

### ARCHAEOLOGICAL MONITORING AND RECORDING: RIVER BAIN HABITAT CREATION, TATTERSHALL, LINCOLNSHIRE (TARB 10)

Work Undertaken For The Environment Agency

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# **Table of Contents**

# List of Figures

# **List of Plates**

1.	SUMMARY1	L
2.	INTRODUCTION1	L
2.1 2.2 2.3	Planning Background	
3.	AIMS	2
4.	METHODS	2
5.	RESULTS	2
6.	DISCUSSION	5
7.	CONCLUSION	3
8.	ACKNOWLEDGEMENTS	3
9.	PERSONNEL	5
10.	BIBLIOGRAPHY	5
11.	ABBREVIATIONS	ŀ

# Appendices

1.	Context descriptions
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- 2. The Finds by Paul Cope-Faulkner and Gary Taylor
- 3. Assessment of the plant macrofossils and other remains by Val Fryer
- 4. Glossary
- 5. The Archive

# List of Figures

Figure 1	General location plan
Figure 2	Site location plan
Figure 3	Plan showing location of works and section locations
Figure 4	Sections 1 to 3

# List of Plates

Plate 1	Test Pit 1 during excavation
Plate 2	Section 1
Plate 3	Section 2
Plate 4	Pond 2 during excavation
Plate 5	Section 3

## 1. SUMMARY

Archaeological monitoring and recording was undertaken during groundworks alongside the River Bain at Tattershall, Lincolnshire. The investigation monitored the excavation of test pits and a pond for a new wildlife habitat.

The site lies on glaciofluvial sands and gravels formed during the Devensian Ice Age (110,000-10,000 years ago) that have produced bones of bison and reindeer. Mesolithic (8000-4200 BC) flint tools and Neolithic (4200-2200 BC) stone axes have also been found in the vicinity of the site.

The investigation revealed a sequence of clays and gravels. A basal clay relates to an early glaciation with the gravels representing the outwash from glaciers of the last ice-age. Molluscs may indicate that the site was subject to brackish conditions at times, though freshwater species were also found. Furthermore, evidence from environmental samples indicates a marsh, fen or wet grassland environment with some limited evidence for human occupation nearby. A possible former channel of the River Bain or relict land surface was also recorded.

# 2. INTRODUCTION

# 2.1 Planning Background

Archaeological Project Services was commissioned by the Environment Agency to undertake a programme of archaeological monitoring and recording during groundworks associated with new wildlife habitation works at the River Bain, Tattershall, Lincolnshire. The investigation was carried out between the 30<sup>th</sup> March and 6<sup>th</sup> April 2010 in accordance with a specification prepared by Archaeological Project Services and approved by the Heritage Environment Team, Lincolnshire County Council.

## 2.2 Topography and Geology

Tattershall is situated 27km southeast of Lincoln and 18km northwest of Boston in the administrative district of East Lindsey, Lincolnshire (Fig. 1).

The site is located 2.7km south of the centre of Tattershall as defined by the Market Place at National Grid Reference TF 2101 5581 (Fig. 2). Situated close to the confluence of the Rivers Bain and Witham, the site lies at a height of c. 4m OD. The excavated areas lie on the west bank of the Bain with an embankment which followed a previous course of the river.

Local soils are of the Fladbury 2 Association, typically pelo-alluvial gley soils (Hodge *et al.* 1984). These soils are developed on a complex drift geology of river and glaciofluvial sands and gravels, which overlie glacial till which in turn seals a solid geology of Jurassic Ancholme Group clays (BGS 1995).

# 2.3 Archaeological Setting

The site is located in an area of many archaeological discoveries of prehistoric and medieval date. Bones from both bison and reindeer, together with reindeer antlers, have been found to the north of the site during sand and gravel quarrying. These probably represent the remains of animals present in the area during the Devensian Ice Age, between 110,000 and 10,000 years ago. The sand and gravel formed as outwash from a glacier whose westerly advance halted a few kilometres east of the site.

Several polished stone and flint axes of Neolithic date have been recovered in close proximity to the site. Prehistoric flint flakes have also been found to the north. In addition, Mesolithic and Neolithic flint tools were found during the Fenland Survey on a slight island 500m to the southwest (Lane 1993, 15). The River Bain was straightened at this point prior to 1891 (OS 1891) and the parish boundary between Tattershall and Coningsby follows the meandering course of the former route.

## 3. AIMS

The aim of the archaeological investigation was to ensure that any archaeological features exposed during the groundworks should be recorded and, if present, to determine their date, function and origin.

## 4. METHODS

Two trial pits were initially excavated by machine to ascertain the nature of the underlying geology. Test Pit 1 proved unsuitable so a pond for a new habitat was excavated around the area of Test Pit 2. Following excavation, the deposits were cleaned by hand. Selected deposits were excavated further to retrieve artefactual material and to determine their origin. Each deposit was allocated a unique reference number (context number) with an individual written description. A list of all contexts and their descriptions appears as Appendix 1. A photographic record was compiled and sections were drawn at a scale of 1:10. Recording was undertaken according to standard Archaeological Project Services' practice.

Following excavation the records were checked and a stratigraphic matrix produced. Phasing was assigned based on the nature of the deposits and recognisable relationships between them.

## 5. **RESULTS**

Archaeological contexts are listed below and described. The numbers in brackets are the context numbers assigned in the field.

Sealing all the excavated areas was the current topsoil comprising greyish brown clayey silt (001).

## Test Pit 1

The earliest deposit encountered within this pit was a layer of orange brown gravel (006) which measured in excess of 0.15m thick.

This was overlain by a 50mm thick grey peat or organic mud layer (005), formed within undisturbed marsh, alder fen and wet grassland (Appendix 3), which was sealed by orange brown sand and gravel (006). This measured 0.22m thick. Further sand and gravel deposits (003 and 002) overlay this with a combined thickness of 0.45m.

## Test Pit 2 and Pond 2

Recorded at the base of this pit was a layer of bluish grey clay (010) over 0.5m thick. Above this was a layer of yellowish grey sand (015), measuring 0.18m thick, though not continuous across the area. The next deposits in the sequence comprised reddish brown silty clay (009) and sand and gravel (014). These measured between 0.15 and 0.2m thick.

Above this was a layer of brownish grey sand and gravel (008 and 013). Interpreted as a possible former land surface, albeit wet and marshy, this was between 50mm and 0.15m thick. Bone of bovine, large mammal, a dog and shells indicative of a freshwater environment were retrieved along with evidence for charred grain and charcoal, perhaps derived from a nearby settlement.

This was sealed by further deposits of brownish grey sand and gravel (012), followed by yellowish brown sand and gravel (007) and yellowish grey sand (011).

### 6. **DISCUSSION**

The basal clay recorded in the vicinity of Test Pit 2/Pond 2 is likely to represent glacial till. Elsewhere in the vicinity this is identified as the Wragby Till formed during the Anglian glaciation (Clark *et al.* 2004, 63), approximately 478,000-473,000 years ago. This is at an elevated height compared to that recorded in the gravel quarries to the north.

The gravels overlying the till have been assigned a Mid-Devensian and early Flandrian date, that is post-10,000 years BP (Holyoak and Preese 1985, 198). A possible land surface was also identified, though this may represent a channel deposit, formed within an earlier course of the Bain. The faunal remains are not typical of the period before the Neolithic. Additionally, the presence of scrobicularia suggests that the local environment was brackish and further plant evidence indicates an alder fen, marsh and wet grassland environment. Dogdyke was recorded as being tidal until the Grand Sluice was constructed in Boston in 1766.

Further gravel deposits were also recorded, some of which may derive from deliberately infilling the former Bain channel, using the gravel extracted from the canalised course.

# 7. CONCLUSION

Archaeological investigations were undertaken adjacent to the River Bain, Tattershall, as the site lay in close proximity to findspots of Palaeolithic and Neolithic date.

However, the monitoring recorded glacial till overlain by gravel deposits, some of which that were likely to have been formed since the last glaciation. A deposit contained animal bone and may represent the infill of a former channel of the Bain or a relict land surface. Other than faunal and plant remains, no artefacts were retrieved.

## 8. ACKNOWLEDGEMENTS

Archaeological Project Services wishes to acknowledge the assistance of Mr K Kalchev of the Environment Agency for commissioning the fieldwork and postexcavation analysis. The work was coordinated by Gary Taylor who edited this report along with Tom Lane. Dave Start kindly allowed access to the parish files and library maintained by Heritage Lincolnshire.

### 9. PERSONNEL

Project Coordinator: Gary Taylor Site Supervisor: Mark Peachey Finds processing: Denise Buckley Photographic reproduction: Sue Unsworth Illustration: Paul Cope-Faulkner, Post-excavation analysis: Paul Cope-Faulkner

## **10. BIBLIOGRAPHY**

BGS, 1995 Boston: Solid and Drift edition, 1:50 000 map sheet **115** 

Clark, CD, Gibbard, PL and Rose, J, 2004 Pleistocene glacial limits in England, Scotland and Wales, in J Ehlers and PL Gibbard (eds), *Quaternary Glaciation*, *Extent and Chronology. Part 1 Europe* 

Hodge, CAH, Burton, RGO, Corbett, WM, Evans, R and Seale, RS, 1984 *Soils and their use in Eastern England*, Soil Survey of England and Wales **13** 

Holyoak, DT and Preece, RC, 1985 'Late Pleistocene deposits at Tattershall, Lincolnshire', *Philosophical Transactions* of the Royal Society London, B **311** 

Lane, TW, 1993 The Fenland Project Number 8: Lincolnshire Survey, the *Northern Fen-Edge*, East Anglian Archaeology **66** 

OS, 1891 *Lincolnshire Sheet LXXXVIII.S.E*, 6 inches to the mile

### **11. ABBREVIATIONS**

- APS Archaeological Project Services
- BGS British Geological Survey
- IFA Institute of Field Archaeologists
- OS Ordnance Survey



Figure 1 - General location plan



Figure 2 - Site location plan



Figure 3 - Plan showing location of works and section locations





Plate 1 – Test Pit 1 during excavation, looking northeast

Plate 2 – Section 1, looking east

Plate 3 – Section 2, looking south



Plate 4 – Pond 2 during excavation, looking southeast

Plate 5 – Section 3, looking north

# CONTEXT DESCRIPTIONS

No.	Area	Description	Interpretation
001	All	Friable mid greyish brown clayey silt, 0.35m thick	Topsoil
002	TP1	Loose mid yellowish brown sand and gravel, 0.27m thick	Glaciofluvial deposit
003	TP1	Loose light yellowish brown sand and gravel, 0.18m thick	Glaciofluvial deposit
004	TP1	Loose mid orange brown sand and gravel, 0.22m thick	Glaciofluvial deposit
005	TP1	Soft dark grey peat, 50mm thick	Possible buried land surface
006	TP1	Loose mid orange brown gravel, >0.15m thick	Glaciofluvial deposit
007	TP2	Loose mid yellowish brown sand and gravel, 0.25m thick	Glaciofluvial deposit
008	TP2	Loose mid brownish grey sand and gravel, 50mm thick	?land surface/channel infill
009	TP2	Friable mid reddish brown silty clay, 0.15m thick	Glaciofluvial deposit
010	TP2	Firm mid bluish grey clay, >0.5m thick	Glacial till
011	Pond 2	Loose light yellowish grey sand, 0.1m thick	Alluvial depsoit
012	Pond 2	Loose mid brownish grey sand with gravel, 0.35m thick	Glaciofluvial deposit
013	Pond 2	Loose mid brownish grey sand and gravel, 0.15m thick	?land surface/channel infill
014	Pond 2	Loose mid reddish brown sand and gravel, 0.2m thick	Glaciofluvial deposit
015	Pond 2	Loose mid yellowish grey sand, 0.18m thick	Glaciofluvial deposit

### THE FINDS

### FAUNAL REMAINS

By Paul Cope-Faulkner and Gary Taylor

#### Introduction

A total of 77 (56g) fragments of faunal remains were recovered from stratified contexts.

#### Provenance

The faunal remains were collected from possible land surfaces or channel infills (005, 008 and 013).

### Condition

The overall condition of the remains was good.

#### Results

Table 1, Fragments Identified to Taxa

Cxt	Taxon	Element	Number	W (g)	Comments
005	swan mussel	shell	1	5	
	oyster	shell	2	15	1 probable fossil
008	large mammal	skull	1	10	
	scrobiculariidae	shell	1	4	Fossil?
008 <2>	large mammal	rib	1	4	
	cattle	horn core	1	2	
	dog	phalange	2	2	
	bone	unidentified	67	13	
013	swan mussel	shell	1	1	

Animal bone comprises large mammal, cattle, dog and a number of unidentified fragments.

Shells of swan mussels were recovered. This is a freshwater species that inhabits hard water bodies including rivers and lakes and prefers a muddy bottom (McMillan 1973, 113).

Marine mollusc species were also recovered but at least one, and possibly all, were probably fossils. If not fossils these probably represent food waste.

#### Summary

As a small assemblage with no dating evidence, the faunal remains have little potential though should be retained as part of the site archive.

### ABBREVIATIONS

CXT	Context
W (g)	Weight (grams)

#### REFERENCES

~ 2003, *Lincolnshire Archaeological Handbook* [internet]. Available at <u>http://www.lincolnshire.gov.uk/</u> section.asp?catId=3155

McMillan, NF, 1973 British Shells (London)

### ASSESSMENT OF THE PLANT MACROFOSSILS AND OTHER REMAINS By Val Fryer

#### **Introduction and method statement**

Excavations at Tattershall, undertaken by Archaeological Project Services (APS), recorded a series of 'peats', alluvial deposits and possible buried land surfaces of unknown date. Samples for the retrieval of the plant macrofossil assemblages were taken from 'peat' deposit [005] and from buried surface [008] and two were submitted for assessment.

The samples were bulk floated by APS and the flots were collected in a 300 micron mesh sieve. The flot from sample 1 was seen to contain a high density of waterlogged plant remains and was stored in water prior to sorting. The flot from sample 2 was air-dried. Both the wet retents and the dried flot were scanned under a binocular microscope at magnifications up to x 16 and the plant macrofossils and other remains noted are listed in Table 1. Nomenclature within the table follows Stace (1997) for the plant macrofossils and Kerney and Cameron (1979) and Macan (1977) for the mollusc shells. Plant remains were largely preserved in a waterlogged state (denoted within the table by a lower case 'w' suffix) although a small number of charred macrofossils were recovered from sample 2 (lower case 'c' suffix).

#### **Results**

Seeds of dry land herbs, wetland/aquatic plants and tree/shrub species were present at a low to moderate density within both assemblages. A single charred wheat (*Triticum* sp.) grain was recorded from sample 2.

A limited range of dry land herbs was recorded, the majority of which were meadow/grassland species including persicaria *maculosa/lapathifolia*), buttercup (*Ranunculus* sp.), chickweed (*Stellaria media*) and meadow rue (*Thalictrum flavum*). Seeds/fruits of wetland/aquatic plants including sedge (*Carex* sp.), spike-rush (*Eleocharis* sp.) and hemp agrimony (*Eupatorium cannabium*) were also recorded along with alder (*Alnus* sp.) fruits, a sloe (*Prunus spinosa*) fruit stone, bramble (*Rubus* sp.) type 'pip' fragments and elderberry (*Sambucus nigra*) seeds. With the exception of charcoal/charred wood fragments and pieces of waterlogged root/stem, other plant macrofossils were rare, with most occurring within the assemblage from sample 1. Material noted included a bog heather (*Erica tetralix*) leaf, stonewort (Characeae) oogonia and indeterminate buds, moss fronds and bark and leaf fragments.

Shells of freshwater obligate molluscs were common or abundant within both assemblages. Species noted most frequently included *Anisus leucostoma, Bithynia tentaculata, Pisidium* sp., *Planorbis planorbis, Succinea* sp., *Valvata cristata* and *V. piscinalis*, all of which are common in bodies of open water, marshes or streams. A limited range of terrestrial mollusc shells were recorded within the assemblage from sample 2.

Other remains were scarce, although waterlogged arthropod remains were noted within both assemblages.

#### **Conclusions and recommendations for further work**

In summary, the composition of the assemblage from sample 1 appears to indicate that largely undisturbed marsh, alder fen and damp grassland conditions were prevalent at the time when organic rich layer [005] was deposited. The presence of shells of riverine molluscs and the lack of compacted plant materials which form the major component of most peats probably indicates that this layer is not a true peat but rather an organic 'mud', possibly laid down by one or more episodes of flood activity. Possible anthropogenic remains in the form of a charred grain and charcoal/charred wood fragments are present at a very low density within the assemblage from sample 2. Although it is, perhaps, most likely that the remains are derived from scattered or wind-blown refuse, the source of this material is uncertain as the composition of the mollusc assemblage would appear to indicate that the area was probably very wet and marshy at the time when layer [008] was deposited.

Although the list of plant and mollusc species recorded during assessment is reasonably comprehensive, quantification of the assemblages would add very little additional data to that contained within this report. Therefore, no further analysis is recommended. However, a written summary of this assessment should be included within any publication of data from this site.

#### **References**

Kerney, MP and Cameron, RAD, 1972 A Field Guide to the Land Snails of Britain and North-west Europe

Macan, TT, 1977 British Fresh- and Brackish-Water Gastropods: A Key, *Freshwater Biological Association Scientific Publication* No. 13

Stace, C, 1997 New Flora of the British Isles. Second edition. Cambridge University Press

#### Key to Table

x = 1 - 10 specimens xx = 11 - 50 specimens xxx = 51 - 100 specimens xxxx = 100+ specimens c = charred w = waterlogged cf = compare fg = fragment

Sample No.	1	2
Context No.	005	008
Cereals		
Triticum sp. (grain)		XC
Dry land herbs		
Apiaceae indet.	XW	
Chenopodium album L.	xcfw	
Persicaria maculosa/lapathifolia	XW	
P. lapathifolia L.	XW	
Poaceae indet.	XW	
Ranunculus sp.	XW	
R. acris/repens/bulbosus	XW	
Rumex sp.	xwfg	
Solanum nigrum L.	xcfw	
Stellaria media (L.)Vill	XW	
Thalictrum flavum L.	xw	XW
Wetland/aquatic plants		
Alisma plantago-aquatica L.	xw	
Carex sp.	xw	
Cladium mariscus (L.)Pohl	xcfw	
Eleocharis sp.	XW	
Eupatorium cannabium L.	xw	XW
<i>Juncus</i> sp.	xw	
Oenanthe aquatica L.	xw	
Potamogeton sp.	xcfw	
Tree/shrub macrofossils		
Alnus sp. (fruits)	XXW	
Prunus spinosa L.	xw	
<i>Rubus</i> sp.		XW
<i>Salix</i> sp.	xcfw	
Sambucus nigra L.		XW
Other plant macrofossils		
Charcoal <2mm	х	XXXX
Charcoal >2mm		XX
Charcoal >5mm		х
Charred root/stem		х
Waterlogged root/stem	XXXX	XX
Erica tetralix L. (leaf)	xcfw	
Characeae indet.	XW	
Indet,buds	XW	
Indet.bark	XW	
Indet,moss	XW	
Indet.leaf frags.	XW	
Indet.seeds	XW	XC
Wood frags.>5mm	xw	
Mollusc shells		
Terrestrial species		
Discus rotundatus		х
Trichia hispida group		х
T. striolata		xcf
Vallonia sp.		х

Table 1: Plant macrofossils and other remains from land adjacent to the River Bain at Tattershall, Lincolnshire

Sample No.	1	2
Context No.	005	008
Freshwater obligate species		
Acroloxus lacustris		Х
Anisus leucostoma	Х	х
Armiger crista	Х	
Bathyomphalus contortus		х
<i>Bithynia</i> sp.	XX	XXXX
(operculi)	х	XXX
B. tentaculata	х	XXX
Gyraulus albus	х	х
<i>Lymnaea</i> sp.		х
L. peregra		х
Pisidium sp.	х	XX
Planorbis carinatus		х
P. planorbis	х	х
<i>Succinea</i> sp.	х	х
Theodoxus fluviatilis		х
Valvata cristata	х	х
V. piscinalis	х	XXX
Viviparus viviparus	х	
Other remains		
Black porous 'cokey' material		х
Fish bones		х
Ostracods	х	
Small coal frags.		х
Small mammal/amphibian		
bones		x
Waterlogged arthropods	XX	х
Sample volume (litres)		
Volume of flot (litres)	0.1	<0.1
% flot sorted	50%	100%

# GLOSSARY

Alluvium	A deposit (usually clay, silts or sands) laid down in water. Marine alluvium is deposited by the sea and freshwater alluvium by streams, rivers or within lakes.	
Context	An archaeological context represents a distinct archaeological event or process. For example, the action of digging a pit creates a context (the cut) as does the process of its subsequent backfill (the fill). Each context encountered during an archaeological investigation is allocated a unique number by the archaeologist and a record sheet detailing the description and interpretations of the context (the context sheet) is created and placed in the site archive. Context numbers are identified within the report text by brackets, $e.g.(004)$ .	
Layer	A layer is a term to describe an accumulation of soil or other material that is not contained within a cut.	
Medieval	The Middle Ages, dating from approximately AD 1066-1500.	
Mesolithic	The 'Middle Stone Age' period, part of the prehistoric era, dating from approximately 8200-4500 BC.	
Natural	Undisturbed deposit(s) of soil or rock which have accumulated without the influence of human activity.	
Neolithic	The 'New Stone Age' period, part of the prehistoric era, dating from approximately 4500-2250 BC.	
Palaeolithic	The earliest part of the 'Stone Age' dating from the first period of human occupation to the end of the last ice age (approximately 10,000 years ago). It is usually sub-divided into lower, middle and upper, each characterised by differing stone tools and subspecies of humans.	
Post-medieval	The period following the Middle Ages, dating from approximately AD 1500-1800.	
Till	A deposit formed after the retreat of a glacier. Also known as boulder clay, this material is generally unsorted and can comprise of rock flour to boulders to rocks of quite substantial size.	

### THE ARCHIVE

The archive consists of:

- 15 Context records
- 1 Photographic record sheet
- 2 Sheets of scale drawings
- 1 Stratigraphic matrix
- 1 Bag of finds

All primary records and finds are currently kept at:

Archaeological Project Services The Old School Cameron Street Heckington Sleaford Lincolnshire NG34 9RW

The ultimate destination of the project archive is:

The Collection Art and Archaeology in Lincolnshire Danes Terrace Lincoln LN2 1LP

Accession Number:

LCNCC: 2010.46

Archaeological Project Services Site Code:

TARB 10

The discussion and comments provided in this report are based on the archaeology revealed during the site investigations. Other archaeological finds and features may exist on the development site but away from the areas exposed during the course of this fieldwork. *Archaeological Project Services* cannot confirm that those areas unexposed are free from archaeology nor that any archaeology present there is of a similar character to that revealed during the current investigation.

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