

RSPB BOWERS MARSH WETLAND NATURE RESERVE

BASILDON

ESSEX

ARCHAEOLOGICAL TRENCHING AND TEST PITTING



Essex County Council

FIELD ARCHAEOLOGY UNIT

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Prepared By: M. Germany	Signature:
Position: Project Officer	Date:
Approved By: A. Scruby	Signature:
Position: Project Manager	Date:

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Please contact the Archaeological Fieldwork Manager at the
Field Archaeology Unit,
Fairfield Court, Fairfield Road, Braintree, Essex CM7 3YQ
fieldarch@essexcc.gov.uk
Tel: 01376 331470
Fax: 01376 331428

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Essex CM1 1LF

CONTENTS

	Summary	1
1.	Introduction	2
2.	Background	2
3.	Aims and objectives	5
4.	Method	5
5.	Fieldwork results	6
6.	Conclusions	6
7.	Assessment	7
	Acknowledgements	8
	Bibliography	8

APPENDICES

1.	Trench and test pit locations and dimensions	9
2.	Trench and test pit fill sequences	10
3.	Contents of archive	11
4.	Historic Environment Record Summary	12

FIGURES (at the back of this report)

1. Site locations
2. Test pit locations (pond scrapes)
3. Trench and test pit locations (channel)
4. Diagrammatic sections: test pits TP1 to TP23 and trenches TR4 and TR5

PLATES (at the back of this report)

1. Trench TR4
2. Trench TR4
3. Test pit TP22
4. Test pit TP6
5. Test pit TP20

**ARCHAEOLOGICAL EVALUATION BY TRIAL TRENCHING AND TEST PITTING
RSPB BOWERS MARSH WETLAND NATURE RESERVE
BASILDON, ESSEX**

Client: Royal Haskoning Ltd, acting for the RSPB

Grid reference: TQ 575627 186456

ECC FAU project number: 2130

Site code: BABM 09

Oasis number: essexcou1-67184

Date of fieldwork: 28/10/09 to 30/10/09

SUMMARY

Archaeological trenching and test pitting preceded the proposed construction of a new RSPB nature reserve at Bowers Marsh, near Basildon. It is likely that Bowers Marsh was regarded as a valuable asset during the past and was used for a wide variety of different activities, including fishing, salt extraction, the grazing of livestock, the gathering of reeds and the loading and mooring of boats.

The archaeological work investigated the proposed site for two new ponds, and the north side of a shallow valley. The valley contained a largely silted-up channel, indicated by a strip of water and reeds.

All of the trenches and test pits revealed near-identical c. 1.3m to 1.8m deep sequences of alluvial layers; namely, brown topsoil and dark grey humic clay silt above an inter- and supra-tidal salt marsh deposit of brownish orange silt clay above a sub-tidal marine deposit of dark bluish grey silt clay. There were no archaeological features or finds.

The archaeological work established the maximum limit for the northern edge of the channel and the probable absence or near-absence of archaeological remains within the areas of the two pond sites.

Conditions within the channel are probably suitable for the long-term preservation of palaeoenvironmental remains and organic artefacts, although it was not possible to excavate any holes within the channel itself to confirm this as the area is covered by standing water and the soils are exceptionally wet and unstable.

1. INTRODUCTION

This report presents the results of archaeological trial-trenching and test-pitting carried out in advance of the proposed construction of a new nature reserve at Bowers Marsh, near Basildon. The construction work for the nature reserve will potentially include the excavation of two large ponds and the northward enlargement of the flood plain of a former channel. The archaeological work was commissioned by Royal Haskoning Ltd, acting for the RSPB, and was recommended and monitored by the Essex County Council Historic Environment Management team (ECC HEM). It was carried out by the Essex County Council Field Archaeology Unit (ECC FAU) and was undertaken in accordance with an archaeological brief and a written scheme of investigation (ECC HEM 2009; ECC FAU 2009).

Copies of this report will be supplied to the client, ECC HEM and the Essex County Council Historic Environment Record. The site archive will be deposited at Southend Museum. A digital copy of the report will form part of the Online Access to Index of Archaeological Investigations (OASIS) at <http://ads.ahds.ac.uk/project/oasis/>.

2. BACKGROUND

2.1 Site description and location

Bowers Marsh consists of 270ha of low lying agricultural land (centred on TQ 75960 85916 – see Figure 1) which will become part of a network of new reserves in south Essex that are being created by the RSPB.

It will comprise a variety of wetland habitats including newly created intertidal, reedbed and coastal wet grasslands with a network of public access facilities. The outline habitat creation scheme proposes the construction of a 10 hectare tidal-exchange saline lagoon, a large reservoir/ reedbed that will act as a reservoir to supply water to two coastal wet grassland units, a network of new ditches and scrapes and a visitor car park with approximately 70 to 100 spaces. The creation of the reservoir/ reedbed may potentially included the reopening and widening of an existing, largely silted-up channel (shown in blue on the accompanying Lidar survey plan - Fig. 3), which is indicated on the ground by a broad strip of water and reeds. A further element of the scheme is the proposed creation of two large ponds immediately to the south of Great Mussels and it is these ponds and the channel described above that are the focus of this report.

2.2 Geology

The British Geological Survey (BGS) records the solid geology of Bowers Marsh as London Clay. The overlying superficial geology comprises Tidal Flat Deposits of consolidated soft

silty clay (alluvium) with layers of sand, gravel and peat (BGS Lexicon of Rock Units; <http://www.bgs.ac.uk/Lexicon.cfm?pub=TFD>).

The following sequence of deposits was revealed by geoarchaeological trial pitting within Bowers Marsh in September 2009 (Green and Young 2009):

- Dark bluish grey clay (1.4m to more than 1.8m in depth)
- Compact brown clay with sub horizontal partings of sand at depths below 0.6m
- Agricultural soil (generally to 0.2m)

The sequence represents the transition of a landscape from the sub-tidal to inter- / supra-tidal and to finally agricultural. Some of the deposits contain *Scrobicularia* (marine bivalve) shells, which typically occur in tidal flat environments.

2.3 Archaeology

Reference to the Essex Historic Environment record indicates that there are no known remains with an established prehistoric date within the proposed reserve or immediate vicinity with the exception of a two sherds of Iron Age pottery, recovered during the construction of the bridge to Canvey Island in the early 1970s (EHER 7189). The pieces comprised the base angle from a heavily flint-gritted vessel and a sherd from a carinated bowl belonging to Cunliffe's 'Darmsen-Linton' style and dating to the 5th-3rd centuries BC. Fragments of amphorae were also found, including sherds from a Spanish globular amphora from a layer of burnt material and a sherd from a cylindrical amphora in Peacock's Dressel 1, Fabric 1 (EHER 7189).

2.3.2 The geotechnical studies would suggest that in these earlier periods much of Bowers Marsh would have been a complex of mud and sand flats, which were inter or supra tidal and the monitoring of test-pits across the marsh has not identified any prehistoric land-surfaces or peat-beds .

2.3.3 The degree of exploitation of this landscape in the prehistoric periods is unknown. Depending on the tidal regime it may have been used for foraging or perhaps grazing, activities which leave few archaeological traces. Elsewhere around the Essex coast evidence of utilisation has included the presence of, for example, wattle or broom trackways that have been dated to the Bronze Age (e.g. Wilkinson and Murphy 1995; Heppell and Brown 2004).

2.3.4 Salt-making has been a significant industry around the Essex coast for millennia, utilising tidal waters. The earliest known examples in the county have been found in the intertidal zone of the River Crouch and date to the Bronze Age. More typical are salterns known locally as 'red-hills', mounds of red-brown soils resulting from burning, hearths, tanks and briquetage. Whilst in use they would have been situated on the edge of the high tide line and manufactured salt through the evaporation of sea water. They are generally considered to be Late Iron Age and Early Roman in date, although it should be noted that recent investigations of an example at Tollesbury have indicated Middle Iron Age origins and ongoing investigations on Stanford-le-Hope marshes have identified salt-works of the early, middle and late Roman periods (OAU South 2009).

During the construction of the bridge onto Canvey in the early 1970s a great deal of pottery was recovered, along with '... finds from a red hill ...' comprising briquetage, hearth structure, vitreous slag, imbrex and Roman brick. The finds were recovered from a depth of 2-3m below the '...present [1970s] ground level', with the 'brown alluvial clays' overlying this being sterile. Sources also refer to wattle and daub being recovered, along with oyster and mussel shells (EHER 7190). Although the remains were not recorded and the finds dispersed it would appear that no actual 'red hill' was encountered during the works; however, the range of finds would suggest that there was one in the immediate vicinity, perhaps with associated structures, as identified on the Stanford Marshes.

In the Saxon and Medieval periods the site of the proposed Bowers Marsh reserve was, in common with many of the extensive tracts of Essex marshland, divided between a number of parishes; principally, Pitsea, Bowers Gifford, Laindon and Vange. The Domesday Book records landholdings in these parishes in 1066 and 1086 and, while geographically non-specific, entries that relate to 'Pasture for xxx Sheep' are likely to have been on the marshlands. This land was a valuable asset, hence its division between numerous parishes, but while utilised it is unlikely that the area would have been embanked at this early date, the landscape being exploited rather than transformed.

2.3.7 The geoarchaeological assessment has indicated that prior to embankment the landscape was one of mud and sand flats, with uniform conditions of deposition across the site. In some places, even within 0.2m of the present ground surface there were the remains of *Scrobicularia* (marine bivalves), which typically occur in tidal flat environments. Presumably, as the marshes were grazed in the early part of the medieval period, the flats must have been supra-tidal rather than inter-tidal; that is submerged at exceptional tides or storm surges and flood events. Thus grazing would be possible but the presence of marine molluscs explained. As with other areas close by, particularly Canvey Island, if earlier

earthworks were present they may have been reused as refuges in high tides and sites for shepherd shelters. By the mid 16th century the area appears to have been embanked and settled at least in part, with the earliest reference to Southstynkneys in 1549, suggesting that the farmstead, now below the nearby landfill site, was extant at this date (Medlycott and Gascoyne 2006, 77). During the Second World War the marsh was criss-crossed by a network of anti-glider ditches.

3. AIMS AND OBJECTIVES

3.1 Aims

The aim of the archaeological work was to determine the presence or absence, extent, date, character, condition, significance and quality of any surviving archaeological remains within the area of the two ponds and the former channel or fleet.

3.2 Objectives

The objectives were:

- to determine the presence or absence, extent, date, character, condition, significance and quality of any surviving archaeological remains within the area of the two ponds. Particular attention will be paid to identifying the terrace slope in the area of the ponds to determine if the existing dryland ground surface extends beneath the ponds at a depth where any remains present on this surface may be impacted upon by the scheme.
- to establish the deposition sequence, course, width and depth of the channel and to investigate its contents for artefactual and palaeoenvironmental remains

4. METHOD

The pond sites were archaeologically investigated through the excavation of twenty test pits (Fig. 2, TP 1 to TP20), and the area to the immediate north of the channel through the excavation of three test pits (Fig. 3, TP21 to TP23) and two short trenches (Fig. 3, TR4 and TR5). The latter replaced an earlier proposal to investigate the channel through the excavation of five trenches to either side of a drainage ditch and trackway (Fig. 3, TR1 to TR5) as trenching to the south of the drainage ditch separating the low-lying channel area from the arable field to the north quickly established that the channel was much narrower than originally thought and that the deposits outside the reed bed were identical to those which had already been encountered elsewhere. The trenches were backfilled immediately after recording as they filled up with water and the sides were unstable (Plate 2).

The test pits and trenches were excavated under archaeological supervision by using a tracked excavator with a toothless ditching bucket. The test pits measured 1.9m wide and between 1.9 and 3.2m long, and the trenches (TR4 and TR5) 1.9m wide and 4.8 and 5.3m long respectively. The maximum depth of the trenches and test pits was 2m.

The test pits and trenches were placed and located by using a directional GPS with on-board map-based software. The error margin of the GPS varies, but is always less than 0.2m.

The archaeological test pitting and trenching was carried out in accordance with the Institute of Field Archaeologists' Standards and Guidance for Archaeological Field Evaluation and the Association of Local Government Officers' Standards for Field Archaeology in the East of England (IFA 1999; Gurney 2003). The ECC FAU is a registered archaeological organisation with the Institute of Field Archaeologists. The ECC FAU uses its own recording system to record all archaeological deposits and features (ECC FAU 2006). Further details of the recording strategy and method can be found in the written scheme of investigation (ECC FAU 2009).

5. FIELDWORK RESULTS

The test-pits and trenches all revealed a near-identical sequence of layers (Fig. 4; Plates 1, 3, 4 and 5). There were no buried soils, archaeological features or artefacts.

The layers comprised dark bluish grey silt clay overlain by brownish orange silt clay, below brown silt clay topsoil or dark grey humic clay silt. The thickness of the topsoil and the brownish orange silt clay layers combined varied little between most of the test pits. Trenches TR4 and TR5 and test pits TP21 and TP22 alongside the channel contained dark grey humic silt clay instead of topsoil and were the only ones to contain *Scrobicularia* shells, although there were no shells in the dark grey humic silt clay (Plate 2).

6. CONCLUSIONS

The trenching and test pitting have found no evidence to indicate that the pond sites or the northern side of the channel valley were intensively settled or exploited during the past.

The four layers identified by the archaeological work match those identified by the geoarchaeological trial pitting and are a further indication that the surface geology of the site comprises a sub-tidal deposit of dark bluish grey silt clay, an inter / supra-tidal deposit of

brownish orange silt clay, and an agricultural layer of brown topsoil. The dark bluish grey silt clay is a marine deposit laid down when Bowers Marsh was permanently covered by sea water, and the brownish orange silt clay is a salt marsh deposit formed when the site consisted of an inter- and supra-tidal landscape of islands, creeks, channels and reeds. The topsoil at the top of the sequence is derived from the brownish orange silt clay and is probably related to the introduction of farms and cultivation into the area after embankment from the 16th century onwards. The different types of deposit are largely consistent between trenches and test pits and were probably formed under uniform conditions.

The presence of the *Scrobicularia* shells and the peat-like deposit of dark grey humic clay silt instead of topsoil in the channel valley are a product of its wet and boggy conditions and the fact that its low height above mean sea level would have meant that it would have been susceptible to flooding and tidal incursion. Trenches TR4 and TR5 and test pits TR21 and TR22 contain no channel deposits and the northern edge of the channel must therefore lie to their immediate south. It appears likely that the channel is still extant - albeit in a largely silted-up form - and that it is represented by an existing strip of water and reeds (Fig. 3). The strip slightly meanders across the southern two thirds of the valley and is of variable width.

7. ASSESSMENT

The proposed pond sites appear to contain no archaeological remains, reflecting the marginal nature of the land and suggesting that the area has never been intensively exploited or settled.

The northern edge of the channel appears to lie immediately south of trenches TR4 and TR5 and test pits TP21 to TP23, with the channel itself, albeit in a largely silted-up form, indicated by an existing band of water and reeds. The soils in the channel valley are waterlogged and unstable, making archaeological test pitting or trenching within the channel itself difficult and potentially dangerous. However, the archaeological works have been successful in defining the northern edge of the feature and this information should allow a design solution to be implemented which will preserve the channel and any deposits it may contain in situ. The contents of the channel remain unknown although they are nevertheless likely to comprise layers of waterlogged silt, conditions known to be favourable to the long term preservation of organic artefacts and palaeoenvironmental remains.

ACKNOWLEDGEMENTS

The archaeological trenching and test pitting were commissioned by Royal Haskoning Ltd acting on behalf of the RSPB and were carried out by the Essex County Council Field Archaeological Unit. The ECC FAU gratefully acknowledges the help and co-operation of David Hedges and Marc Outten of the RSPB.

The archaeological fieldwork was carried out by Mark Germany and Andy Lewsey and was managed by Adrian Scruby. Figures 1 to 4 were drawn by Andy Lewsey.

BIBLIOGRAPHY

ECC FAU	2006	<i>Site Recording Manual (Version 2)</i>
ECC FAU	2009	<i>Written Scheme of Investigation for archaeological evaluation by trial-trenching and test-pitting, ESPB Bowers Marsh Wetland Nature Reserve, Basildon, Essex. ECC FAU wsi 2130</i>
ECC HEM	2009	<i>Design Brief for archaeological and palaeoenvironmental assessment of land for new scrapes and opening up of an existing channel at Bowers Marsh, Basildon</i>
Green, C.P. and Young, D.S.	2009	<i>Trial pits at Bowers Marsh, Pitsea, Essex: Preliminary Geoarchaeological Report. Quaternary Scientific (QUEST) unpublished preliminary report, project number 064/09</i>
Gurney, D.	2003	<i>Standards for Field Archaeology in the East of England. E. Anglian Archaeol. Occ. Paper 14</i>
Heppell, E.	2009	<i>RSPB Bowers Marsh Wetland Nature Reserve, Basildon, Essex. Archaeological Desk-based Assessment. ECC FAU report 2114</i>
IFA	2009	<i>Standard and guidance for archaeological evaluation. Institute of Field Archaeologists</i>

APPENDIX 1: TRENCH AND TEST PIT LOCATIONS AND DIMENSIONS

Dimensions in metres

Test pit / trench	Co-ordinates	Length	Width	Depth
TP1	575481.6 186628.2	2.4	1.9	1.57
TP2	575495.4 186612.3	2.2	1.9	1.56
TP3	575504.7 186595.5	2.3	1.9	1.7
TP4	575515.4 186581.1	2.6	1.9	1.3
TP5	575514.2 186561.8	1.9	1.9	1.82
TP6	575458.3 186607.0	2.3	1.9	1.7
TP7	575472.4 186577.8	3.4	1.9	1.7
TP8	575481.1 186548.6	1.9	1.9	1.66
TP9	575430.8 186588.5	2.9	1.9	1.72
TP10	575445.3 186557.1	2.5	1.9	1.7
TP11	575608.4 186531.8	2.8	1.9	1.6
TP12	575621.3 186513.9	3.2	1.9	1.75
TP13	575634.1 186496.1	3	1.9	1.75
TP14	575646.9 186478.2	3.2	1.9	1.7
TP15	575659.8 186460.4	3.2	1.9	1.66
TP16	575593.6 186503.4	1.9	1.9	1.7
TP17	575610.0 186477.7	1.9	1.9	1.7
TP18	575627.2 186456.3	1.9	1.9	1.6
TP19	575570.3 186475.8	1.9	1.9	1.8
TP20	575590.3 186445.1	1.9	1.9	1.6
TP21	575776.2 186011.1	2.9	1.9	1.58
TP22	575644.1 185979.6	3	1.9	1.4
TP23	575371.1 185908.0	2.9	1.9	1.7
TR4	575860.6 186119.7 575862.1 186113.4	5.3	1.9	2
TR5	575723.2 185980.3 575721.4 185974.6	4.8	1.9	1.8

APPENDIX 2: TRENCH AND TEST PIT FILL SEQUENCES

Dimensions in metres (basal depths)

Test pit / trench	Topsoil / dark grey humic clay silt	Brownish orange silt clay	Dark bluish grey silt clay
TP1	0.4	1.57	1.57+
TP2	0.42	1.56	1.56+
TP3	0.38	1.7	1.7+
TP4	0.4	1.3	1.3+
TP5	0.42	1.6	1.82+
TP6	0.38	1.7	1.7+
TP7	0.36	1.7	1.7+
TP8	0.52	1.66	1.66+
TP9	0.4	1.72	1.72+
TP10	0.4	1.7	1.7+
TP11	0.38	1.6	1.6+
TP12	0.43	1.75	1.75+
TP13	0.48	1.75	1.75+
TP14	0.39	1.7	1.7+
TP15	0.42	1.66	1.66+
TP16	0.4	1.7	1.7+
TP17	0.33	1.7	1.7+
TP18	0.36	1.6	1.6+
TP19	0.45	1.35	1.8+
TP20	0.3	1.6	1.6+
TP21	0.2	1.58	1.58+
TP22	0.22	1.4	1.4+
TP23	0.45	1.7	1.7+
TR4	0.2	1.3	2+
TR5	0.17	1.2	1.8+

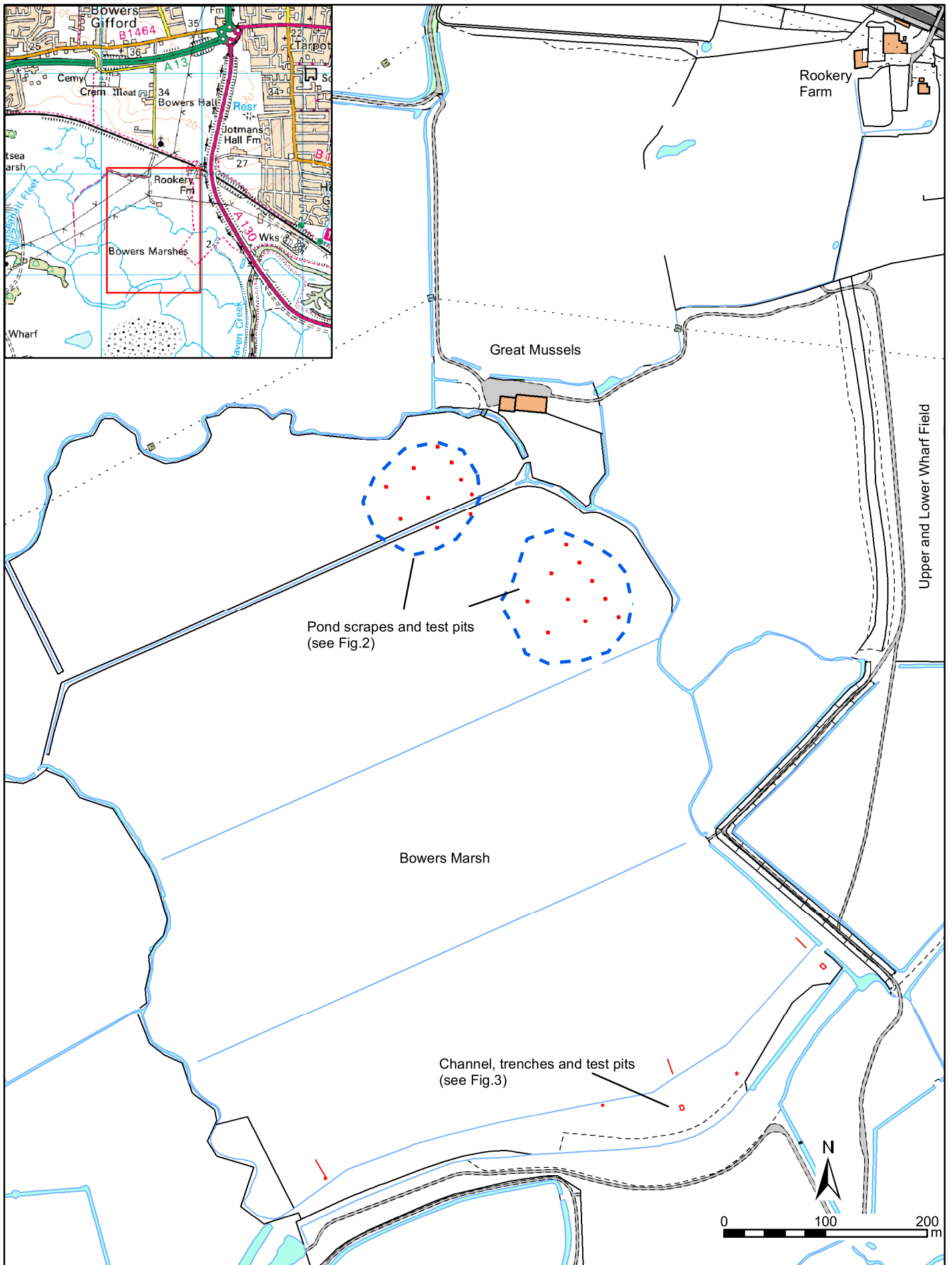
APPENDIX 3: CONTENTS OF ARCHIVE

- 1. Client report
- 1. Written Scheme of Investigation
- 1. Archaeological Brief
- 25 Trench / test pit record sheets
- 1. Photo register
- 1. Computer disk containing copies of the documents listed above and forty-four digital photographs

The site archive has no site drawings or finds.

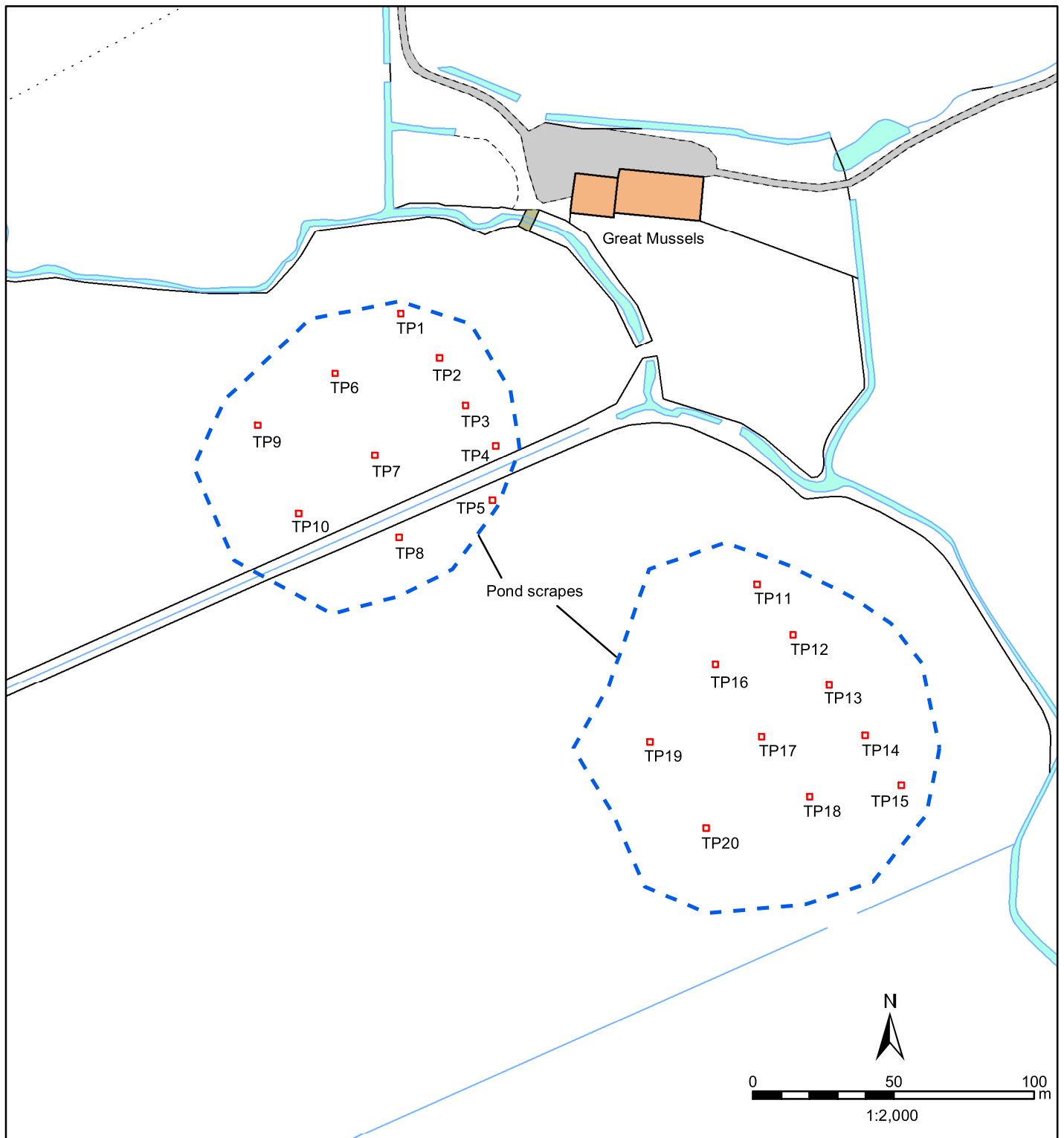
APPENDIX 4: HISTORIC ENVIRONMENT RECORD SUMMARY

Site name/Address: RSPB Bowers Marsh Wetland Nature Reserve, Basildon	
Parish: Bowers Gifford	District: Basildon
NGR: TQ 575627 186456	Site Code: BABM 09
Type of Work: Archaeological trial-trenching and test pitting	Site Director/Group: Mark Germany, Essex County Council Field Archaeology Unit
Date of Work: 28/10/09 to 30/10/09	Size of Area Investigated: Twenty-three test pits, totalling 116m ² Two trenches, totalling 19m ²
Location of Finds/Curating Museum: Southend Museum	Client: Royal Haskoning, acting for the RSPB
Further Seasons Anticipated?:	Related HER Nos.:
Final Report: <i>Essex Archaeology and History</i> (summary)	
Periods represented: Uncertain	
SUMMARY OF FIELDWORK RESULTS:	
<p><i>Archaeological trenching and test pitting preceded the proposed construction of a new RSPB nature reserve at Bowers Marsh, near Basildon. The archaeological work investigated the proposed site for two new ponds, and the north side of a shallow valley. The valley contained a largely silted-up channel, indicated by a strip of water and reeds.</i></p> <p><i>It is likely that Bowers Marsh was regarded as a valuable asset during the past and was used for a wide variety of different activities, including fishing and shell-fishing, salt extraction, the grazing of livestock, the gathering of reeds and the loading and mooring of boats.</i></p> <p><i>All of the trenches and test pits revealed near-identical c. 1.3m to 1.8m deep sequences of alluvial layers; namely, brown topsoil and dark grey humic clay silt above an inter- and supra-tidal salt marsh deposit of brownish orange silt clay above a sub-tidal marine deposit of dark bluish grey silt clay. There were no archaeological features or finds.</i></p> <p><i>The archaeological work established the maximum limit for the northern edge of the channel and the probable absence or near-absence of archaeological remains within the areas of the two pond sites.</i></p> <p><i>Conditions within the channel are probably suitable for the long-term preservation of palaeoenvironmental remains and organic artefacts, although it was not possible to excavate any holes within the channel to confirm this as the soils within the valley are exceptionally wet and unstable.</i></p>	
Previous Summaries/Reports:- Germany, M. 2009 <i>RSPB Bowers Marsh Nature Reserve, Basildon, Essex. Archaeological trial-trenching and test pitting.</i> ECC FAU report 2130	
Author of Summary: Mark Germany	Date of Summary: November 2009



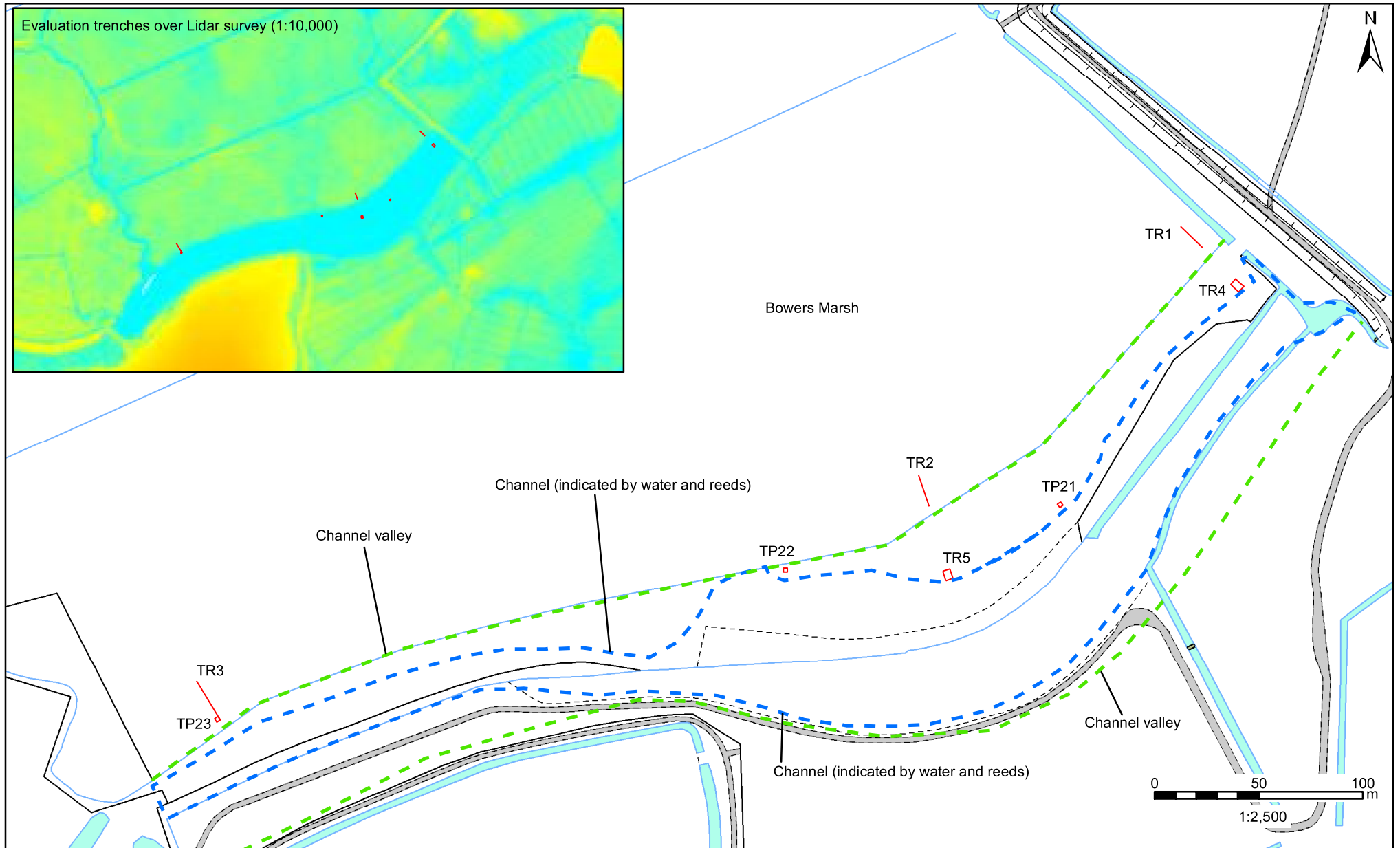
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Fig.1. Site locations



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Fig.2. Test pit locations (pondscrapes)



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Fig.3. Test pit and trench locations (channel)

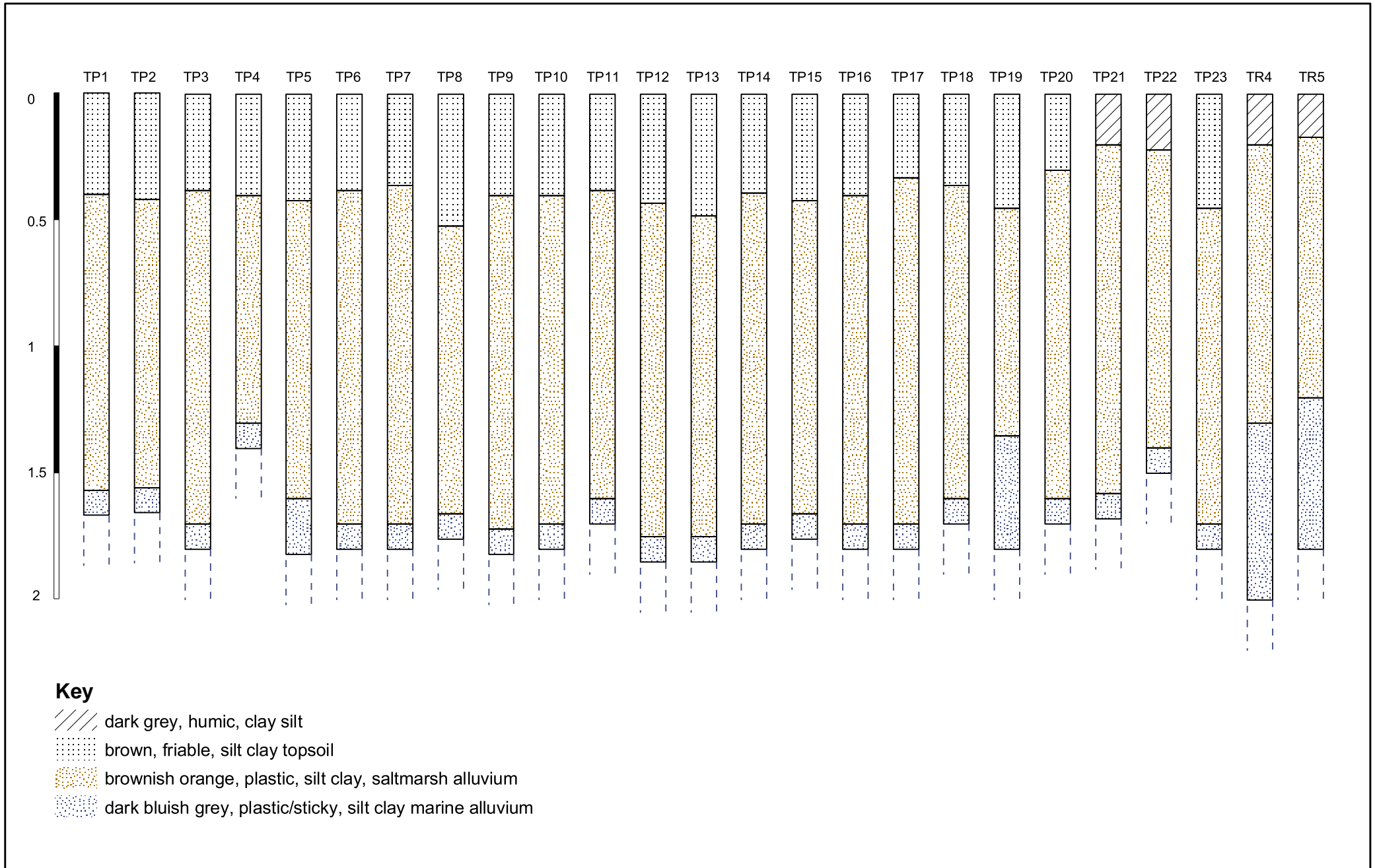


Fig.4. Diagrammatic sections: testpits TP1 to TP23 and trenches TR4 and TR5



Plate 1: Trench TR4



Plate 2. Trench TR4. The white flecks are *Scrobicularia* shells



Plate 3: Test pit TP2



Plate 4: Test pit TP6



Plate 5: Test pit TP20