurred. The impact of the cutting of the Fossdyke remains unclear. Further work on the palaeochannel network and topographies may produce a clearer picture.

Worship, the Wodwo and the War Pony: another aspect of the river Witham

Paul Everson and David Stocker

Paul Everson presented research from the project 'Sacred Landscapes of Monasteries' exploring why the northern end of the Witham valley is the site of so many medieval religious foundations. This area is both linear (a river valley) and 'liminal' in that it includes river crossings, wetlands and tidal waters. Such landscapes are often associated with beliefs that may date back to the Iron Age or earlier, while the density of monasteries in this area (including Lincoln) is high, and significant in both English and European contexts.

Monasteries in the Witham valley are associated with earlier ritual landscapes. The Premonstratensian Barlings Abbey (fd. 1154) is located on a dry island site including several prehistoric ritual monuments. At nearby Fiskerton, excavation has revealed an Iron Age causeway, boat and votive offerings including those of Romano-British date. This causeway crossed streams and wetlands, and it is believed that timber used in its construction was from trees felled at times determined by the lunar eclipses. This provides insights into how ritual activity in Iron Age society was governed; another possibility being that the liminal zone where waters meet at the incoming tide may have also been auspicious for tree felling due to the meeting of rivers and tidal pools.

Horses appear to be a recurring theme in ritual and religious activity in the area. The river name itself may be related through a Celtic language root to horses, and a Bronze Age broken bridle

bit from the Ulceby hoard has been interpreted as an offering to the river Witham. Minted coins of the Corieltauvi tribe bearing horse images are known from the area, and there is possibly a manifestation of the cult of the female Celto-Roman diety *Epona*, god of horses and horse riding, as an eadicula (small shrine) dedicated to her was found at Canwick.

Other ritual themes link the focus on rivers with the moon and tides, with Bede placing great significance on the movement of celestial bodies in determining political events in the 7th and 8th centuries. At Bardney Abbey bones were washed and ground before interment. Such a practice was apparently applied to the remaining bones of St Oswald when they were re-buried, while annual fishing expeditions by the monks of the abbey may have had a religious significance as a continuation of pre-Christian cults relating to river deities.

In the Anglo-Saxon period the area east of the Witham (south-east of Lincoln) was heathland dominated by dispersed settlement, with place-names suggesting that Tattershall and Coningsby were centres of hunting. Local historical figures claimed embodiment of the mythical Sir Bevis of Hampton whose story was told in popular medieval romances. They included Charles Brandon, first Earl of Suffolk (present at the Field of the Cloth of Gold, 1520) and Ralph third Baron Cromwell, who both had large hunting estates in Lincolnshire and were keen horsemen with large stables. Brandon developed the post-Dissolution estate of Kiskstead Abbey into a stud farm, hunting lodge and kennels. Their lives also sought to echo St Bertilak and his horse in the tale of 'Gawain and the Green Knight', and maybe also St George. Bertilak is transformed into the Green Knight and his slaying and rebirth is believed part of a Celtic fertility cycle myth. Bevis has also been associated with William D'Albiny, the first Norman lord of Lincoln.

Other evidence for the symbolic links between woodland, hunting, monasticism and lordship, hinted at by decoration in Tattershall Castle, included Gawain meeting a 'Wadwo/ Wadwose', a form of Green Man associated with hermits whose spiritual home is in the woods. Hermits can be more specifically Christian figures such as St Hubert (linked with a stag) and St Leonard, who may represent a manifestation of Christ derived from figures from pre-Christian belief. Others are more likely to be specifically Christian, such as St Anthony who sought a hermitage in the Desert. Either way the hermit, often sought by hunters, can be seen as a transformation or metaphor for Christ himself. It was suggested that monastic activity around Crowland and Peterborough was seeding the area with 'warrior hermits', and the authors of this paper are currently mapping hermitages in the east Witham area, of which there are a significant number.

Inhabiting water: the (Fen) landscape context of the Must Farm pile-dwelling settlement *c.* 850 BC

Mark Knight

The date 850 BC approximates to the Bronze Age - Iron Age transition. Archaeological exploration of the Fenland basin has included excavation within gravel and clay quarries associated with brickworks, revealing settlement patterns and local Fenland stratigraphy before peat accumulation in the basin. The Fenland Research Committee established the basic stratigraphy (Lower Peat, Fen Clay including fluvial sediments generally associated with roddons, and the Upper Peat) in 1935, but more recently, Martin Waller has pointed out that land presently surrounding the peat infill of Fenland holds clues to the topography that extended beneath Holocene sediments, and is now largely concealed. The study seeks not only to look at the settlement remains but place them in a vertical (stratigraphic) context within Fenland.

The pre-Flandrian land surface can be reconstructed near to Flag Fen (near Peterborough) from depositional sequences associated with the (now buried) river Nene floodplain sequence. The Mesolithic Fenland was considerably smaller in area and this situation continued until the Bronze Age, after which sea level rise drove the development of fen peat in the basin. Today, peat shrinkage is bringing buried sites closer to the surface, including the tops of barrows of Bronze Age date which are much larger than their visible profile suggests because most of their mass remains buried in the peat.

Palaeochannels in the Fen Clay are of dark-grey colour, indicating a freshwater fluvial origin. They contain hurdle fish weirs dating from the Middle Bronze Age (*c.* 1500 BC), and remains of pile dwellings are also to be found. Examination of roddon sequences furthermore show the presence of field boundaries from the Middle Bronze Age. At the Must Farm site of Late Bronze Age date (1000 – 800 BC) nine log boats have been found in a palaeochannel associated with 10 fish weirs, 25 fish traps and five round houses built as pile dwellings. Analysis of the timbers from the palisade showed all to have been felled in the same year, indicating the settlement was built quickly, and also suggested it was destroyed not long after as no woodworm had developed in the structural timbers. Dendrochronology showed that the trees used were young, and indicated the systematic exploitation of local woodland and the selective felling of trees of an age suitable for construction.

Perhaps as little as six months after the settlement was built the houses caught fire. The rapid abandonment of the site meant that most artefacts were left behind, and as the remains of the site then collapsed into the mud and water below, conditions were excellent for preservation. This has caused the site to be dubbed a 'Bronze Age Pompeii'. Finds have included pots with food residues, fabric yarn wound into bobbins, a pair of shears in a wooden box, axe heads still in their wooden hafts, beads including jet jewellery, textiles from Europe, and vast numbers of

ceramic fragments. Animal bones were mostly domestic and dryland in character, including semi-articulated young sheep and calves. Notably, all the structures contained the same range of artefacts. Indication that the residents followed a specialised aquatic lifestyle included selected use of lamb and deer carcasses with only some elements brought to the site, and human coprolites in the channel sediments including fish tapeworms, giant kidney worms and *Echinostoma* worms.

The overall picture is one in which causeways across the wetland gave rise to settlement above open water on wooden piles driven into sediment. By the late Bronze Age people were living above water surfaces as an alternative to being located in drier locations. The remains suggest a sophisticated local economy which exploited nearby dry land for animal husbandry, agriculture and raw materials.

CONCLUDING THOUGHTS

At the end of an excellent day with a compelling series of papers, recurring themes could be noted pertaining to Lincolnshire's landscapes of river and fen. In their very different ways, all speakers drew attention to this unique landscape as one which has been carefully and intensively used while remaining mysterious and fragile. It was also shown to be a landscape in which past concerns are integrally connected to today's: the challenge of how to survive in this landscape, while simultaneously enabling the landscape itself to survive has faced human societies for millennia. The survival of this landscape remains as important to human society today as in the past, and its history offers a parable for today's pressing environmental concerns.