



The Fenland Project Number 8:  
LINCOLNSHIRE SURVEY,  
THE NORTHERN FEN-EDGE

East Anglian Archaeology

Heritage Trust of Lincolnshire, 1993

**EAST ANGLIAN ARCHAEOLOGY**

**The Fenland Project  
Number 8:  
Lincolnshire Survey,  
the Northern Fen-Edge**

**by T.W. Lane**

**with a major contribution by Peter Hayes**

---

and contributions by  
Peter Chowne, Martin Henig, Hilary Healey,  
Francis Healy and John Samuels

illustrations by  
Michael Clark, Margaret Mathews and Dave Watt

**East Anglian Archaeology**  
Report No. 66, 1993

**Fenland Project Committee**  
Heritage Trust of Lincolnshire

EAST ANGLIAN ARCHAEOLOGY  
REPORT NO. 66

Published by  
Heritage Trust of Lincolnshire  
28 Boston Road  
Sleaford Lincs NG34 7EZ

in conjunction with  
the Scole Archaeological Committee

Editor: Stanley West

EAA Managing Editor: Jenny Glazebrook

Scole Editorial Sub-committee:

David Buckley, County Archaeologist, Essex Planning Department  
Keith Wade, County Archaeological Officer, Suffolk Planning Department  
Peter Wade-Martins, County Field Archaeologist, Norfolk Museums Service  
Stanley West

Typeset in Plantin  
Printed by Witley Press Ltd., Hunstanton, Norfolk

©Heritage Trust of Lincolnshire 1992

ISBN 0 948639 11 3

For details of *East Anglian Archaeology*, see last page

This volume is published with the aid of a grant from  
the Historic Buildings and Monuments commission for England

**Cover Illustration**

*Winter in the northern Fens.* Photo by Tom Lane

# Contents

List of Contents	v	<b>The Parish Essays</b>	11
List of Plates	vi	Chapter 2. The South-East Witham Fens by Tom Lane and Peter Hayes	13
List of Figures	vi	Chapter 3. Stickney and the Northern Fen-Edge	24
List of Tables	vii	Chapter 4. Wrangle	69
Contents of Microfiche	viii	Chapter 5. Discussion	81
Contributors Acknowledgements	viii	Appendix I: The briquetage by Tom Lane	90
Abbreviations	ix	Appendix IIa: The prehistoric pottery by Tom Lane	96
Summary	ix	Appendix IIb: A note on the pottery dating by Peter Chowne	97
<b>Chapter 1. Introduction</b>	1	Appendix III: The Lithics by Frances Healy	98
I. The Fens and the Fenland Project	1	Appendix IV: The Roman Pottery by John Samuels	107
II. Description of the Surveyed area	3	Appendix V: The Saxon and medieval pottery by Hilary Healey	107
III. Flandrian Deposits	5	Appendix VI: A terracotta head from Stickney, Lincolnshire by Martin Henig	108
IV. Survey methods	6	Appendix VII: An early seventeenth century map of Wrangle Tofts and Marshes by Tom Lane	109
V. Previous research	6	Appendix VIII: The pre-enclosure landscape at East Keal by Peter Hayes	112
VI. Organisation of the Volume	7	Appendix IX: The pre-enclosure landscape of Toynton All Saints and Toynton St Peter by Peter Hayes	115
VII. Sources	8	Bibliography	120
VIII. Terminology—Marsh and Fen	9	Index	115
IX. Radiocarbon Ages	9	Microfiche	

## List of Plates

Pl. I	Stickney island and the adjacent East and West Fens	4	Pl. VI	King's Hill, Wrangle, showing as earthworks in pasture and as surrounding cropmarks	78
Pl. II	Extinct creeks in East Fen	4	Pl. VII	Wolmersty? Cropmarks of former ditches surrounding medieval sites on Wrangle – Friskney boundary	78
Pl. III	Three courses of the River Witham near Dogdyke	22	Pl. VIII	Medieval saltern mounds at Wrangle	80
Pl. IV	Sandy soils around the north-west of Stickney island	31	Pl. IX	Map of Wrangle Tofts, 1606	109
Pl. V	Cropmarks of probable prehistoric origin on upland soils formed on Spilsby Sandstone. East Keal – Hundleby border.	49			

## List of Figures

Fig. 1	The Wash Fenlands and places mentioned in the text	x	Fig. 31	Stickney: Fieldwork Intensity	36
Fig. 2	Location of the surveyed parishes	2	Fig. 32	Midville: Fieldwork Intensity	37
Fig. 3	Symbols used on parish maps	8	Fig. 33	East Kirkby: Mesolithic—Neolithic	38
Fig. 4	Dogdyke: Modern Landscape	12	Fig. 34	Hagnaby: Mesolithic—Neolithic	38
Fig. 5	Hart's Grounds and Pelham's Lands: Modern Landscape	13	Fig. 35	West Keal: Mesolithic—Neolithic	39
Fig. 6	The Lower Witham Valley: Relief and major creeks	15	Fig. 36	East Keal: Mesolithic—Neolithic	39
Fig. 7	Dogdyke: Fieldwork Intensity	16	Fig. 37	Toynton All Saints: Mesolithic—Neolithic	40
Fig. 8	Hart's Grounds and Pelham's Lands: Fieldwork Intensity	17	Fig. 38	Toynton St Peter: Mesolithic—Neolithic	40
Fig. 9	Dogdyke: Mesolithic—Neolithic	18	Fig. 39	Stickford: Mesolithic—Neolithic	41
Fig. 10	Dogdyke: Early Bronze Age	18	Fig. 40	Stickney: Mesolithic—Neolithic	42
Fig. 11	Hart's Grounds and Pelham's Lands: Early Bronze Age	19	Fig. 41	Midville: Mesolithic—Neolithic	43
Fig. 12	Dogdyke: Medieval	20	Fig. 42	East Kirkby: Early Bronze Age	44
Fig. 13	Hart's Grounds and Pelham's Lands: Medieval	21	Fig. 43	Hagnaby: Early Bronze Age	44
Fig. 14	East Kirkby: Modern Landscape	24	Fig. 44	West Keal: Bronze Age	45
Fig. 15	Hagnaby: Modern Landscape	25	Fig. 45	East Keal: Early Bronze Age	45
Fig. 16	West Keal: Modern Landscape	25	Fig. 46	Toynton All Saints: Early Bronze Age	46
Fig. 17	East Keal: Modern Landscape	26	Fig. 47	Toynton St Peter: Early Bronze Age	46
Fig. 18	Toynton All Saints: Modern Landscape	26	Fig. 48	Stickford: Early Bronze Age	47
Fig. 19	Toynton St Peter: Modern Landscape	27	Fig. 49	Stickney: Early Bronze Age	48
Fig. 20	Stickford: Modern Landscape	27	Fig. 50	Midville: Early Bronze Age	49
Fig. 21	Stickney: Modern Landscape	28	Fig. 51	Stickford: Middle Bronze Age	50
Fig. 22	Midville: Modern Landscape	29	Fig. 52	Midville: Middle Bronze Age	51
Fig. 23	Stickney and the northern fen-edge: Relief	30	Fig. 53	East Kirkby: Roman	52
Fig. 24	East Kirkby: Fieldwork Intensity	32	Fig. 54	Hagnaby: Roman	52
Fig. 25	Hagnaby: Fieldwork Intensity	32	Fig. 55	West Keal: Roman	53
Fig. 26	West Keal: Fieldwork Intensity	33	Fig. 56	East Keal: Roman	53
Fig. 27	East Keal: Fieldwork Intensity	33	Fig. 57	Toynton All Saints: Roman	54
Fig. 28	Toynton All Saints: Fieldwork Intensity	34	Fig. 58	Toynton St Peter: Roman	54
Fig. 29	Toynton St Peter: Fieldwork Intensity	34	Fig. 59	Stickford: Roman	55
Fig. 30	Stickford: Fieldwork Intensity	35	Fig. 60	Stickney: Roman	56
			Fig. 61	West Keal: Saxon	57
			Fig. 62	Some Saxon finds and details of pottery stamps	58
			Fig. 63	East Kirkby: Medieval	60
			Fig. 64	Hagnaby: Medieval	60
			Fig. 65	West Keal: Medieval	61

Fig. 66	East Keal: Medieval	61	Fig. 82	Stickney and the northern fen-edge: Medieval	87
Fig. 67	Toynton All Saints: Medieval	62	Fig. 83	Briquetage from probable Iron Age salterns	90
Fig. 68	Toynton St Peter: Medieval	62	Fig. 84	Briquetage: 'Supports' from probable Roman salterns	91
Fig. 69	Stickford: Medieval	63	Fig. 85	Briquetage: Clips or spacers	92
Fig. 70	Stickney: Medieval	64	Fig. 86	Briquetage: Vessel fragments from probable Roman salterns	93
Fig. 71	Midville: Medieval	65	Fig. 87	Distribution of salterns in Wrangle	94
Fig. 72	Sherds from possible fish smokers	66	Fig. 88	Assorted artefacts	98
Fig. 73	Wrangle: Modern Landscape	68	Fig. 89	Lithic material from various collections	102
Fig. 74	Wrangle: Fieldwork Intensity	70	Fig. 90	Wrangle coast combining 17th century and modern detail	110
Fig. 75	Wrangle: Prehistoric	72	Fig. 91	East Keal: 1757	112
Fig. 76	Wrangle: Iron Age and Roman	73	Fig. 92	Toynton All Saints: 1614	115
Fig. 77	Undated pottery	74	Fig. 93	Toynton St Peter: 1614	116
Fig. 78	Wrangle: Medieval	76			
Fig. 79	Stickney and the northern fen-edge: Early Bronze Age	83			
Fig. 80	Stickney and the northern fen-edge: Roman	84			
Fig. 81	Stickney and the northern fen-edge: Early—Middle Saxon	86			

## List of Tables

Table 1	Lithics: Overall composition	99	Table 4	Lithics: Punctiform, faceted and cortical butts expressed as % of flakes, blades and retouched forms	100
Table 2	Lithics: Cores	100	Table 5	Lithics: Retouched forms	101
Table 3	Lithics: Complete flakes and blades	100			

## Contents of Microfiche

Table of Contents  
Introduction to gazetteer

### Gazetteers:

Dogdyke  
Hart's Grounds and Pelham's Lands  
East Kirkby  
Hagnaby

West Keal  
East Keal  
Toynton All Saints  
Toynton St Peter  
Stickford  
Stickney  
Midville  
Wrangle

## Contributors

**Peter Chowne**, Ph.D, M.I.F.A.  
Head of Service, Museum of London Archaeology Service  
(formerly Deputy Director, Trust for Wessex Archaeology)

**Michael Clarke**  
Lindsey Archaeological Services  
(formerly Illustrator, Trust for Lincolnshire Archaeology)

**Peter Hayes**, LL.B, B.A., Ph.D  
(formerly Field Officer, Trust for Lincolnshire Archaeology)

**Hilary Healey**, N.D.D., M. Phil., F.S.A.,  
Freelance Medieval Pottery Specialist  
(formerly Field Officer, Trust for Lincolnshire Archaeology)

**Frances Healy**, B.Sc. (Econ.), Ph.D, M.I.F.A., F.S.A.,  
Senior Research Officer, Oxford Archaeological Unit  
(formerly Researcher, Trust for Wessex Archaeology)

**Martin Henig**, M.A., S.Phil., F.S.A.  
Research Associate, Institute of Archaeology, 36 Beaumont  
Street, Oxford, OX1 2PG.

**Tom Lane**, M.I.F.A.  
Field Officer, Trust for Lincolnshire Archaeology

**John Samuels**, B.A., Ph.D, M.I.F.A.  
Consultant Archaeologist  
(formerly Pottery Researcher, Trust for Lincolnshire Archaeology)

## Acknowledgements

The completion of this volume finds the author indebted to a great many people for their various skills and kindnesses. The field survey was conducted by the author and Dr Peter Hayes, who undertook his field work with great thoroughness and diligence and has smoothed the completion of this report. Dr Hayes's contribution to the Fenland Project as a whole has been outstanding. The encouragement and assistance of friends and colleagues at the Trust for Lincolnshire Archaeology (now Heritage Lincolnshire) and the Fenland Project has been greatly appreciated and noted. Thanks are offered for specialist contributions and opinions to Peter Chowne (prehistoric pottery), Frances Healy (lithics), John Samuels (Roman pottery), Hilary Healey (Saxon and medieval pottery), Martin Henig (terracotta head); to illustrators Mick Clarke, who also made a contribution to the study of briquetage, Margaret Mathews and Dave Watt.

In addition, much appreciation is offered to Brian Simmons, Peter Hayes, Peter Chowne and Martyn Waller for reading and greatly improving blocks of text (though any misconceptions or mistakes remain the province of the principal author); to Tony Page for identification of metalwork finds; to Tim Clough for identification of stone axes; to Roy Switsur and Martyn Waller for permission to publish radiocarbon dates; to Bob Alvey for identification of vegetation in the briquetage; to Brian Redman for the loan of the Hobhole Drain section drawing; to Vanessa Garrad for word processing and personal organising; to Frank Heaven and Denis Robson of the Soil Survey and Land

Research Centre for access to unpublished sources, the loan of air photographs and invaluable advice; to the staff of the Lincolnshire Archives Office, Lincolnshire Museums Services and Lincolnshire Library Service; to Maureen Lock, Barbara Barnes and Sharron Clarke of North Kesteven District Council reprographics section; to the Witham Fourth Internal Drainage Board for supplying drainage plans; to the Cambridge University Committee for Aerial Photography for permission to publish Plates I, II, III and VI; to the Trust for Lincolnshire Archaeology for permission to publish Plates IV, V, VIII; Plate VII is reproduced by permission of the Controller of Her Majesty's Stationery Office; Plate IX is a Crown Copyright photograph (Public Record Office, MPC 81) and is reproduced with permission.

The farming community should be especially commended for their interest and for permission to conduct the survey. It is not to the detriment of others that Mr Danby of Wrangle and Mr Grant of Sibsey are singled out for their particular interest and hospitality.

Frances Healy wishes to express gratitude to Tom Lane, Peter Hayes, Peter Chowne, Brian Simmons, Rosamund Cleal and Bob Silvester for comment on, and improvement to, an earlier version of Appendix III and to Margaret Mathews for executing the illustrations of lithics.

Finally, the Historic Buildings and Monuments Commission (English Heritage) are gratefully acknowledged for funding the survey.



# Abbreviations

## Parishes

DOG	: Dogdyke
EKI	: East Kirkby
FRI	: Friskney
WFE	: West Fen
WIL	: Wildmore
HAG	: Hagnaby
OLE	: Old Leake
WKE	: West Keal
EKE	: East Keal
TAS	: Toynton All Saints
TOP	: Toynton St Peter
SKD	: Stickford (west side)
STD	: Stickford (east side)

SKY	: Stickney (west side)
STY	: Stickney (east side)
MID	: Midville
WRA	: Wrangle (east side)
WRN	: Wrangle (west side)

## Organisations

LAO	: Lincolnshire Archives Office
PRO	: Public Record Office
TLA SMR	: Trust for Lincolnshire Archaeology Sites and Monuments Record
LM SMR	: City and County Museum, Lincoln Sites and Monuments Record

# Summary

The second publication detailing the results of the Fenland Project's fieldwalking survey of the Lincolnshire Fenland deals with the northern fens and their margins. In addition, a small group of parishes at the southern end of the Witham Valley, and the coastal parish of Wrangle, are included.

Survey in the north has offered the opportunity to compare and contrast the archaeology and palaeoenvironments of the north with those of the western margins of the Lincolnshire Fenland.

Differences between the two have been striking. The northern fen-edge yielded a much greater quantity of pre-second millennium BC material. In particular, its evidence for Mesolithic settlement far outweighs that recorded on the west. Small islands with Mesolithic and Neolithic flints have been exposed by shrinking peat in Midville and Dogdyke.

Marine flooding arrived earlier in the north than the west and by the onset of the second millennium BC peat, followed by marine sediments, blanketed the low-lying areas. Within a few centuries a second marine phase affected East Fen and a third affected parts of Wrangle in the Iron Age.

The focus of settlement shifted to the western fens in the middle part of the Bronze Age and the wide expanses of fen in the north served as a barrier to communications. Saltmaking sites were a feature of the Iron Age economy in Wrangle but other than this there is little evidence of activity immediately before the Roman conquest.

The rich Roman sites of the western marshes have no parallels in the northern survey area. On the northern fen-edge the Roman settlements are small and lack fine pottery. Even in Wrangle where there are Roman salterns and a more varied economy, the pottery is predominantly grey-ware.

Saxon sites from the northern fen-margins are outliers from the kingdom of Lindsey but have a range of sherds including Ipswich Wares. The peats of East, West and Wildmore Fens isolated Lindsey from the tribes who occupied the siltland.

Saltmaking had resumed on the coast by the time of the *Domesday* survey and, along with the pottery industry of the Toynton area, created a demand for peat for use as fuel. West and Wildmore Fens would appear to have become denuded of peat by the early 19th century when they, along with East Fen, were drained and enclosed.

The Witham is the major watercourse of the northern fens of Lincolnshire and much of its story is yet to unfold. Part of its major prehistoric channel has been mapped to the point where it enters the Fenland Basin, but its primary course after that is away from the area of survey. The river's modern course in the Witham Valley is also out of the area of survey, but is known to have yielded rich metalwork.

Overall, the story of the northern fens is one of people making precarious livings from harsh environments. The Fenland Project has sought to bring together evidence of both.



Figure 1 The Wash Fenlands

# 1. Introduction

'... to know everything possible about the men of a given epoch it is necessary also to study their environment. This must first be restored and portrayed in the form of maps ...'

*Man and His Past*

O.G.S. Crawford, 1921

## I. The Fens and the Fenland Project

The Fenland of Eastern England is an extensive tract of former wetland covering some 400,000 ha (Hall 1989, 15). It was created by the gradual infilling of a lowland basin with a succession of alluvial deposits. Subsequent drainage, particularly over the past three hundred years, has turned it into a highly fertile landscape ideal for intensive arable agriculture. It is a land that requires constant management of its many waterways, for it is still lowland, almost all below 3.5m OD and with large areas, particularly in Cambridgeshire, where the land surface lies below sea-level.

The appearance of the modern Fenland, particularly in the summer when almost every square metre of the rich alluvial silt, peat or clay is obscured by thriving arable crops, is often difficult to reconcile with the aqueous condition of its recent past. Only the relentless, ocean-like flatness and the extensive geometric pattern of drains, dykes and ditches point to a watery past: one characterised by extensive saltmarshes, pierced by winding tidal creeks, and boggy fens surrounding stagnant pools. For much of the past there existed a fine and shifting balance between landscape and seascape.

Perhaps, at first, archaeology and these inhospitable, watery, early settings seem strange bedfellows. But archaeology is the study of humankind and all its facets, and people have explored, exploited, used, worked and lived in the Fenland since its prehistoric development. Some evidence of their presence is immediately identifiable by means of archaeological field survey: cultural remains indicating locations of long- or short-term domestic dwellings, industrial areas, or merely the spots where objects were accidentally lost or deliberately discarded can all be recorded and their relationships to other sites, and their environments, can be interpreted.

Some of the sites, however, lie buried and, for the time being, safeguarded by subsequent accretions of marine silts or clays, or by peat. Continuous waterlogging of these sites since their abandonment can mean the survival of a whole range of organic artefacts and environmental indicators, but the duration of the protection offered, especially by peat, is limited. Continued drainage dries and oxidises the peat, repetitive cultivation helps break it down, and inevitably the resource wastes away. The breakdown of organic matter includes that which was utilized by the ancient communities of the Fenland. Coles (1984 and 1986) has listed the remains likely to survive on dryland archaeological sites and compared them to the much wider range of material that can potentially be found on sites which have remained waterlogged. These latter finds can be anything from delicate strands of hair or textile remnants to wooden trackways or even artificial

'islands' of timber such as at Flag Fen (Pryor *et al* 1986). As another example, dryland burials may leave only coffin stains and skeletons. Given the appropriate conditions, it is possible for wetland burials to provide the body as evidence. In these unusual circumstances belated post-mortems may identify anything from social status inferred by manicuring to details of the deceased's last supper.

Such discoveries are incalculably important, though rare, and, it must be stated, not always directly detectable by surface field survey. However, field survey does have an important role in the Fenland. In addition to the usual recovery and spatial analyses of artefacts, the surface patterns of sedimentary deposition can be mapped and the different deposits can be attributed to specific past environments, which themselves changed through time. The environments offered specific and limited ranges of resource opportunities, and, by correlating artefacts and sediments, archaeologists in the former wetlands are afforded greater insight into the activities of the early local communities than could be expected in dryland areas. By studying the sub-surface strata and their contents, the ancient environments can be defined in greater detail; through a framework of radiocarbon dates it is possible to establish an independent chronology for the landscape changes.

It was partly in order to exploit this potential that the Fenland Project was initiated. The detailed aims and intentions of the project have been listed elsewhere (Hall 1987a; Silvester 1988b; Hayes and Lane 1992) but are further summarised below. Survey took the form of a large-scale ground-based archaeological reconnaissance of the Fenland and its margins. In addition to locating archaeological sites the purpose was to record and interpret surviving evidence of ancient landscapes, to assess the present condition of the archaeology, and to create a database with which any, and every, future action concerning the archaeology could be accurately evaluated.

The appointment by the Cambridgeshire Archaeological Committee in 1976 of David Hall as their Fenland Field Officer was the foundation stone of the Project. Later initiatives led the Historic Buildings and Monuments Commission (HBMC or English Heritage) to fund survey officers in Norfolk and Lincolnshire. An advisory committee under the chairmanship of Dr John Coles was formed and has overseen the survey from its inception in April 1982. Funding has come from the rescue archaeology budget of English Heritage.

Four survey officers have been engaged on the work. In addition, a paleoenvironmentalist has collected and collated sub-surface details of the Fenland's formation, its changing environments and the chronology of those changes (summarised in Waller 1988a and b).

The Fenland Project Committee has also advised on concurrent, wholly or partly HBMC funded, excavation



Figure 2 Location of the surveyed parishes

programmes in the Fenland, notably those at Flag Fen, Cambridgeshire (Pryor *et al* 1986), Haddenham, Cambridgeshire (Hodder and Shand 1988; Evans and Serjeantson 1988), Stonea, Cambridgeshire (Potter and Jackson, 1982) and West Row, Suffolk (Martin and Murphy, 1988).

## II. Description of Surveyed Area

This volume reports on survey conducted in three separate locations (Figs 1 & 2): the northern margins of the Fenland, including parts of the former East and West Fens; a group of parishes at the junction of the Fenland Basin and Witham Valley; the complete parish of Wrangle. The survey was conducted by parish during the following seasons.

1983–4:

Dogdyke and parts of Billingham, Hart's Grounds, Pelham's Lands, East Kirkby, Hagnaby, West Keal, East Keal, Toynton All Saints, Toynton St Peter, Stickford, Stickney, Midville and parts of West Fen and Sibsey.

1988:

Wrangle.

The fieldwork was conducted by the author and Dr Peter Hayes.

Dogdyke, Hart's Grounds and Pelham's Lands (otherwise the southeastern Witham Fens) are small parishes bordering the west bank of the River Witham, close to the point where the river enters the Fenland basin. Dogdyke is separated from the neighbouring parishes to the south by the Kyme Eau, a continuation of the River Sleas, which flows from its source in the uplands west of Sleaford into the Witham south of Chapel Hill. Opposite Dogdyke to the east, the River Bain also enters the Witham. There are few archaeological sites known from the south-eastern Witham Fens but the discovery of a wide band of estuarine silt identified a prehistoric course from which the River Witham has long since departed. Apart from the hamlet of Chapel Hill, which stands on a small gravel island in Dogdyke parish, it is a sparsely populated landscape dotted with isolated clusters of farm building. Soils comprise marine silts and clays on which little of the former peat cover survives.

Some 14km east of the Witham, beyond the former Wildmore and West Fens, lies Stickney and the northern fen-edge parishes. Stickney village is situated on a narrow boulder clay moraine extending south from Stickford into the Fen. A narrow band of Flandrian sediment separates it from Sibsey which lies further south on the same geological feature. The medieval usage of the land in these parishes has left clear traces of ridge and furrow ploughing extending over the flood-free uplands. Many of the modern field boundaries reflect the medieval furlongs and create a pattern of small, hedged fields that contrast sharply with the prairie-type fields of the surrounding Fenland (Plate I).

To either side lie East and West Fens, drained areas of former wetland that are, themselves, now strikingly dissimilar. A map of the region published by Dugdale (1772) amply reflects the nature of East and West Fens in the seventeenth century. In contrast to the empty and unbroken aspect of West Fen the East Fen was

dominated by a series of shallow lakes, called 'Deepes', the result of extracting large quantities of the once abundant peat (discussed more fully in Chapter 3). Although the deep peat, which had blanketed East Fen from the Bronze Age, has now largely wasted, the soils of East Fen are still organically rich, creating a distinctive 'black fen' in comparison to the brown and yellow silty clays which form the surface sediments west of the moraine. These sediments in West and Wildmore Fens were deposited in a saltmarsh, and subjected to regular tidal ebb and flow from the Later Neolithic onward, probably for many centuries. The area drained naturally through a series of winding creeks, which can be traced as silt ridges in an otherwise silty clay matrix. At one time peat had formed on West and Wildmore Fens (Chapter 3) but this has long since disappeared.

East, West and Wildmore Fens, constituted the last substantial tract of the Wash Fenland to undergo drainage, the work taking place in the early years of the 19th century. Earlier efforts at enclosure, led by Sir Anthony Thomas, had commenced in 1631 and were judged successful three years later. But after seven years the fen people had forcibly re-possessed their land, returning it to its former natural state (Darby 1956, 46), and allowing it to provide once more the resources that historically had benefitted generations of fen people.

The completion of the 19th century scheme saw, in 1812, the creation of seven new townships, later parishes. Midville and Eastville occupied much of the former East Fen with the peripheral parishes taking in the remainder. From the West Fen Frithville, Carrington, Westville, Thornton-le-Fen and Langrville were formed. In addition there are modern parishes named Wildmore and West Fen.

Although the 'East Fen' is no longer in existence it is a useful term with which to identify the group of modern parishes as east of the Stickney moraine, and is used as such within this volume. Similarly 'West Fen', when not used in the historical sense, denotes the group of modern parishes west of Stickney. References to the present day parish of West Fen will indicate that the parish rather than the region is being discussed.

The Hobhole is the main north-south drainage channel bisecting East Fen. Water enters it through a series of straight drains and ditches which incise the landscape to form a regular grid. It is then pumped to a higher level at Lade Bank Pumping Station from where it continues south before discharging into the Witham estuary (Robson 1985, 73).

Drainage and enclosure have dictated the shapes of the boundaries around the villages which bordered the East and West Fens: a proportion of the adjacent Fenland was attached to each of these parishes early in the 19th century to compensate for loss of commoning rights.

An undulating ridge of partly drift-covered Cretaceous sandstone, frequently referred to as the southern extremity of the Lincolnshire Wolds, forms the northern part of the fen-edge parishes. Towards the centre of this group of parishes the surface plunges steeply from c.75m OD to c.15m OD from which level the land shelves more gradually beneath the fen deposits. The surface of the fen-edge area is characterised by glacial clays east of Stickford, and gravels to the west. Many of the villages along this edge are sited just away from the highest areas, overlooking the Fen.

The economy of the whole area is dominated by the agricultural industry. Part of East Kirkby airfield has



**Plate I** Stickney island and the adjacent East and West Fens  
*(Cambridge University Collection: copyright reserved)*



**Plate II** Extinct creeks in East Fen  
*(Cambridge University Collection: copyright reserved)*

warehouses and an aircraft museum and there exist elsewhere small, scattered rural industries. Otherwise, there is little non-agricultural employment. Housing within the villages tends to be scattered and the villages themselves are sparsely populated, perhaps reflecting a geographic location away from major towns and transport links.

The small market town of Spilsby lies nearby to the north-east and the area is approximately midway between the towns of Horncastle and Boston (13km and 16km respectively from Stickford).

The eastern half of East Fen was not investigated and the survey moved directly from Midville to the coastal parish of Wrangle whose inland tip encompasses the eastern margins of East Fen. In Wrangle this humose fringe gives way nearer the sea to a lowlying and level zone of marine silty clay which contains discontinuous traces of former creeks (Plate II). Wrangle Tofts (see Chapter 4) is an elevated band of coarse silts bordering the post-medieval reclaimed marshes. A series of sea-banks testifies to phases of reclamation. The most seaward of the banks, marking the latest phase, was constructed in 1977 (Robson 1985, 4). In Wrangle agriculture and horticulture are again the main industries. The area is dotted with farms and a few packing sheds. There is also an agricultural box factory but little other industry. A wide range of vegetable and horticultural crops are grown on the Toftland including brassicas, onions, dwarf french beans, celery, bulbs and potatoes. A list of crops grown during the year 1982 (Robson 1985, 71) indicates that in Wrangle, vegetables and other horticultural crops were grown on 19.7% of the agricultural land in the parish, most of which would have been Toftland. Of the remainder, 43.8% was used for cereals but only 7.6% was permanent or temporary grassland. These figures reflect the extensive arable use of the modern fenland. Comparable figures for Eastville, a parish wholly on the organic soils of the former East Fen, indicate that cereals occupied 62.5% of the available land and only 0.2% was permanent or temporary grassland. Therefore in Eastville in 1982 some 99.8% of the agricultural land in the parish was in arable use. Such intensive cultivation of the land demands efficient drainage and this has led, and can only lead further, to wastage of the organic soils, thus lowering the surface of the land and the water table. The lowering of land and water table increases the risk of drying out any buried, waterlogged remains, and eventually of such remains coming within range of subsoiling machinery. In this area moling or subsoiling is estimated to be necessary every three years (Robson 1985, 80).

### III. Flandrian Deposits

Infilling of the Fen basin over the last 10,000 years, by a series of freshwater and marine deposits has been intermittent and diachronous. The pattern and extent of sedimentation, both organic and marine, has been determined by the influence and interaction of many factors including palaeogeography, proximity to large rivers, and fluctuations in sea-levels. The standard sequence of deposition recorded during early studies in various parts of the southern fenland (notably by Sir Harry Godwin) was one of Lower (basal) Peat formed on the pre-Flandrian surface, marine clays (termed 'Fen Clay'), an Upper Peat and, nearer the coast, silts from later marine flooding. The recognition of this sequence laid the found-

ation for further research. Godwin and Clifford (1938, 405) proposed a Late Neolithic date for the Fen Clay while the silt was thought to have been deposited during the Roman period. The chronology, however, came under a harsh spotlight when radiocarbon dates became available. Moreover, further research subsequently revealed areas where alternative and more complex sequences of deposition were recorded, some with intercalations between organic and marine clay/silt beds.

By the time the Fenland Survey had commenced along the northern fen-edge the Soil Survey had already adopted in this area the terminology of Gallois (1979) introduced from the southern fens. The marine ('Fen Clay') sandwiched between the peats, had become the 'Barroway Drove Beds', the Upper Peat the 'Nordelph Peat' and the silts the 'Terrington Beds', all after type-sites in Norfolk. To those Hall (1987a, 8) later added 'Upper Barroway Drove Beds', a deposit first recognised near Thorney, Cambridgeshire.

The survey officers were reluctant to correlate the sediments in Lincolnshire with the southern fen scheme. Not only was this because the type-sites lay up to 80km away, but also that 'Terrington Bed' silts encountered in two areas during the first season's survey could clearly be seen, from the study of air photographs, to have been deposited several centuries apart. In Crowland it was a pre- or early Roman deposit, for a network of crop-marks could be related to Roman sites discovered on the ground. Meanwhile, at Quadring, in the region devoid of cropmarks, Roman sites were lightly buried by silt but nevertheless identifiable by ground survey. Later survey demonstrated that the siltlands at Pinchbeck have been subjected to, and partly formed by local, intermittent flooding which deposited sediment during and after the Roman period (Hayes and Lane 1992). In addition the few stratigraphical sequences published for Lincolnshire (e.g. Smith 1970) could be seen to have little resemblance to their southern counterparts. For further discussion of these problems see Hayes (1987a).

Instead of adopting the southern terminology in Lincolnshire, the soils were recorded in the field by lithological characteristics and visible organic content (e.g. 'silty clay', 'clayey silt', 'sandy silt' 'peaty clay'), Soils on the surface of West Fen were found to be predominantly silty marine clays with distinct raised bands of silt/sand identifying extinct creek channels. These channels are known as roddons (sometimes rodhams in the southern Fenland; see Silvester and Hall 1985, 66). On the western Fens of Lincolnshire almost all the archaeological sites were situated on roddons (Hayes and Lane 1992). In the north no equivalent sites existed on the former marine landscape, even on the higher, wider roddons, except in parts of Wrangle.

A second Flandrian deposit, river alluvium, was mapped at the north-east edge of West Fen. The alluvium extended along the ancient course of Hagnaby Beck, reaching inland to East Kirkby airfield.

Deep peat once extended over East Fen and concealed marine deposits. Mapping precise limits to organic soils, such as those in East Fen, is not possible for the organic content diminishes imperceptibly around the edges of the Fen. More than a century previously Skertchly (1877, 129) had concluded that 'in mapping the peat it was found necessary to adopt more or less empirical data for the determination of boundaries'. Similar guidelines still apply.

Wastage of the peat has lowered the surface and exposed underlying roddons in East Fen. Two distinct phases of inorganic sedimentation were mapped, one draining east, the other south. Subsequently they were related to deposits recorded in section along the Hobhole Drain (Waller 1988a, 56 and Fig. 22 in this volume). Both marine phases pre-date the Mid to Late Bronze Age and are more fully discussed in Chapters 3 and 4. Seaward from the East Fen parishes clays predominate at the surface but then grade into a siltier cover nearer the coast. Wrangle Tofts (Fig. 73), close to the sea, are composed of sandy silt redeposited after use in the medieval saltmaking process.

A fuller, more detailed analysis of the Flandrian deposits will appear in the Fenland Project's environmental volume (Waller, forthcoming).

#### IV. Survey Methods

Details of survey methods and techniques used during the Fenland Survey have been presented by Hall (1981a, 53 and 1987a, 14). Regional variations have been slight and have been outlined for Norfolk by Silvester (1988b, 12) and for Lincolnshire by Hayes and Lane (1992). Summarised, the survey is a large scale reconnaissance of the Fenland region undertaken to identify and record past landscapes, and to locate any archaeological sites and features and assess their condition. In addition to the recording of artefacts, landscape features were mapped. Particular attention was paid to the mapping of soil and sediment boundaries for these are key indicators in the interpretation and dating of past environments in the Fenland.

Along the northern fen-edge the survey was also conducted on fields away from the Fen, and at altitudes above the normal range encountered by Fenland fieldwalkers. It is a region where no pre-medieval settlement occurred on the Fenland and the exploitation of the area was undertaken solely by people living on the upland or fen-edge. Therefore, in order to understand the effect of landscape changes on the local populations, it was considered valid to investigate some of the adjacent upland. On the western fens where settlement on the Fenland itself was, at times, intensive, the adjacent upland played a less significant role and consequently less upland was surveyed.

Upland and fen-edge fields were walked in thirty metre lines in order to locate sites of archaeological interest and to collect a proportion of scattered, background finds. Discrete concentrations of contemporary material were termed 'sites'. Those dating to the Roman, Saxon and medieval periods were often found to be accompanied by secondary indicators such as soil discolourations and animal bones. The term 'site' also encompasses non-habitation areas, such as salterns, kilns, or earthworks.

Identification of flint 'sites', in particular on the sandstone ridge where the background scatter was especially dense, posed some difficulties. The problem of recognition of some small contemporary groups within the overall distribution will doubtless mean that this type of site is under-represented in the archaeological record.

In addition to the fields on the uplands, a number of Fenland fields were walked at thirty metres. Having established a general absence of sites on the Fenland a less rigid fieldwalking system was applied there and walk-

ing reverted to a freer line for easier mapping of roddons. Within this system, the frequent crossing of roddons, which are the potential settlement locations, was undertaken in order to reduce the possibility of any stray settlements or industrial areas being overlooked. In Midville the presence of limited exposures of the pre-Flandrian surface within the otherwise blanket peat meant that a large area needed to be surveyed at thirty metres in order to avoid overlooking these important features. Otherwise the area would have been walked less intensively.

Attempts were made to walk fields in ideal conditions, when the surface was relatively unobscured by crops and adequately weathered. This was not always possible and therefore a method was devised of assessing the field conditions and recovery factors as objectively as possible for each field. This assessment of conditions has been termed 'Fieldwork Intensity'. Within this system a field walked in lines thirty metres apart in good conditions is classified as 1. A field not walked at thirty metres (*i.e.* a Fenland field) but in good condition, and which would in the opinion of the Field Officer have yielded no additional sites of any periods if walked at thirty metres, is classed as 2. Class 3 encompasses any fields walked that are not covered by the above categories (*i.e.* poorly weathered, poor field surface visibility, or non-thirty metre walking on uplands). Class 4 is land that remains unvisited. Figure 3 notes the conventions used on Fieldwork Intensity maps, one of which has been prepared for each parish.

Specific details of each site, and each area walked (an arbitrary block usually of one or more fields), were entered on standard record sheets. The surveyed blocks were termed 'Field-Codes'. In the field, sites were designated a unique number based on a parish code, usually the first three letters of the parish, and a numerical succession. All site and soils information was plotted in the field on to paper copies of the 1:10560 Ordnance Survey maps.

Processing of finds was partly undertaken by volunteers at the end of each season. Later all finds underwent various levels of analysis by appointed specialists.

#### V. Previous Research

The disparate nature of East and West Fens and their late survival as undrained fens provoked interest and comment, particularly in the last century. Wheeler's (1896, 198) synthesis of medieval records provides insight into the condition of the area prior to drainage and contains Camdens's long and evocative description of West and East Fens in 1602:

the fen called the West Fen is the place where the ruffs and reeves resort in great numbers, and many other sorts of waterfowl, which do not require the shelter of reeds and rushes, migrate hither to breed, for this fen is bare, having been imperfectly drained by narrow canals which intersect it for many miles. The East Fen is quite in a state of nature, and exhibits a specimen of what the country was before the introduction of draining. It is a vast tract of morass, intermixed with numbers of lakes, from half a mile to two or three miles in circuit, communicating with each other by narrow reedy straits. They are very shallow, none above four or five feet deep, but abound with pike, perch, ruffs, bream, tench, dace, eels, *etc.* The reeds which cover the fens are cut annually for



thatching not only cottages, but many very good houses.

Dugdale (1772) reproduced the findings of the Commissioners of Sewers and published a splendid map surveyed in 1661, one that depicted lakes, or 'deepes' in East Fen and a defensive bank around its southern and eastern side. This bank served to protect the coastal parishes from freshwater inundation prior to drainage and enclosure. The 'deepes' were further mapped, and published by Padley (1882, 62) who also made reference to the methods of extracting the peat from East Fen. Thompson (1856, 654) commented on 'the subsidence of the upper stratum of peat' following the drainage of East Fen. This was confirmed on a drawing of a longitudinal section of the entire Hobhole Drain made by Anthony Bower at the turn of the 19th century and now in possession of Mr Brian Redman. This important document indicates that up to 2m of peat was present in East Fen at the time and also records the position and depth of certain of the 'deepes'.

In his much admired memoir '*The Geology of the Fenland*', Skertchly (1877) began the scientific study of the area. Hallam's (1965) historical account of the Lincolnshire Fens contains some information regarding the enclosure and reclamation on the northern fen-edge but is more comprehensive in its early references to the medieval salterns at Wrangle. In this latter respect it supplements his earlier (1960) account of medieval saltmaking. Thompson (1856) also provides a useful historical account of Wrangle.

Soil Survey sheet TF 45 (Friskney) (Robson, 1985) has proved an invaluable source of information and shows the soil pattern recorded for Wrangle extending over nearby parishes.

Archaeologically, little previous work had taken place in the area covered by this survey. Excavation of part of the Saxon cemetery on Hall Hill, West Keal is noted in the Lincolnshire Museums Sites and Monuments Record (LMSMR), and Thompson (1956) has described some of the finds. Some excavation has taken place on medieval kiln sites in Toynton All Saints (Petch 1956, 71; White 1980), and the Boston and District Archaeological Society have been excavating a complex Roman settlement and Roman or Iron Age saltern in Wrangle for a number of years.

## VI. Organisation of the Volume

Results of the survey are presented at both local and regional scales. The assembled data have been used to make interpretive judgements about landscape changes covering the last seven millennia.

Survey was conducted by parish, and that same unit of study has been retained for the illustrated presentation of the results. Essays, in which both the archaeological and environmental development are considered, have been prepared for three groups of parishes. These are linked to a series of parish maps which are reproduced at 1:40000 scale and present details of site locations and the likely environment for certain archaeological periods. However, not every parish has maps relating to the same periods. For instance, a Mid to Late Bronze Age map is only necessary for Midville and Stickford. It charts a marine incursion of which there is no evidence in the other parishes.

The period maps combine both objective and subjective information. The latter relates chiefly to interpretation of past environments from surface soil and sediments. There are no fixed numbers of maps per parish. Maps combining information from more than one period have been produced when insufficient detail is available for a specific period (e.g. Fig.76). Each parish however, has standard maps which depict Fieldwork Intensity and the Modern Landscape. The latter is based on the Ordnance Survey sheets but has updated field boundary and building information with built-up areas represented by hatched lines. Modern Landscape maps underlie each period map.

The boundaries between environmental zones in the Fenland have seldom been static. The environments themselves were dynamic, constantly shifting in response to either freshwater or marine dominance. Where divisions between zones are recorded on the parish maps they are an approximation. They generally record the maximum extent of active marine phases, as judged from the surface. Less easy to estimate has been the maximum lateral extent of contemporary peat growth. Attempts to determine this have taken in a number of factors such as the extent of staining of mineral soils and the nature of the local topography.

Just as the environmental boundaries shown on the phase maps may depict a situation that existed only for a short time within the overall period represented, the number of sites recorded on any particular map may also misrepresent the overall density of settlement within that period. Some of the sites may have been only transitory settlements and even those occupied for a few generations may be termed short-lived in the context of the timespan covered by the period maps. Therefore the maps are a composite picture of activity within a period.

For the medieval period arable land-use, as identified by the surviving traces of ridge and furrow, can only record the maximum extent of the fields. Episodes of expansion and contraction cannot be identified. In order to attain a measure of standardisation within the maps illustrating the medieval phase, ridge and furrow depicted on the medieval period plans is limited to that observed during field survey or sketch-plotted from air-photographs. The position of individual strips and furlongs within the early post-medieval field systems of East Keal, Toynton All Saints and Toynton St Peter are available from documents. These have been treated separately in Appendices VIII and IX (Figs 91–93). The pattern of strips largely coincides with that recorded during survey of the three parishes (Figs 66–68) but the post-medieval strips have not been added to the medieval maps.

During the survey all sites were listed numerically by parish. Sites are generally referred to in the text prefixed by the parish code. For example, the first site found in Midville is MID 1. However, on the parish maps the prefix is omitted and the first Midville site is simply labelled 1 on the appropriate period map of Midville.

Where previously known sites have been re-walked as part of the Fenland Survey, they have been included in the normal sequence of sites. However, care has been taken to separate out previously recorded sites whose existence was not confirmed during the Fenland Survey. These have been prefixed on the map by the letter 'U' denoting unverified by Fenland Survey. It is hoped that this will alert any future researchers to the differences in artefact retrieval strategies between sites located as part

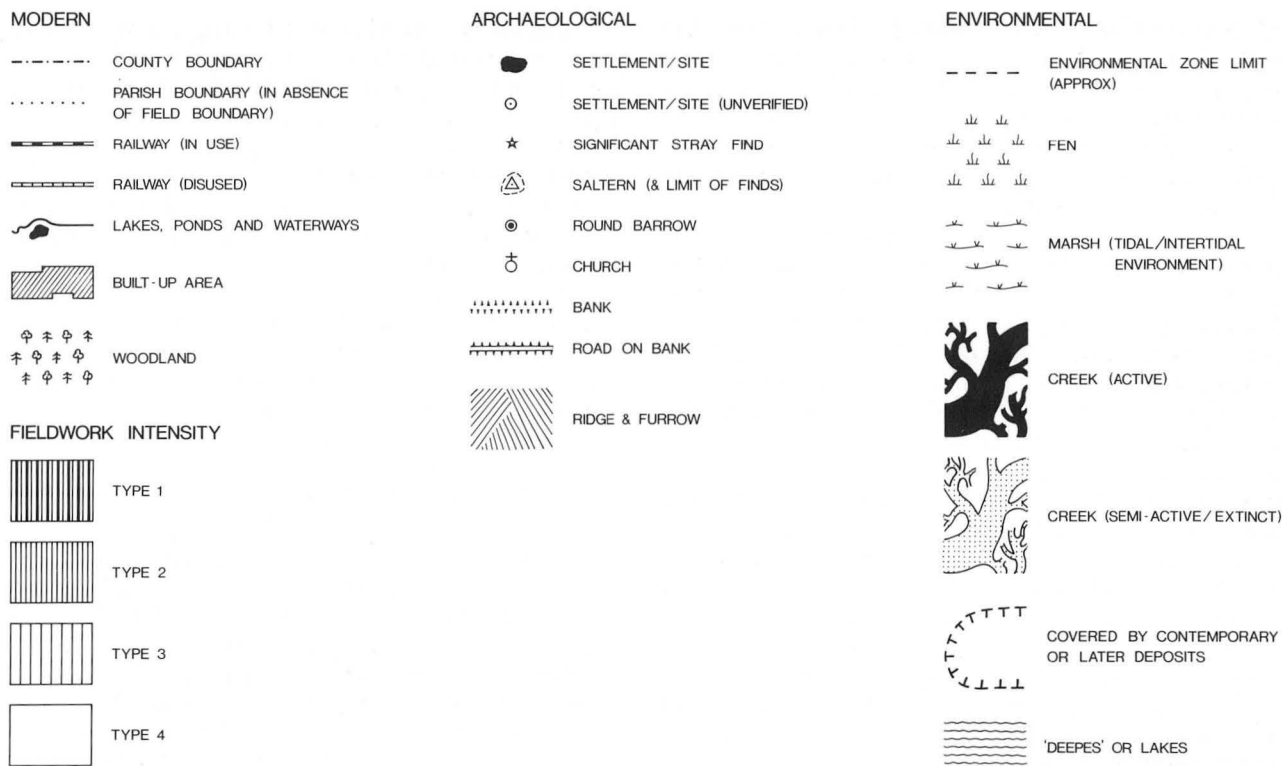


Figure 3 Symbols used on parish maps

of the Fenland Survey and those known beforehand. Previously recorded sites may be 'unverified' for any number of reasons. Some have been quarried or built over, others exist in fields that were unavailable for walking during this survey. The term unverified has no connotations regarding the quality of the original evidence.

Significant individual finds or small groups of artefacts are also recorded on the parish maps. These have been listed numerically in each parish and prefixed with an 'A' if found during the Fenland Survey and 'UA' if found previously by others.

Figure 3 lists the conventions used on the period maps. Period maps are designed to be used in conjunction with the essays and with the gazetteer of sites and finds. This is printed on microfiche and housed in the rear of the volume. Where possible, the essays themselves are similarly structured by period. They are designed to stand whenever possible as separate entities and the intention is that they capture some local flavour. A set of regional maps (Figs 79–82) summarises the information on a broader scale.

Appendices set out the methods of analyses and results of specialist studies on the finds. All the lithic and ceramic finds made during the survey have been examined and catalogued by relevant specialists; Lithics, Frances Healy; Prehistoric pottery, Peter Chowne; Roman pottery, John Samuels; Saxon and medieval pottery, Hilary Healey. Briquetage was examined by the author. Analyses were at a level sufficient to enable a broad chronological framework to be established in order that this may complement the landscape data.

It must be emphasised that, from the onset of the Fenland Survey, it was accepted that not all the finds generated from such a large undertaking could be intensively analysed and published in great detail in the time available. Given the imminence and finite nature of the threat (to potentially waterlogged remains and the disappearing peat), the survey, and its subsequent publication, was designed to be undertaken as rapidly as possible and to emphasise the changing landscape. It is recognised here that there is still much that could be achieved from further study of the finds. However, now the finds have been retrieved and their original provenance accurately recorded, such research, however valuable, can be undertaken at a later date.

## VII. Sources

The principal data for this volume were assembled during one and a half seasons of fieldwalking.

Observations made in the field to detect archaeological material and soil or environmental boundaries formed the basis of the work and the results were plotted on the 1:10560 scale Ordnance Survey maps.

Most of the post-survey historical research is alluded to under 'Previous Research' (p.6). Pressures of time have meant that few primary historical documents could be consulted. Exceptions were the relevant Enclosure and Estate maps housed at Lincolnshire Archives Office (LAO). Of particular interest were 'The surveigh of the manour of Toynton 1614' (LAO 5ANC 4/A/4) and 'A plan

of *East Keal 1757* by John Grundy (LAO Misc. Dep. 2/1) both of which depicted the pre-enclosure landscapes of the parishes complete with furlong names and direction of ridge and furrow (Appendices VIII and IX).

Drainage plans and borehole records were kindly made available by Anglian Water and Witham Fourth Internal Drainage Board.

Three collections of aerial photographs were consulted, each providing complementary data. Those belonging to the Soil Survey and Land Research Centre were indispensable for survey in Wrangle and East Fen; individual prints in the collection of the Cambridge Committee for Aerial Photography were especially useful for identifying specific sites and the same source provided extensive coverage of East and West Fens; the 1946 coverage by the Royal Air Force was particularly helpful in recreating the pattern of medieval ridge and furrow. Additional aerial photographs taken by Peter Chowne, Peter Hayes and the author, were used. In general few sites were readily identifiable on the air-photographs examined (see Pl. V for an exception).

Sites and Monuments Records and Parish Files of both the Lincolnshire Museums Service and the Trust for Lincolnshire Archaeology were frequently consulted and used to expand the details of previous work.

In addition to the Soil Survey report on Friskney (Robson 1985), copies of the unpublished Old Bolingbroke sheet TF 36, with notes, were kindly made available by Frank Heaven. This covers East Kirkby, Hagnaby, West Keal, East Keal and Toynton All Saints.

### VIII. Terminology—Marsh and Fen

The terms 'marsh' and 'fen' are used in this volume as shorthand expressions to indicate, respectively, wetlands predominantly influenced by the sea and freshwater. This is a rather wider use of the term fen than, in, for example, botany or ecology (and includes areas commonly referred to as bog), and a rather narrower use than usual for 'marsh', though the distinction has a long history in the Fenland region.

Used in this sense each of the terms covers a wide range of environments and it should be recognised that they formed a continuum with a broad gradation between the two. On a period map any line drawn between the two groups will necessarily be somewhat subjective. Similarly, the highest parts of fens and marshes will be difficult to separate from slightly damp grassland, especially if affected by agricultural activities such as grazing and scrub removal.

Another terminological point which needs to be clarified is the distinction between 'fen' and 'Fen'. In this volume 'Fen' is used to refer to a location, while 'fen' refers to an environment. Thus, it is possible to say that today there is no fen left in West Fen.

### IX. Radiocarbon Ages

A large number of new radiocarbon determinations has been made by Dr Roy Switsur, of Cambridge University, during the course of the Fenland Project. The full details of the sites and samples together with the definitive radiocarbon ages will be presented in the Environmental volume of these reports (Waller, forthcoming). The nomenclature and notation used in these reports is in accordance with that approved at the Trondheim International Radiocarbon Conference, 1986. The Conventional Radiocarbon Age is denoted by the upper-case letters BP and this may be calibrated to a date-range on the Christian calendar, denoted by Cal.BC (or Cal.AD) using the high-precision calibrated curve. The tables in Dr Switsur's paper will indicate for the new, and previously published data, two calibrated date-ranges with probabilities of 68% and 95%. In this report only the 68% (e.g. there is a 68% likelihood that the correct date lies within this range) calibrated date-range will be given, for example:

Q-2548 4135 ± 70 BP (2875–2595 Cal.BC)



## **The Parish Essays**

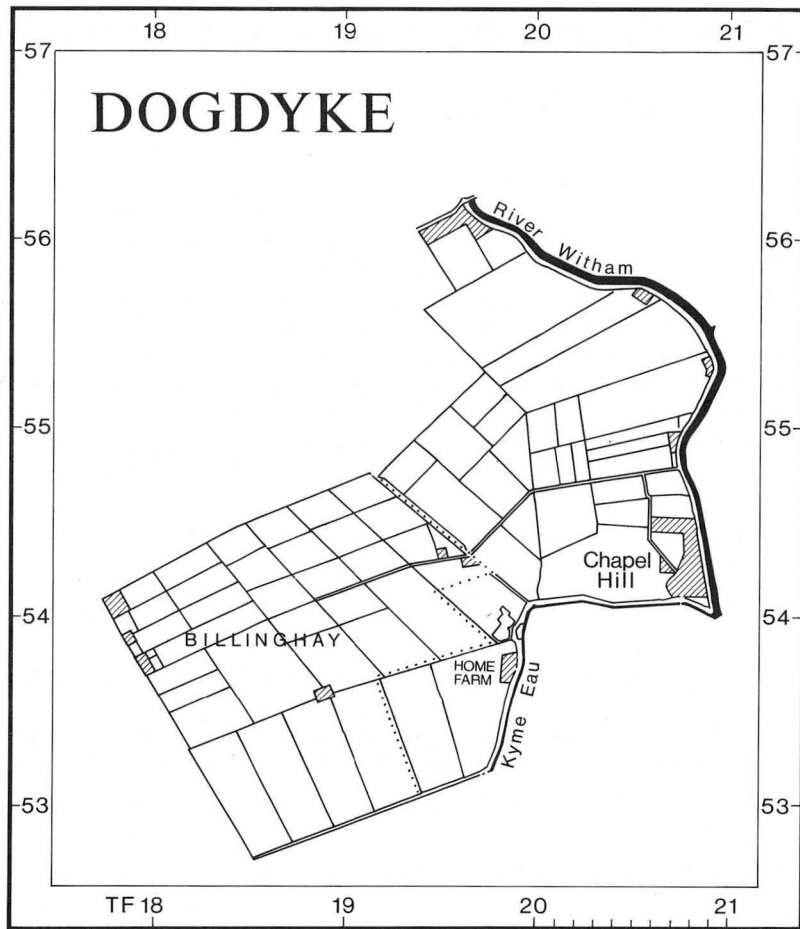


Figure 4 Dogdyke: Modern Landscape. Scale 1:40,000

## 2. The South-Eastern Witham Fens

by T. Lane and P. Hayes

### I. Introduction

(Figs 4 and 5)

The broad, low-lying valley of the River Witham extends inland from the Fenland Basin to Lincoln for a distance of *c.* 30km. It has a surface altitude of generally less than 2.5m OD and is bordered by various deposits of river gravel and boulder clay (Robson *et al* 1974, 2). The valley itself broadens out from about 0.5km wide near Washingborough, east of Lincoln, to in excess of 10km at the surveyed area.

Extensive brackish/marine sedimentation has infilled the valley floor. This, in turn, has been overlain by peat, much of which has been lost towards the southern end of the valley through wastage (defined by the Soil Survey and Land Research Centre as 'the continuing process of biochemical oxidation, particularly compression, wind erosion and removal of peat on crop roots'). Work by the Soil Survey in the mid-reaches of the valley (sheet TF 16) concluded that the area of surface peat exceeding 80cm thick is now very small (Robson *et al* 1974, 9)

although in the last century Skertchly (1877, 133) noted that 'it [peat] occasionally attains a thickness from 6' [1.8m] to 8' [2.4m] in the Witham Valley'.

The archaeology and landscape history of the Witham Valley between Lincoln and the Fen Basin has yet to undergo a comprehensive assessment based on systematic fieldwork, despite the richness of the known sites and finds. A number of large barrow cemeteries overlook this part of the valley, including one with largely intact mounds at Barlings, *c.* 10km east of Lincoln. The mounds are situated in extremely low lying land, and appear to protrude through alluvium (Everson 1983, 15; Everson and Hayes 1984, 36). Adjacent barrows in Stainfield parish are ploughed flat, a fate shared by those further south at Anwick (Fig.6 and Chowne and Healy, 1983). Barrows near the remains of Catley Abbey, west of Walcott (Fig.6), have also been levelled, though off Catley island some remain partly protected by peat. Chowne (1980, 300) obtained a radiocarbon date of HAR-3362  $2450 \pm 100$  BP (820–515 Cal.BC) from peat overlying one barrow. More recently, rescue excavations on a near-

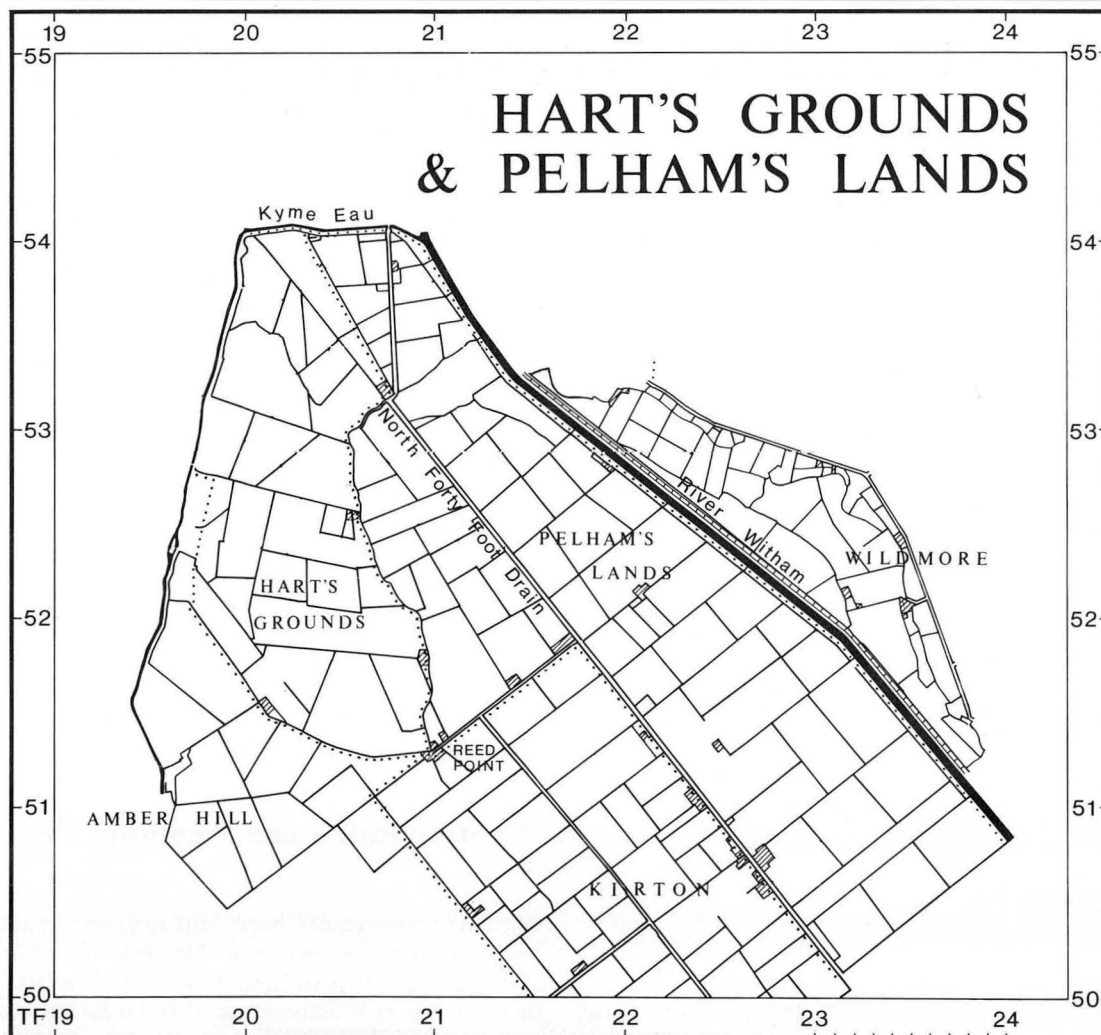


Figure 5 Hart's Grounds and Pelham's Lands: Modern Landscape. Scale 1:40,000

by mound exposed a crouched inhumation within the remnants of a wooden coffin (Healey & Hurcombe, 1989, 17). Nearer to Lincoln, re-deposited Late Bronze Age or Early Iron Age material, including antler cheek pieces, was excavated in Washingborough Fen (Coles *et al* 1979, 5) and, nearby in Fiskerton, Field (1986) excavated a timber trackway of Iron Age date. In addition quantities of rich metalwork, predominantly of Bronze Age and Iron Age date, and several dug-out boats have been recorded from the Witham Valley (May 1976). A number of medieval religious establishments were also founded along the edge of the valley (White 1978).

No time was available for the investigation of the main part of the Witham Valley but, during the 1983/4 season, survey was conducted in part of the south-eastern Witham Fens. The area surveyed was adjacent to the west side of the modern river Witham at the junction of the Witham Valley and the Fen Basin. Three complete parishes, Dogdyke, Hart's Grounds and Pelham's Lands, were investigated, along with parts of the adjoining parishes of Billingham, Kirton, Wildmore and Amber Hill (Figs 4 & 5). The three main parishes are small by Fenland standards, their total area not exceeding 1058 ha.

The origins of Hart's Grounds and Pelham's Lands, their separate identities, and the reasons for their rise in status to that of civil parishes, are not easily understood. Both were classed as extra-parochial by White (1856). At that time Dogdyke or 'Dockdyke' was represented by 'scattered houses in Billingham'. Modern settlement in Dogdyke parish is concentrated on Chapel Hill, a gravel island (or perhaps a spur of higher land truncated by the artificial course of the river) at the confluence of the River Witham and the Kyme Eau (Fig.4). The latter watercourse, which now incorporates the waters of the River Slea, formerly flowed north of Chapel Hill before joining the Witham. Pelham's Lands (Fig.5) was formed into a parish with another extraparochial area, Beat's Plot in 1883 (Wheeler 1896, 30). In the middle of the last century Chapel Hill was regarded as a hamlet belonging to Swineshead parish (White 1856, 817). The hamlet known as Dogdyke was formerly situated on the east bank of the Witham (in Coningsby parish) where it grew up around the terminus of a ferry.

Apart from a cluster of houses and a caravan park at Chapel Hill, in Dogdyke parish, the area is sparsely populated. A few farms abut a road which runs along the high banks of the Witham between Chapel Hill and Tattershall Bridge, at the north-east end of Dogdyke. The western terminus of the Dogdyke Ferry was also situated along this road. Neither Hart's Grounds nor Pelham's Lands has centres of population and the few inhabitants of the area occupy remote farmhouses. The modern landscape is very open; the fields are almost entirely arable and divided by a grid of dykes and tracks. Only the high banks of the artificially straightened rivers Witham and Kyme Eau, and the low relief of the island of Chapel Hill, interrupt the generally level aspect of the area.

## II. Topography

(Fig. 6)

The south-eastern Witham Valley parishes occupy predominantly marine alluvial soils which lie adjacent to the ancient river terraces on the eastern side of the valley. In the parishes of Tattershall and Coningsby, which

adjoin to the east (Fig.6), these terraces consist mainly of sands and gravels, which are quarried extensively. Skirting the gravels, and defining the eastern limit of the survey area, is the present course of the Witham. Only in Dogdyke, at Chapel Hill, does the gravel outcrop to any great extent within the surveyed area, although it can be seen intermixed with the humose plough soil adjacent to the river bank in Dogdyke.

The Kyme Eau forms a landscape boundary with the Witham Valley to the north and the Fenland Basin to the south. Dogdyke is situated in the lower Witham valley, an area in which surface peat was once widespread and extensive. Humose soils in Dogdyke are now confined to the eastern (landward) edge and towards Billingham where, until the last century, surface peat was extracted to provide fuel (Miller and Skertchly 1878, 566). As late as 1930 the surface soils in Dogdyke were described as being 'mostly peat' (Kelly 1930, 167). The diminishing cover of peat is a result of increasingly efficient drainage and the more widespread practice of arable agriculture. The effect of modern arable agriculture on peat was clearly visible in a field to the west of Chapel Hill which had only recently undergone conversion from permanent pasture to arable. The field remained strikingly dark in colour and noticeably peaty, almost spongy to walk on. Also, the surface remained significantly higher by *c.* 30cm, than the silty/clay surface of the surrounding fields.

Although attempts at draining the lands north of the Kyme Eau began as early as 1720 (Miller and Skertchly 1878, 182), and were intensified by the installation of a forerunner of Dogdyke pumping station in 1796 (Darby 1983, 204), the rate of peat loss has been greatest over the last forty years (Robson *et al* 1974, 9).

South of the Kyme Eau, in Hart's Grounds and Pelham's Lands, fewer areas of humose soil were encountered. Essentially this region belongs more to the Fen Basin than the Witham Valley. Historically it formed part of Holland Fen. Soils here are alluvial, largely marine in origin, and are dominated by a silty roddon which is in excess of 1km wide and represents a prehistoric course of the Witham.

## III. Fieldwork

(Figs 7 and 8)

Fieldwork methods and intensities were varied in response to local circumstances. A conspicuous lack of settlement or industrial debris, and the alluvial nature of the surface soils made it unnecessary and unjustifiable to spend time walking in 30 metre transects, other than on a few selected fields. In order to ascertain the extent of the major roddon, particularly its southern and western edges, some mapping was undertaken by means of observations from roads or field edges in neighbouring parishes.

## IV. Mesolithic - Late Neolithic

(Fig. 9)

With the exception of Chapel Hill and two further small sand and gravel exposures in Dogdyke the entire pre-Flandrian surface is covered by alluvial deposits. In the surveyed part of Wildmore, gravel was recorded in a ditch section at less than one metre below the surface. Gravel is also known to outcrop and form at least one island at



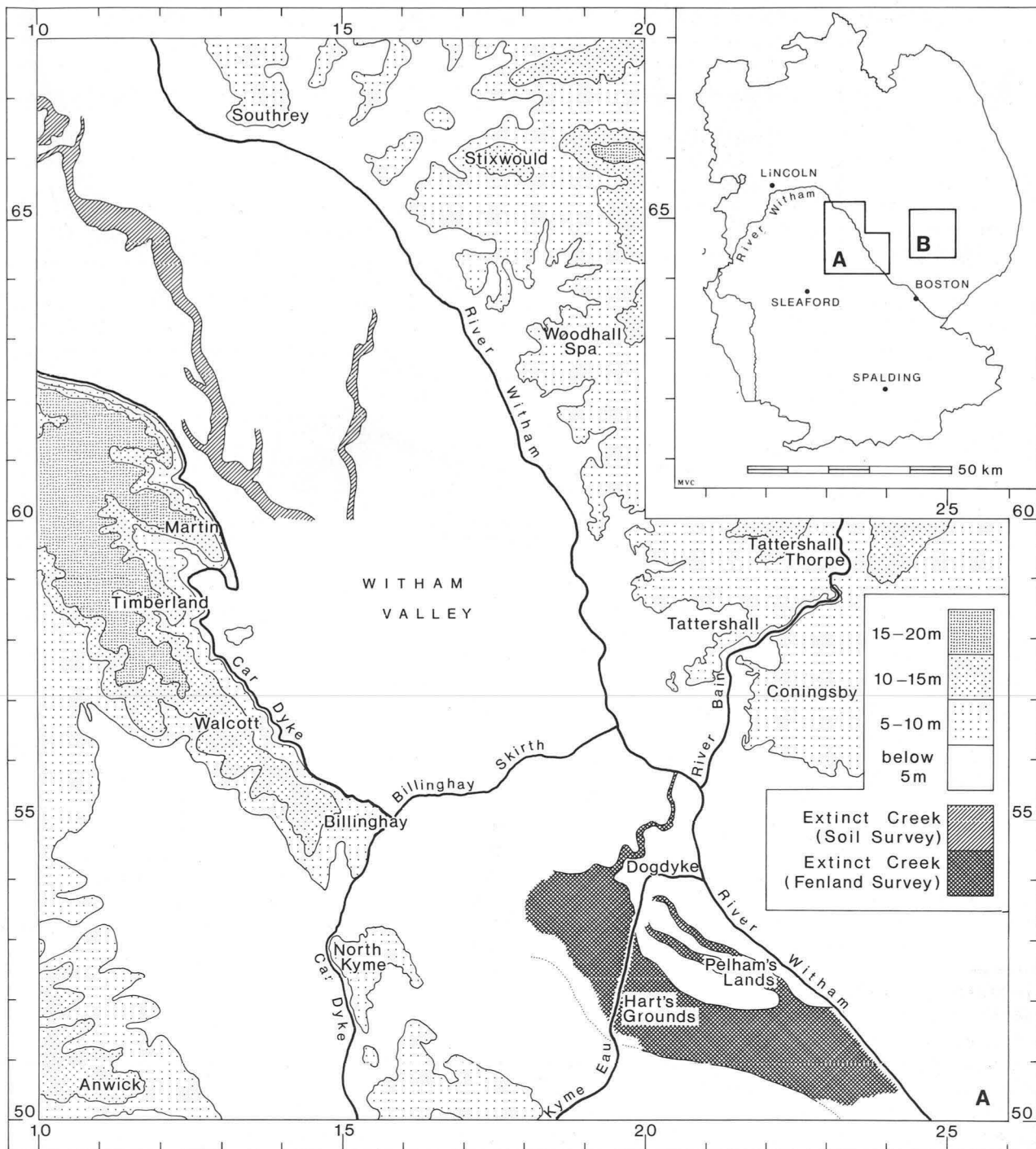


Figure 6 The Lower Witham Valley: Relief and major creeks. Scale 1:100,000 (For Area 'B' see Fig 23)

Amber Hill some 7km to the south of Dogdyke.

To the north of Chapel Hill, on the larger of the remaining sand and gravel exposures, worked flints were found at DOG 2, a prehistoric site of unknown nature. A number of flints on the site were of Mesolithic date and indicate a degree of early activity followed by evidence of a Late Neolithic presence. The finds came from the southern tip of the island. The site may extend further north from the area mapped for much of the surface was obscured by a crop of lucerne and unavailable for survey. In addition to the finds made on the sand island, further flints were collected on the surface of the adjacent, later, marine clays. These flints had been incorporated into the topsoil as ploughing cut through the shallow clay and into

the underlying sand. How much more of the site remains completely or partially sealed and preserved by the clay is unknown. The state of preservation is dependent on the steepness of the buried southern slope of the island but some features of the site may remain buried and possibly waterlogged.

It would seem that the landscape surrounding the Dogdyke site in the Late Neolithic was one dominated by increasingly wet conditions, with the formation of peat over much of the lower lying ground surface. Valentine and Dalrymple (1975) obtained a series of dates from a basal peat which had developed on the former land surface of the Witham valley. These range from HAR-192 4205 ± 110 BP (2920–2651 Cal.BC) to HAR-149

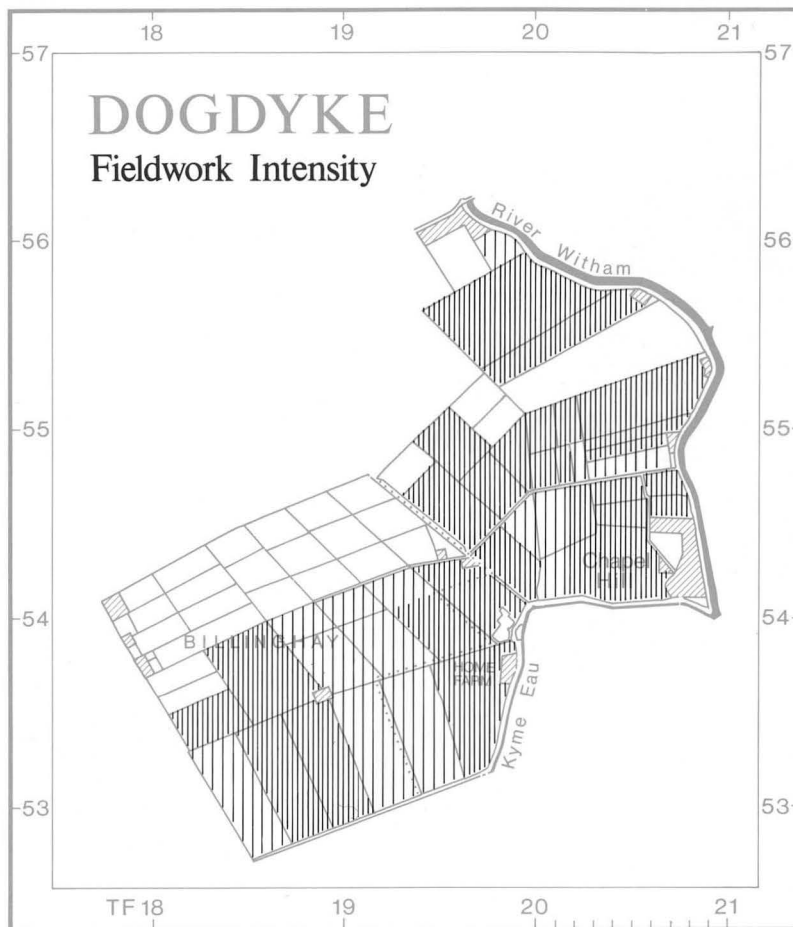


Figure 7 Dogdyke: Fieldwork Intensity

3620 ± 130 BP (2145–1800 Cal.BC).

At Bettinson's Bridge (TF 233544) in Wildmore, some 2.5km east of Chapel Hill, a single radiocarbon date of Q-2568 3810 ± 70 BP (2410–2140 Cal.BC) was obtained from the upper contact of a layer of peat which had formed on the pre-Flandrian gravels. Subsequent marine flooding deposited sediments above the peat. Dyke cleaning enabled that same sequence of events to be identified for 8.8km south-east to Sharpe's Bridge (TF 294484) near Anton's Gowt, north-west of Boston. Near to the southern extent of the dyke section a radiocarbon sample taken from the junction of peat and marine sediments at Gypsy Bridge (TF 280499) dates the onset of marine conditions locally to Q-2565 3825 ± 75 BP (2450–2145 Cal.BC). (Shennan *et al* in Waller, forthcoming a). The closer proximity of the Dogdyke area to a major river may have resulted in the marine influence being exerted there slightly earlier.

## V. Early Bronze Age – Roman (Figs 10 and 11)

On the basis of the existing palaeoenvironmental record, an Early Bronze Age date has been chosen with which to indicate the full extent of the marine environment. Marine dominated conditions are likely to have been long lasting, resulting in the deposition of silts and clays over the course of many centuries.

Although it cannot be confirmed without extensive sub-surface investigations, it is likely that the Witham

broadly maintained its original course during the deposition of the basal peat and overlying marine sediments, and in the latter case acted as a major tidal creek. Extensive levees formed by the prehistoric Witham are depicted in Figures 10 and 11. Some 10km further north from Dogdyke, between Timberland Fen and Nocton Fen, a similar relict channel, almost certainly a continuation of the course mapped here, has been identified by the Soil Survey (Robson *et al* 1974 and Figure 6). Using aerial photographs Wilkinson (1987, 53) plotted the same channel a further four kilometres towards Lincoln. In Timberland Fen, the most southerly point of Robson's mapping, the roddon of the prehistoric Witham is in excess of 400m wide, and, by the time the course enters the area of this survey, its width exceeds a kilometre.

Without further investigation the course of the Witham seaward of Pelham's Lands must remain open to question. Working on Stukeley's erroneous assumption that Wainfleet was the original outfall, Skertchly (1877, 13) and Miller and Skertchly (1878, 180) sought and mapped an alluvial channel 'south-east from Dogdyke' and suggested that this represented an early course of the Witham. Shortly afterwards Jukes-Browne (1885, 111) refuted this suggestion, after identifying and measuring that same channel. His results indicate the feature to have been 130 yards (119m) wide by 7ft (2m) deep. Bicker Haven, a broad estuary which, at the time of the *Domesday* survey, extended inland to Bicker, c.16km south of Dogdyke marks a more likely early outfall for the Witham.

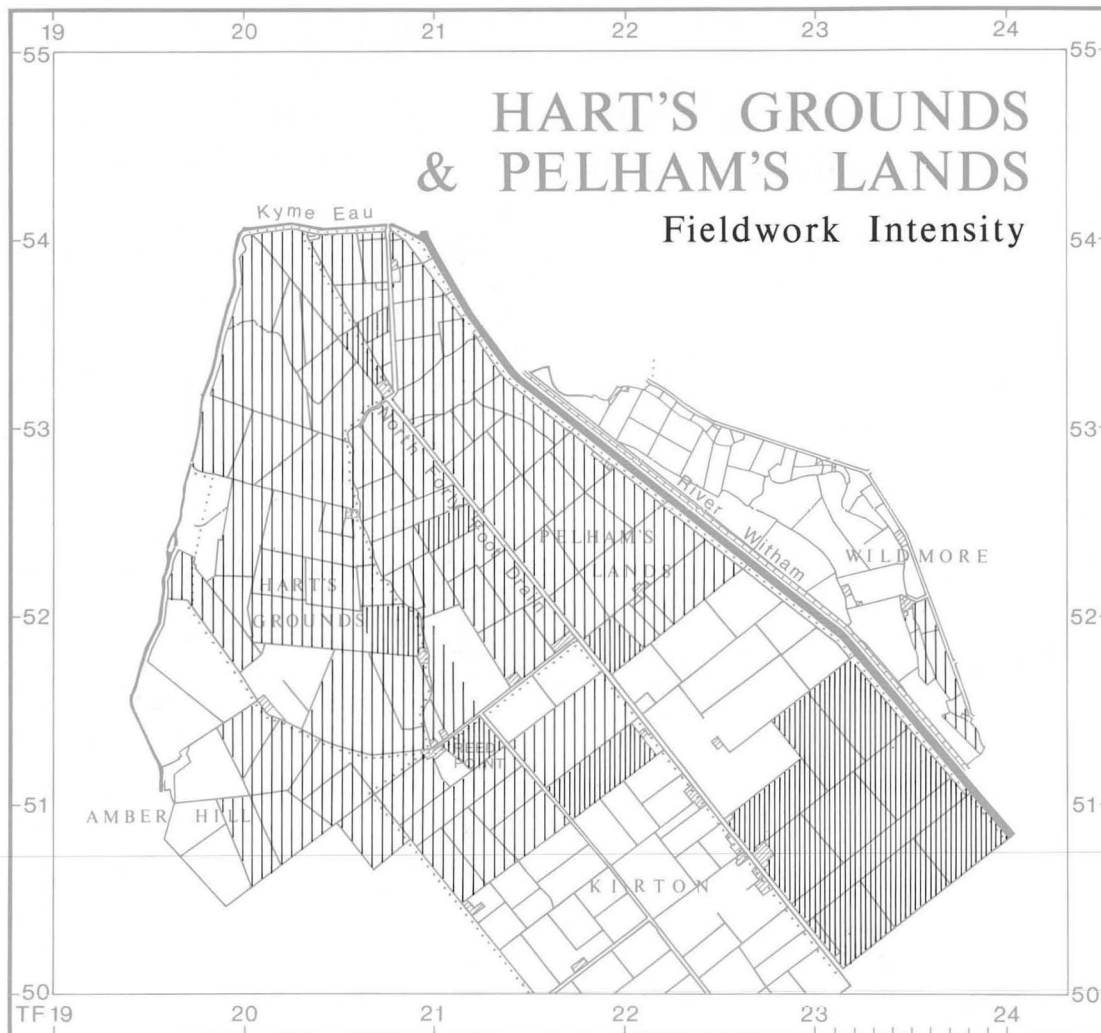


Figure 8 Hart's Grounds and Pelham's Lands: Fieldwork Intensity

On Figure 10 the early course of the River Bain can be seen entering from the east and winding through the islands to join the Witham north-west of Home Farm. Its present course has changed little.

Within the surveyed area the prehistoric Witham is represented by a band of clayey silt, over a kilometre wide, but not appreciably elevated. After curving around the west and south of Hart's Grounds (Reed Point is situated near its centre), it continues east across Pelham's Lands (Fig.11), and then appears to veer south-east. The surface of this feature generally lies at around 3m OD. Along some stretches in the surveyed parishes it was found to have a clear edge, marked by a change in height and soil texture, but in other parts the edge was indistinct. A narrower, more distinct, band runs approximately along its centre (Fig.11). This central spread, some 300–400m wide, was found to contain a rather clayey soil. It is interpreted as the final central channel of an exceptionally large creek, flanked by very wide silty levees. In places the channel-edge visible on air-photographs was clearly marked on the ground by a textural change in the soil. Elsewhere, however, the apparent tonal change on the photographs was not supported by any physical change observable in the field at the time of the visit.

It is clear that for a considerable time in the prehistoric period the Witham and its surrounding creeks functioned as one system, the inorganic sediments being

deposited in various intertidal environments, the silty clays representing areas of quiet water sedimentation away from the channels. It is possible that these conditions continued through the Roman period.

It should not be assumed from the width of the roddon that the Witham was over a kilometre wide where it flowed through Pelham's Lands. The width of the open watercourse may have varied considerably through time, and cannot be estimated from the surface evidence alone. Most of the considerable width of the deposit seems to consist of two levees, though they are not very high. They would have built up gradually over a long period by the deposition of silt each time the river overflowed. Even the central 'channel' may be wider than the open river ever was, and it could have been produced by a meandering river reworking the mud and clay which it had earlier deposited. The higher clay content of the central band indicates a lower water velocity than over the silty levees, and the clay may have been deposited towards the end of the life of this course of the river, when the rate of waterflow had decreased. Air-photographs indicate a sinuous band of dark soils within the central 'channel', and this may be the result of a peaty or humose fill in the final channel. There are similar dark marks across parts of the silty levees. Several of the marks were noticeable in the field as dark stains in the soil, but occasionally, near the central channel, they were slightly

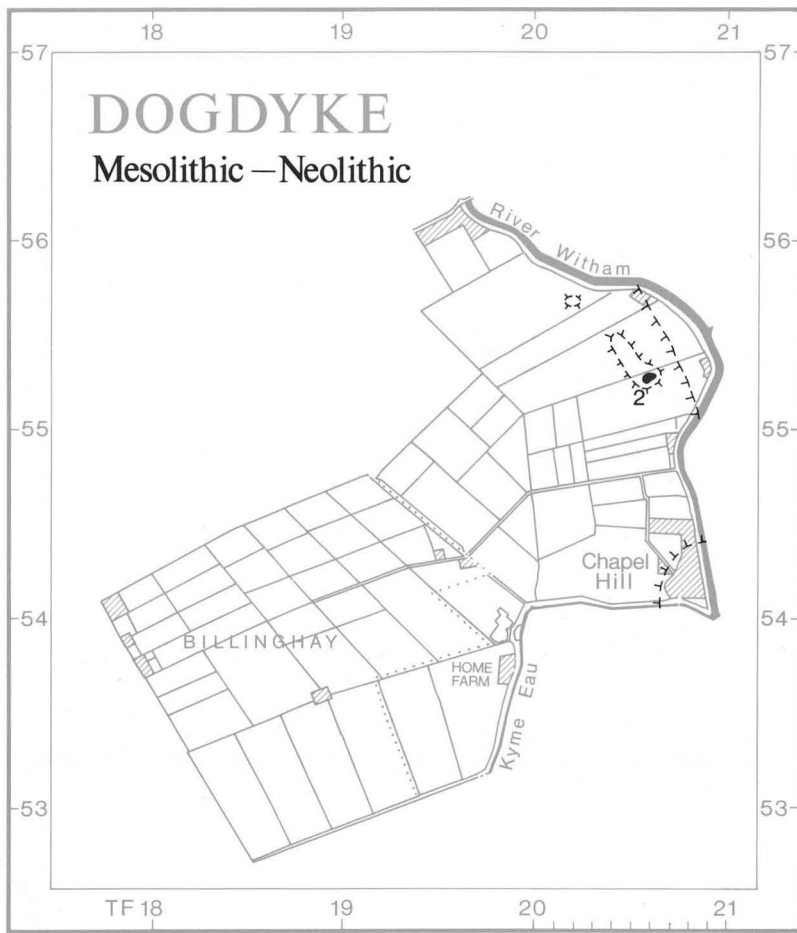


Figure 9 Dogdyke: Mesolithic-Neolithic

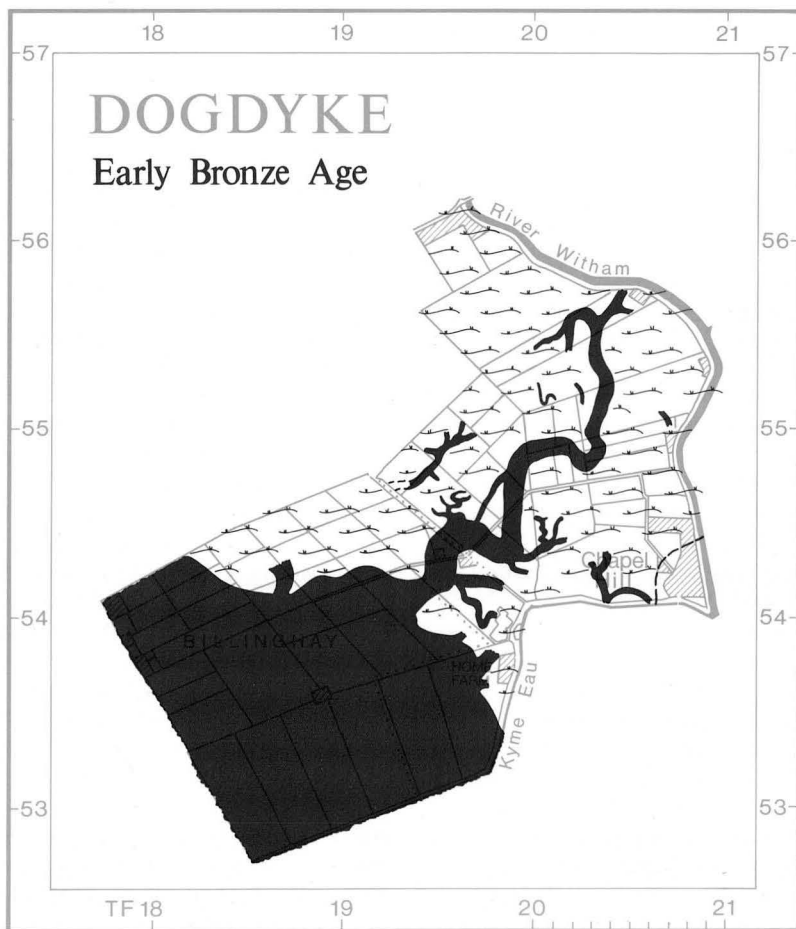


Figure 10 Dogdyke: Early Bronze Age

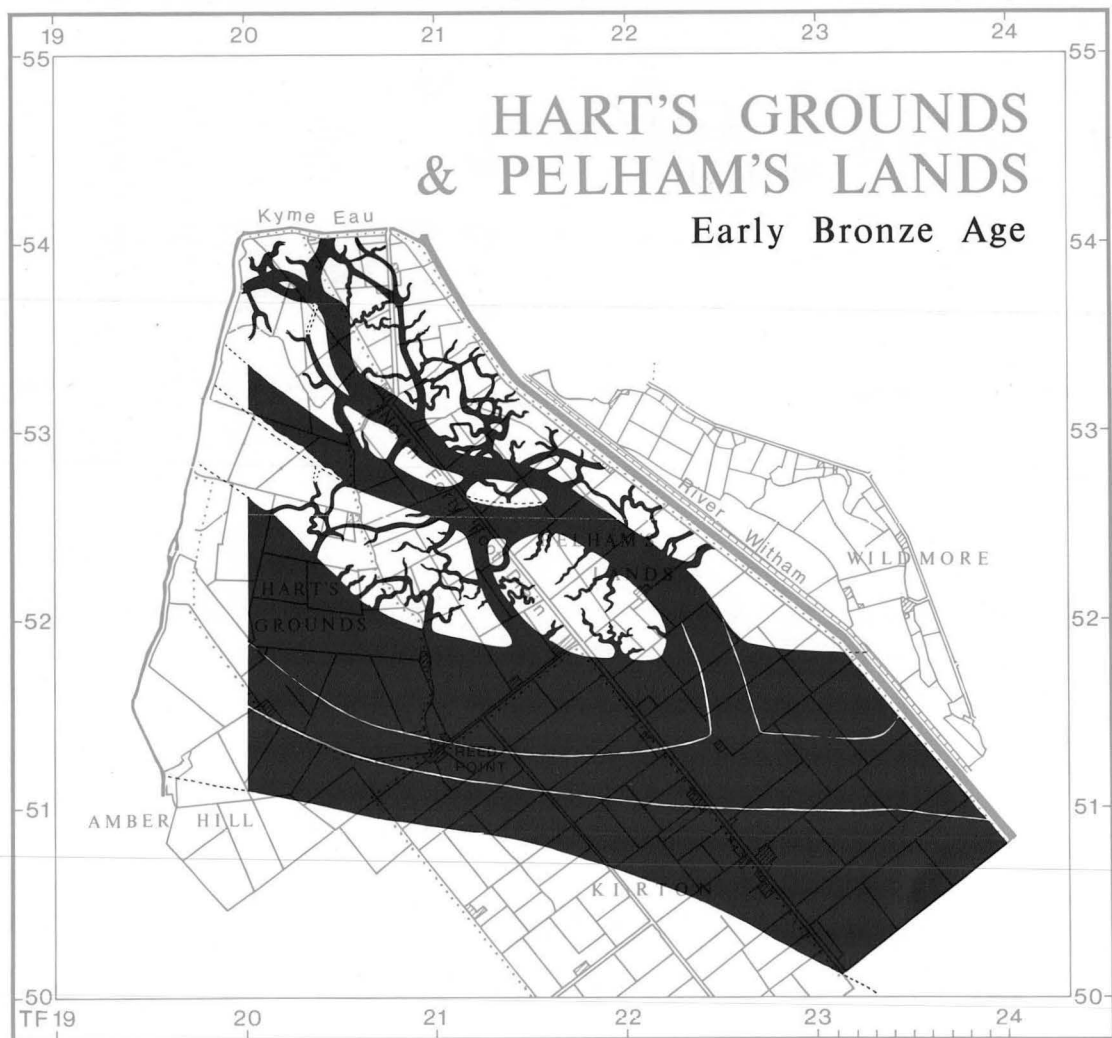


Figure 11 Hart's Grounds and Pelham's Lands: Early Bronze Age

raised, like small roddons. This suggests that they were produced by water periodically spilling across the levees from the main watercourse towards the end of its life.

It may therefore be concluded that early in the period when tidal flats and marshes covered the parishes, the creeks and watercourses represented by the roddons, including the former Witham, were carrying brackish or salt water which ebbed and flowed with some strength, depositing the coarser silts and sands in or close to their channels, and clays and silts in the intercreek areas. Later, as some of the creeks silted up, the volume and rate of water flow lessened, and there would have been wide stretches of shallow, standing water. These very poor drainage conditions allowed a silty clay to settle in the formerly active creeks. Water flowing down the Witham would have kept its course open for longer adding silt to its wide levees in time of flood and on high tides. In the last stages of its existence, before it found a new course, the river was sluggish, depositing clay in its channel.

The surface deposits, even over many of the roddons, were often found to contain appreciably more clay than the underlying sediments. In one dyke side, a rather indistinct roddon could be seen much more clearly under the land surface, marked by a very coarse silt or fine sand, with about a metre of silty clay or clay overlying the earlier deposits.

The phases in the existence of the large roddon cannot yet be dated. Other than the flints noted above,

no prehistoric finds were made within the surveyed area. The absence of Romano-British, Saxon and medieval material on even the highest parts of the levees of the former Witham strongly suggests that very wet conditions continued well into the historic period, perhaps even to within the last century.

Except for a single grey-ware sherd from Chapel Hill and four tiles that could be *tegulae* from the riverside, no finds of Roman date were made. However, a prominent linear feature, clearly visible on air-photographs running west to east across the junction of Hart's Grounds and Pelham's Lands, about a kilometre south of Chapel Hill, has been suggested by Simmons (1980, 71) as having a Roman date and function. The feature lacks respect for any of the present boundaries in the area, thus implying that it is not later than medieval in date, and a Roman origin is not impossible. A Roman date would be highly significant for the feature crosses the prehistoric course of the Witham, which would mean that by the Roman period the Witham had changed its course. Several other circular and linear ditched features can be seen on air-photographs of levees of the prehistoric Witham near Reed Point. Traditionally, circular cropmarks in the Fenland have been regarded as late medieval or post-medieval in date, probably the remains of steddle-cocks, but Silvester (1988a) has recently argued for a Roman date for examples of circular cropmarks in Norfolk.

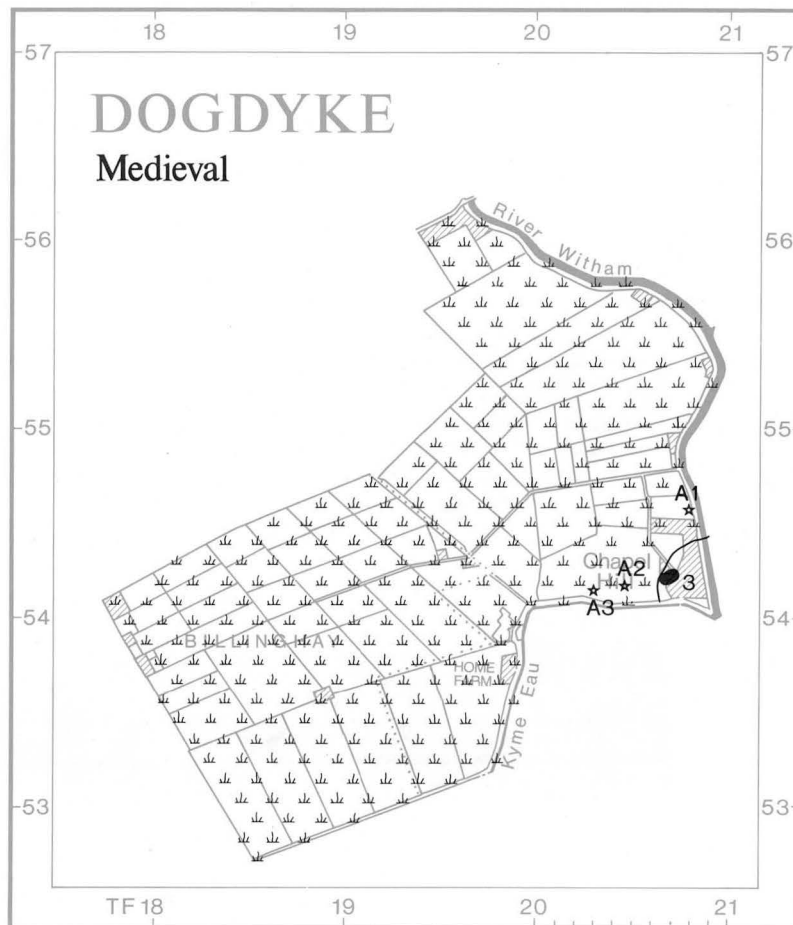


Figure 12 Dogdyke: Medieval

Some of the Reed Point cropmark locations were visited during the survey, with varying results. In some cases no evidence of their presence could be seen on the field surface, in others dark soilmarks were visible. Soilmarks that were not visible on air-photographs, including linear marks resembling ditches, were also observed elsewhere on the levees. The only artefacts found associated with any of the crop or soilmarks were post-medieval pottery sherds, probably 19th century. Since many of the marks occur very close to the clayey, central channel, they would seem unlikely to be early, and post-medieval farming practices are likely to explain most of them.

It is probable that the area remained variably waterlogged through the Roman period with tidal influence reaching far into the valley. Peat would have blanketed much of the upper reaches and the landward edges of the valley.

## VI. Medieval (Figs 12 and 13)

It would appear that, by early in the medieval period, the Witham's prehistoric course, as mapped by the Soil Survey (Robson *et al* 1974) and Wilkinson (1987, 53), had silted up and the present course close to the eastern edge of the valley had become established. This had occurred by the time of the *Domesday* survey for many fisheries were noted as belonging to the parishes that flank the valley to the east (Darby 1957, 67). The new course had certainly been adopted by 1331 when a gift of land to the abbey at

Bardney was said to extend 'in length from the water of Wydme (Witham) to the middle of the marsh, and from the middle of the marsh in length to the arable land of Noketon' (Hallam 1965, 99). The earlier course of the river between Bardney on the east side and Nocton on the west, as mapped by the Soil Survey, was more or less along the centre of the valley, or the middle of the marsh.

South of Dogdyke the transfer in the main outfall from Bicker Haven to Boston took place, according to Hallam (1965, 105), before the late 12th century. This set the scene for extensive river traffic along the Witham between the towns of Boston and Lincoln, which, by 1205, had become respectively the second and fourth most important ports in the country (Barley 1936, 19). It is not known what sort of shipping was able to use the Witham. Owen (1984, 42) suggested Boston marked a convenient point to transfer cargoes between river craft and sea worthy vessels. Whatever the nature of the passing craft, regular use of the waterway would have necessitated frequent maintenance of banks and channels. Dugdale (1772) commented on the problems of maintaining a navigable course within the Witham but noted that '... great vessels have anciently come up from Boston to that City [Lincoln], as the inhabitants thereof do, by tradition, affirm: and as may seem by large ribs of them, which, within memory, have been digged up'. Dugdale was writing in the 17th century (the edition of his work referred to in this text was published at a later date) and by noting the 'tradition' of vessels 'anciently' travelling from Boston to Lincoln, suggested the river trade had suffered a decline.

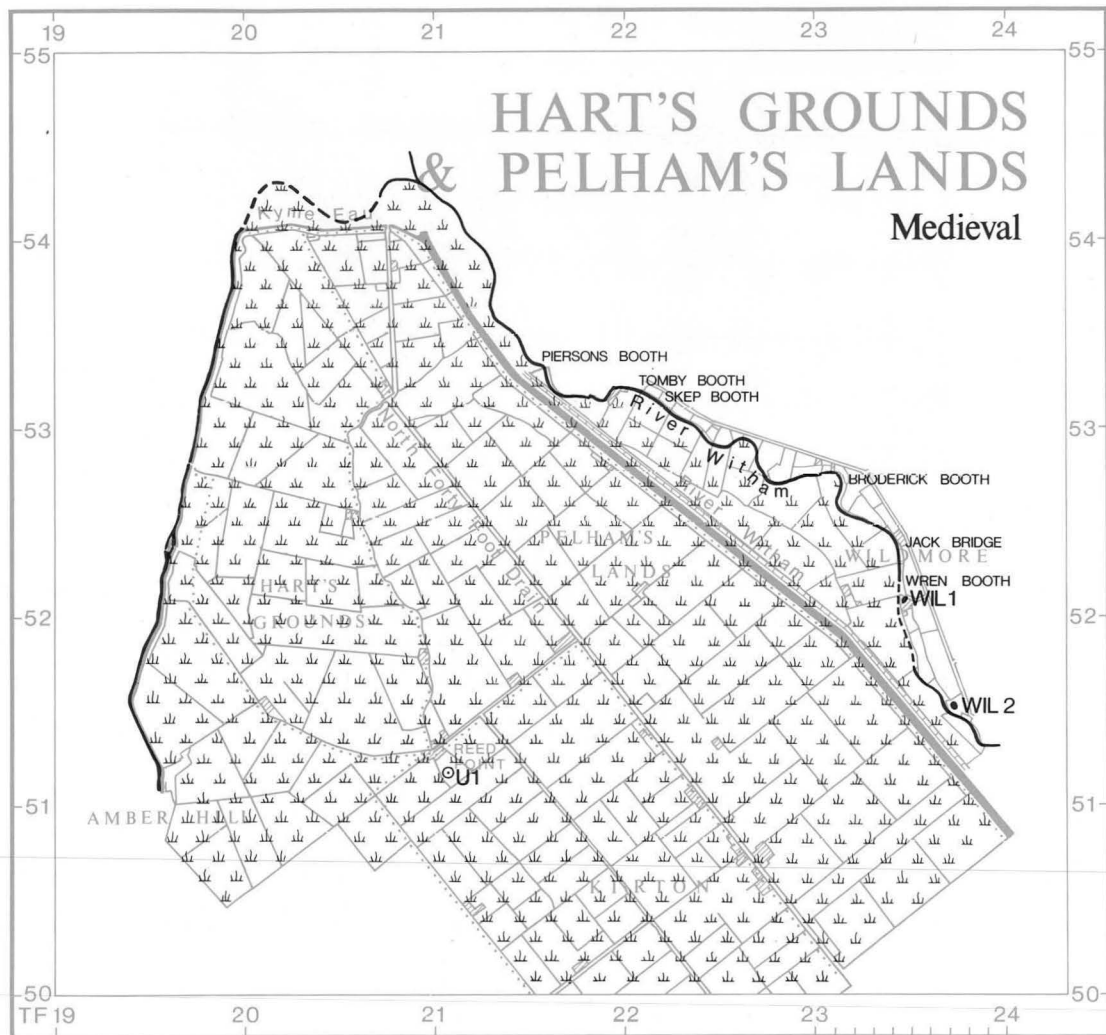


Figure 13 Hart's Grounds and Pelham's Lands: Medieval

Shipping was using the Witham and its navigable tributaries in the 14th century. By 1342 Gilbert de Umfraville, Earl of Angus, had petitioned the King regarding the state of the Kyme Eau, between Dogdyke and Brent Fen. What had formerly been 'a very convenient passage for ships and boats' had become blocked by mud and sedge. With opportunism Gilbert undertook to cleanse the river and to maintain its banks in exchange for the right to take tolls at a fixed rate. The various published accounts of this agreement mention cargoes of wool, wine, corn, cattle and herrings (Barley 1936, 14) and, in addition, turves (Dugdale 1772, 196). Both the Witham and Kyme Eau remained locally important transport arteries throughout the Middle Ages. A recession in the trade of wool, probably Boston's major export of the 12th and 13th centuries (Harden 1978, 9), coupled with an economic decline in Lincoln, may have reduced the quantity and size of shipping using the Witham in the later Middle Ages.

Throughout the medieval period the landscape of Dogdyke is likely to have remained uniform, with peat covering all but the Chapel Hill island. Settlement evidence in the form of pottery (DOG 3), was located on the only part of the island accessible for survey. Two sherds appeared to be early medieval in date while much of the rest was from later in the Middle Ages. Pottery of the types produced at kilns in Toynton, Lincoln,

Nottingham, Boston and Bourne were represented and indicate the widespread transportation of goods. Little is known of the early settlement at Chapel Hill although the chapel (of St Nicholas) which gives the island its name was known to be in existence by c.1342 (Owen 1975, 16).

No medieval finds were made in Hart's Grounds or Pelham's Land where the medieval landscape would have been very wet. Fen conditions probably prevailed, but subject to frequent brackish water flooding from the river.

South of Dogdyke the medieval Witham occupied a meandering course with a low rate of fall. Its further decay was inadvertently assured by some of the early drainage schemes, notably the diversion of the waters of East and West Fens which formerly flowed into the Witham at Langrick, into the Maud Foster Drain. In 1762 a new, straight cut was ordered to be made for the Witham south-east from Chapel Hill for approximately 8.5km to Langrick Ferry.

During survey in Wildmore, the medieval course of the Witham was traced to the east of the present route. It was seen as a depression 175–200 metres wide, aligned on a road called Haven Bank. On the Ordnance Survey Sheet TF 25 SW (1:10560) an almost continuous, line of field boundaries can be seen meandering along the same general course. It can be seen that the band of sediment, line of boundaries, and the modern river, all cut across the course of the prehistoric Witham (Plate III).



Plate III Three courses of the River Witham near Dogdyke. The Bronze Age course flowed left to right across the bottom of the picture. The modern river is the large watercourse in the centre of the plate while the irregular field boundaries in the bottom right mark the medieval course. (*Cambridge University Collection: copyright reserved*)

In an attempt to understand more fully the survey results in Hart's Grounds and Pelham's Lands, one visit was made to the Haven Bank area of Wildmore parish. Roddons had been observed on air-photographs of this area studied prior to the survey, and it could be seen in the field that some of the roddons were quite substantial, with a general trend from north-east to south-west. The soils near to Haven Bank were predominantly silty clays broadly similar to those in the nearest part of Pelham's Lands. However, one important difference was clear. Gravel could be seen less than a metre below the modern land surface, in a ditch section close to a substantial roddon and the presumed old course of the river. It was not practicable, in the short time available, to investigate the extent of the gravel, or to check for the presence of datable peat deposits. It seems likely that the river had run along the edge of the gravel, but there was not enough time to investigate the band of sediment noted on the air-photographs, and to establish its relationship to the roddons.

It was found that the meandering line of field boundaries followed a distinct hollow that, despite efforts by the farmers to fill it, still contains water in winter. This hollow is what remains of the channel of the pre 18th-century Witham, which dried up when the waters of the river were diverted into the new, straight cut at a point near Chapel Hill. The suddenness of the change meant that the channel did not have time to fill with sediments brought in by slow-flowing water. Also, not enough time has elapsed, in relation to the size of the channel, for the dryland processes of erosion, deposition and soil development to fill the hollow.

Despite the brevity of the visit, two chronologically

useful sites were found, WIL 1 and WIL 2. Both lay on the north-east, or Wildmore, side of the medieval Witham, and a good range of medieval pottery was found on them. The full extent of WIL 1 is not clear, as it partly lay beneath a recently demolished old house and is close to existing farm buildings. Although they differ slightly in detail, the surface collections from the two sites bear strong similarities, and share characteristics which are otherwise unusual. In particular, limestone and gravel on the sites imply substantial structures. A wide range of animal bones was present, and oyster, mussel and cockle shells indicate access to the Witham estuary and the Wash. The farmer who lives next to WIL 1 has found some large stone weights which may have been used as net weights. Limestone net weights have been found further north along the Witham (White 1984, 32). It is difficult to resist the inference that the sites were operating, or were regularly visited by, boats sailing along the Witham at least as far as the Wash. The availability of water transport would also help to explain the presence, unusual at fen sites, of building stone. The stone and the pottery found at the sites suggests that the water-borne traffic was more than purely local. The commonest pottery on the sites was from the nearby Toynton area, but medieval wares from Lincoln were also plentiful, and there were some wares from Nottingham, and Bourne. Unglazed, shell-tempered pottery, of a Potterhanworth type (Healey 1974, 30) was also present, and was common at WIL 2. The date range at WIL 2 appears to be early 12th-century to late 16th-century. WIL 1 has a similar, but possibly slightly later, range, and post-medieval wares were found there. Although there were a few post-



medieval sherds at WIL 2, the pottery evidence suggests abandonment around AD 1600.

A map of the area by Pitchford, dated to 1734, shows a series of buildings along the north-east side of the Witham. Despite differences in scale, it is possible, using the known fixed points and the intricate and distinctive shape of the meanders of the river, to match the course of the Witham shown on the map with the extinct course established during the survey. The approximate locations of the sites shown on the early map are thus identifiable in the modern landscape. One is clearly the survey site WIL 1. It was known as Wren Booth in 1734. WIL 2 does not appear on Pitchford's map, leaving a noticeable gap. This agrees with the archaeological evidence for the continuity of WIL 1 but the abandonment of WIL 2 around 1600.

Survey evidence suggests that most of these riverside sites are likely to date to the medieval period, often the early medieval, and the possibility of Late Saxon foundations should not be discounted. The sites are individually named on Pitchford's map (and some appear on later maps), which suggests a degree of local importance. Most of the names are in two parts, the second often being 'Booth', e.g. Swine Booth and Picklebeck Booth. Booth is a word introduced by Scandinavian settlers in the ninth or tenth centuries and is generally associated with temporary dwellings (Fellows Jensen 1978). The consistent use of the word in connection with riverside sites (others occur, for instance, on the Slea), suggests that they are almost certainly fisheries. Hallam (1965, 101) refers to fishing booths. North of Chapel Hill the names of a number of fisheries were recorded in a grant to Bardney Abbey dated 1115 (Thompson 1856, 355). These names almost all contained 'garth' as a second element. White (1984, 30) has suggested that garths may have been small enclosures for drying nets.

The fisheries south of Chapel Hill would repay further study as they are likely to provide a valuable insight into medieval settlement and economic activity along this part of the Witham, as well as an indication of the direction of regional trade links. The sites should be very easy to find in the field, and many, if not all, will be known to the local farmers.

Intermittent flooding of the landscape remained a problem throughout the medieval period. South of Chapel Hill the flood waters of the Witham would have been brackish for, as late as the 16th century, Leland noted that 'the river Lindis [Witham] ebbeth and floweth within a little of Dogdike ferry' (quoted in Thompson 1856, 360). As a final reminder of conditions in that part of the Fenland it is worth repeating an extract from Wheeler (1896, 34) who recorded that a fenman living near Kyme in the last century had

time out of number . . . seen cows loosed out of their hovels and swim across the water with nothing but their faces and horns above the surface, and then take footings at mid rib deep, but not one spot of dry land, and then forage till weary and return to their hovels by swimming. No place was more famous for this than Chapel Hill, inaccessible but by boat or by riding belly deep, and more in water than in mud. I have also known in the whole parish of Dogdyke not two houses communicable for whole winters around, and sometimes scarce in summer.

## VII. Conclusion

It is not possible at present to date more closely the processes and events discussed above. Many of the changes may, in any case, have taken place gradually over a long period. Information from boreholes in the Witham valley confirms the presence of peat overlying much of the early prehistoric land surface. This peat was produced when conditions deteriorated in advance of marine/brackish water flooding. The peat formation process may have started earlier in the deep parts of the Witham Valley, but it seems reasonably clear that over much of the area peat developed during the Neolithic.

Other than the islands of Chapel Hill and those to the north, no trace of the earlier prehistoric land surface was found, though some buried gravel was seen in Wildmore Fen. The absence of Romano-British, Saxon and medieval material on even the highest parts of the levees of the former Witham, strongly suggests that very wet, possibly estuarine conditions, continued into the historic period, though it must be pointed out that this conclusion is based on limited fieldwork, and further survey is desirable. Survey did, however, establish that by the early medieval period the Witham was flowing along an entirely different channel from that which existed in prehistoric times.

It is at the regional level that the surveyed parishes make their most valuable contribution. Development of the landscape, and its communities in the past, cannot begin to be understood until certain broad guidelines have been established. In particular, it is necessary to ascertain the extent of the main environmental zones, and the changing courses of the major rivers. Also, the limits of those areas that were or were not settled at certain periods in the past need to be defined. In the case of this particular area, the River Witham must always have played a major part in shaping both the landscape and the way of life of the inhabitants, therefore its past courses are of considerable archaeological importance. It ought not to be forgotten that the Witham has had more than local significance: it afforded access from the coastal waters of the Wash to Lincoln and onward into the Trent valley, and has been a major long-distance trade route. From time to time certain places with access to the river, particularly crossing points, will have had strategic or commercial significance at the regional level.

The surveys of Hart's Grounds and Pelham's Lands, and of neighbouring Dogdyke, have been a first stage in this essential work. Some fixed points have been established from which to work in the future. Parts of the course of the medieval and prehistoric Witham have been identified in the field. It should be possible to trace these upstream, into the peat fens of the Witham Valley, and to join up, in part, with earlier work by the Soil Survey. In the other direction, the task may be more difficult, particularly where the prehistoric course enters the higher silts. Nevertheless, it is important to carry out the mapping as far as is practicable in order to establish the physical framework for the periods of settlement and land use in the northern fens. Lastly, the lands to the west and east of the river as it joins the fens should not be overlooked. Sealed under the fen deposits are gravel and peat and these must contain important environmental, chronological and archaeological evidence. This is easily accessible, and merits further investigation.

### 3. Stickney and the Northern Fen-Edge

#### I. Introduction

(Figs 14–22)

Survey in the 1983–84 season centred on a section of the northern fen-edge. The chosen area extended west-east for some 10km from East Kirkby across to Toynton St Peter and south to include the island of Stickney, a narrow spur separating East and West Fens. Midville, in the former East Fen, was also investigated. East and West Fens are remarkably dissimilar and throw sharp emphasis onto the disparity and variety of landscapes within the Fenland as a whole. Of the two, West Fen was subjected to a longer span of marine brackish flooding, one in which accumulating sediments built-up the surface of the land to between 1.5m and 2.0m OD. In contrast, East Fen suffered two separate marine incursions (Waller 1988a, 55). Subsequently, the area rapidly reverted into a freshwater environment with a considerable depth of peat forming. Since undergoing drainage in the early 19th century much of this peat has disappeared leaving areas of land below sea-level (Fig. 23) and locally exposing the pre-Flandrian land surface.

Stickford occupies a spur of glacial clay which juts into the fen south of West Keal. It is separated from Stickney to the south by a narrow band of alluvium, in part the result of flooding from Hagnaby Beck. Clearly the place-names Stickney and Stickford are related but there is no direct evidence to support Ekwalls's (1960, 442) supposition that Stickney was sited between two parallel streams and therefore called 'Sticca', or 'the stick'.

There remains less doubt regarding the origins of the Midville place-name. It was a centrally placed township in East Fen, one of seven formed in 1812 subsequent to the draining of East and West Fens (Darby 1956, 234). It lies between the Hobhole, the main drainage channel of East Fen, and Stickney island. Today Midville remains a sparsely populated landscape set within a geometric design of drains and dykes. Much of it is farmed in three large holdings.

From West Keal across to Toynton St Peter, the villages lie close to springs and situated slightly downslope from a partially drift-covered ridge of Spilsby Sandstone, which underlies the chalk Wolds further north, but is often cited as being their southern extremity. The place-

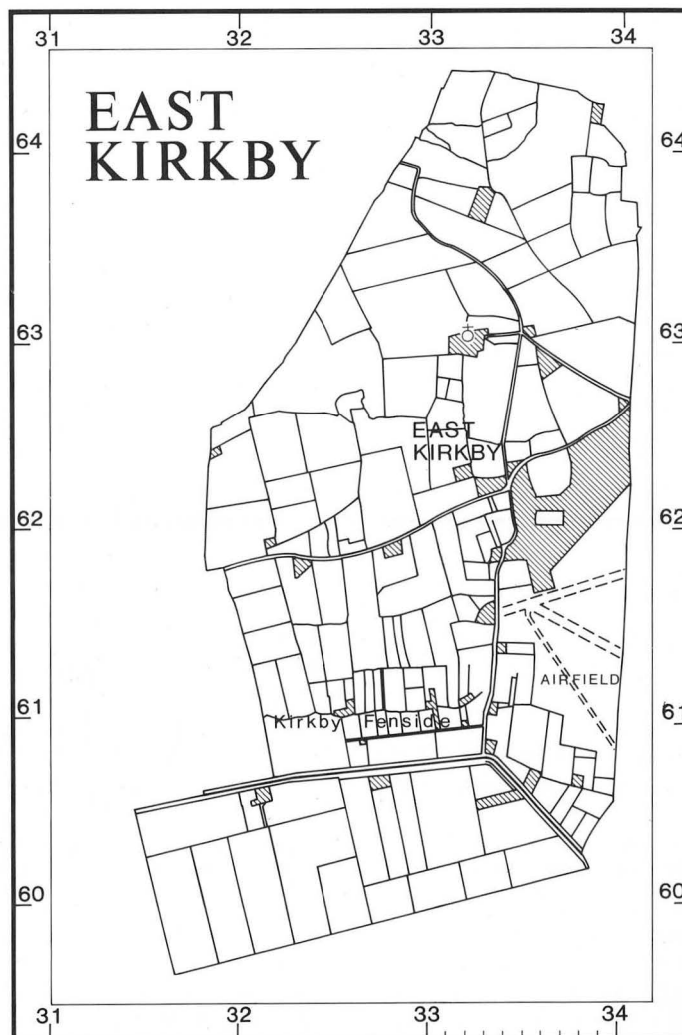


Figure 14 East Kirkby: Modern Landscape. Scale 1:40,000

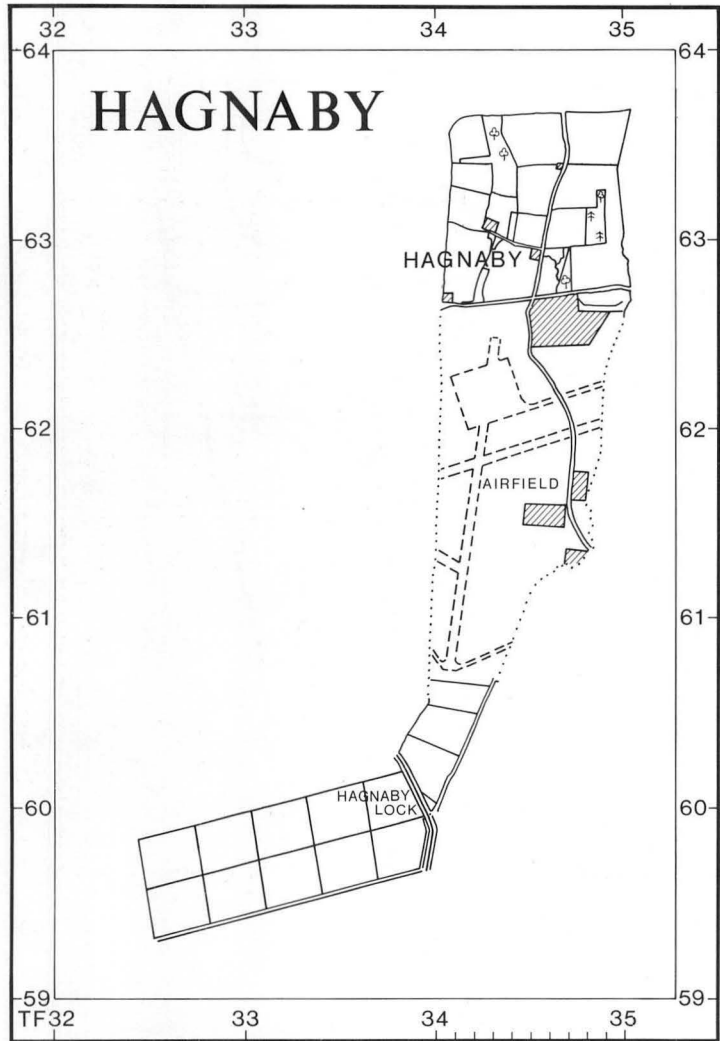


Figure 15 Hagnaby: Modern Landscape. Scale 1:40,000

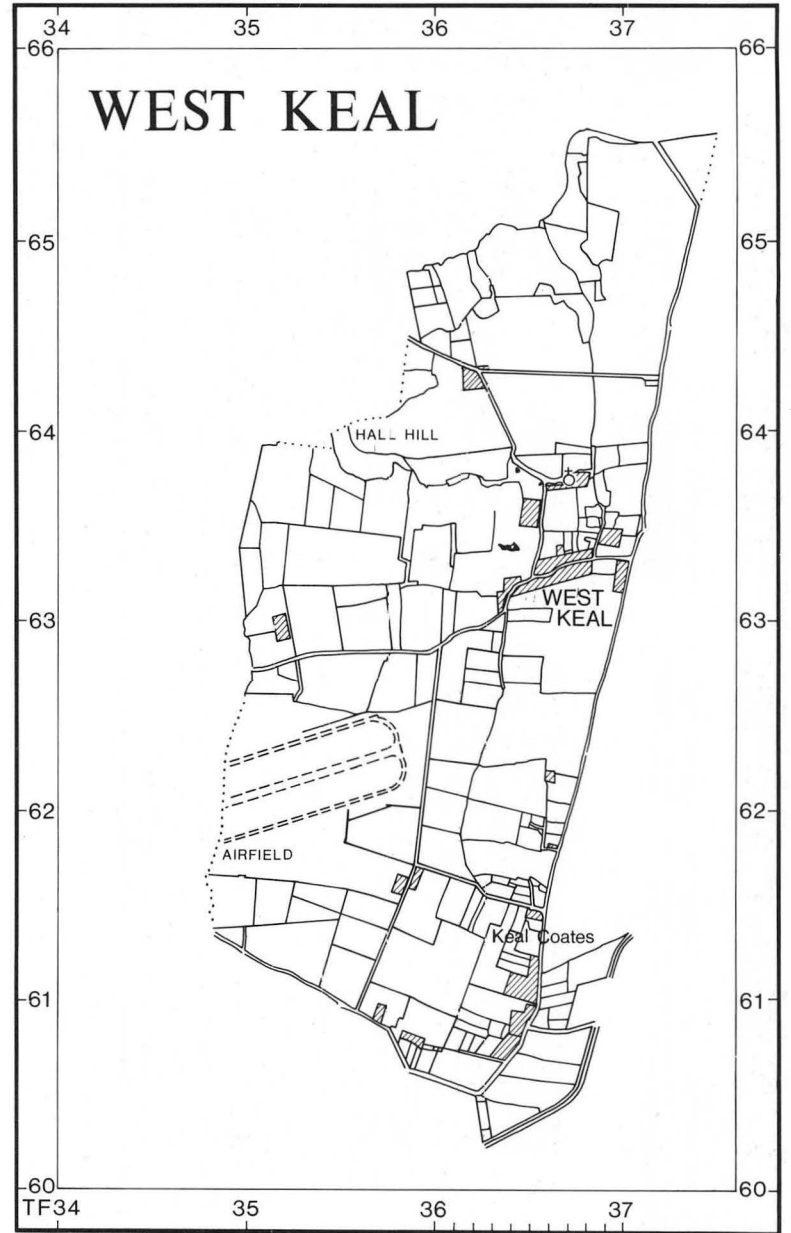


Figure 16 West Keal: Modern Landscape. Scale 1:40,000

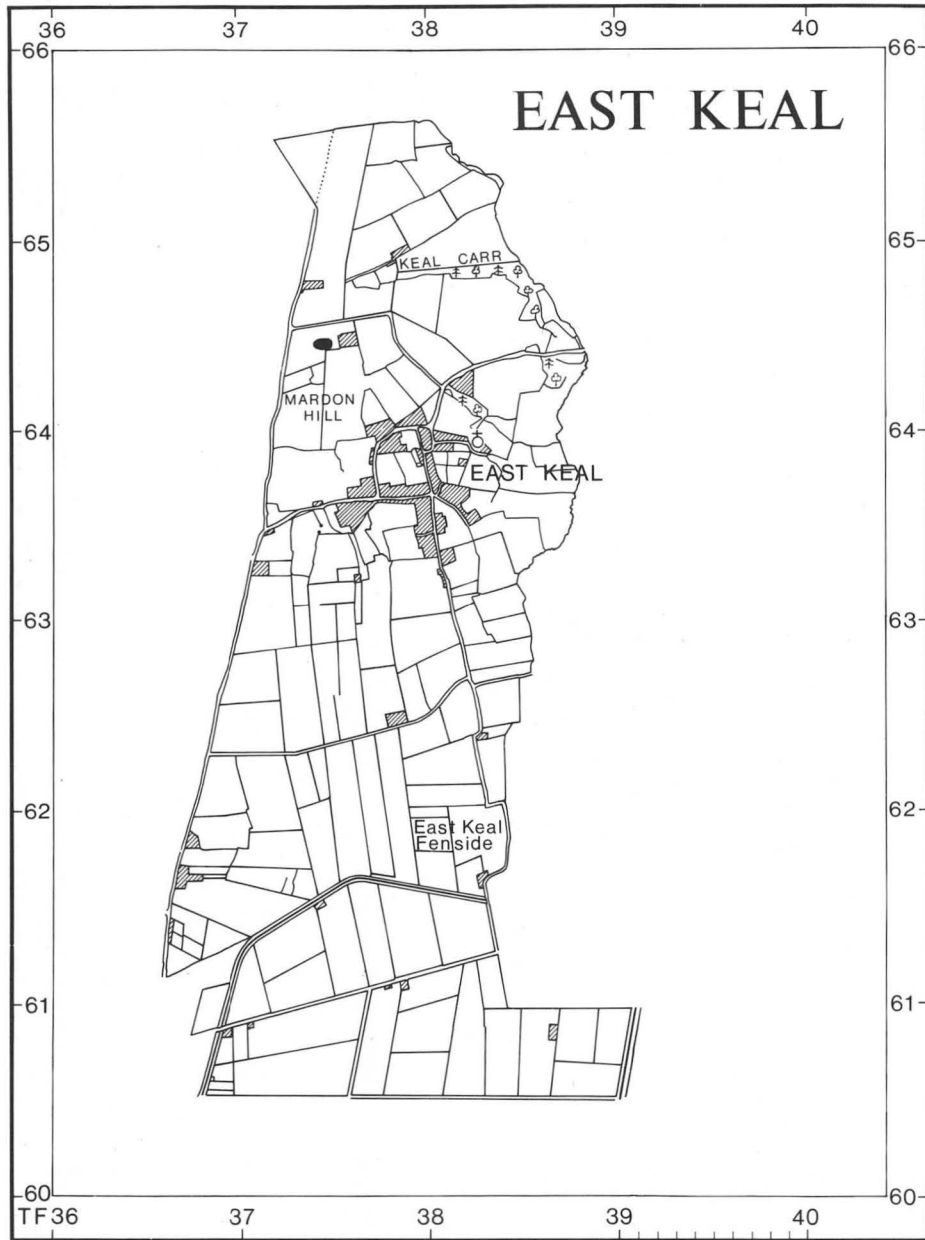


Figure 17 East Keal: Modern Landscape. Scale 1:40,000

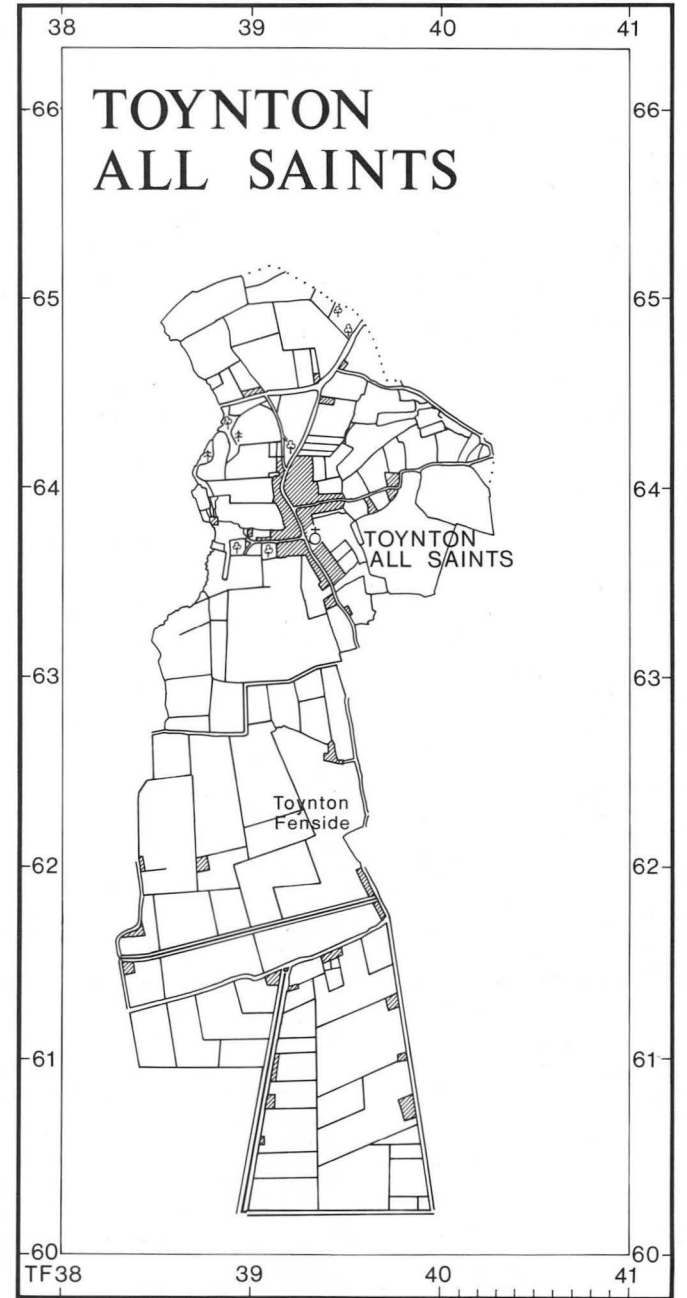


Figure 18 Toynton All Saints: Modern Landscape. Scale 1:40,000

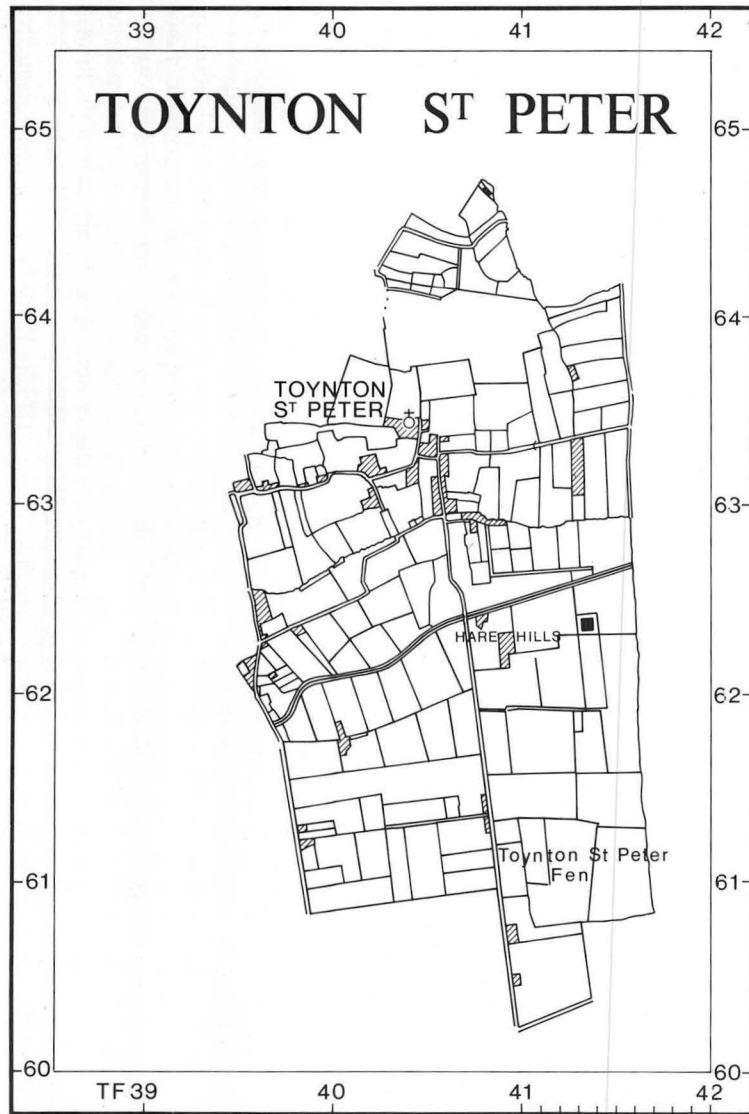


Figure 19 Toynton St Peter: Modern Landscape. Scale 1:40,000

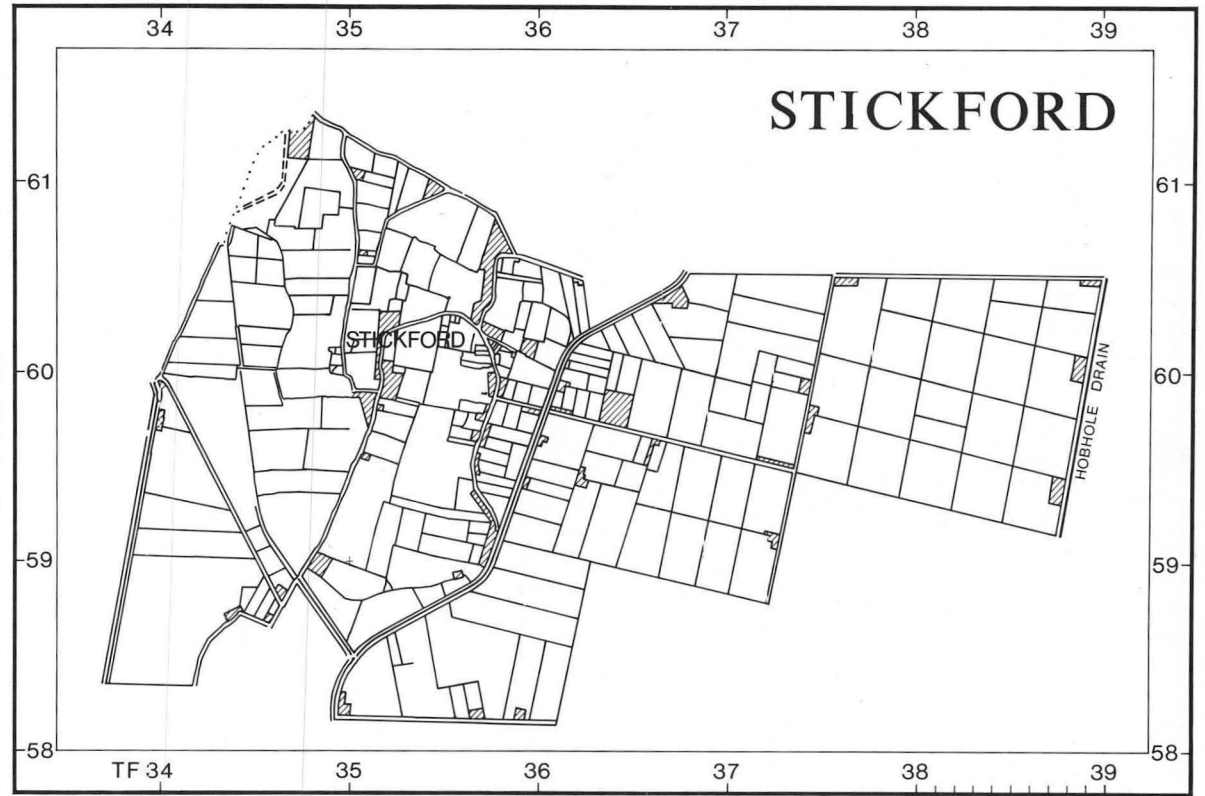


Figure 20 Stickford: Modern Landscape. Scale 1:40,000



Figure 21 Stickney: Modern Landscape. Scale 1:40,000

name Keal is said to reflect the prominence of the Sandstone ridge (Ekwall 1960, 269).

East Kirkby and Hagnaby occupy corresponding locations adjacent to West Fen. The Scandinavian place-names of Kirkby and Hagnaby are part of the generally dense concentration of such names along the northern fen-edge.

Neither the present-day villages of West Keal nor East Kirkby are situated around their churches. Settlement at East Kirkby has migrated almost a kilometre to the south where it has re-formed around the intersection of the Spilsby-Coningsby road and the route south into

the fen. West Keal church is prominently positioned on the sandstone edge 65m above, and overlooking, the Fenland. An Early Saxon pottery scatter is the only sign of adjacent settlement. Even within this commanding location, the church appears to occupy a mounded area and its position may reflect an earlier place of worship. Recent settlement at West Keal has concentrated along the Spilsby-Coningsby road at the foot of the scarp.

It is presumed that much of the early settlement of Hagnaby has been absorbed by the grounds of the former Hagnaby Hall, which was re-named Hagnaby Priory in the 19th century (White 1856, 779). This new name has



Figure 22 Midville: Modern Landscape. Scale 1:40,000

created some confusion and the building is frequently mistaken for the site of a Premonstratensian foundation of that name which lies in Hannah-cum-Hagnaby some 7km north-east of Alford.

Much of the ground between the village and former fen of Hagnaby was disturbed during construction of the large East Kirkby airfield which operated between 1943 and 1958 (Hancock 1978, 115). From Hagnaby the airfield extended east into West Keal and west into East Kirkby. Its runways and taxiways remain but the intervening land has returned to arable use. However, the levelling of the surface during post-war redevelopment has obliterated the medieval ridge and furrow, although fortunately, the 1946 air-photographs taken by the RAF have recorded much of the pattern. Further areas of East Kirkby, notably between the church and Spilsby Road, were subjected to ground disturbance during construction of underground armaments and fuel dumps and anti-aircraft defences.

Even today the northern fen-edge parishes remain relatively isolated geographically. Routes to Lincoln and Sleaford are rather indirect. Peat fens of the Witham Valley and the northwest corner of the main Fenland Basin were an obstacle to long distance movement from

the Bronze Age onward. Indeed almost the entire area of the Lincolnshire Wolds suffered isolation as the developing wetlands of the Ancholme Valley similarly affected the northern part. With the coastal marshes to the north and east, the Fenland to the south and south-west and the Ancholme Valley to the north-west, the overall effect was the creation of a large island dominated by the high chalk land of the Wolds. The northern fen-edge parishes formed a peripheral part of this distinctive region. Within these parishes local rather than regional connections and influences are likely to have been of greater importance. This is not to deny entirely the significance of regional or national factors. At times these would have been paramount, for instance during the Scandinavian settlement, but in general, it was local social, economic, political and environmental developments in the southern Wolds and northern fens, that would have been the prime influences.

Other than sporadic trawling of Hall Hill, West Keal, the wider flint collecting of M. Felcey, and the estimable work of the late Mrs Rudkin at Toynton, little archaeological attention had previously been paid to the Northern Fens. The area lies beyond the limit of Roman Fenland cropmarks and settlements and thus left little for S.J.

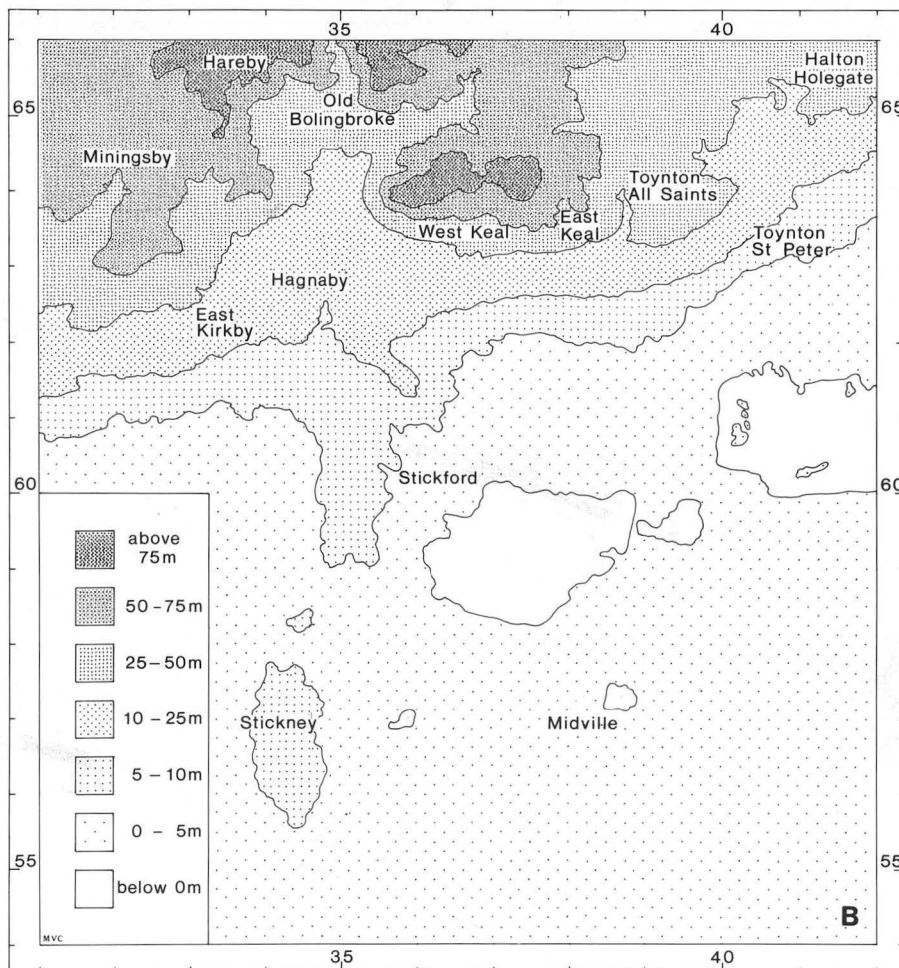


Figure 23 Stickney and the northern fen-edge: Relief. Scale 1:100,000

Hallam to comment upon in 1970. H.E. Hallam embraced the wider area in his discussions in 1965 although even he was forced to state baldly 'There is no significant early information about Stickney and Stickford' (Hallam 1965, 95). Perhaps this paucity of detail reflects the low-key nature of settlement locally. Since the Neolithic, the evidence left to archaeologists has been at best unspectacular and understated, at worst invisible. It is, however, the ordinariness and austerity, particularly of the Roman settlement, that makes the area important. Archaeological sites of wealth and power only have a relevance when compared to poorer areas and it would seem that, particularly in the Roman period, the northern fen-edge falls, comprehensively, into the latter category.

## II. Topography

By Fenland standards, the northern margins contain a remarkable and contrasting range of soil types and altitudinal variations. The height of the land increases within 3km from below sea-level in parts of East Fen to over 80m OD in East and West Keal (Fig. 23). Lincolnshire, in contrast to the southern Fenland of Cambridgeshire, has few 'fen islands'. The accumulation of clays and silts is sufficiently high and stable to mask most varia-

tions in the pre-Flandrian surface. Stickney is therefore a rarity, the largest island in terms of height and area surveyed in Lincolnshire. Sibsey, directly to the south, is comparable in size to Stickney but unsurveyed. A further exposure of the same geological feature that created Stickney and Sibsey islands occurs further south at Fishtoft, east of Boston. The feature is a moraine and it marks the limit of the Devensian ice-sheet. Waller (forthcoming) will review the geological background for the Fenland region. This present volume concerns itself with the influence of the moraine on the changing postglacial landscape rather than the origins of the feature.

In Stickney the maximum height of the land surface is attained near the church on the centre of the ridge where, at 7.5m OD, a deposit of glacial sand stands out from the otherwise uniform stony clay soils. Sands have also been deposited around the north-west edge of the island (Plate IV). On either side of the Stickney moraine lie the disparate East and West Fens whose adjacent uplands also contrast. The broad, west-east division of the upland regions occurs along the Hagnaby Beck, a once influential stream leading into West Fen, now culverted and insignificant beneath the airfield. During an earlier, grander existence, it provided a natural drainage outlet for the numerous valleys intersecting the Spilsby Sandstone. Over a period, sands from the weathered escarpments found their way into the stream and were deposited in



hummocks at points along its course. These are found particularly in the Hagnaby Lock area where the stream entered the Fenland Basin. In Stickford and on the periphery of Stickney island, the sand areas were settled in the Bronze Age. The fen margin from Hagnaby across to Tattershall is composed of gravel, extending inland to around the 15m contour (Fig. 23). Studies of the soils (Heaven, in press) by the then Soil Survey of England and Wales (now the Soil Survey and Land Research Centre) suggest these gravels were formerly subjected to a high ground-water level. Comparatively sparse quantities of early finds in the area surveyed would tend to support this.

On the fen-edge east of Hagnaby Beck the soils are predominantly sandy clay loams developed on Devensian Till. Soils of similar structure but formed on solid clay are found in northern parts of East Kirkby, Hagnaby and the Toyntons and around the escarpments. The most significant soil-type for the prehistoric period is the Frilford series (now called Cuckney; Heaven, in press), which is common on the upland plateau. It is a shallow, sandy soil formed on the weathered top edges of the Spilsby Sandstone. This light soil has long been known to have attracted Mesolithic occupation (Clark, 1932a). Clark refers specifically to Hall Hill, West Keal, the south western extremity of the sandstone ridge. Hall Hill remains a dominating and imposing feature, surrounded on three sides by steep escarpments. It has proved a popular natural memorial to the dead. A Saxon cemetery

has been found there (Thompson 1956) in addition to Bronze Age cremations (LMSMR) and pottery similar to that found in the rich Iron Age burials in Yorkshire (Whitwell 1970, 6). Furthermore, it is one of the few locations in the county to yield a Palaeolithic hand axe (Enderby 1977, 78).

Hall Hill is a prime vantage point for viewing the Fens and it would certainly have offered prehistoric communities the opportunity to observe the inexorable thrust of the encroaching wetlands over the Fenland Basin.

### III. Fieldwork

(Figs 24 – 32)

As large fen islands, Stickney and Sibsey were obvious choices to survey. Stickney was investigated but, at the time, the Boston and District Archaeological Society had made a commitment to survey Sibsey during the same season and, therefore, to avoid duplication, Sibsey did not form part of this survey.

The parishes across from East Kirkby to Toynton St Peter have a smaller proportion of alluvial to upland soils, than parishes on the western fen-edge where the ratios are more even. The modern (and medieval) communities in the north are also situated slightly further away from the fen than those on the western fen-edge. A further difference between the two regions is that



Plate IV Sandy soils around the north-west tip of Stickney. Marine clays of West Fen can be seen at the bottom. To the east the sand gives way to Devensian till. The medieval fields of Stickney, with traces of ridge and furrow, can be seen in the centre of the Plate, with the humose soils of East Fen stretching into the distance.

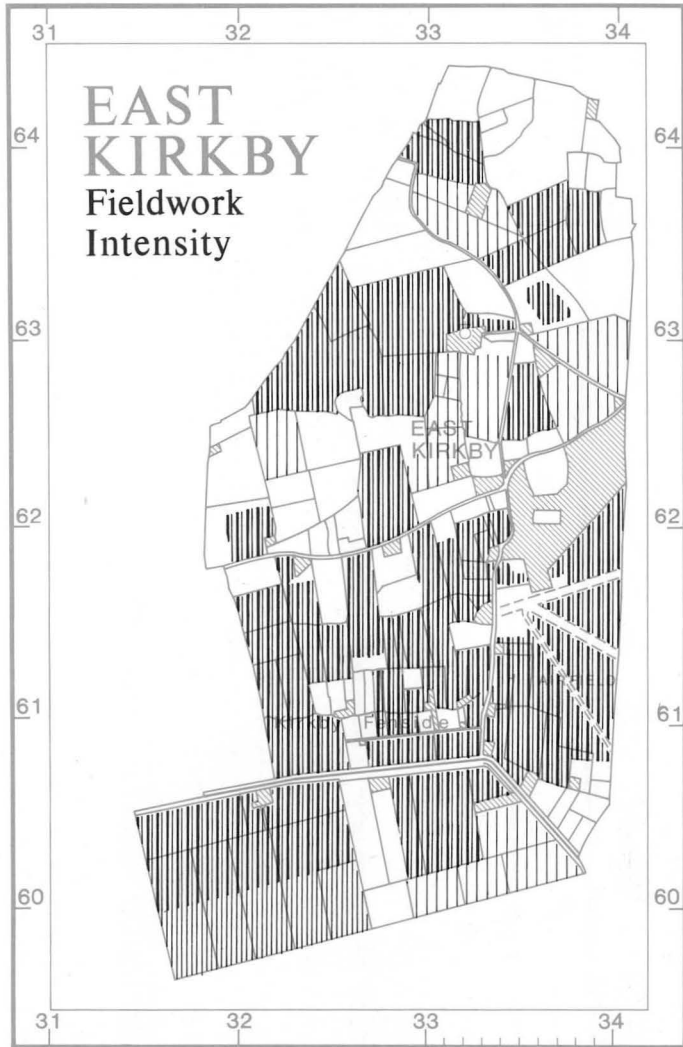


Figure 24 East Kirkby: Fieldwork Intensity

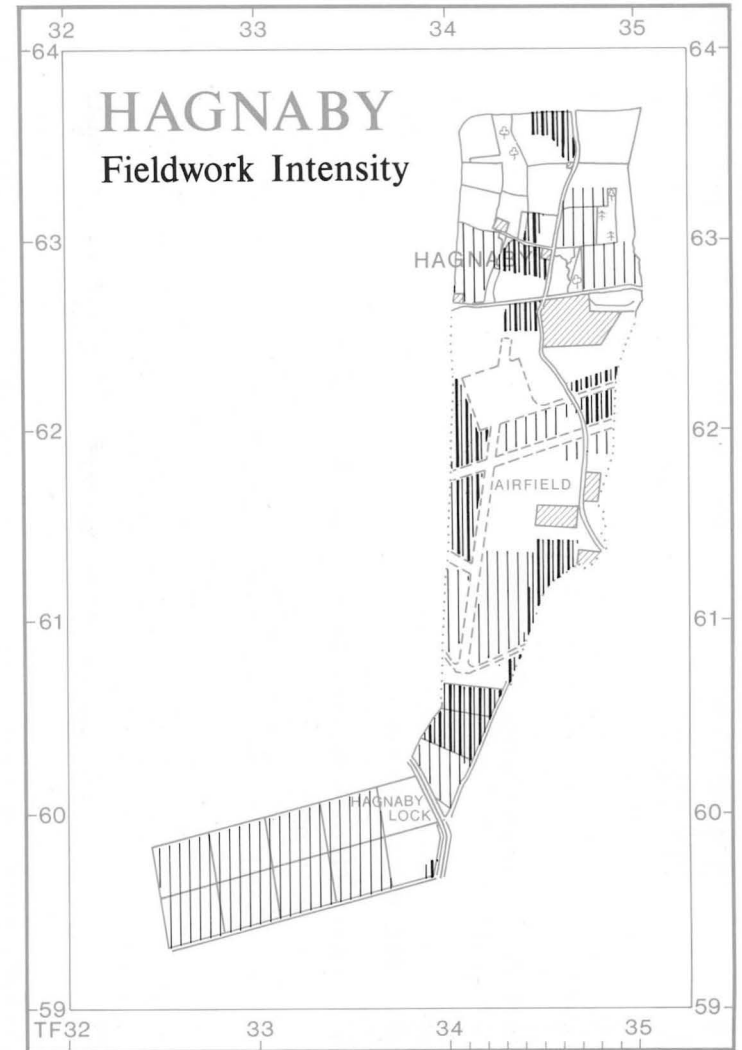


Figure 25 Hagnaby: Fieldwork Intensity



Figure 26 West Keal: Fieldwork Intensity

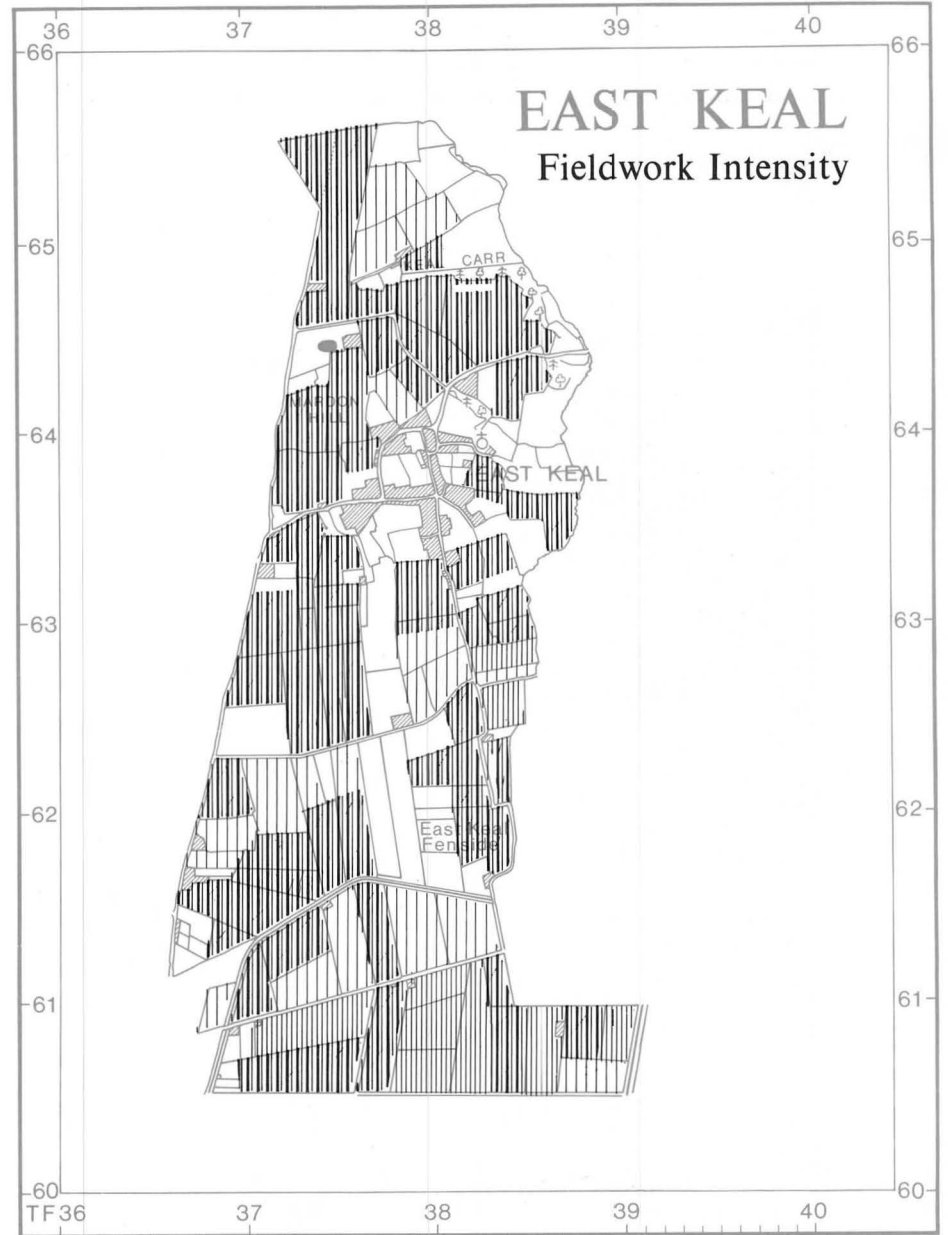


Figure 27 East Keal: Fieldwork Intensity

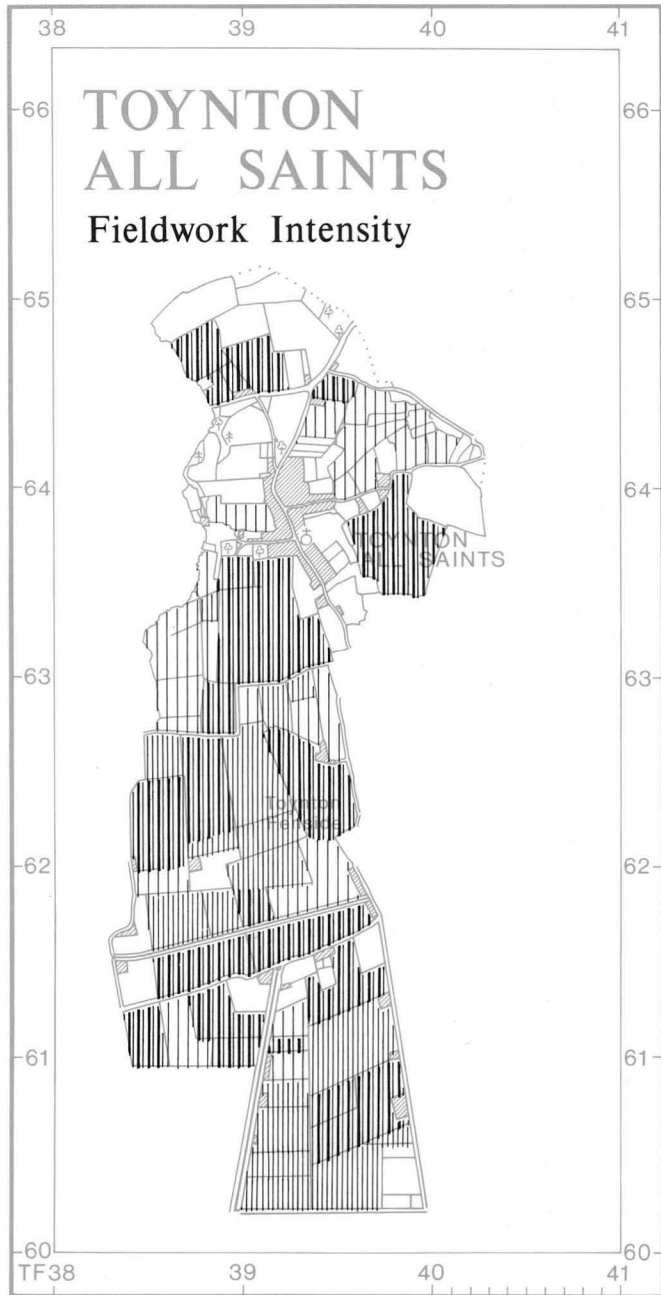


Figure 28 Toynton All Saints: Fieldwork Intensity



Figure 29 Toynton St Peter: Fieldwork Intensity

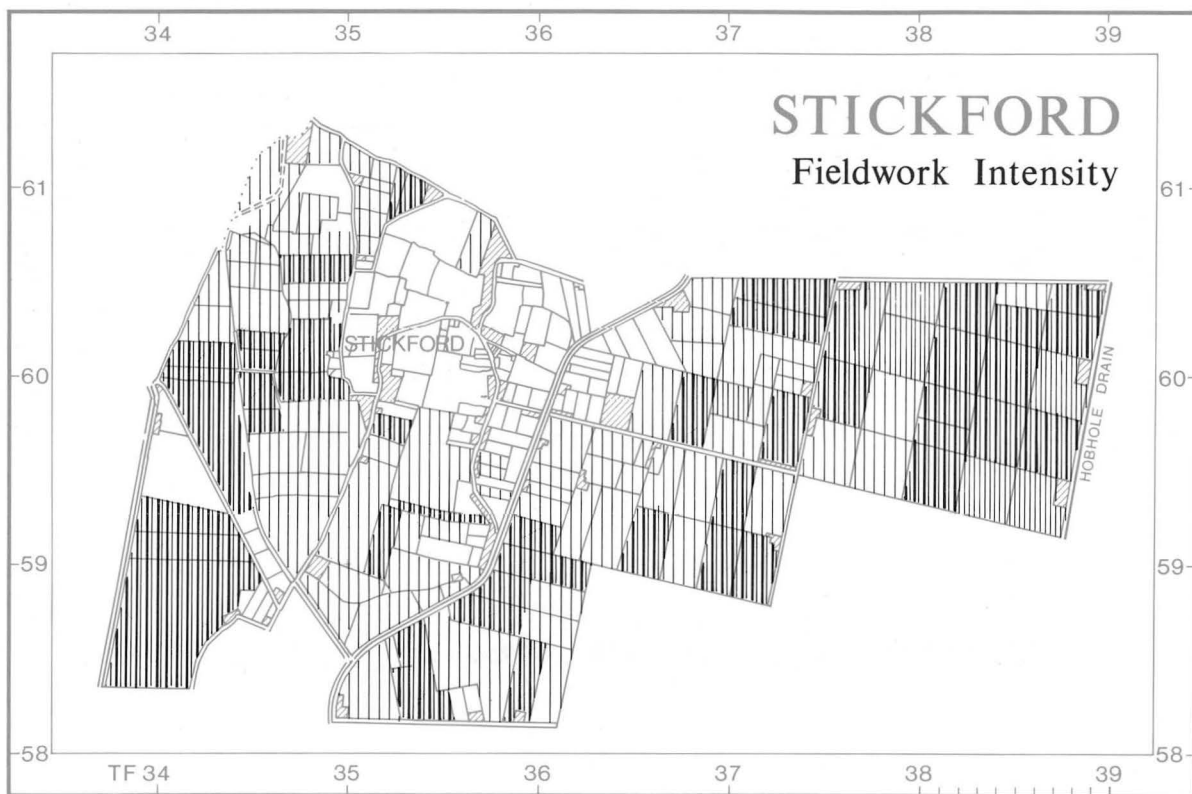


Figure 30 Stickford: Fieldwork Intensity

prehistoric settlement along the northern fen-edge is on the sandstone plateau in the north of the parishes away from the fen, rather than on the fen margins as was commoner in the western fens (Hayes and Lane 1992). Thus, there were options to survey either complete parishes with consequent reduction in the extent of former wetland that could be covered in the time available, or to survey larger areas of empty fen. In the end it was felt that more benefit could be gained from surveying the entire parishes, including the upland areas, in the hope that human responses to the changing environments could be detected.

During survey the officers worked separately. The survey area was divided along the A16 Boston-Grimsby Trunk road through Stickney and Stickford, then along the boundary between East and West Keal. This could have meant that in Stickney and Stickford the same site code prefixes could be in simultaneous use by the two field officers, each referring to different sites. To overcome this practical difficulty, sites west of the A16 in

Stickney were prefixed SKY and in Stickford SKD. To the east STY and STD respectively were used. Sites on the phase maps do not indicate a prefix for the western sites while those to the east are marked with their STY or STD prefixes.

Uplands and fen-edge were walked in lines at 30 metre intervals while much of the Fenland was walked on a twisting, irregular line to aid the mapping of roddons. The discovery of small exposures of the pre-Flandrian surface in East Fen determined that more of the peat fen was walked on 30 metre transects than is usual on peat land.

On certain estates, access was prohibited until February, the conclusion of the shooting season. By then, many autumn sown cereals were of sufficient height to impede survey. Also, the dry spring of 1984 delayed weathering of some soils. This was particularly detrimental where root crops and brassicas were grown. In these cases only a short time elapsed between ploughing and preparation for spring-sown crops.



Figure 31 Stickney: Fieldwork Intensity

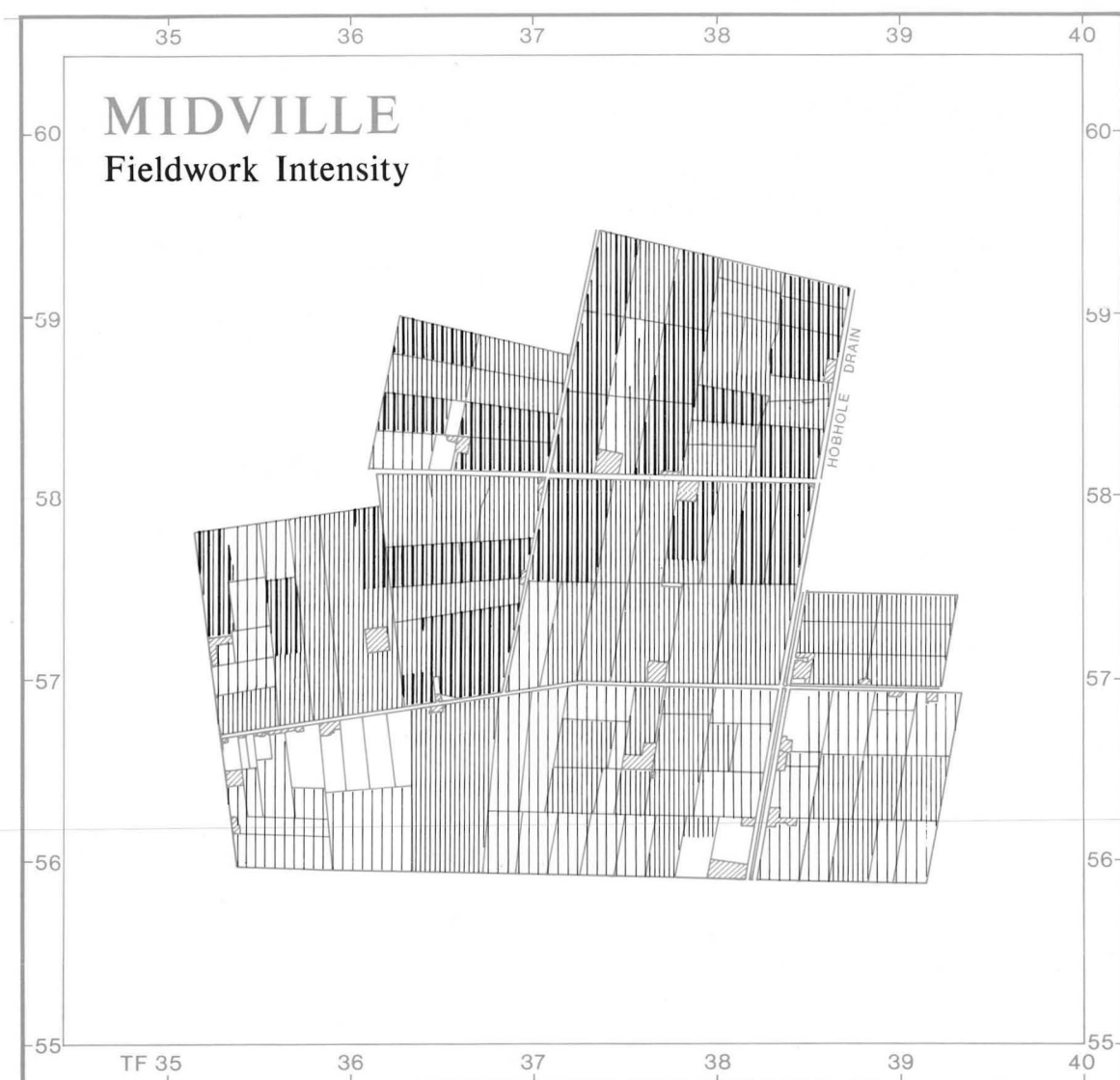


Figure 32 Midville: Fieldwork Intensity

#### IV. Mesolithic – Neolithic

(Figs 33 – 41)

Mesolithic flints are comparatively densely scattered in the surveyed area. EKE 4, WKE 15, 18 and 18A form considerable, predominantly single period, concentrations on the sandy, Frilford soils, and are matched by extensive scatters throughout the higher areas. Away from the plateau there is a marked decrease in the quantities of sites, scatters and single lithic finds of all periods.

During the Mesolithic and Neolithic periods the Lincolnshire Wolds was an area of considerable human activity. The sandstone uplands and chalk wolds inland from the northern fen-edge are the site of virtually all the long barrows known in the county (May 1976, Fig. 21). A group, including the Giants' Hills barrows at Skendleby (Phillips 1936), lies little more than 10km to the north-east of East Keal. No examples of the monument type are known from the limestone uplands which border the western fen-edge and, indeed, the overall early pre-Bronze Age presence there is sparse by comparison.

Despite difficulties in the identification of Earlier Neolithic sites (see Appendix III) there is little reason to suppose that human activity in the northern fen-edge did not continue into and through the Neolithic period. However, only one definite Earlier Neolithic site (EKE 17, Fig. 36) was found, although MID 2 (Fig. 41) is probably from that period (see Appendix III). A combination of resources would have been available. The sandy soils had potential as early ploughland (although there is no direct evidence to support their use as such) and there was also a range of clay soils which would have supported woodland, scrub or grassland where domestic animals could be grazed.

In addition to the abundant flint scatters, 13 Neolithic axes, or axe fragments, have been found in this part of the northern fen-edge, six during this survey. Of the total, five are from West Keal and three from Stickney. One example (EKE A4, Fig. 88 No. 4) is of ungrouped epidiorite. It was found in the still humose margins of East Fen.

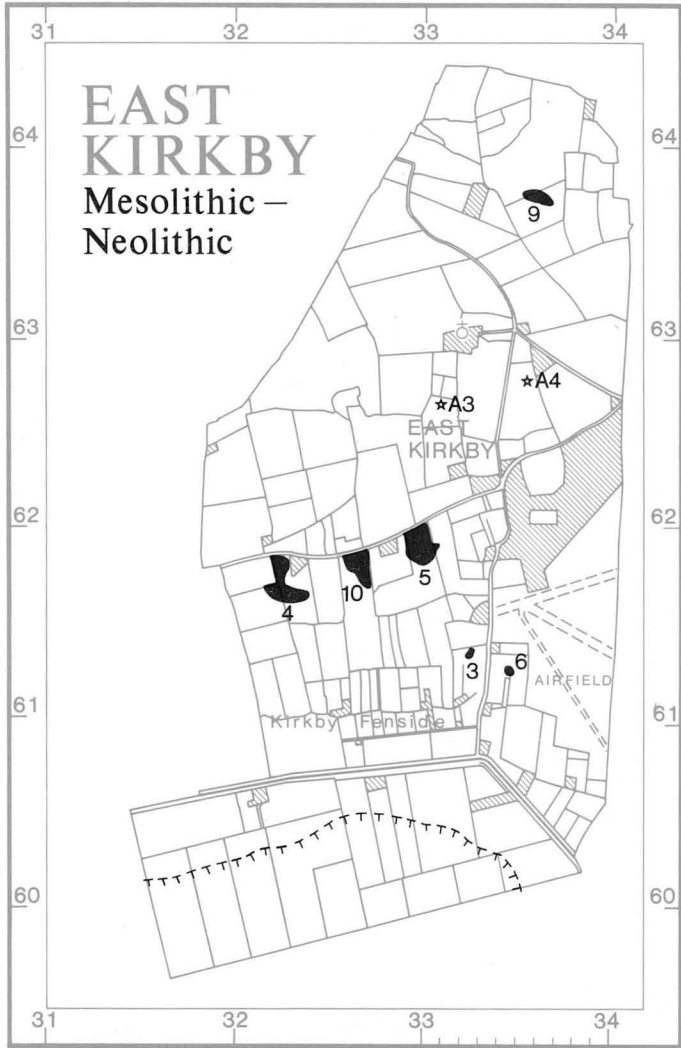


Figure 33 East Kirkby: Mesolithic-Neolithic

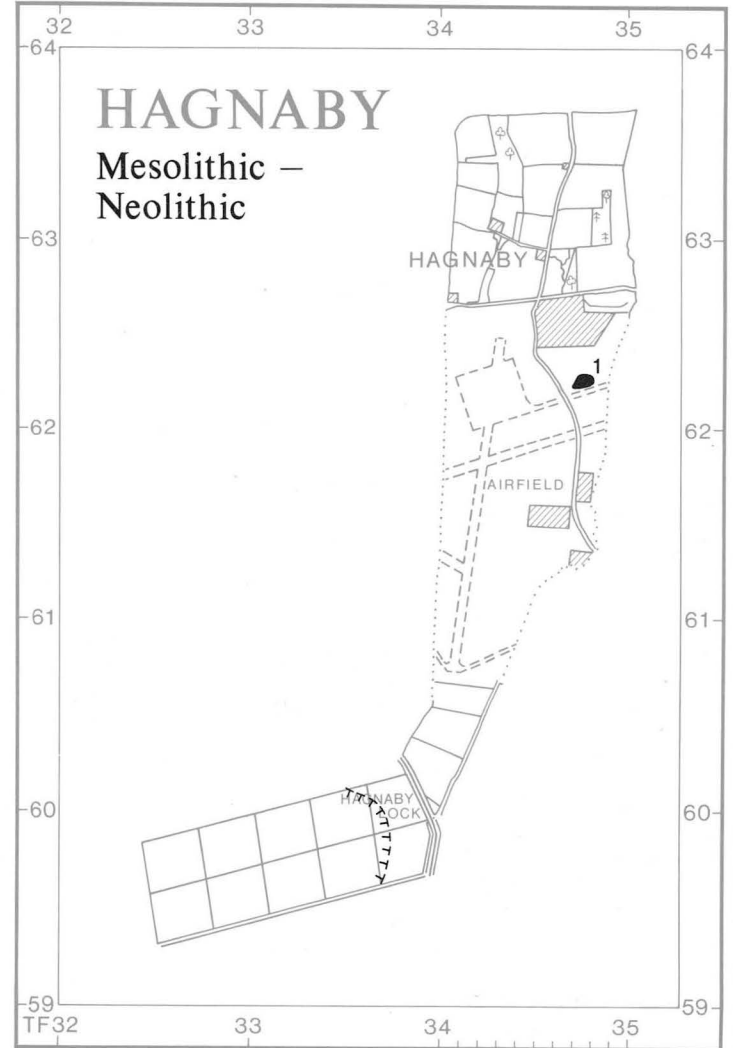


Figure 34 Hagnaby: Mesolithic-Neolithic



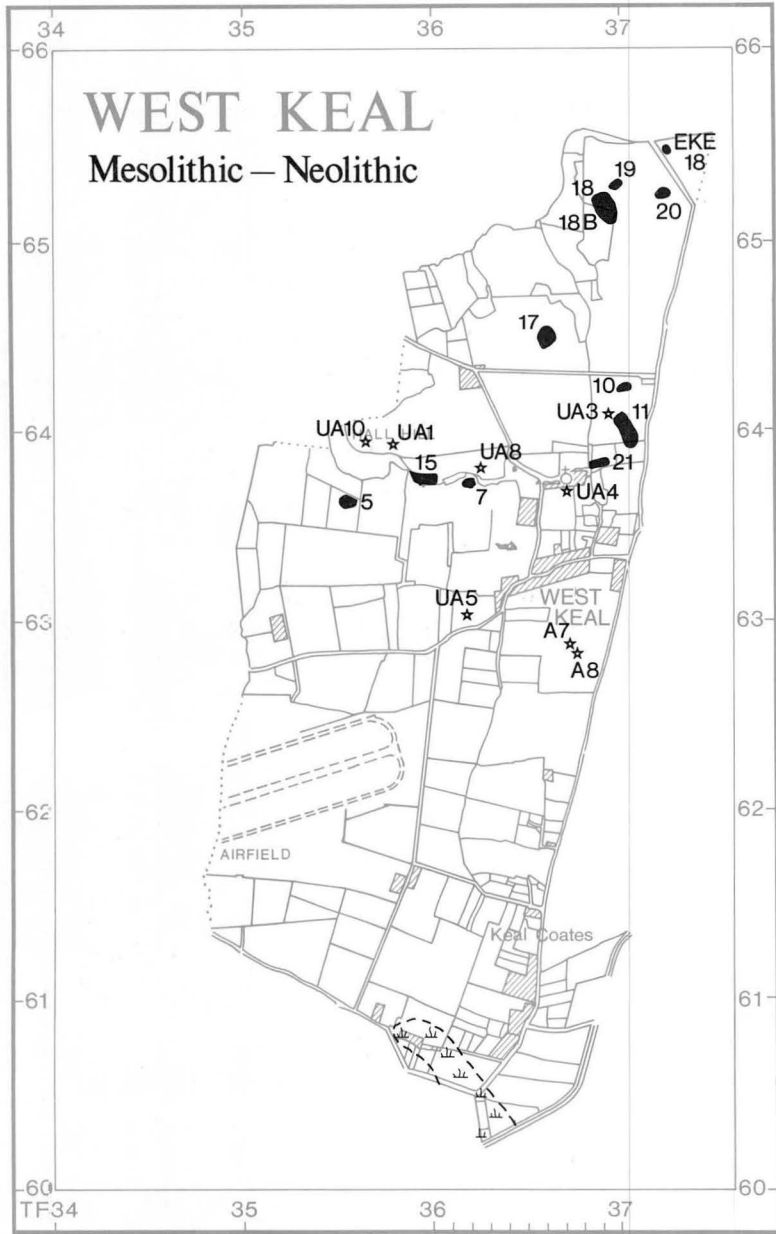


Figure 35 West Keal: Mesolithic-Neolithic

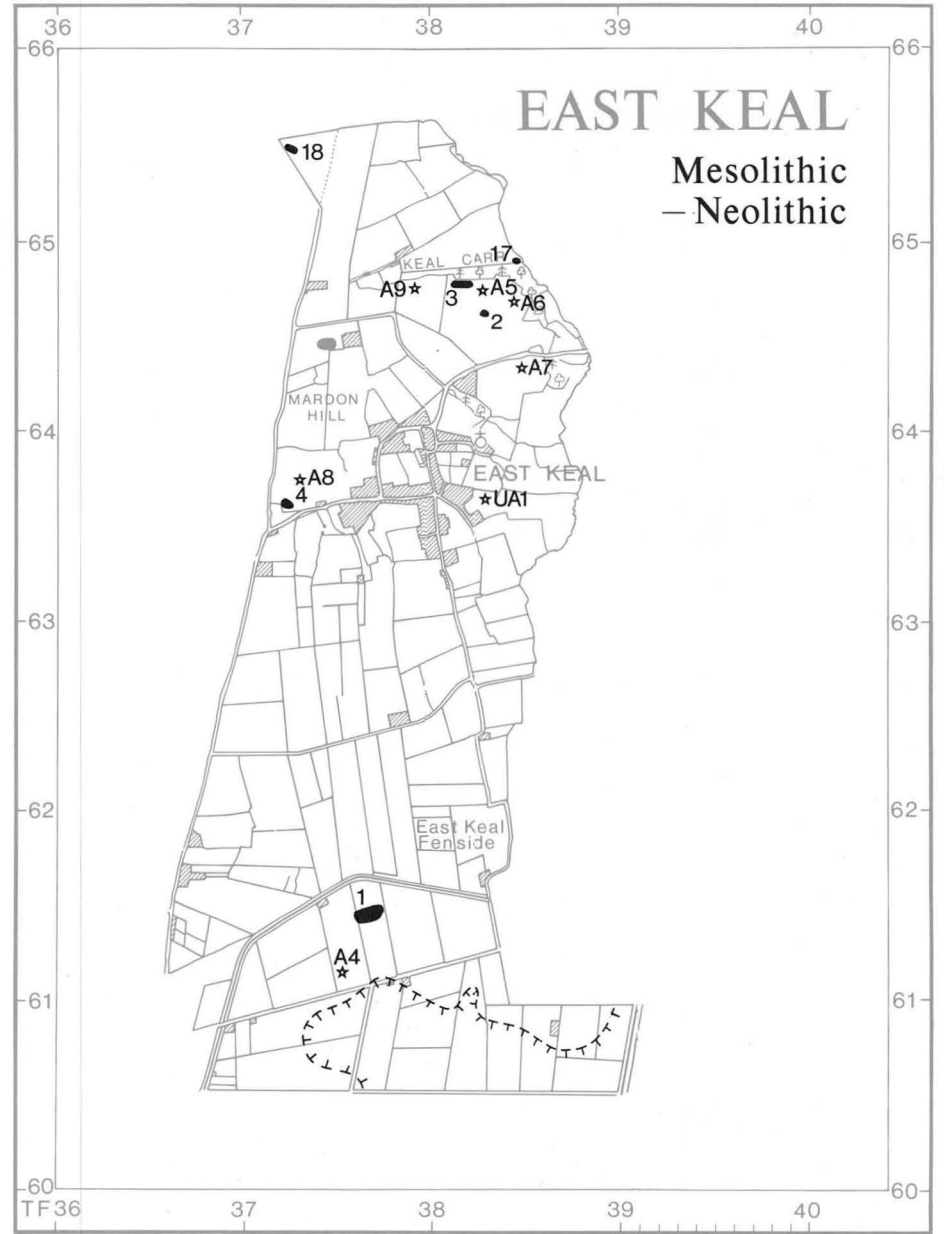


Figure 36 East Keal: Mesolithic-Neolithic



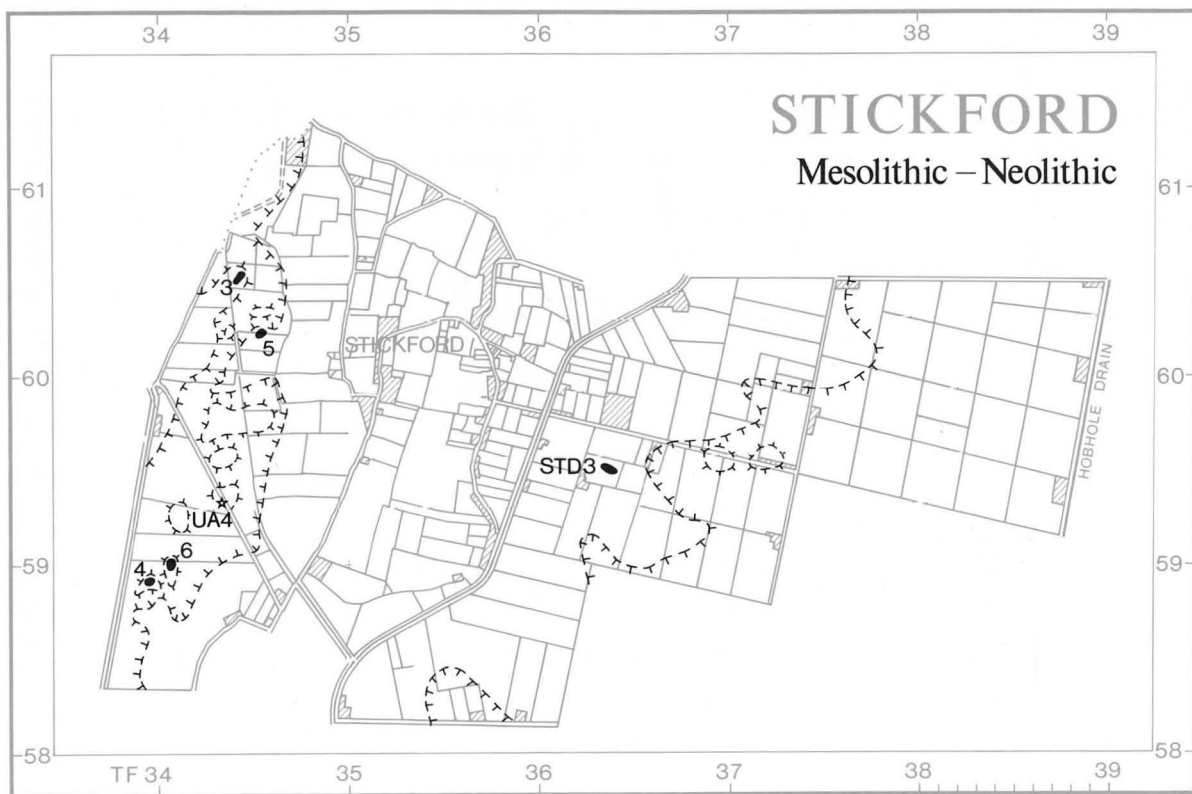


Figure 39 Stickford: Mesolithic-Neolithic

By the onset of the second millennium BC profound environmental changes were affecting the landscape either side of the Stickney moraine. Marine conditions were gradually moving further inland. Impaired natural drainage of upland waters and a rising ground water table meant that the marine environments were preceded by a period of waterlogging during which peat began to form. Much of this initial (basal) peat was buried by inorganic sediments as the marine environments encroached further. The eventual withdrawal of marine influence enabled a second (upper) peat to form, covering much of the silts, sands and clays which had been deposited.

Radiocarbon dates give a broad guide to the sequence. From the contact of the basal peats and pre-Flandrian sand at TF 3797 5480, close to Lade Bank Pumping Station, a date of Q-2547 4460 ± 90BP (3340–2940 Cal.BC) was obtained.

The pollen diagram from the buried soils suggests that prior to flooding, trees, in particular lime (*Tilia*) were common in the area. Waterlogging initiated changes, first to a stage of fen woodland, followed by reedswamp (Waller, forthcoming). A newly cleaned section of drainage ditch was recorded close to the fen-edge at TF 3590 5812 in Stickney parish (Alderton 1984, 21). The

basal peat in this section provided a date of Q-2525 3825 ± 70BP (2440–2145 Cal.BC). This is similar to the date previously cited from Bettinson's Bridge in West Fen Q-2568 3810 ± 70BP (2410–2140 Cal.BC) and suggests that corresponding changes were taking place, on either side of the moraine.

Many of the identified lithics from the northern fen-edge have been grouped into a broad Late Neolithic-Early Bronze Age category. It is a time when the concept of 'fen-edge' first becomes relevant in these parishes. Prior to this, all lithics in the area are derived from upland contexts, *i.e.* not directly affected by wet landscapes. Spatial analyses of these pre-Late Neolithic finds indicate a direct relationship to soil-type and a clustering on the lighter soils.

Much of the area south of the modern East Fen and West Fen Catchwater Drains underwent marine/brackish flooding. This is shown on phase maps of the Early Bronze Age by which time it had become well established. Because it is not feasible to assign Late Neolithic-Early Bronze Age flints confidently to either period, they are shown both on the Mesolithic-Neolithic plans and on those representing the Early Bronze Age. It is under the latter heading that the sites will be further discussed.

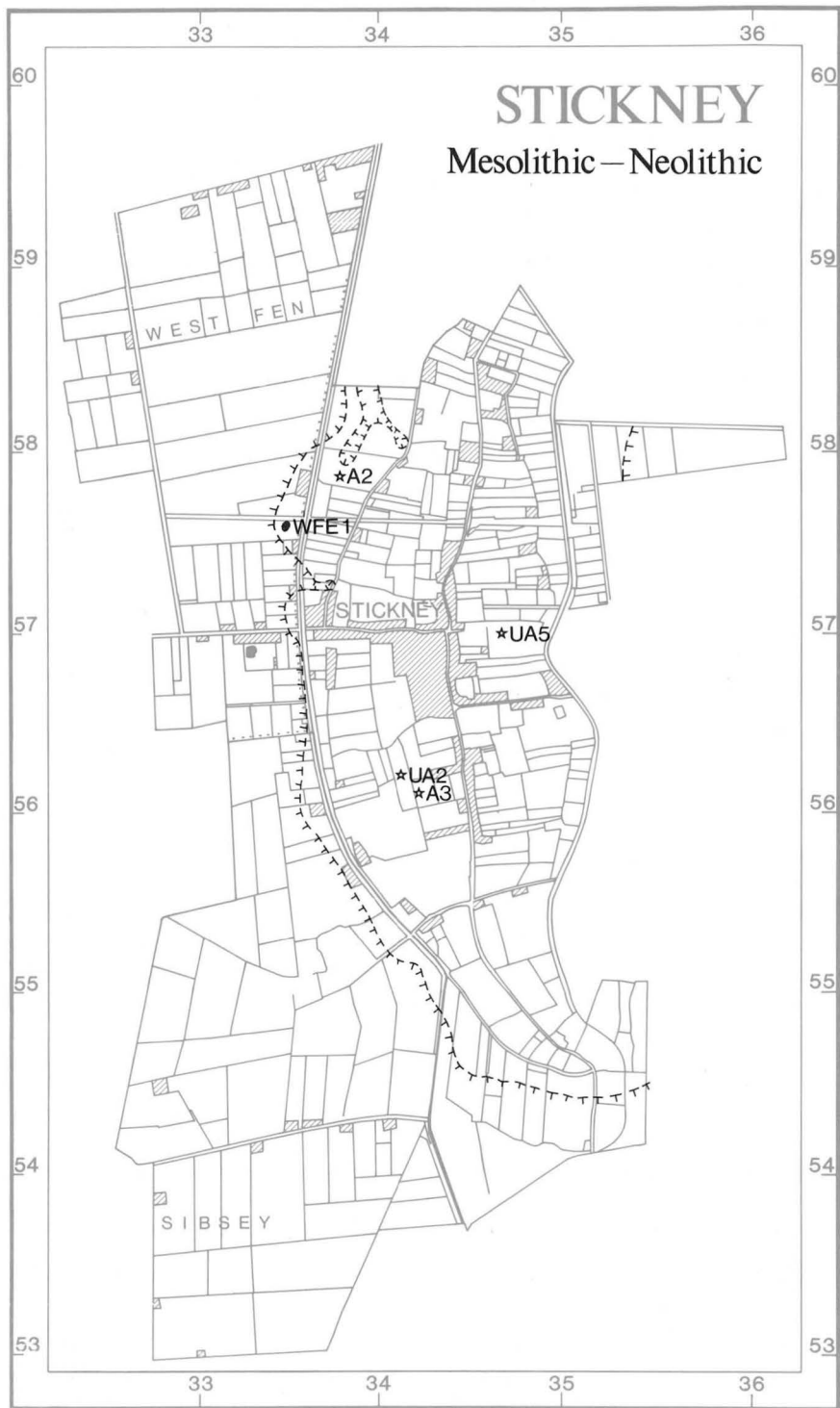


Figure 40 Stickney: Mesolithic-Neolithic

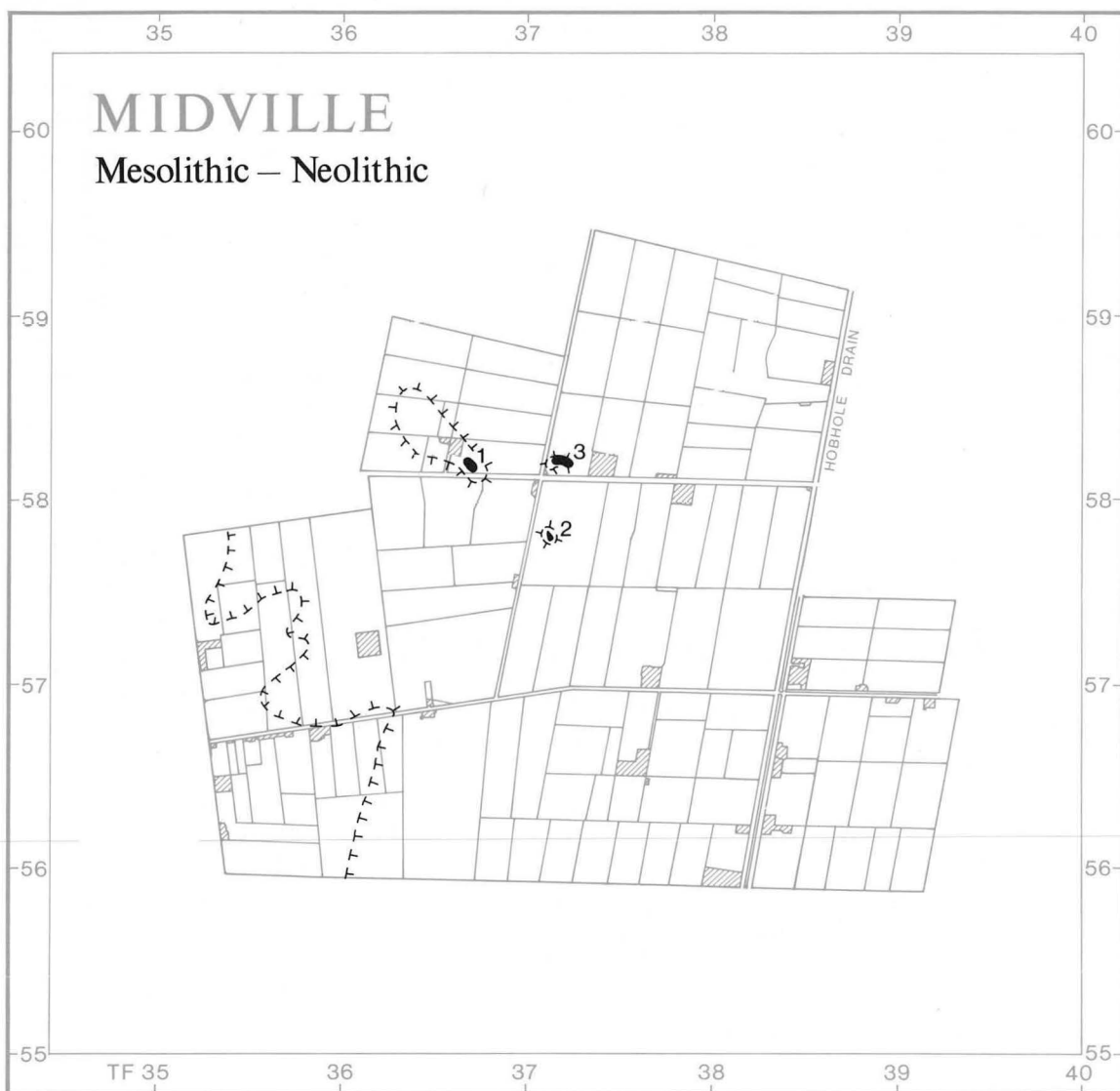


Figure 41 Midville: Mesolithic-Neolithic

## V. Early Bronze Age

(Figs 42–50)

In East Fen the creeks through which the tidal waters drained flowed east towards the Wainfleet area. In the surveyed part of West Fen a large creek taking the waters of Hagnaby Beck meandered south near to the Stickney moraine. The proximity of the major creeks to the west side, and a greater depth of sedimentary deposition has left a more even 'shoreline' there, while the deposits on the eastern side are shallow enabling detached portions of the pre-Flandrian surface, or low islands to protrude.

While settlement and agricultural activity continued on the light soils of the 'uphill' region, the arrival of the wetlands broadly coincided with sporadic settlement along the margins. Doubtless these were bases for people engaged in specific functions dealing with wetland exploitation for the generally clayey soils on which they settled had previously attracted little settlement. Of 26 sites identified as containing predominantly Late Neolithic-Early Bronze Age lithics, 18, or 69%, are situated close to the fen-edge. They form a reasonably clear pattern of human activity

along the fen margin. Many are small sites (perhaps seasonally occupied) on low, sandy or loamy ridges within the clays. There tends to be no general scatter of flint artefacts or waste in this lowland zone. Stone and flint axes have been found on lower ground nearby and these may have been used to construct timber trackways out to some of the small islands such as those in Midville (Fig. 41). Such trackways have been found in other, less intensively cultivated preserved parts of the country, notably in the Somerset Levels (Coles and Coles 1986). A high frequency of flints with serrated edges has been noted from the fen-edge sites and it has been suggested (Appendix III) that these may have been used for cutting reeds. Gloss, created by vegetable matter, is still visible on flints from MID 2. The site was located on one of two sandy islands the surface of which had recently become exposed. MID 1 is situated at about OD, close to the limit of marine clay. Farm buildings on the highest part of the ridge may conceal more of the site.

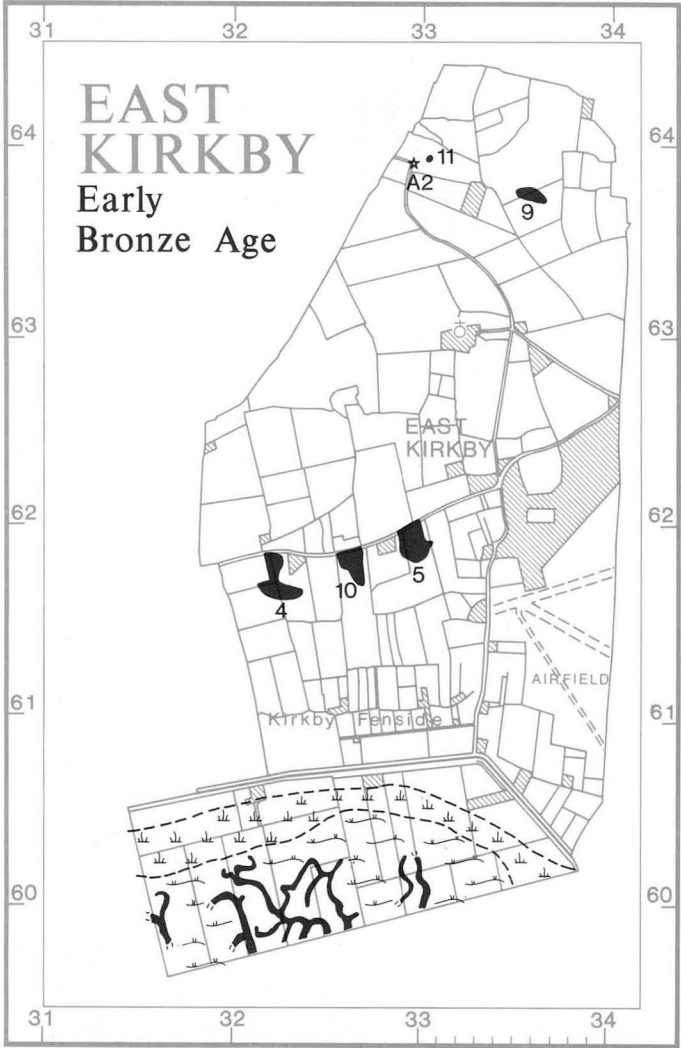


Figure 42 East Kirkby: Early Bronze Age

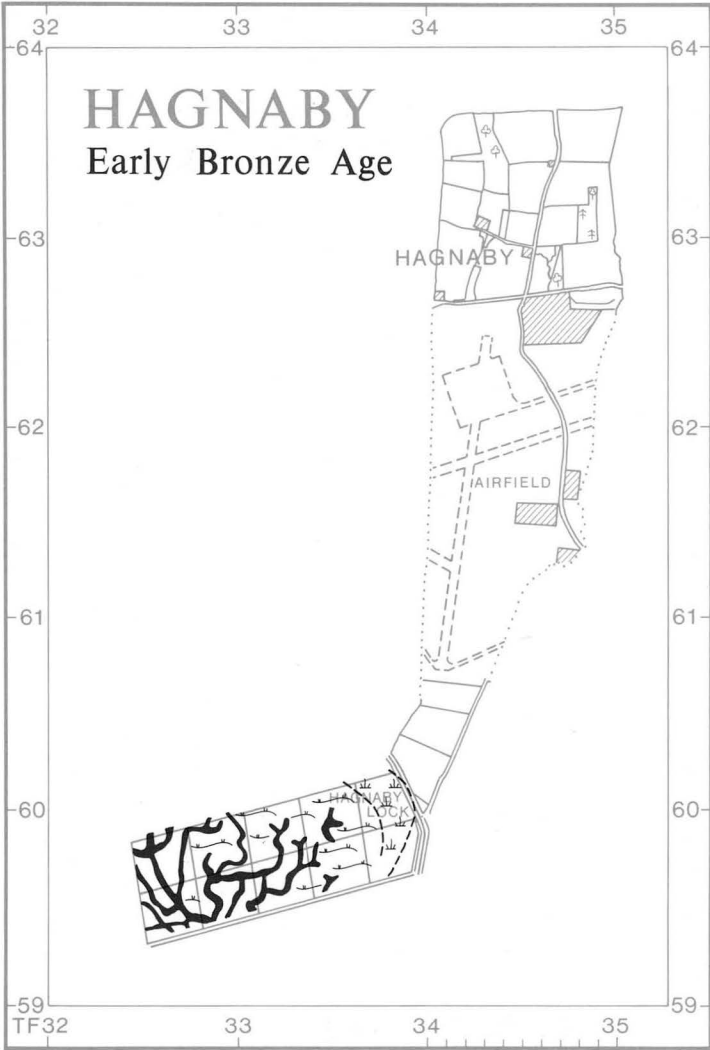


Figure 43 Hagnaby: Early Bronze Age

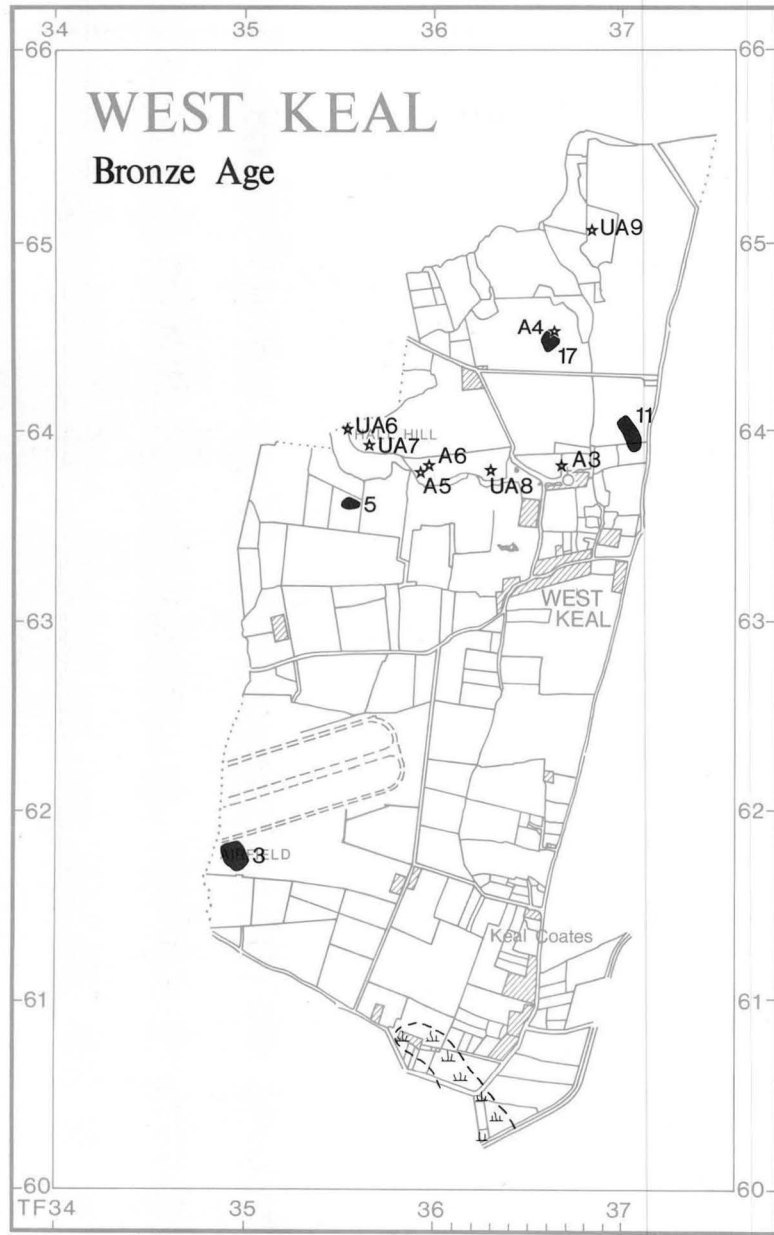


Figure 44 West Keal: Bronze Age

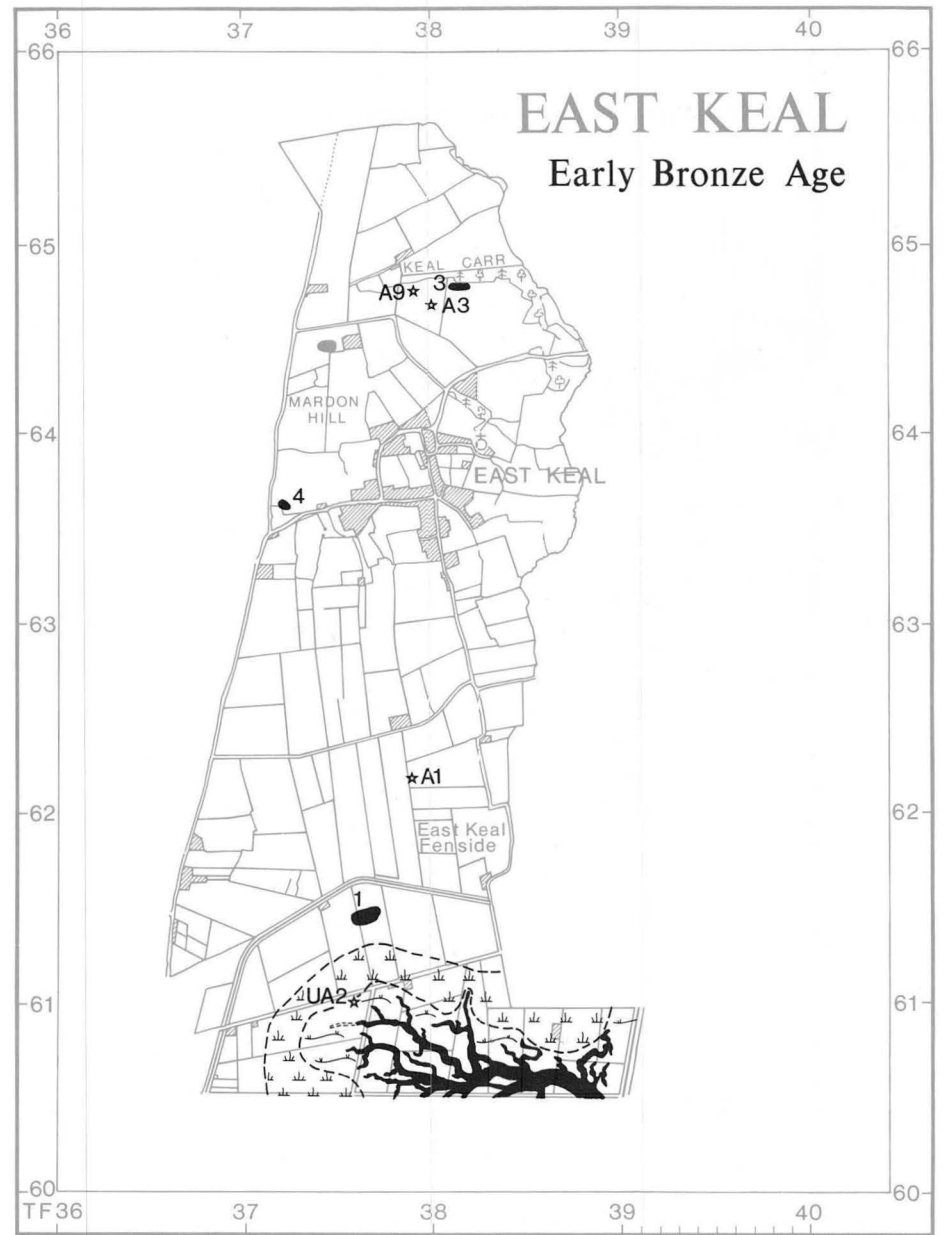


Figure 45 East Keal: Early Bronze Age

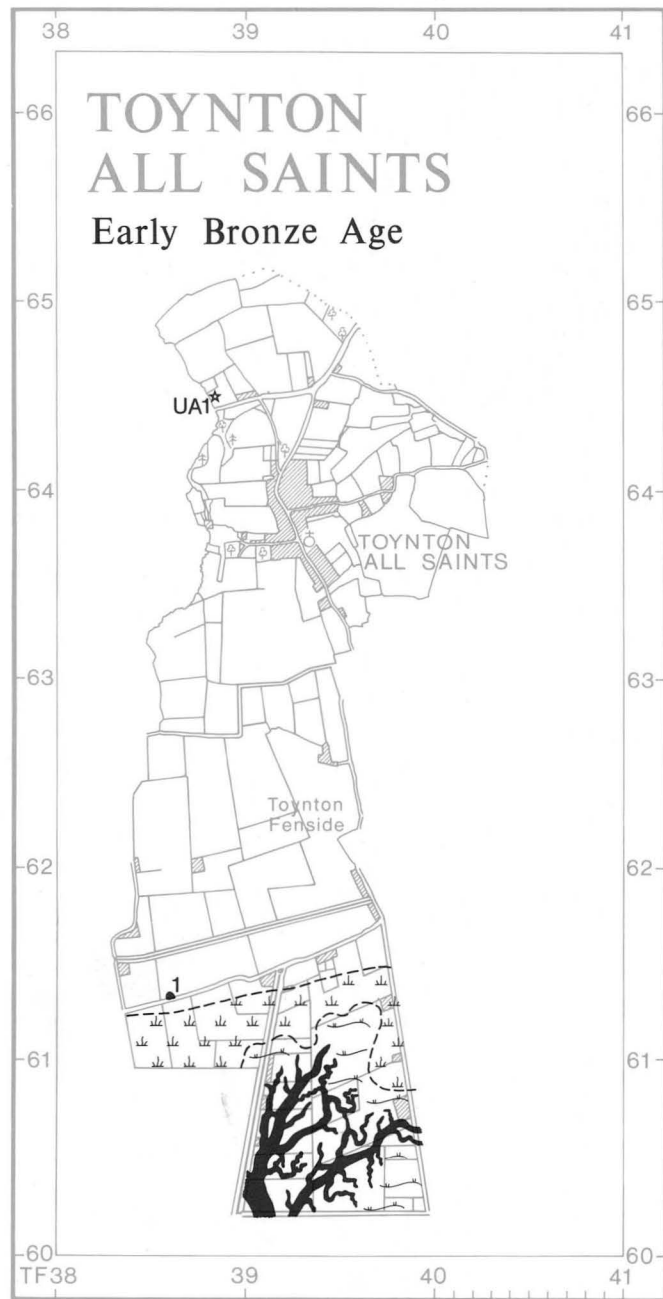


Figure 46 Toynton All Saints: Early Bronze Age

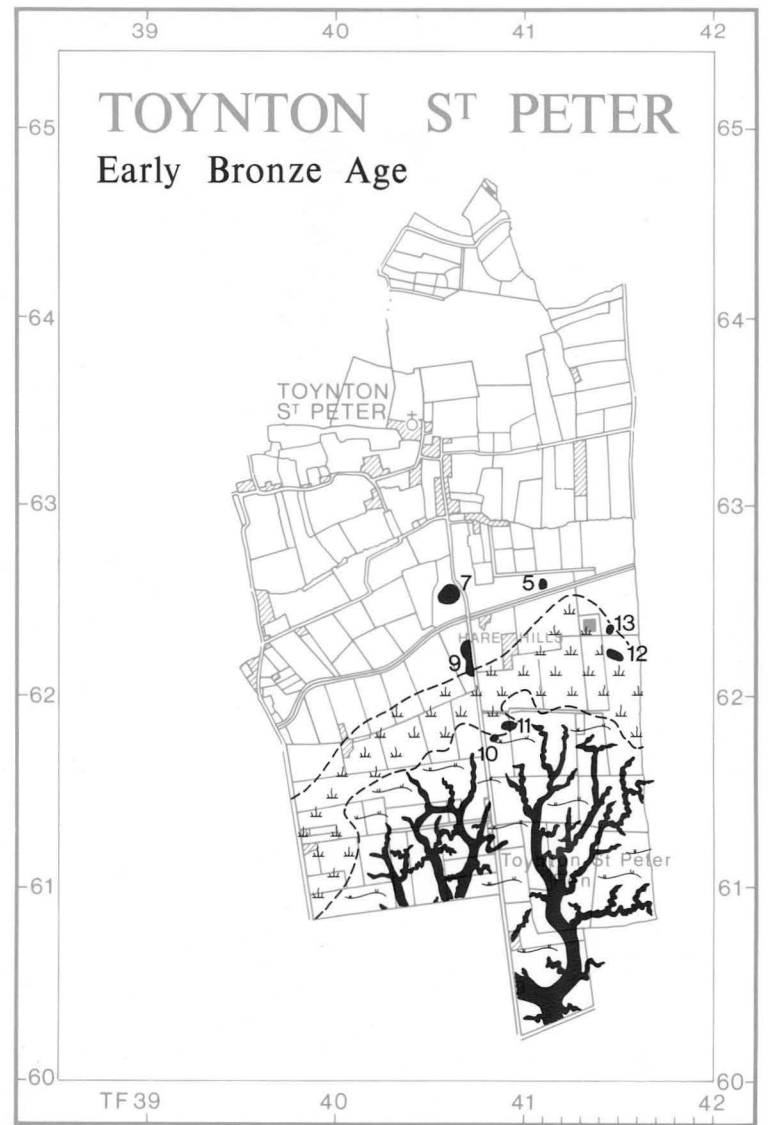


Figure 47 Toynton St Peter: Early Bronze Age



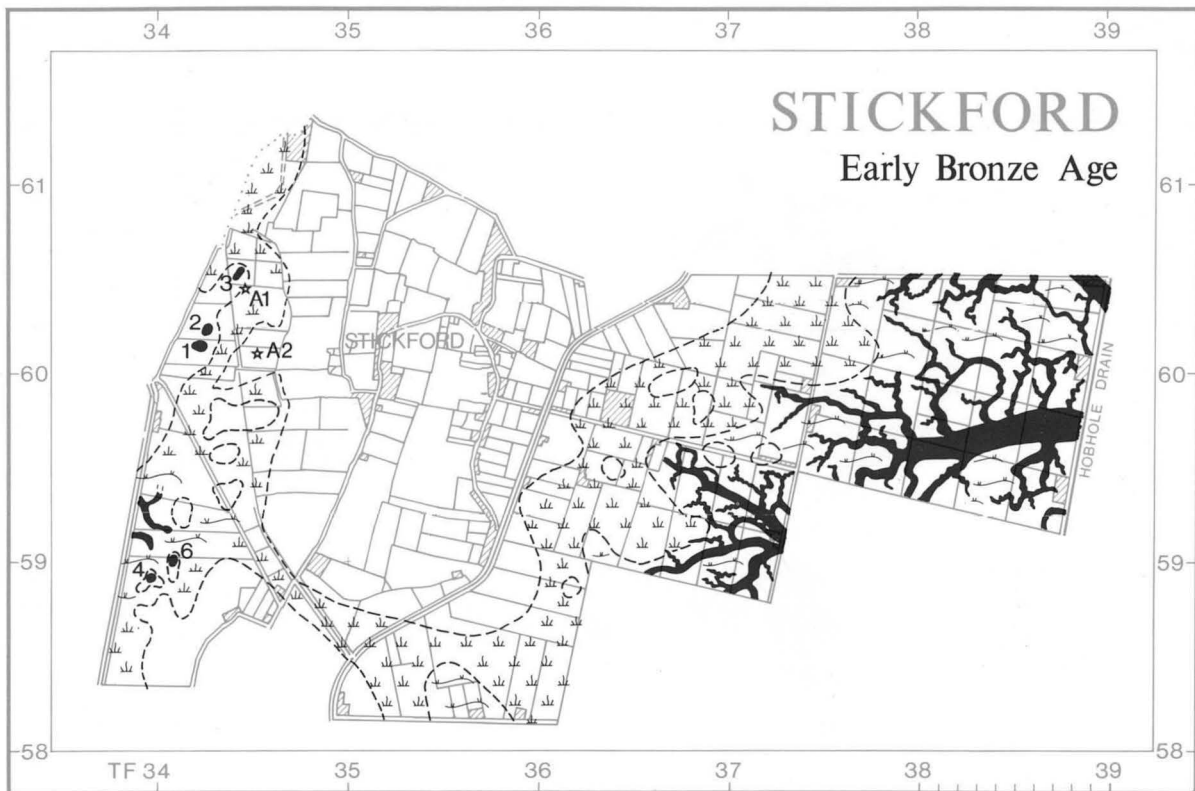


Figure 48 Stickford: Early Bronze Age

The Midville islands proved difficult to locate in the field and their surfaces lay just below the general level of the field. This may result from peat having developed on their surfaces prior to and during the deposition of the surrounding marine clay. Subsequent wastage of the peat would have created the 'inverted island' effect in the present landscape. Whatever the cause, these sites are important for they may continue beneath the Flandrian deposits. If so, there is a likelihood of them yielding buried, waterlogged organic remains. The Midville sites (MID 1–3) yielded a few Earlier Neolithic pieces and may have a longer history of human activity than other nearby fen-edge sites. Marine flooding and peat formation late in the Neolithic and during the Bronze Age would have terminated the use of these sites.

On the edge of West Fen, three lithic sites in East Kirkby (EKI 4, 5, 10) are larger than those bordering East Fen in terms of both area and quantities of finds. A high ground-water table may be the reason these sites lie further 'inland' than their East Fen counterparts. They also occupy a stretch of the generally drier, Wick soils. Some of the finds from the East Kirkby sites appear to be slightly later in date than those from sites bordering East Fen. The single radiocarbon date that is available from West Fen (see above) is from the western part near the Witham, an area that may have suffered marine flooding slightly earlier than the Hagnaby area, thereby enabling the lithic sites to continue into the Bronze Age. The lithic sites grouped on the sand islands at the junction of Hagnaby Beck and the Fen Basin also continue

well into the second millennium BC. Of these, SKD 1 and 3 are accompanied by sherds of Early Bronze Age pottery, with grit and flint inclusions in character resembling some of the Norfolk fen-edge finds. The sites are low-lying and bordering the stream and would seem to have been vulnerable to inundation.

The Stickford pottery is amongst the oldest collected during the Fenland Survey in Lincolnshire. However, Clarke (1970) had previously noted a small quantity of Late Neolithic Peterborough Ware and some Beaker sherds from Hall Hill, West Keal. A further Beaker sherd (A5) was found on Hall Hill. Additional Early Bronze Age sites were found, one on the airfield at West Keal (WKE 3) and a second on the hill further east (EKE 4). Closer to the fen-edge, finds of a Collared Urn rim and associated sherds from TOP 5 suggest a funerary site, as does a food-vessel sherd from the upland (WKE A4). A further upland site EKI 11, may be the ploughed down mound of a barrow and a series of cropmark ring ditches on the East Keal-Hundleby border may have similar origins (Plate V). The edges of the sandstone plateau would have provided conspicuous settings for burial mounds and may well have been widely used for such purposes. However, a combination of light, sandy soils and exposed locations would make any such monument particularly susceptible to erosive affects of wind and weather. A Middle Bronze Age cinerary urn (WKE UA6) is known from the edge of Hall Hill, West Keal (LMSMR) and confirms at least some disposal there of the Bronze Age dead.



Figure 49 Stickney: Early Bronze Age

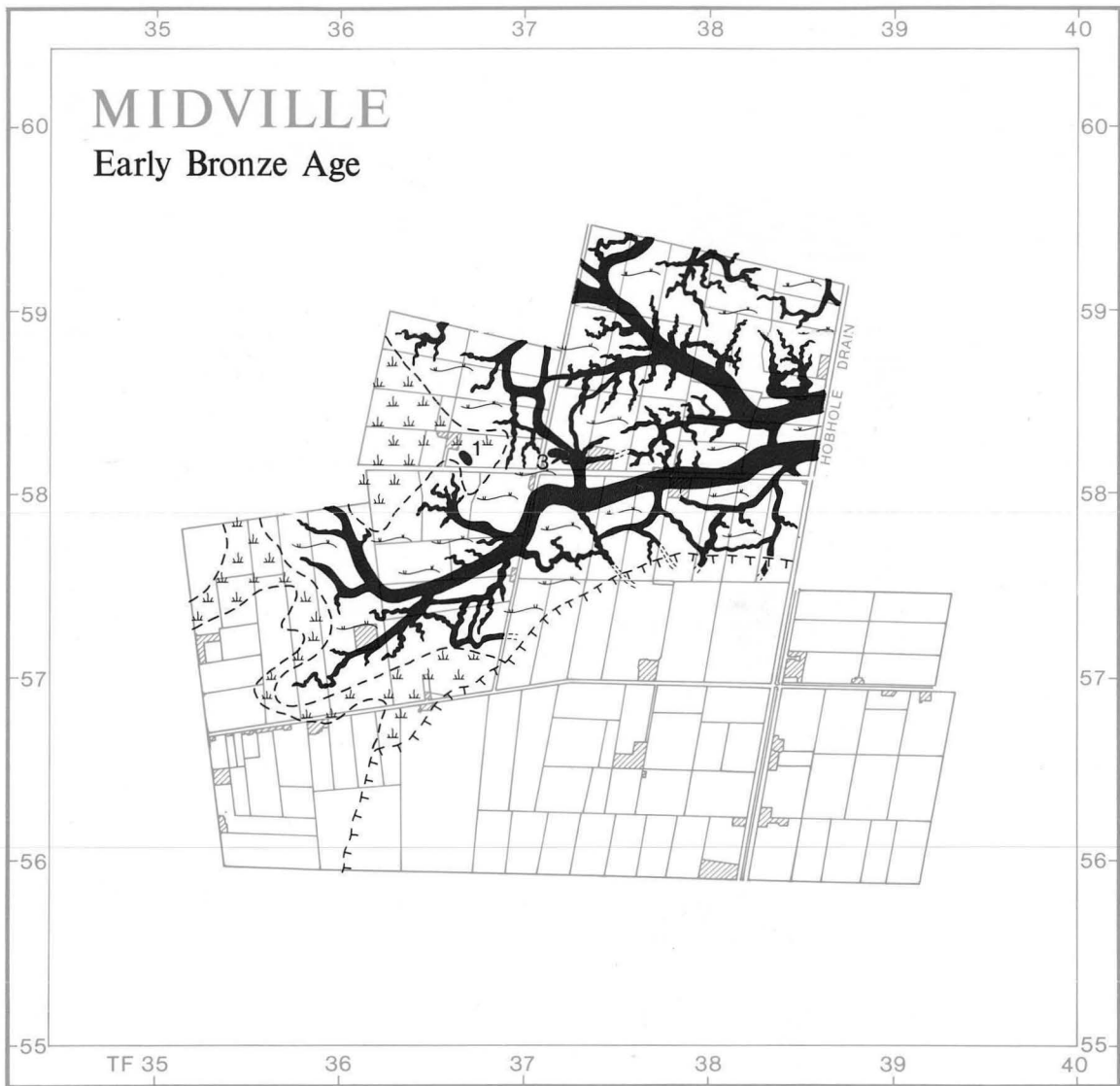


Figure 50 Midville: Early Bronze Age



Plate V Cropmarks of probable prehistoric origin on upland soils formed on Spilsby Sandstone. East Keal-Hundleby border.

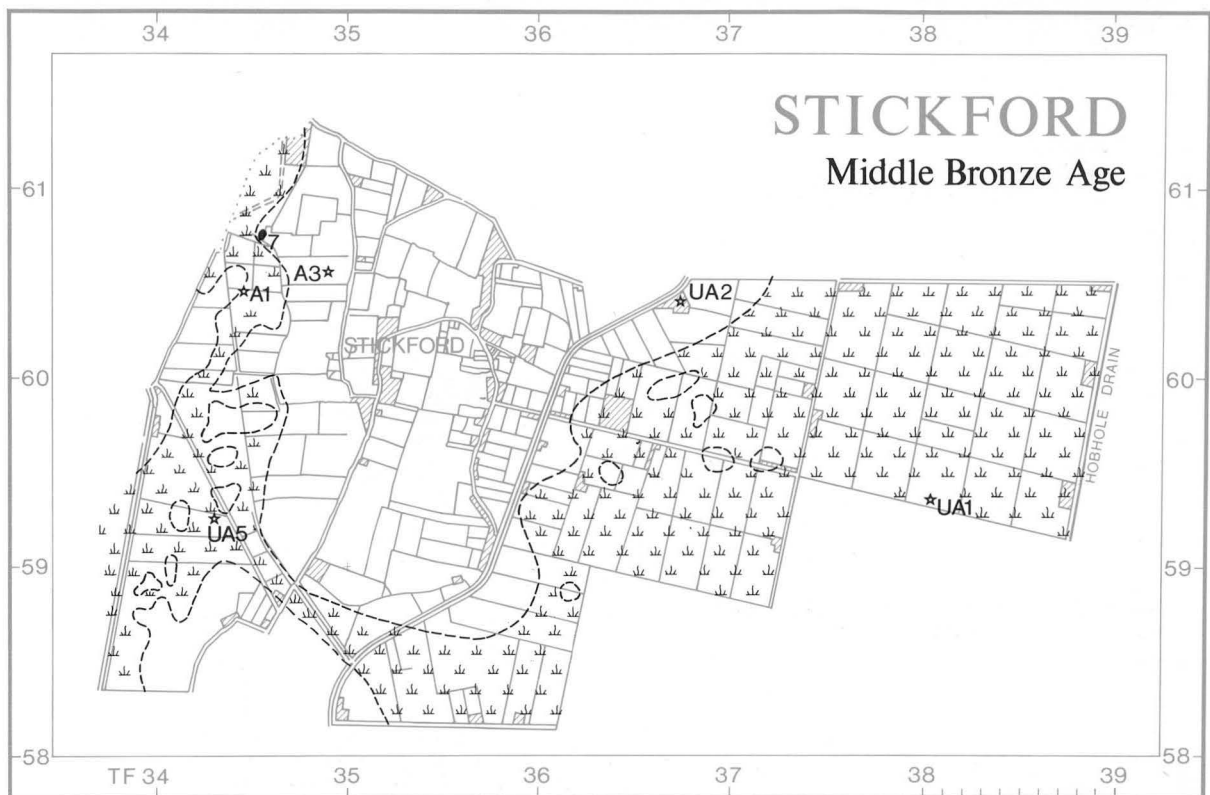


Figure 51 Stickford: Middle Bronze Age

## VI. Middle Bronze Age

(Figs 51 and 52)

If the original onset of waterlogging occurred more or less simultaneously in East and West Fens, then the development of their environments took on a different character during the second millennium BC. As far as can be understood from the limited amount of palaeo-environmental study undertaken the West Fen suffered no major breaks within its sedimentary sequence at this time. Silts and clays continued to be deposited until much of the surface had built up to between 1.5m and 2.0m OD.

By the middle of the second millennium BC freshwater environments were once again dominant in East Fen. Peat formation was widespread between the Stickney moraine, the northern fen-edge and the encircling coastal saltmarshes.

Radiocarbon dates are available from peat which developed above the initial marine deposits in East Fen. At Site 'A' in the Hobhole Drain section (TF 3836 5698) peat was forming by Q-2562 3310 ± 65BP (1730 – 1520 Cal.BC) (Waller 1988b, 338). At Hobhole 'B' (TF 3822 5610) the corresponding date was Q-2564 3390 ± 70BP (1770 – 1605 Cal.BC) and, 3km to the north-west, in the Stickney section, the date obtained was Q-2526 3170 ± 70BP (1525 – 1460 Cal.BC).

Subsequently, a further brackish/marine inundation affected the southern part of Midville. Its roddons were mapped in the field as having north-south tendencies in contrast to the west-east alignment of the earlier episode. At Waller's (1988b, 338) Hobhole Site 'B' (TF 3822 5610) this later phase was shown to have commenced sometime after Q-2563 3120 ± 70BP (1485 – 1320 Cal.BC) and may have been short-lived for it deposited no great depth of

sediment. Following that phase, peat once more blanketed the entire area of East Fen and was maintained until its widespread disappearance subsequent to 19th-century drainage.

Apart from the Witham at the extreme west, few significant streams entered West Fen and, consequently, peat did not develop there so readily. Accumulation of inorganic sediment had been substantial however and at some time prior to the Roman period Hagnaby Beck is likely to have transferred its outlet into the lower East Fen through the narrow gap separating Stickney and Stickford.

There is little cultural or settlement evidence to indicate how the population of the northern fen-edge reacted to changes in their local environment. Several finds of single sherds of Middle Bronze Age pottery were made and a small site, SKD 7, was recorded on the sand hills by Hagnaby Beck but, on the whole, settlement evidence is sparse by comparison to the western fens. As elsewhere around the Fenland, evidence for Late Bronze Age settlement is rare. A socketed axe, along with earlier palstaves and a basal looped spearhead, are known from the fen margins and fens in Stickney, Stickford and Midville (Davey 1973; Gardiner 1980 and see gazetteer). Bronze axes from the contemporary fen may represent losses sustained during trackway construction although the deliberate deposition of bronzes in wet places is a recognised, if unexplained, facet of Bronze Age behaviour (e.g. Barrett and Needham 1988).

Phase maps representing the Middle Bronze Age period which depict the second marine inundation have

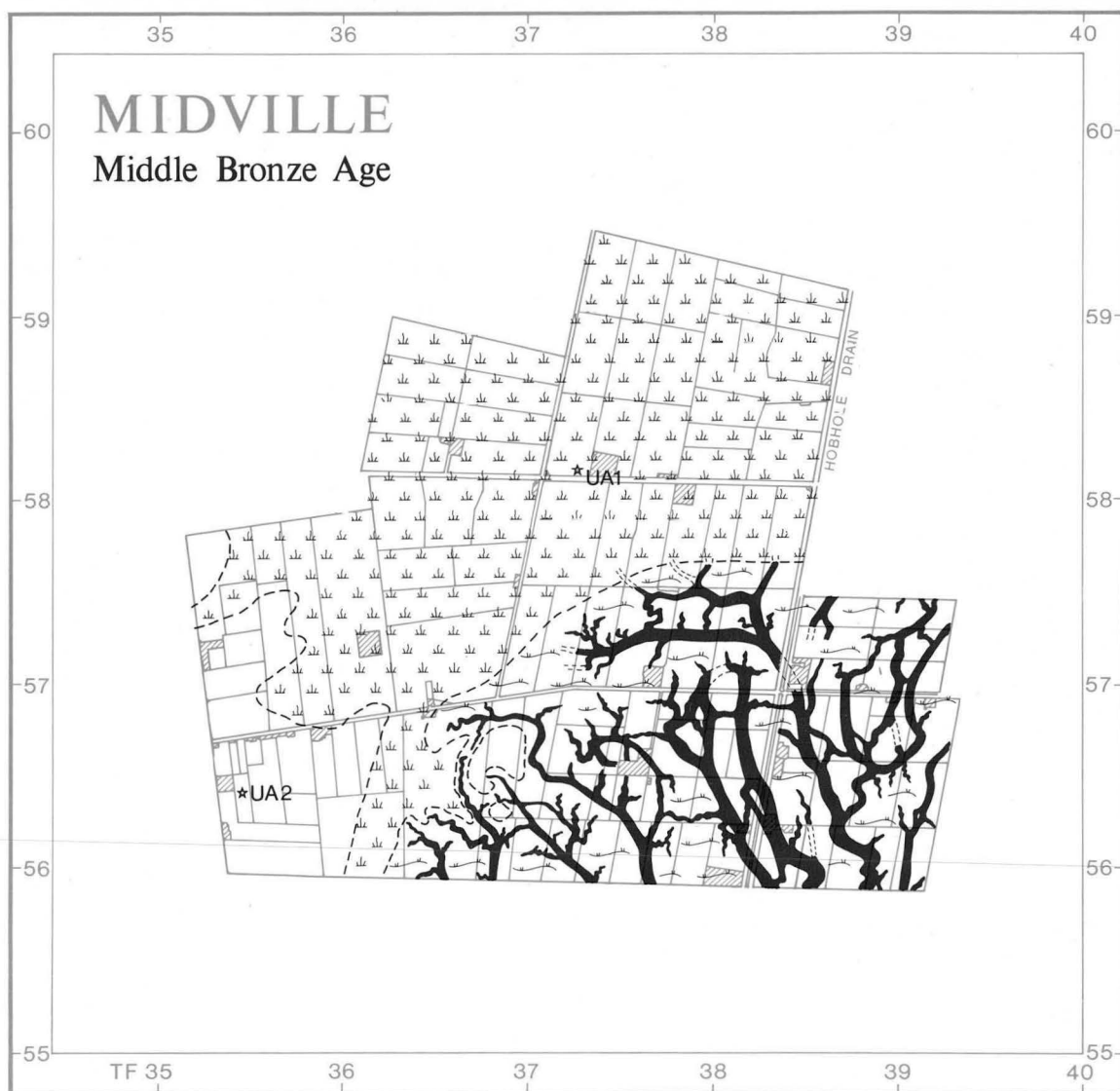


Figure 52 Midville: Middle Bronze Age

only been necessary for Midville and Stickford (Figs 51 and 52). The influences of this occurrence failed to penetrate further north. There the environment would have changed little during the Bronze Age.

## VII. Iron Age

A marked lack of information for the Iron Age has obviated the production of plans for that period. There is one previously recorded object of the Iron Age that is of particular interest. It was found on Hall Hill, West Keal and is an Iron Age vessel, said to be probably related to pottery accompanying some of the rich Yorkshire burials (Whitwell 1970, 6). The nature of its discovery is not known.

Little can be read into the lack of evidence of Early Iron Age activity in the northern fens for it has been a recurring theme of the Lincolnshire survey.

What is noticeable and significant is the contrast in Iron Age finds overall on the northern fen-edge to those from the western edge. In the north only four sherds (from

TOP 4AD), could positively be assigned to the (Middle) Iron Age. This compares with over 1200 in the western fens (Hayes and Lane 1992). One major difference between the northern and western edges in the Iron Age is the absence of salt production sites in the north. Many of the Middle Iron Age pottery sherds from the western edge derived from saltmaking sites. The northern edge lay beyond the range of tidal influence thereby denying the settlers in the north the opportunity to engage in this economically rewarding industry.

The undistinguished nature of much of the pottery has resulted in the Iron-Age Roman transition having little definition in this area. The site at TOP 4 continued, or was re-established, in the Roman period. Both the decorative style and form of the Iron Age sherds from the site suggests that they date from between c. 400 and 150 BC, but that may be too early. In addition to the four Middle Iron Age and 158 Roman sherds on the site there are 20 that remain unclaimed by either of the relevant specialists and could fit into either category. TOP 4 also yielded four sherds identified as 'prehistoric' but, because of the unfamiliarity of the fabrics, not more precisely

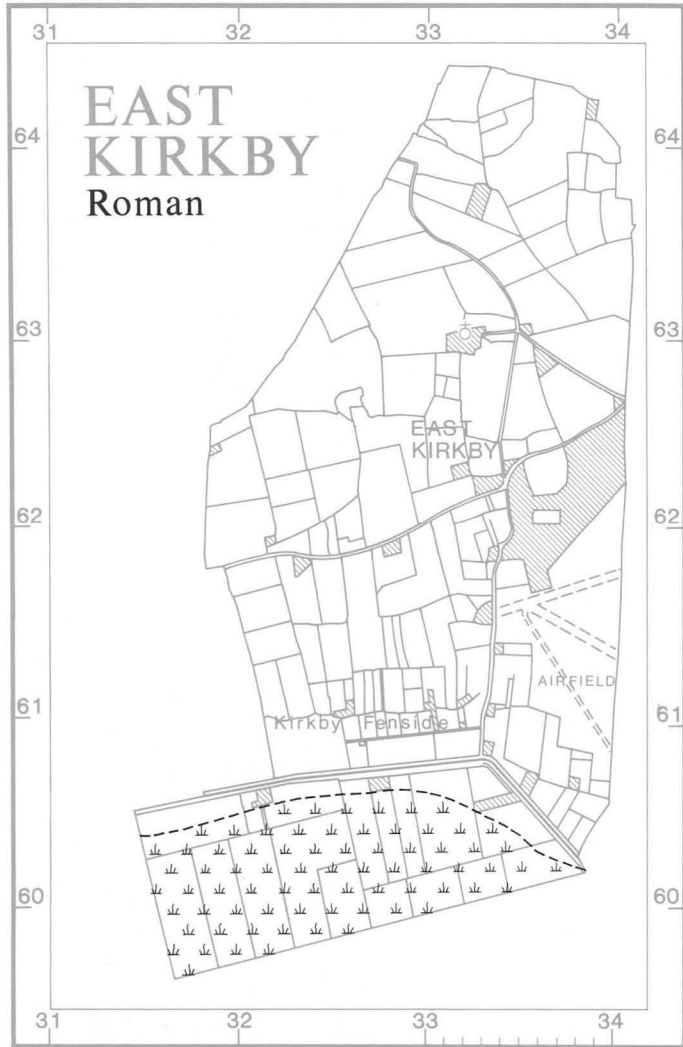


Figure 53 East Kirkby: Roman

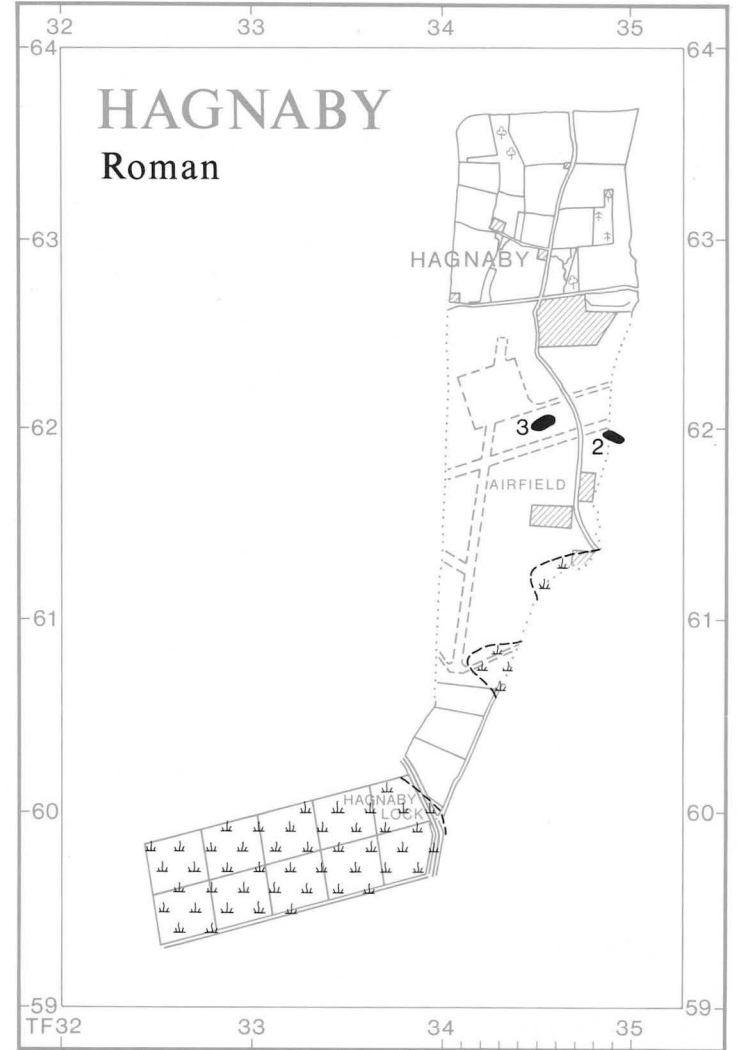


Figure 54 Hagnaby: Roman

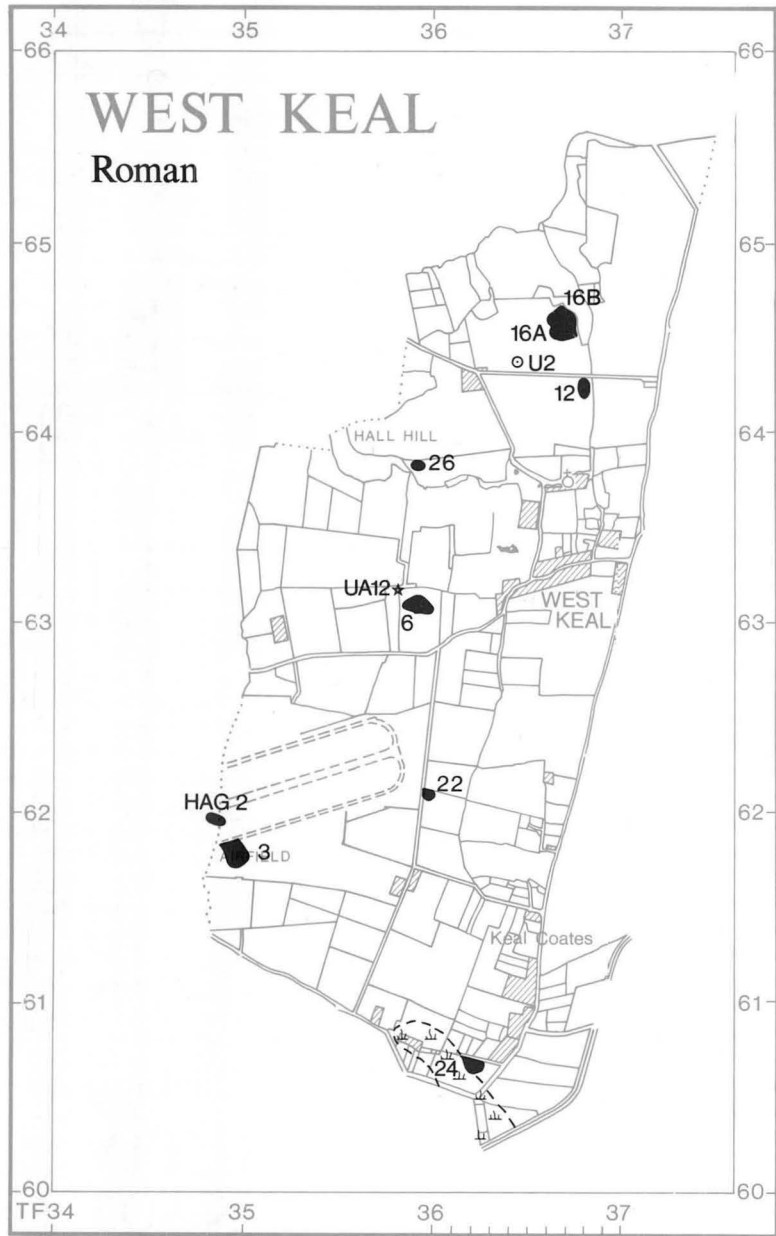


Figure 55 West Keal: Roman

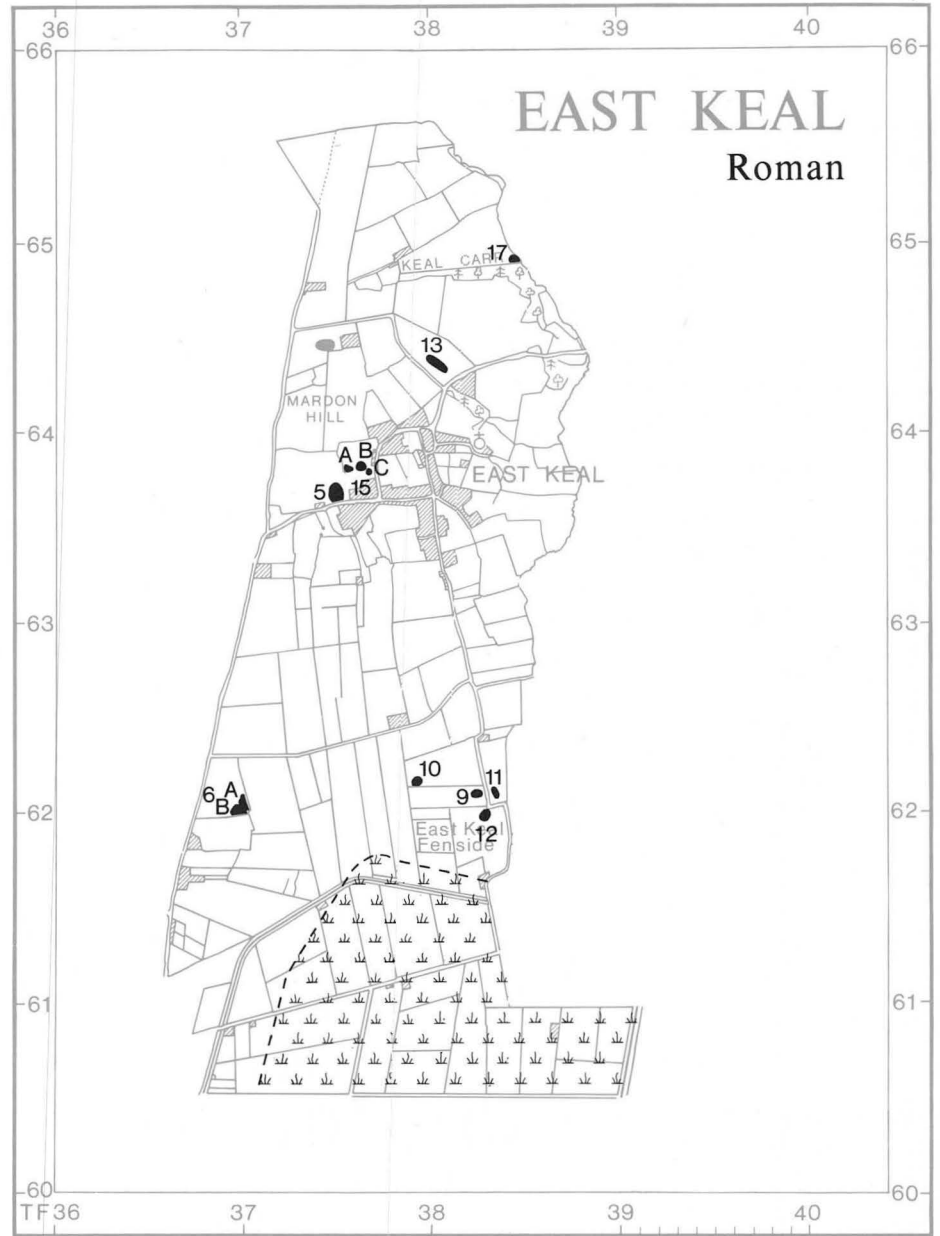


Figure 56 East Keal: Roman

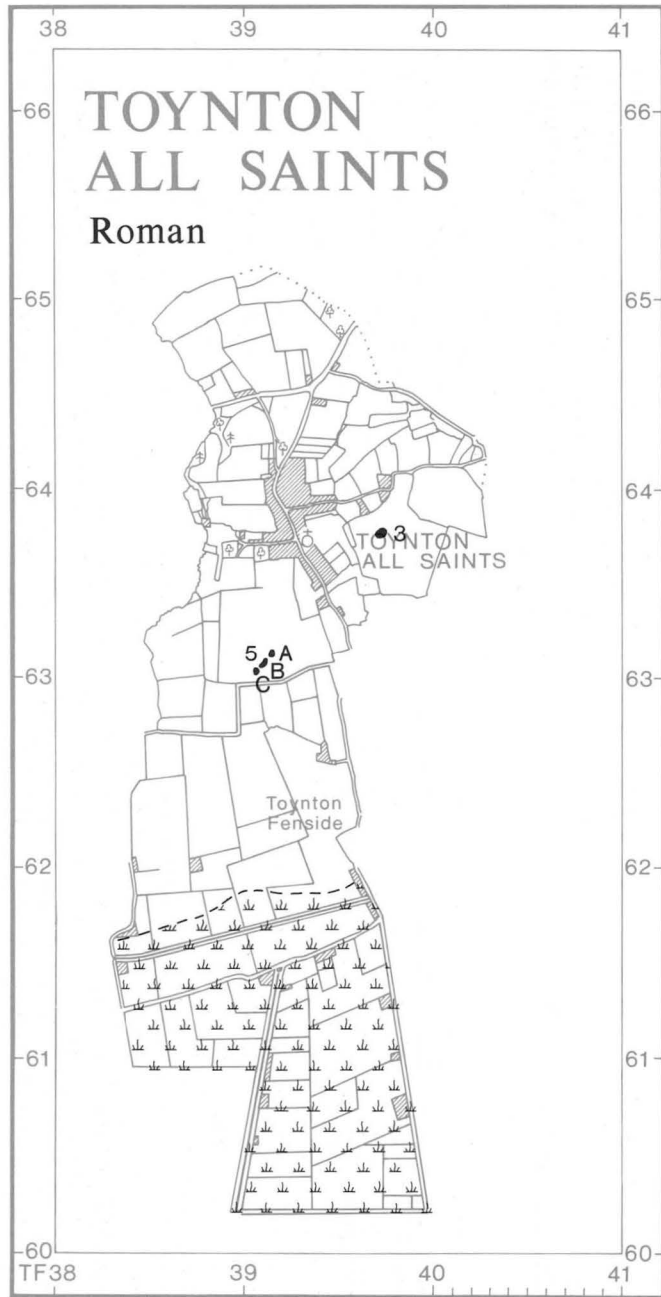


Figure 57 Toynton All Saints: Roman

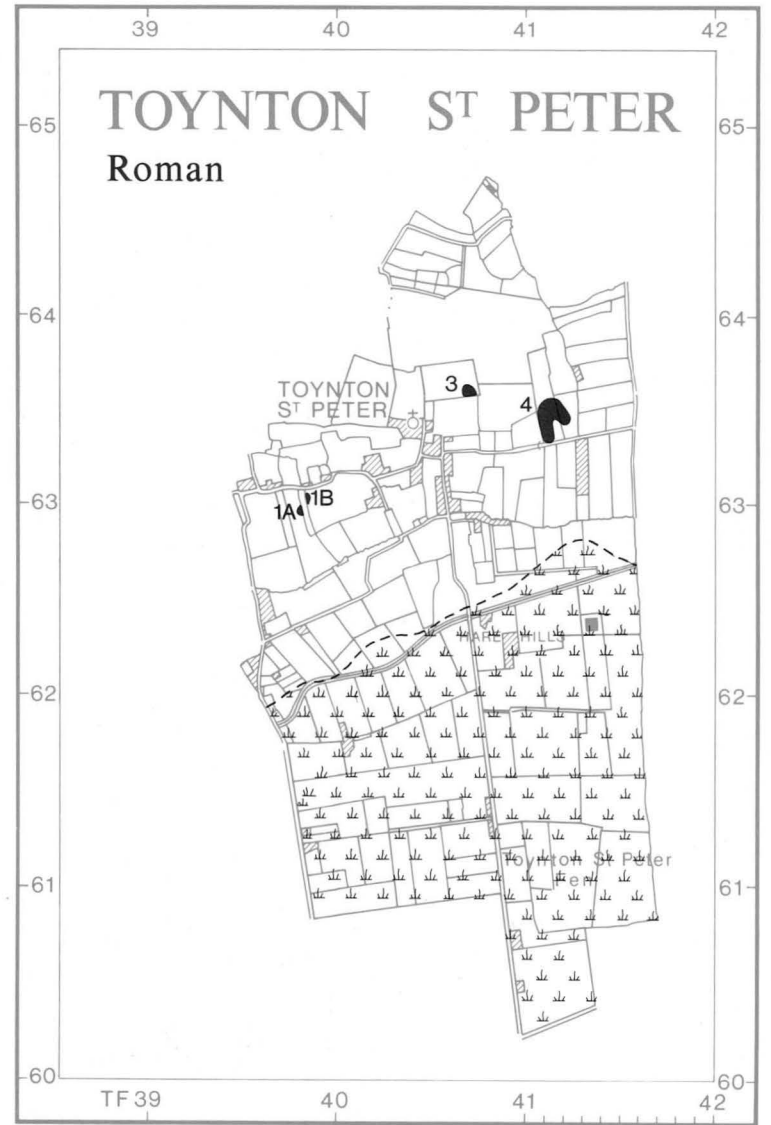


Figure 58 Toynton St Peter: Roman



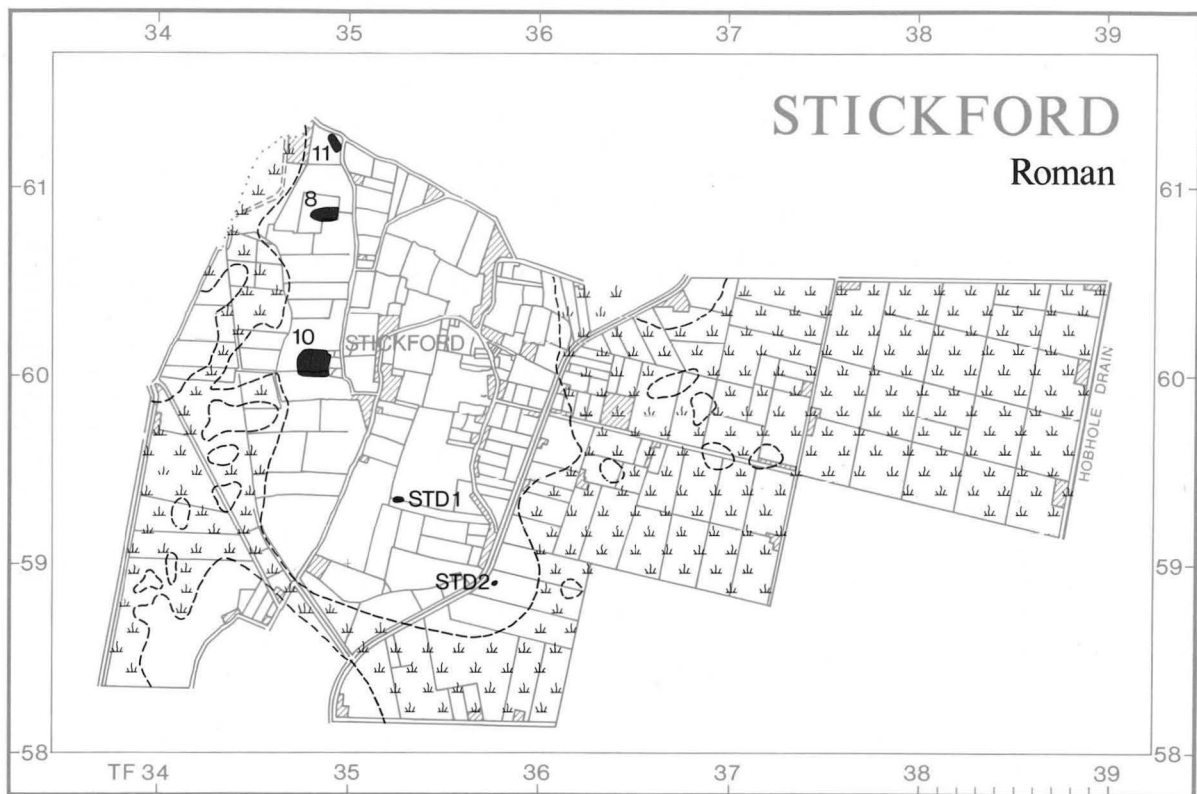


Figure 59 Stickford: Roman

defined. A further 23 sherds assigned to this category originated from predominantly Roman settlements which were, like TOP 4, situated close to the fen, below the 7m contour. It may be that a number of these smaller sites were formed sometime prior to or very early in the period of Roman administration.

However, overall there is little to suggest widespread settlement along the northern fen-edge after the Early Bronze Age. It was a time when the vast and empty fens to the south and west would have been inhospitable and inaccessible to most, so forming a broad physical barrier to trade and contact. The region appears to have become, and continued to be, something of a backwater.

### VIII. Romano-British

(Figs 53–60)

Little information has been added with which to contradict an earlier assumption that 'the Roman economic miracle overlooked the East Fen parishes' (Hayes and Lane 1984, 10). In total the Roman sites in Stickney and the northern fen-edge yielded a mere 2040 sherds, of which only five, or 0.25%, were samian and 20, or 0.99% were colour-coated. The remainder were largely undistinguished grey-ware sherds.

On the western fen-edge and closer to the Nene Valley, the source of much of the available colour-coated pottery, the percentages of colour-coated wares within the overall assemblages was considerably higher (Hayes and Lane 1992, and Hallam, 1970). Even sites on the western dry land margins of the fens, the true topographic equivalents of these northern fen margin sites, were, overall, less wealthy than sites further out on the western

marshes (Hayes 1987b, 21–24). These western fen-margin sites were however, more prosperous than their northern counterparts. In the north, the deep peats of East Fen precluded settlement in the fen itself and, despite there being little evidence with which to confirm it, West Fen was most probably in a wet, boggy, seasonally waterlogged state also, for no attempt was made to occupy the fen.

Although some imported pottery did infiltrate the area, notably mortaria from the Mancetter/Hartshill kilns in the Midlands, relative isolation from the main production centres and transport arteries may have considerably impeded trading options. As might be expected, a wider variety of imported wares have been recorded at Horn-castle, the nearest town (Field and Hurst 1983), but few of these seem to have filtered through to the fen-edge.

The emergence of the area generally, and the Toyn-ton in particular, as a major pottery manufacturing centre in the Middle Ages suggests a supply of natural clay which may have been similarly exploited in the Roman period, and indeed may go some way to explaining the preponderance of unfamiliar fabrics and styles within the Roman assemblage of the northern fen-edge.

Among the ceramic oddities is one of finer clay than that available locally. It is in a white fabric and takes the form of a terracotta head (Fig. 88, No. 1) of Roman style, but unlike any other known from Britain. It is thought to have been originally attached to a pot (see Appendix VI) which, if that was the case, makes it all the more remarkable considering the uniform blandness of the remaining Roman pottery finds from the area.

There is little indication of stone buildings or tiles. WKE 6 boasts an *intaglio* (Henig, 1973, UA12 in gazetteer) and WKE 16 exhibits a wider than average, but still

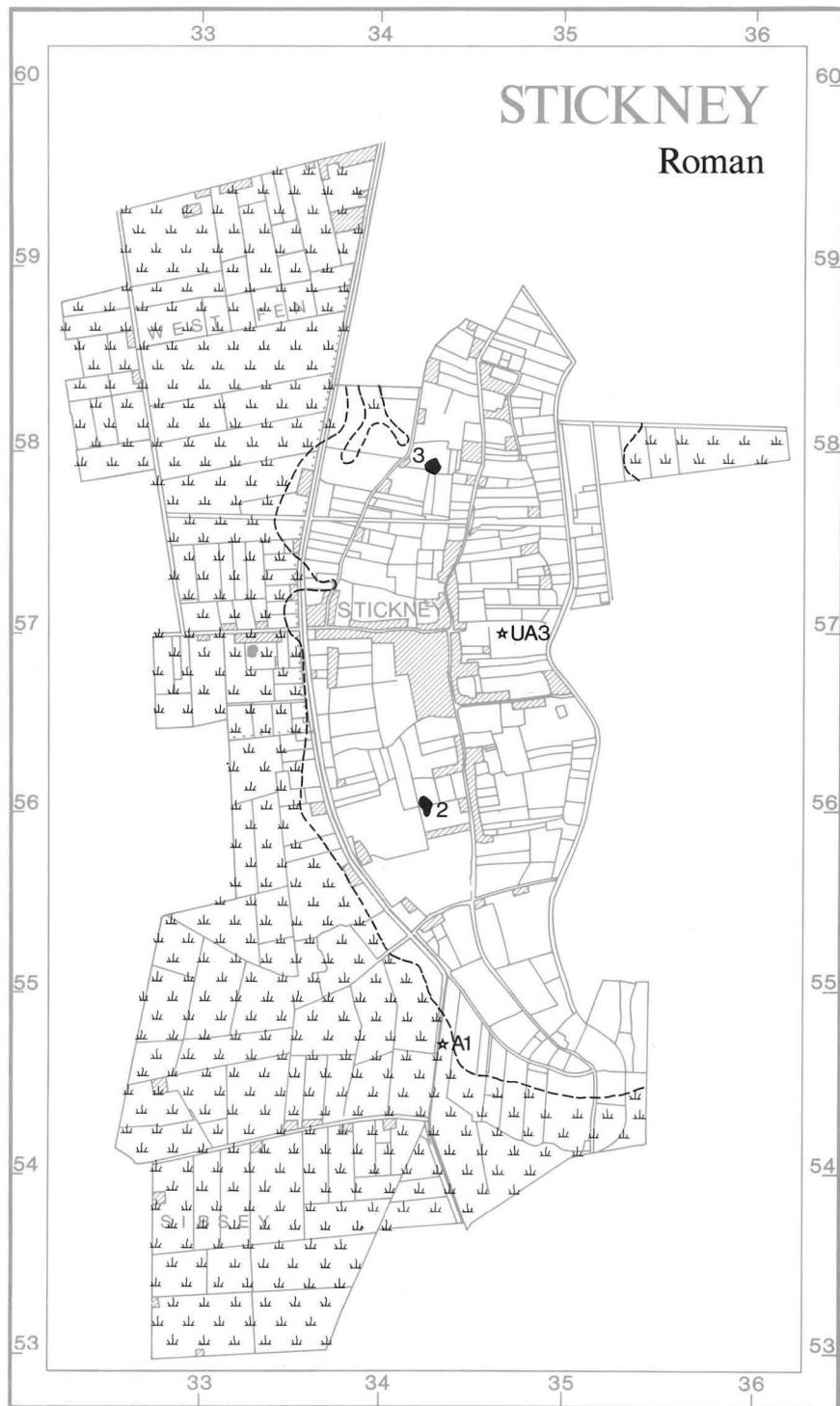


Figure 60 Stickney: Roman

unremarkable, range of sherds. By these ordinary standards SKD 10 is exceptional. It is a predominantly late foundation and has painted ware and sparse Oxford-type sherds. It claims further attention by later becoming a major Early and Middle Saxon settlement and, of all the sites, displays most signs of affluence.

At first glance the distribution of sites appears relatively even but will be considered here as 'uphill' and 'downhill' sites. On the sandstone ridge mixed arable and pastoral farming is likely to have predominated. Mean-

while all the sites in Stickney, Stickford and Hagnaby, along with WKE 3, 24, EKE 6A and 6B, 9, 10, 11, 12, TOA 5A, B, C, 1A and B and TOP 4 were within easy reach of the fen and may have practised a more specialised type of agriculture in which livestock played a more dominant role.

It is difficult to suggest the extent of arable by the plotting of manuring scatters for, just as the sites are ceramically poor, there is correspondingly little scattered material. No finds at all were made on the Fen.

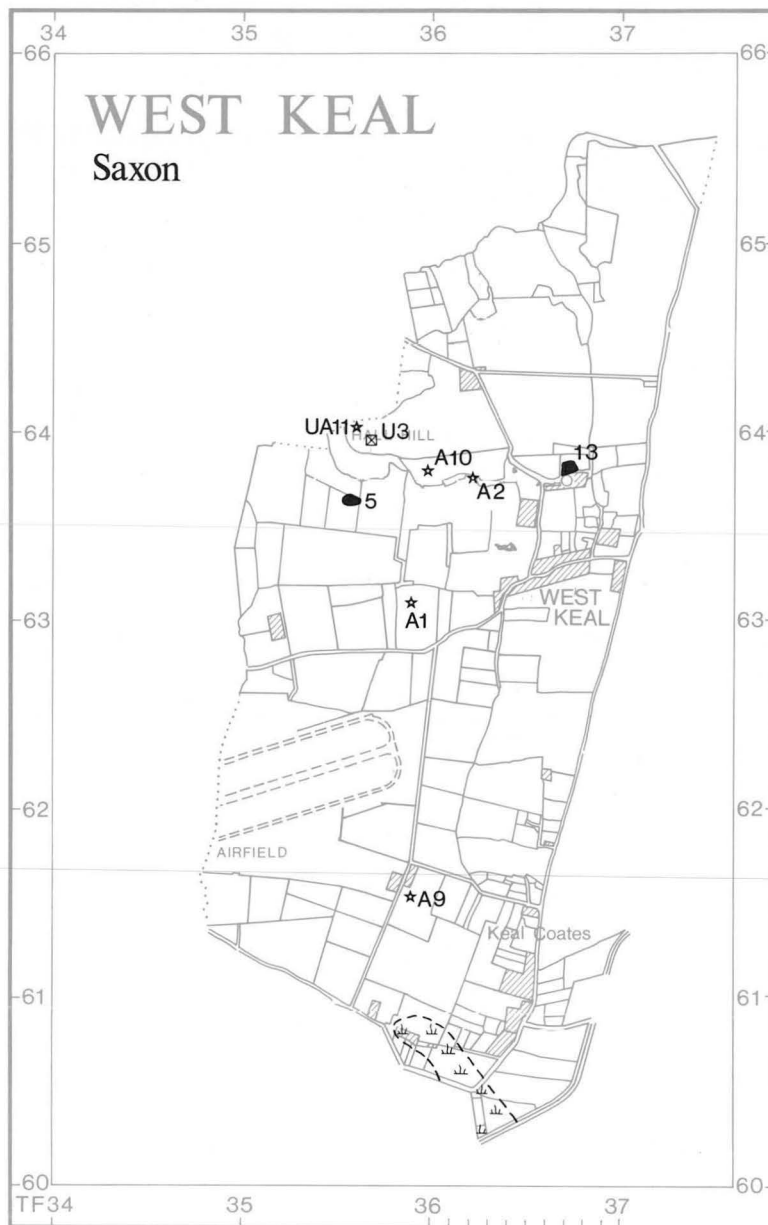


Figure 61 West Keal: Saxon

Overall the Roman sites on the northern fen-margins display no great signs of wealth and their interest to archaeologists must lie in the reasons behind their unremarkable nature. Their relative lack of imported goods suggests self-containment, isolation and only a limited participation in the wider economy of Roman Britain. This is despite the nearest large town, and presumed market centre, of Horncastle lying only 13km distant. Horncastle appears to have been founded in the Iron Age. It became considerable, the walled enclosure and unwalled settlement covering at least 54 ha, and is said to have acquired a military presence in the late 3rd or 4th century (Field and Hurst 1983). Others have put it forward as part of a system of Saxon Shore-type defences, despite its location on the inland fringes of the Wolds (Todd 1973, 42; Johnson 1980, 101; Simmons 1980, 71). Survey on the silt margins at the southern end of Sibsey, has located richer sites than those seen on the northern fen-edge, with plentiful samian (P. Chowne pers.

comm.). Even considering the bleak picture painted above for the Iron Age, one which depicts the northern fens as a rural backwater, it remains a little surprising that the region's economic fortunes did not take a turn for the better under Roman influence. After all, the region lay within the catchment of a significant Roman town, had at least limited access to the richer siltlands via the Stickney moraine, was adjacent to the fen and its varied produce and possibly became a local pottery production centre.

However, its undistinguished appearance in the archaeological record probably indicates a continued relative isolation from outside influences and reflects the condition of the contemporary adjacent Fenland. As noted previously, survey between Billingborough and Crowland (Hayes and Lane 1992) indicated that it was the sites on the Fenland, rather than the fen-edge, that displayed signs of prosperity. The inability to colonise and fully utilize the watery northern fens in the Roman period was due to the great cost of the local population.

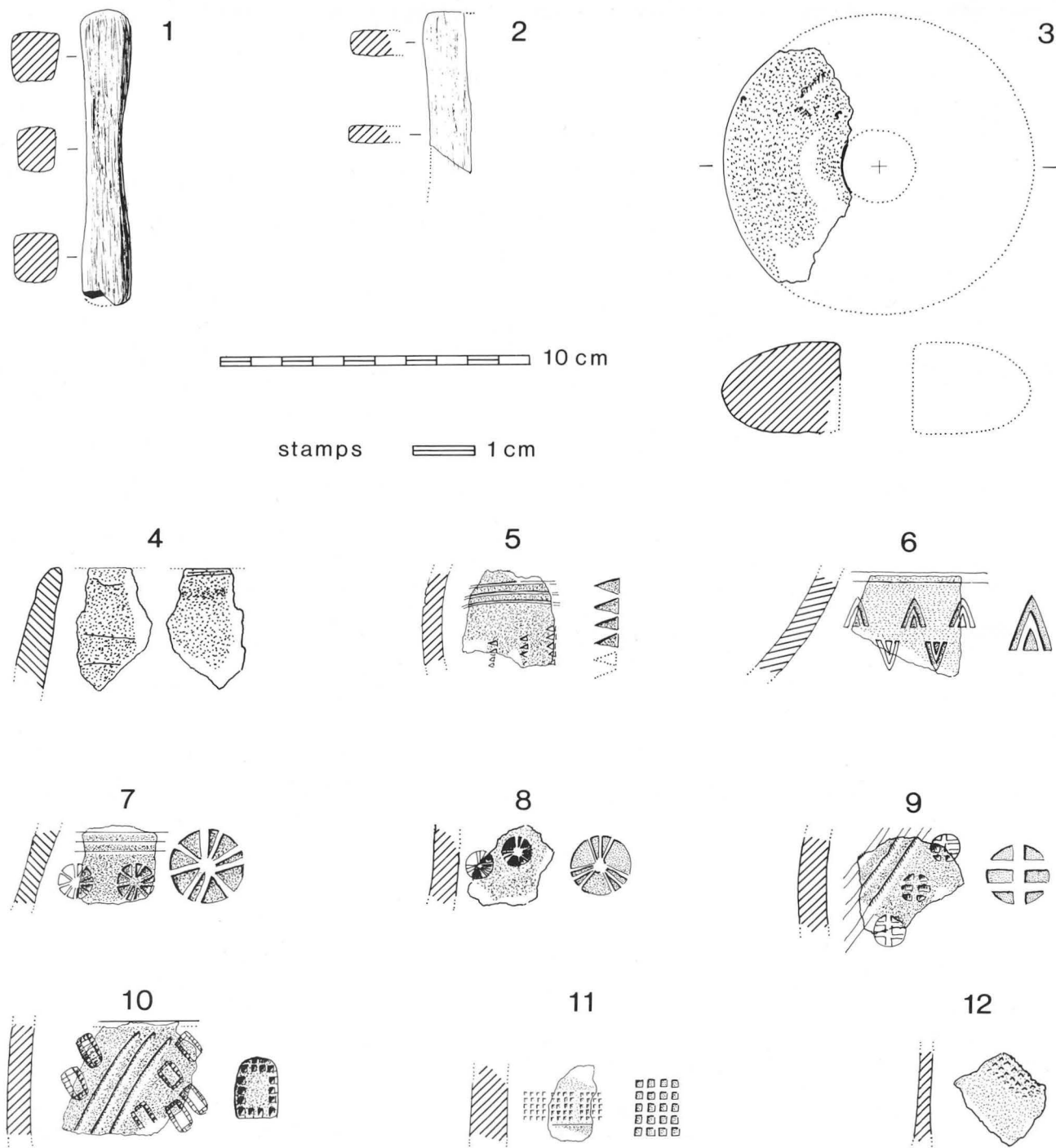


Figure 62 Some Saxon finds and details of pottery stamps.  
All SKD 10 except Nos 4 and 9 (WKE 13) and 8 and 12 (West Keal cemetery)

## IX. Saxon

(Figs 61–62)

As elsewhere in Lincolnshire and beyond, the overall number of settlements appears to have decreased dramatically at the end of the period of Roman administration. However, there appears to have been at least some measure of continuity in the area. Given the essentially native character of settlement in this area during the Romano-British period, this may not be altogether unexpected. Of the eight Saxon settlements recorded, half (TOP 3, EKE 5, HAG 2 and SKD 10) appear to continue the use of,

or reoccupy within a short timespan, sites settled during the Roman period. Of these, the largest in both area and quantity of finds is SKD 10. Almost 300 sherds of Early Saxon pottery were found. The site appears to have continued in use into the early medieval period when settlement emphasis shifted to the east. Some of the Early Saxon pottery from the site is decorated with stamps or incised lines (Fig. 62). Contained in the assemblage for the Middle Saxon period are sherds of both 'Maxey' (hand-built vessels with shell inclusions) and Ipswich type (generally wheel turned vessels with sandy fabrics). This pottery is described more fully in Appendix V and in Healey (1992).

### Some Saxon finds and details of pottery stamps (Fig.62)

1. Fragment of smoothed grey schist **hone**. Stickford (SKD 10).
2. Fragment of smoothed grey schist **hone**. Stone very similar to Fig.62 No.1 Stickford (SKD 10).
3. Fragment of 'doughnut-shaped' loomweight. External diameter c. 10cm, internal c. 2.8cm. Buff/light grey exterior, dark grey interior. Hard fired sandy fabric. Stickford (SKD 10).
4. **Rim sherd**. Medium sandy fabric. West Keal (WKE 13).
5. **Body sherd**. Fine sandy fabric with quartz inclusions. Decorated with grooves and stamps. Stickford (SKD 10).
6. **Body sherd**. Medium sandy fabric with inclusions of biotite and quartz. Decorated with single horizontal groove and series of stamps. Stickford (SKD 10).
7. **Body sherd**. Medium sandy fabric with quartz inclusions. Decorated with horizontal lines and circular stamp. Stickford (SKD 10).
8. **Body sherd**. Coarse sandy fabric with granitic and biotite inclusions. Decorated with circular stamps. West Keal (Hall Hill cemetery, TF 3656 6401).
9. **Body sherd**. Medium sandy fabric with additional quartz inclusions. Three parallel grooves and circular grid stamp. West Keal (WKE 13).
10. **Body sherd**. Medium sandy fabric with biotite and quartz inclusions. Decorated with grooves and stamps. Stickford (SKD 10).
11. **Body sherd**. Medium sandy fabric with biotite and quartz inclusions. Stamped decoration. Stickford (SKD 10).
12. **Body sherd**. Coarse sandy fabric with stamped decoration. West Keal (Hall Hill cemetery, TF 3656 6401).

A doughnut shaped loomweight from SKD 10 (Fig. 62, No. 3) attests to at least a cottage industry and lava querns of continental origin reflect wide contacts and perhaps, some degree of prosperity. Lava querns were also present on EKE 5, another Roman site on which occupation continued into the Middle Saxon period.

The full extent of the occupied area of SKD 10 cannot now be determined for it continues to the east beneath farm buildings and permanent pasture. The site enjoyed a potentially strategic location guarding access to, and along, the Stickney moraine. The occurrence of Ipswich Ware on the Stickford site is significant for the political affinities of the Middle Saxon sites on the northern fens lay with Lindsey, the kingdom to the north. The importing of this pottery from the south and the lava from abroad, would almost seem to suggest that the Saxon trading networks were as extensive as Roman equivalents for this area. In addition to the Ipswich Ware, further contact with East Anglia is suggested by one of the Early Saxon stamped sherds from West Keal which has parallels from sites in Caistor-by-Norwich and Westgarth Gardens, Bury St Edmunds (Lady Briscoe, pers. comm.).

With the exception of SKD 10, fen-side sites were abandoned after the close of the Roman administration in favour of the sandy soils on the upland. A similar move was recorded at Billingborough on the western edge (Hayes and Lane 1992), and seems to confirm a significant change to a more arable-based agricultural regime.

Although SKD 10 and EKE 5 continued into the Middle Saxon period, other smaller Early Saxon sites became abandoned and that may well have coincided with the reorganisation into hamlets or nucleated settlements within the cores of the modern villages. The location of these villages on the favoured sandy soils has probably introduced a bias into the survey results for more Saxon evidence must surely be masked, either beneath the built-up areas or in the adjacent unploughed enclosures.

A Saxon cremation cemetery, dating from before AD 500 and continuing throughout the sixth century, is

known from Hall Hill, West Keal (Thompson, 1956). In the region of 21 urns have been excavated. Myers (1969, 76 and 1986, 180) proposed that the cemetery was directly related to the Roman town of Horncastle. Whitwell (1982, 157) has refuted the suggestion and indeed, it is likely that the burial site, spectacular though it is, has more local connections. It is, for instance, in full and imposing view of the inhabitants of SKD 10 who may have relished being 'overlooked' by their ancestors whilst going about their daily business. Similarly, the broadly contemporary settlement behind West Keal church (WKE 13) is little more than a kilometre distant.

The next major event to affect the area has been a disappointment to archaeologists. Despite a thunderous reputation, Scandinavian settlers left little with which to identify their presence archaeologically. Place-names are the exception and the region has one of the most intense concentrations of Scandinavian-type village names in the country. That, and the survival of Scandinavian-based dialect words and characteristics in the local population, suggest a large presence or strong influence. While East Kirkby, Hagnaby and the Keals were being founded, or renamed by visitors from across the North Sea, there is little that can be seen to have happened elsewhere. A few Late Saxon sites sprang up, such as WKE 23 and TOP 8, the latter occupying an interesting position in the Drove at the edge of Toynton Fen.

### X. Medieval (Figs 63-72)

By the time of the *Domesday* record the villages had become established, mostly high on the escarpment of the hill. East and West Keal have separate *Domesday* entries but as Fellows Jensen (1978, 155) points out, they were distinguished by the comparative adjectives 'more eastern' and 'more western'. The more positive east and west names were introduced as later forms. A further *Domesday* reference under West Keal is to Laythorpe, a now deserted settlement. An isolated group of old enclosures on the Parliamentary Enclosure Award map (Russell and Russell 1985) suggests the settlement existed south of Spilsby Road, on land now covered by the airfield. A farm with the same name lies about a kilometre to the north.

There were further old enclosures on the east side of West Keal and within them a group of moats and earthworks (WKE 1). These were levelled in 1959 and nothing was recorded during monitoring of the work (LMSMR). However, a modern house stands within an adjacent moated area and may succeed an earlier dwelling.

Villages in the surveyed area formed part of Bolingbroke Wapentake and had right of common in the adjacent (west) fen. No humose traces survive on West Fen. From historical sources it is known to have had some peat cover during the Middle Ages, for instance when peat from West Fen was used in the salterns on the coast (Darby 1940, 85). Whilst turbary, and desiccation through drainage, has removed all traces of West Fen's peat, the once deeper, more substantial organic cover of East Fen is still marked by soils that are considerably humose.

The contrast between East and West Fen in the medieval period is clear on the well-known map of the area, surveyed in 1661 and published by Dugdale (1772), among others. On it, West Fen has a rather blank aspect broken only by the outlines of a few small medieval enclosures. East Fen, meanwhile, is characterised by large

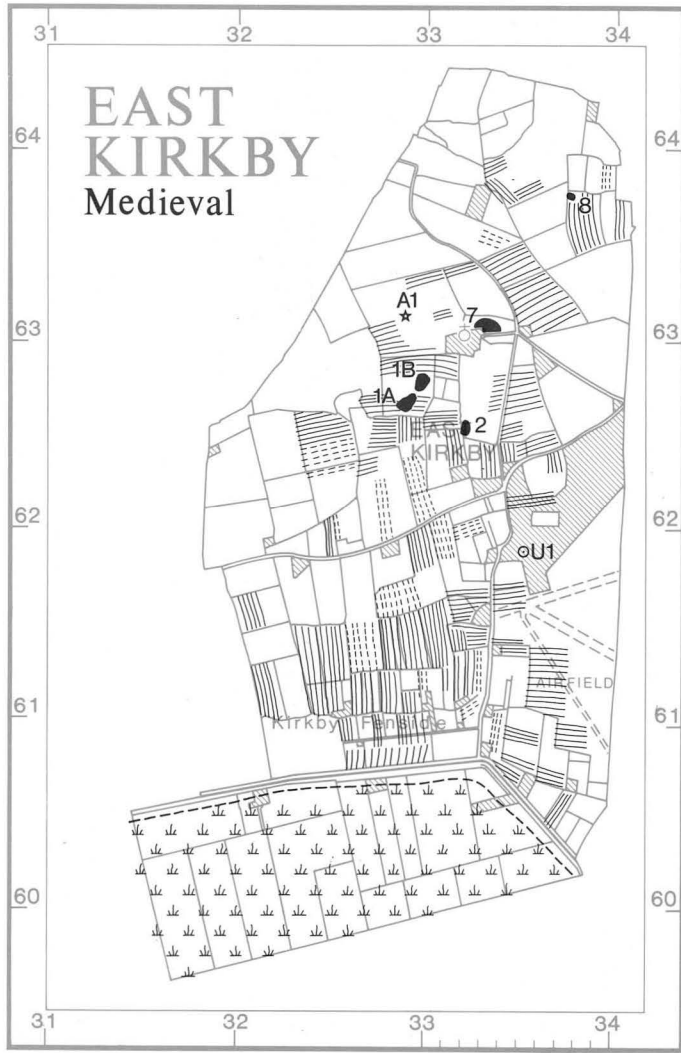


Figure 63 East Kirkby: Medieval

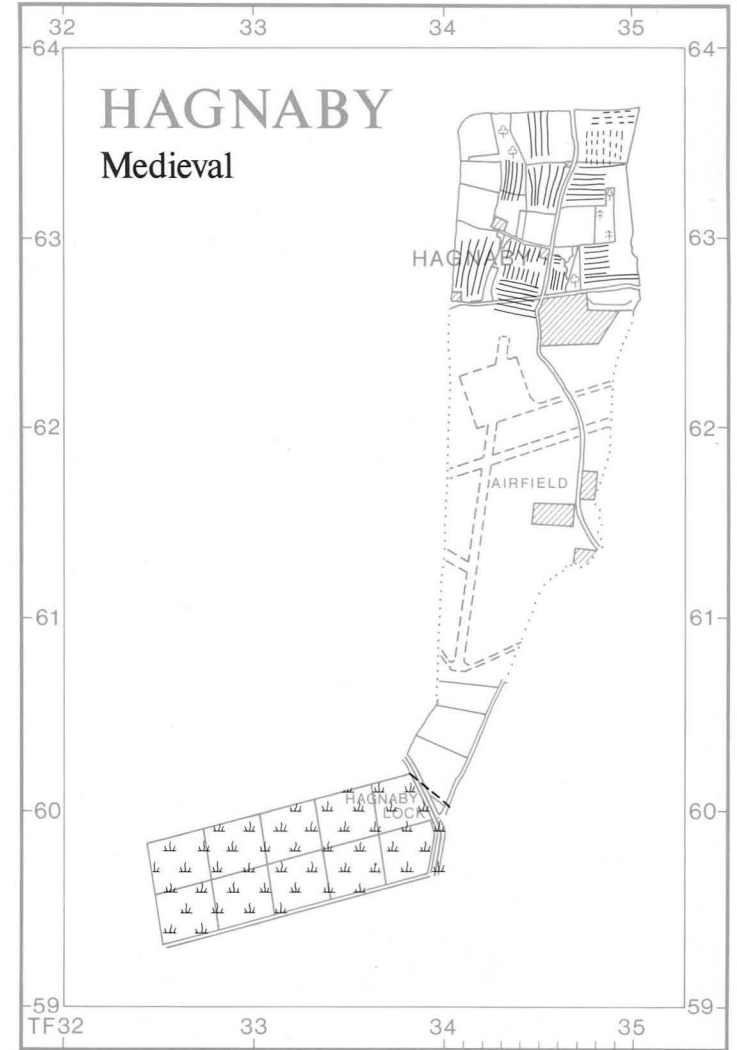


Figure 64 Hagnaby: Medieval

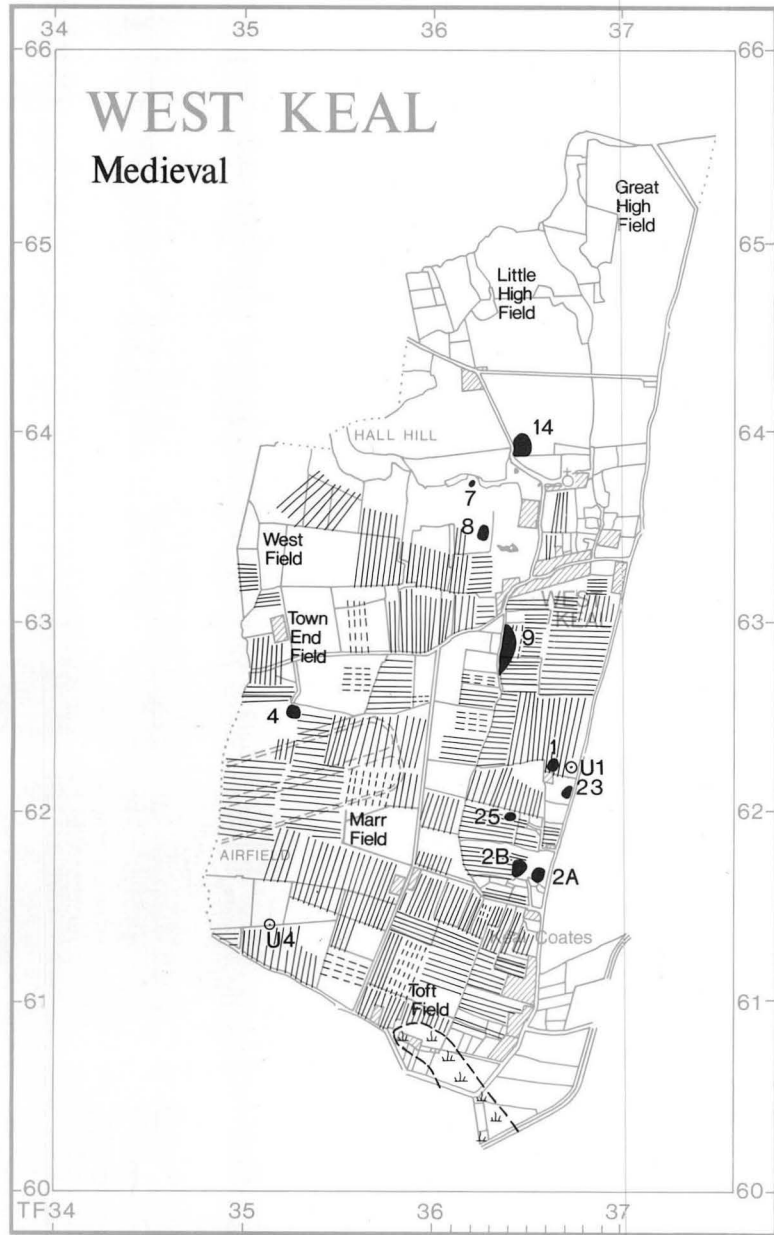


Figure 65 West Keal: Medieval

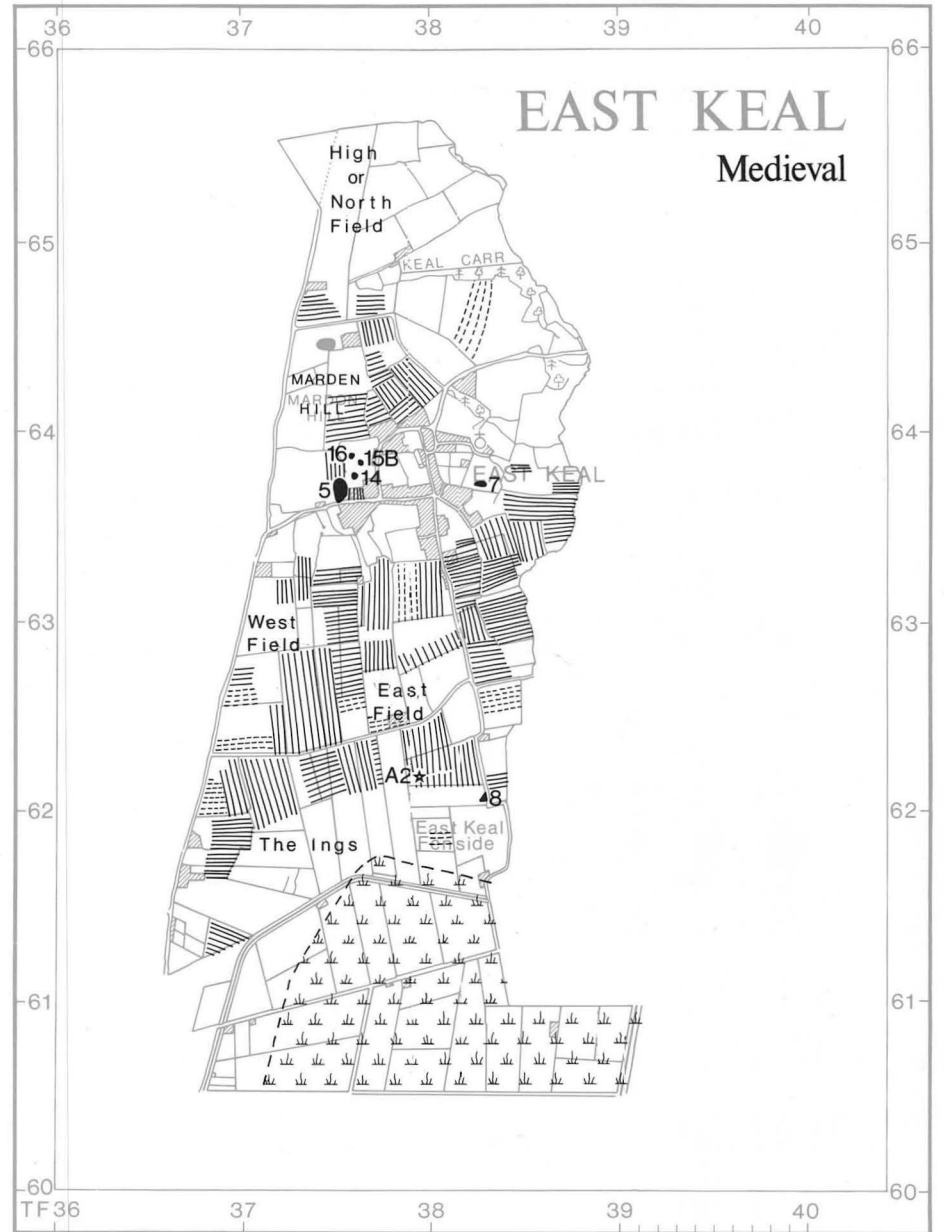


Figure 66 East Keal: Medieval

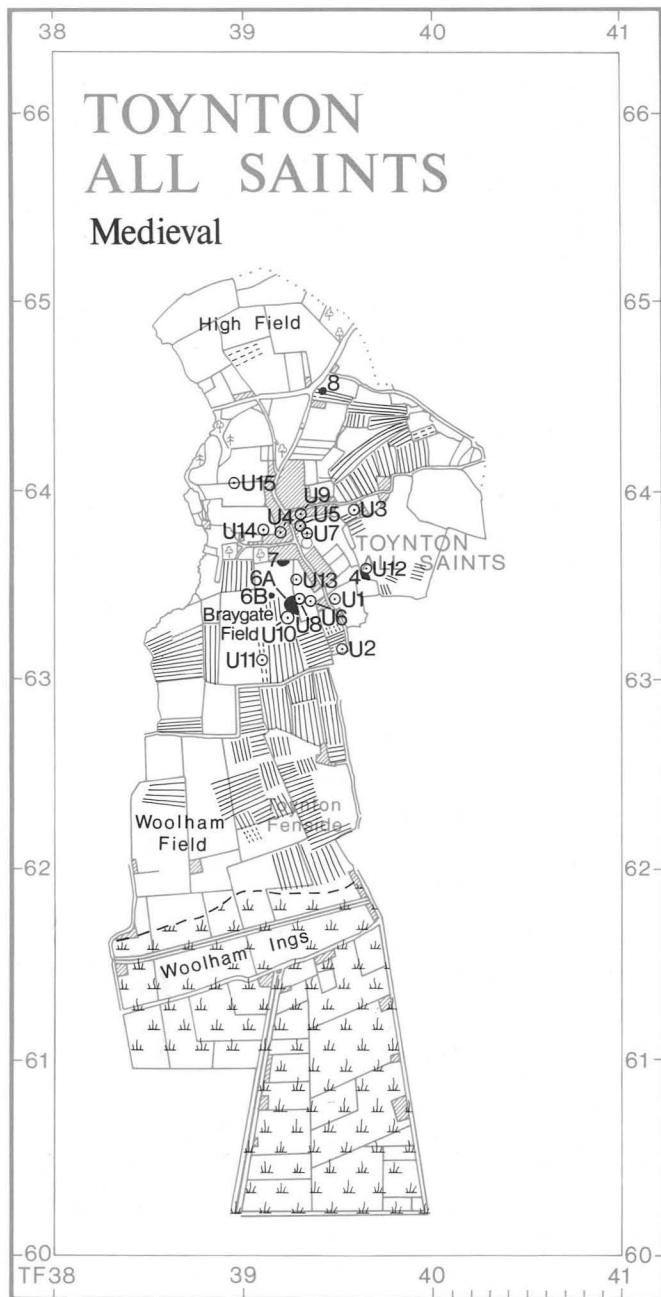


Figure 67 Toynton All Saints: Medieval

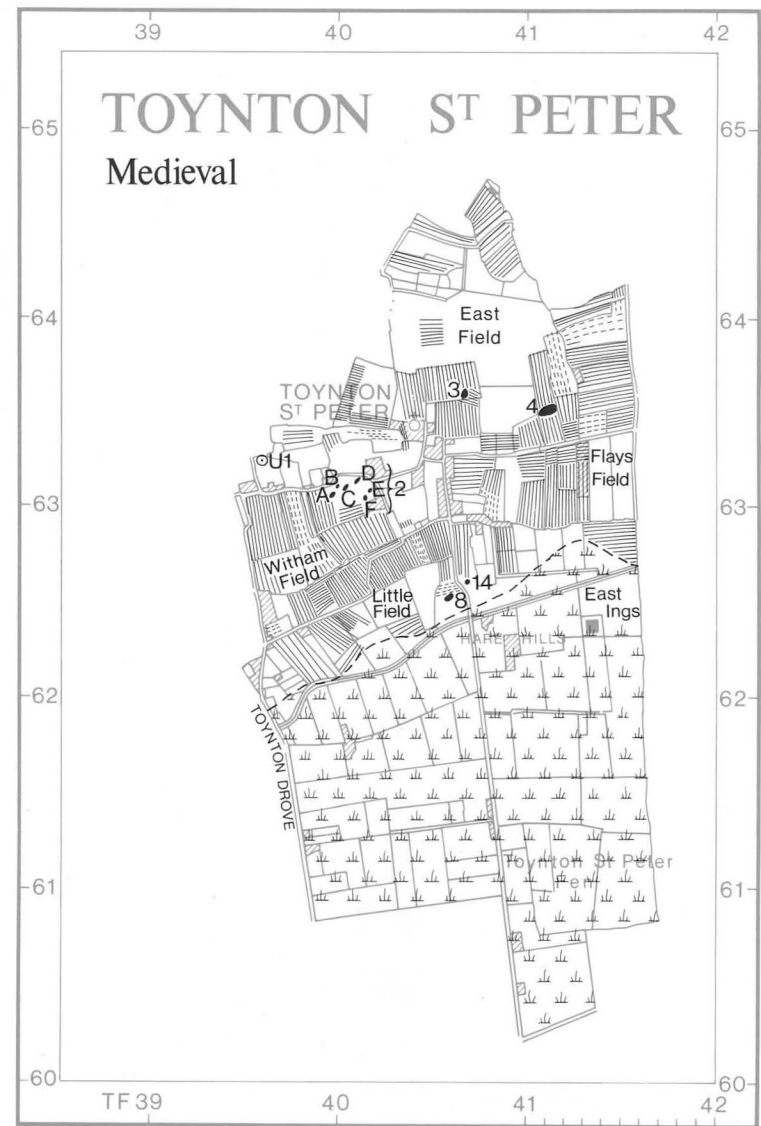


Figure 68 Toynton St Peter: Medieval



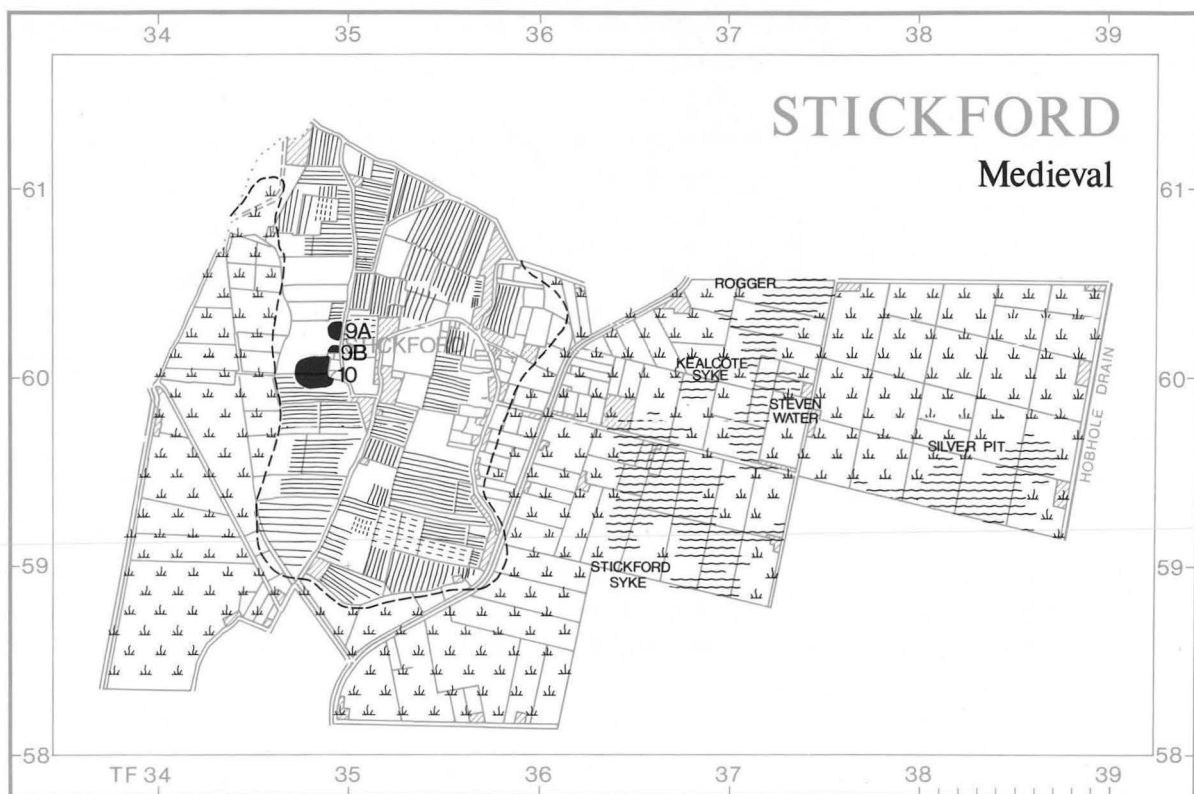


Figure 69 Stickford: Medieval

numbers of pools called 'Deepes' connected by artificial channels, called 'rows'. The pools were evidently well established and recognised by names. 'Faire Fishes' and 'King's Fishing' indicate one use for them. Later, the surviving deepes were recorded by Padley (1882, 63) who superimposed his map on a plan of the newly created roads and main drains and thus enabled the approximate position of the late phases of the deepes to be further plotted on the medieval phase maps of Stickney and Midville (Figs 69 and 71). No trace of them could be seen in the field due to the considerable loss of peat in the intervening period and no trace could be found of the shell marl which characterizes the meres of the southern Fenland (Godwin 1978, 91). Padley (1882, 64) recorded that the margins of pools and channels were shaded by a thick border of reeds generally from 7' - 8' (2 - 2.5m) in height. Prior to drainage early in the 19th century Arthur Young had observed that 'it [East Fen] is in general from three to four feet deep in water, and, in one place, a channel between two lakes, five to six feet. The bottom [is] a blue clay, under a loose black mud, two to two feet and a half deep' (Young 1813, 263).

Godwin (1978, 97) was of the opinion that the deepes of East Fen had formed as a result of peat extraction. Padley (1882, 65) described peat extraction in East Fen. 'Much peat was collected from this [East] Fen, but it was obtained in a different state to that raised in other Fens, being dug in large squares out of solid peat, in a similar manner to that in which peat is gathered in Ireland'.

In addition to domestic uses, the peat fuelled two medieval industries, salt processing and pottery manufacture. The former took place exclusively on the coast (see Chapter 4). Pottery was manufactured on the adjacent uplands, notably at Toynton All Saints, but also elsewhere

along the ridge to Bolingbroke. For a time, Toynton All Saints acquired the name Potter Toynton (Lincs. C.C. Wills 1613/282). In addition to many previously known pottery sites, kilns or their waste were found extensively in the Toyntons and the Keals. Platts (1985, 130) suggested that 'the potters were often also farmers of smallholdings' but despite this, their wares dominated the local markets in the Middle Ages and travelled throughout the county and beyond (Healey 1984, 75).

It was agriculture, however, that continued as the major economic activity. In addition to the arable land enclosed meadows were being created along the northern fen-edge (Hallam 1965, 97). One example, in East Kirkby, lay between *Haldelandes* and *Offedich* and therefore a fen dyke had separated enclosed meadows from the fen by soon after AD 1200. *Haldelandes* or Alderland was on the gravel and supports the suggestion of a high ground-water table. Plotting of ridge and furrow from air-photographs, however, indicates that at some time during the medieval period (or later) the entire area of Alderlands became farmed in strips.

Some reclamation of the fens took place off Stickney. Revesby Abbey, founded in 1142 and situated a kilometre to the west of East Kirkby, received certain land in the 12th century in return for keeping the causeway between Stickney and Sibsey in good repair (Hallam 1965, 93). This land may have been 'Wydals' off the south-east of Stickney, which remained a detached part of Revesby parish well after the Dissolution. On the east side of Stickney a further enclosure, West House Grounds, lay adjacent to Stickney Grange. The Grange has little known documentation but was in existence during the 14th century when a bailiff and ten men spent two days and nights driving the animals of East Fen and North Fen

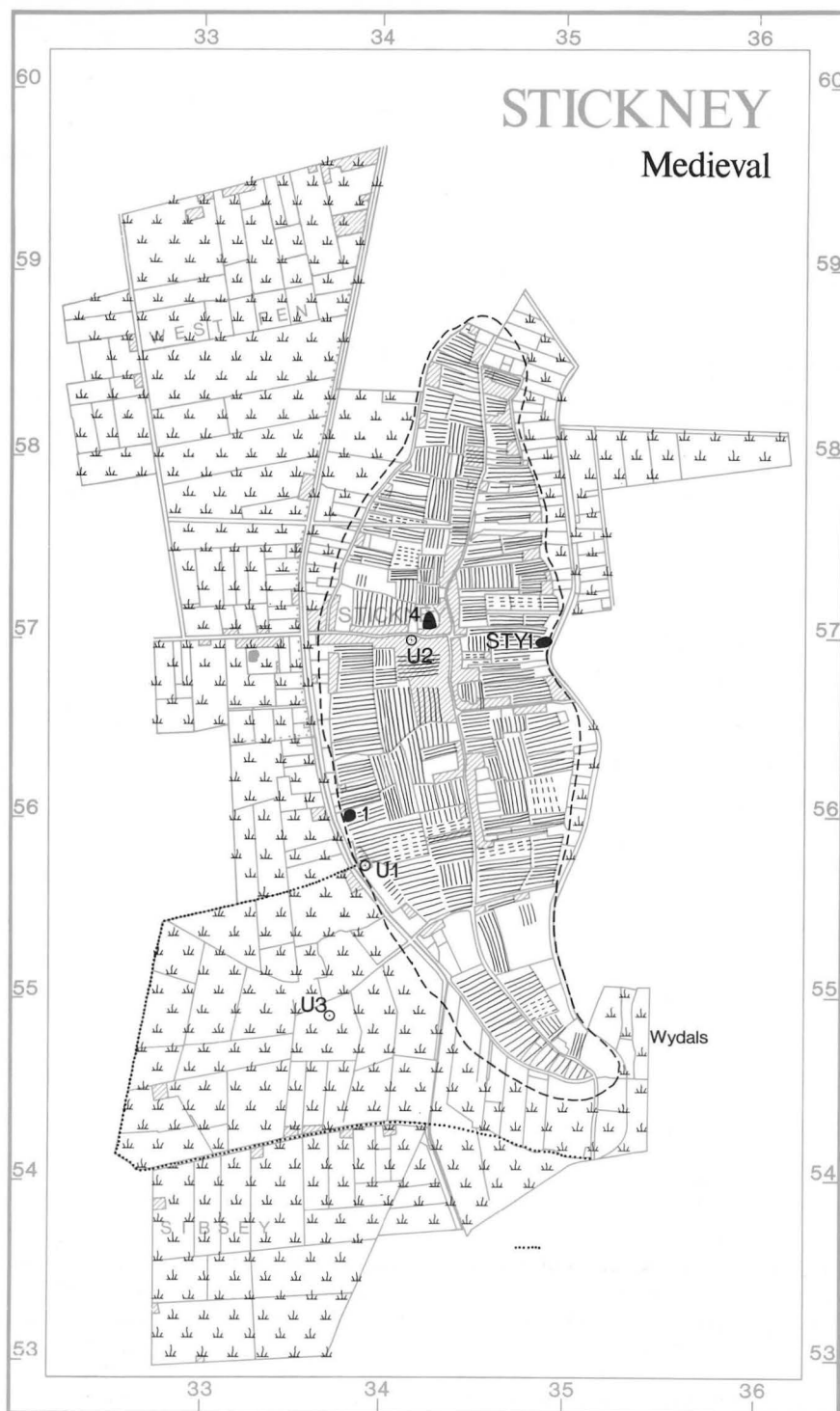


Figure 70 Stickney: Medieval

there (Darby 1974, 72).

All the medieval phase plans (Figs 63 to 71) have ridge and furrow mapped from a combination of ground survey and sketch plotting of air-photographs. The clay soils of Stickney, in particular, retain traces of an almost complete pattern, but there are large gaps on the lighter, more intensively ploughed soils elsewhere, for instance to the north of West Keal. There, few traces of ridges survive but scattered medieval pottery finds suggest considerable cultivation.

Two fine sets of documents exist for East Keal and the Toyntons to supplement the air-photographic evidence. *'The surveigh of the manour of Toynton 1614'* (LAO 5ANC 4/A/4) is a bound book which includes maps indicating the direction of strips in each furlong, the furlong and open field names, and the use of the land. It receives further comment as Appendix VII and is reproduced stylistically as Figs 92 and 93. Meadows (*Ings*) close to the fen are noted. The medieval droveway into the fen came along the present boundary between the two

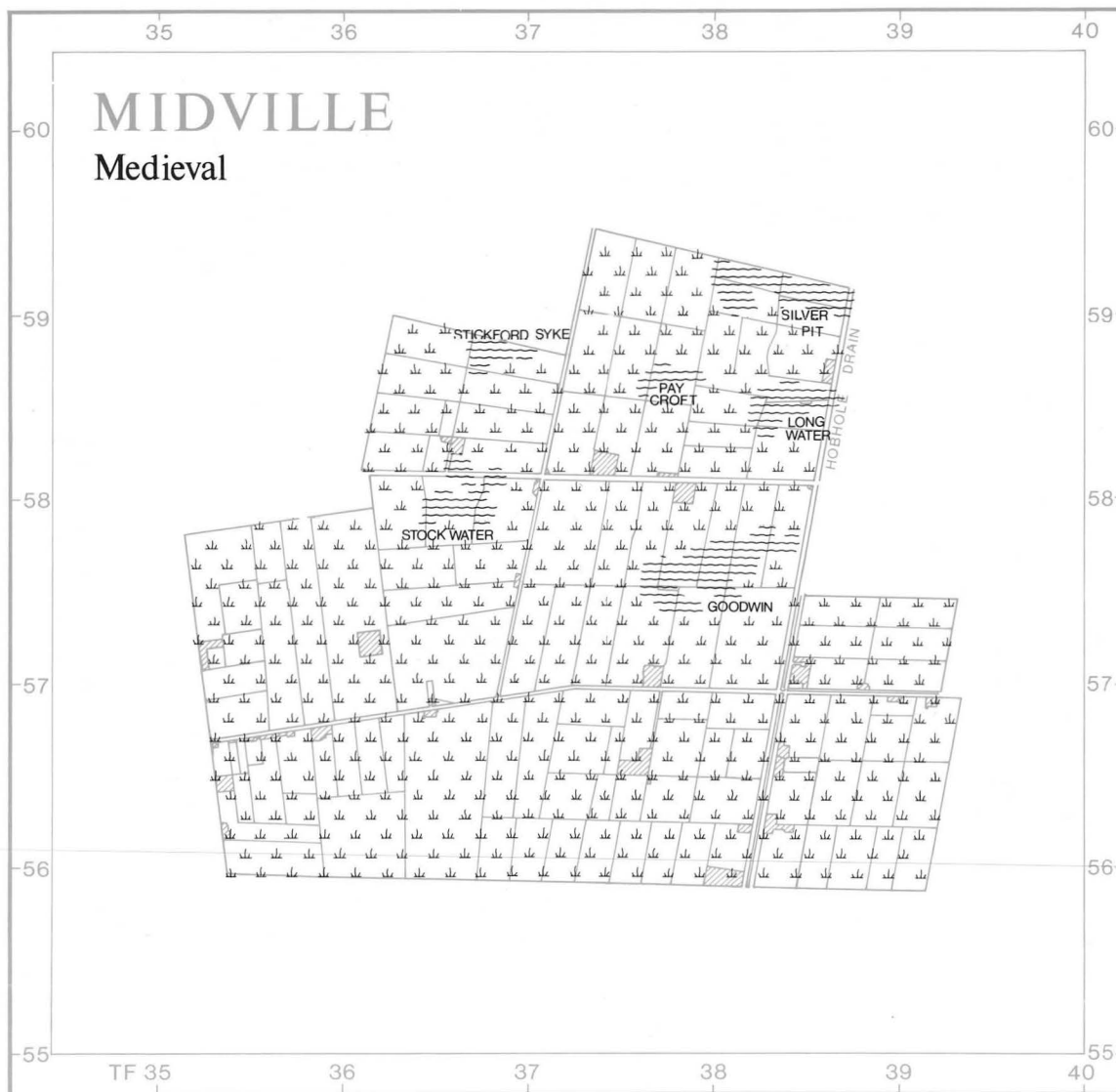


Figure 71 Midville: Medieval

parishes. It would appear that the direction of a stream which formerly flowed directly into the fen has been adjusted to take it across the slope towards Halton Holegate, probably in order to control the supply of water to the meadows.

The East Keal map (LAO Misc. Dep 2/1) of 1757 was surveyed by John Grundy (Appendix VI). On it the modern road between East and West Keal was referred to as The Meare (or boundary) bank. It clearly cuts through Hat Furlong leaving a triangle of land in East Keal, and must post-date the creation of West Field.

The map indicates that East Keal had a conventional three field system with West Field, East Field and North Field. Strips of these open fields originally extended closer to the village than the modern arable. It seems that by 1757, and probably before 1600, the sandy soils nearest to the village were enclosed for pasture. The same thing had happened in Toynton by 1614. At some time in the Middle Ages the arable area was increased. Marden Hill was taken into cultivation and named Marden Field. This was probably a late development. Other changes may have occurred earlier. East Field had been increased in size

by taking in some land south of West Field. Despite being the southernmost of the arable, this was called East Field in 1757. The original East Field is shown on the document as 'The Field called the East Field'. This extension was into meadowland, and many of the strips remained, or soon reverted to, meadow. One furlong was called the Leas. Meadowland on the poorly drained lower slope of the fen margin was an important resource, distinguished from the pasture on the well-drained sandy soils of the upland. Field survey found that the scatter of medieval pottery, presumably from manuring arable strips, extended into the new, southern East Field, but virtually no pottery was found on the *Ings*, or fen-edge meadows, and none on the commons of East or West Fen. The recognition of meadowland as important, and the manipulation of streams to water it, was also a feature of East Kirkby where a north-south stream flowing into West Fen was diverted through Kirkby Fenside.

Concentrations of medieval pottery have identified former settlement areas. EKI 1A and B, situated some 0.5km south-west of the old village of East Kirkby, has pottery from the Late Saxon period onwards. The village

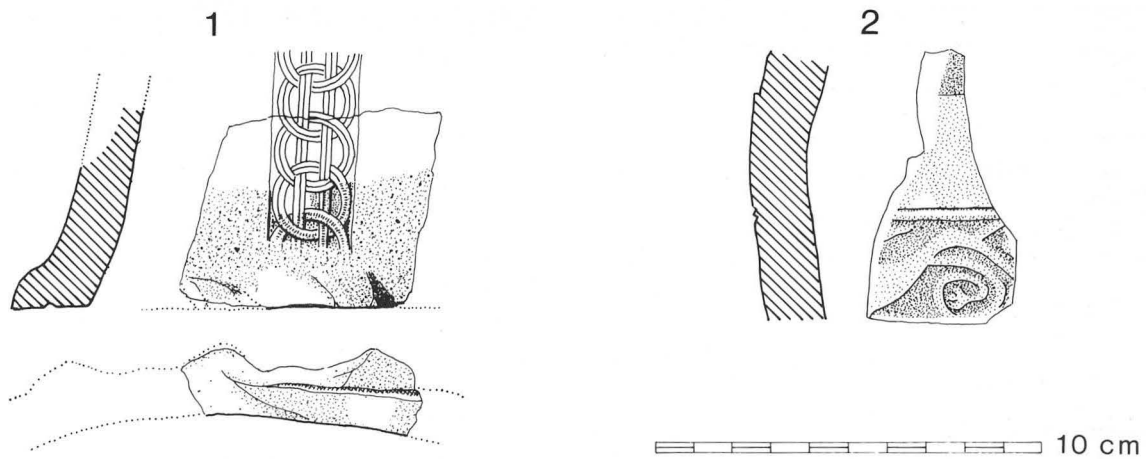


Figure 72 Sherds from possible fish smokers. No. 1 from East Kirkby. No. 2 from Stickney

has an early church (Pevsner and Harris 1973, 229) and a pre-AD 905 coin of St Edmund is known from close by (LMSMR). WKE 14, 200 metres west of the church, has pottery dating from the 13th century. SKY 4 must, at one time, have been a medieval building of some consequence in view of the large limestone blocks that are still ploughed out from the site. Two interesting medieval sherds with rolled decoration (one each from East Kirkby and Stickney) were collected (Fig. 72). Similar sherds are known from the Witham Valley and Everson (1977, 197) has suggested that they formed parts of curfews of 13th–14th century date. More recently their previously exclusive riverside provenance has led to the belief that fish smoking is their specific function (H. Healey, pers. comm.). Considering the proximity to fisheries, particularly in East Fen, the finds made on this survey may well derive from such vessels, despite their non-riparian location.

#### Sherds from possible fish smokers (Fig. 72)

1. **'Rim' sherd** of vessel designed for inverted use. Stamped decoration of interlinked circles and vertical lines. Buff exterior, dark grey interior. Sandy fabric. East Kirkby TF 329 628.
2. **Body sherd.** Decoration of flowing curves. Red/buff exterior, dark grey interior. Sandy fabric. Stickney TF 340 571.

## XI. Conclusion

Freshwater flooding and marine incursions dominated the Late Neolithic and Early Bronze Age. Two relatively short, sharp, bursts of marine activity in East Fen compared with an apparent longer phase in West Fen. Coming into East Fen from the north, the waters of the River Steeping poured into a basin formed by a Stickney moraine, the southern Wolds and higher ridge near the modern coast at Wrangle, to maintain the extensive peat growth.

The light, sandy soils of the higher regions were favourable to prehistoric settlement. Mesolithic finds were comparatively abundant. In addition to these upland sites, the Neolithic also saw some settlement to the south, by the edge of the developing fens. These sites were small

and isolated and there was an absence of any general scatter of flints, suggesting that exploitation of the fens was carried out from temporary fen-edge encampments, with the main settlement zone remaining on the upland. Axes may have been used for cutting willows or sallow brushwood and small timbers, perhaps for the construction of trackways or fish traps. Fen-side sites in the Early Bronze Age were concentrated around the sandy hummocks in the vicinity of Hagnaby Lock. Extensive spreads of Middle Bronze Age pottery were uncommon in the survey area. No sign of Late Bronze Age or Early Iron Age activity was recorded and, unlike on the western edge, no Middle Iron Age settlement or saltmaking were found. In the Roman period there were further regional differences with the settlements in the north showing few indications of wealth. After a typically low-level Saxon presence, but one which produced at least one long-lived settlement and a cemetery, came Scandinavian rule, historically tantalising but archaeologically invisible. Neither their specific settlement characteristics nor their burial practices have been successfully identified. During the medieval period, as at all times, the fen was economically important. The peats of East Fen fuelled the salterns and the Toynton kilns, while cattle, sheep and later, geese pastured on West Fen.

It was not until the turn of the 19th century that East, West and Wildmore Fens finally underwent drainage. Prior to that, utilisation of the fens had undergone some careful organisation in order to preserve their value (for instance, as noted in the Fen Bylaws, Brears 1928, 58). With drainage came the end of four thousand years of evolving, natural landscape. Though still recognisable as 'Fenland' in the modern, geographic rather than ecological sense, its uniqueness has gone.

East and West Fens have characterised better than any other the diversity of Fenland landscapes. Dugdale's maps highlighted the late medieval picture. A drive along the straight, 19th-century roads of the two fens enables one to observe the modern versions of those natural landscapes. Despite similar rectilinear ditched fields differences are clear; West Fen is a landscape of brown marine silts and clays, dissected by intricate, winding silt ridges. Across the Stickney moraine, a subtle but distinct eminence, lies the blackland of East Fen, an organic

blanket that continues to suffer the deleterious effects of drainage. Thompson (1856, 645) noted 'the subsidence of the upper stratum of peat in East Fen has caused the surface to be full two feet six inches lower than at enclosure', (which took place in the first decade of the 19th century). When he observed that 'labourers used to dig through peat as high as their shoulders before they found clay — the peat stratum now scarcely reaches their knees', the size of the labourers had not increased significantly and Thompson was portraying, graphically, the continuing wastage of East Fen.

In addition to the fen, the dryland archaeology has important landscape divisions; uphill and downhill. The former, an undulating plateau of light sandy soils, attracted the Mesolithic communities and subsequently proved ideal for primitive agriculture. Traditionally it has provided the bread whilst downhill, the grassland, meadows and fens have fattened the beef.

Clear, contrasting archaeological patterns are recognisable between this area and others. Comparisons with the archaeology of the western fen-edge between

Billingborough and Crowland, for instance, demonstrate opposing spheres of interest and activity. The high incidence of Mesolithic and Neolithic flints in the north is a negative of the western picture while the richness of the Roman settlements in the west must have created envy among their poorer contemporaries in the north.

One other contrast is the amount of palaeo-environmental data available for western and northern areas. Few dates were available in the west but access to dates from East Fen has proved invaluable. West Fen unfortunately is a marine environment more in keeping with the western edge and with little in the way of radiocarbon dates.

This volume, by definition, has concentrated on the archaeology whilst fully acknowledging the palaeo-environmental input. Fortunately more of the latter detail will shortly become available with the publication of the Fenland Project environmental volume (Waller, forthcoming) and further detail of the natural development of the northern fens will be recorded therein.

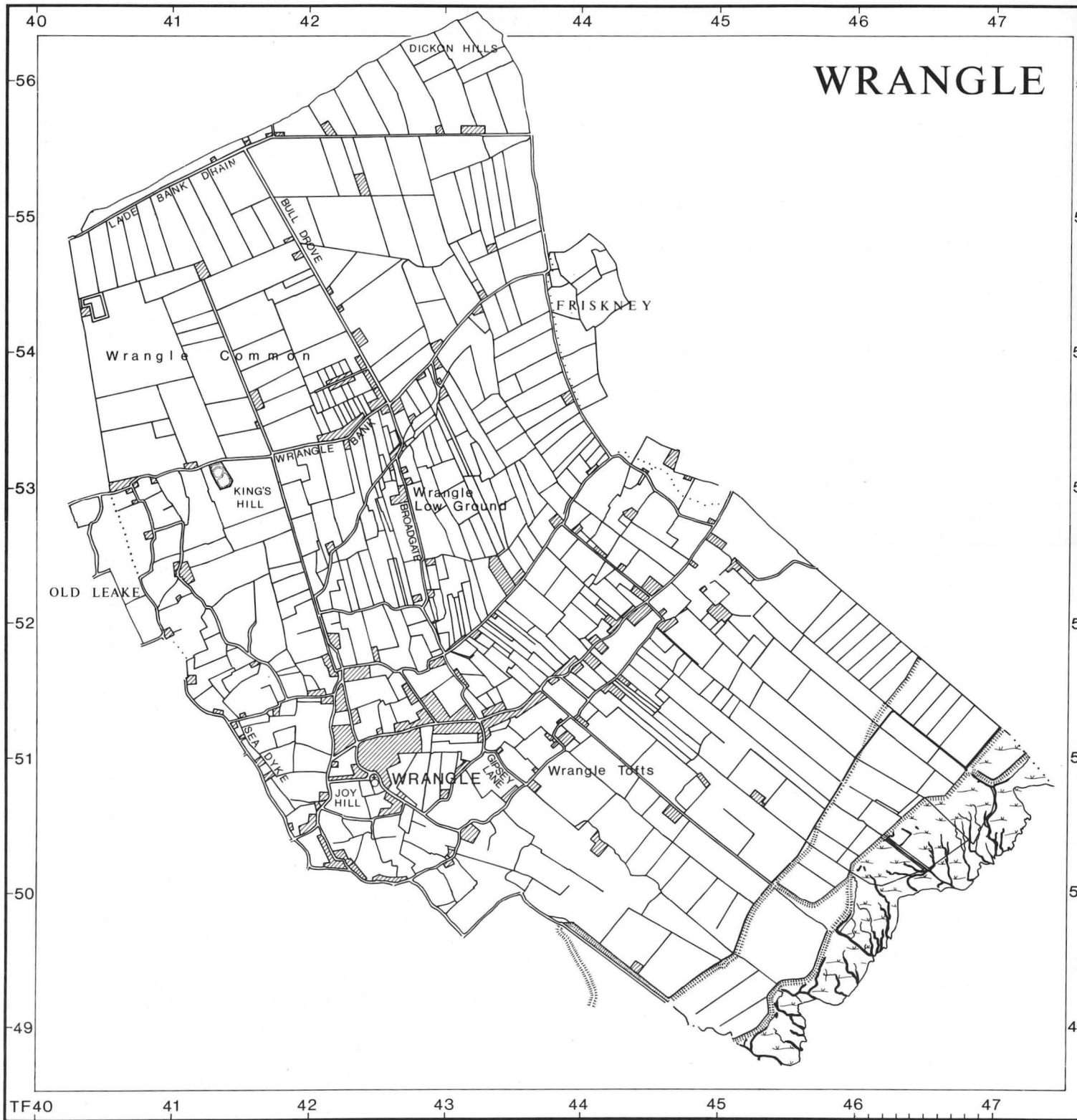


Figure 73 Wrangle: Modern Landscape. Scale 1:40,000

# 4. Wrangle

## I. Introduction

(Fig. 73)

Wrangle parish covers some 2656 ha and is situated along the Lincolnshire coast midway between Boston and Skegness. The placename is said to have Scandinavian origins (Fellows Jensen 1978, 163) and to mean 'crooked creek or river'. It is thought this refers to the navigable creek which at one time formed the division between Wrangle and Old Leake and by which runs a road still called Sea Dyke. The creek was sufficiently substantial to offer safe anchorage to shipping and to enable Wrangle to attain the status of a port in the Middle Ages when ships were said to harbour within a quarter of a mile (400m) of the church (Thompson 1856, 609). The creek is now completely silted and the present shoreline lies almost 3km south-east of the church.

The church, like the village, was protected from the general thrust of the sea by the Tofts, a broad band of high silts artificially created during Late Saxon and medieval saltmaking activity. Such was the height and extent of the mounds that, even in the 17th century, the town, along with Friskney and Wainfleet to the north, had no need of other sea defences (Fig. 90 and Thirsk 1965, 15). By 1807, the time of the Parliamentary Enclosures, a bank created along the edge of the marshes (Fig. 73) had become well established, and a further phase of reclamation had taken place. This was the area enclosed by a second bank which departed from its earlier counterpart at the end of Sea Lane and turned east towards Friskney. In 1807 the enclosed area was called New Marsh. At the same time, the area south of the earliest bank on the west, towards Old Leake, was called Out Marsh.

'The crooked creek' formed a significant early boundary on the west of the parish, but the eastern boundary, with Friskney, was not without its own distinction, for it formed the early division between the Wapentakes of Skirbeck and Candlehoe. It was an ancient division and remains the boundary between the administrative units of Lindsey and Holland. North of Lade Bank, this boundary follows a line of hillocks through the area known as Dickon Hills. Along and parallel with the Friskney border, these 'hills' are composed of laminated silts indicating that they were originally laid down by an active watercourse. North of Wrangle the 'hills' level out and the feature becomes more characteristically roddon-like. A series of field boundaries continues the general line of the roddon through East Fen, north towards Thorpe Fen, and may mark an early, alternative course of the River Steeping. However, no fieldwork has been conducted in that area. If the roddon and line of field boundaries are connected, then their comparative regularity implies an artificial, rather than natural, course. South of Gold Fen Dike Bank in Wrangle, the boundary and general alignment reflects the position of a watercourse, which is now extinct but was still active at the time of the Enclosure Award, when it meandered through the site of the former village of Wolmersty (see Fig. 78).

The present-day village of Wrangle is concentrated near, and to the north of the church. Elsewhere there is

a pattern of scattered roadside settlements which decrease in frequency to the north. A series of farms, many originating in at least the early 19th century, lies dotted along Mill Lane which runs along the highest part of the Tofts towards Friskney. Immediately landward of the Tofts runs the main A52 trunk road linking Skegness and the Midlands. Between the A52 and Wrangle Bank, the fields are still generally small and narrow reflecting the area of early land division and cultivation. Although some early enclosure for meadowland took place north of Wrangle Bank, the widespread conversion to arable was largely post-medieval. North of Lade Bank the map accompanying the Enclosure Award identifies the location of at least three former duck decoys, further strings to the area's post-medieval economic bow.

## II. Topography

Soils in Wrangle derive from Flandrian deposits which overlie Devensian Till and glacio-fluvial sands and gravel (Robson 1985, 2). Much of the parish was mapped by the Soil Survey and is published as part of the Friskney sheet TF 45 (Robson 1985). Robson identified a series of landscape units ranging from the modern salt marshes along the coastal strip, inland to humose remnants of the once extensive peats of East Fen.

The surface sediments of Wrangle were also mapped as part of the Fenland Survey (Hayes and Lane 1988, 46). South-east of the latest sea-bank are active salt marshes which, to the north, form part of the area regularly used for NATO bombing exercises. Inside the sea bank lies a kilometre wide band of former saltmarsh reclaimed for arable use within the last two centuries. Inland is the prominent ridge, up to 3.5m high (*c.* 4.5m OD at the highest point) and 1.5km wide, known as Wrangle Tofts. This feature is composed of re-deposited sands and silts (Waller 1988a, 59), the residue from a flourishing Late Saxon and medieval salt processing industry. The line of Tofts, with soils mapped as Romney series (Robson 1985, 53), is most regular and highest at the northern (inland) limit. Nearer the coast the Toft line is formed by groups of coalescent and conjoined mounds separated in places by lower areas. Some levelling of mounds has taken place in recent years. The Tofts continue north into Friskney and Wainfleet. As a comparatively late and artificial formation, the Tofts can now be seen not to be part of the so-called arc of silts which border much of the Wash.

Inland from the Tofts the surface soils take the form of clayey silts, which appear to partly bury a number of Roman sites. Further north the silt content diminishes and the surface is dominated by clayey soils dissected by a broken pattern of siltier relic creeks, the latter representing more than one marine incursion. Three marine phases depositing shallow clays were recorded during augering at Small End (Waller 1988a, 58). The underlying till protrudes through the marine clay intermittently forming small islands. In the north-west in particular, the pre-Flandrian surface is only shallowly buried.

Both the silty clays north-west of the Tofts and the clays were settled in the Roman period and, to a lesser

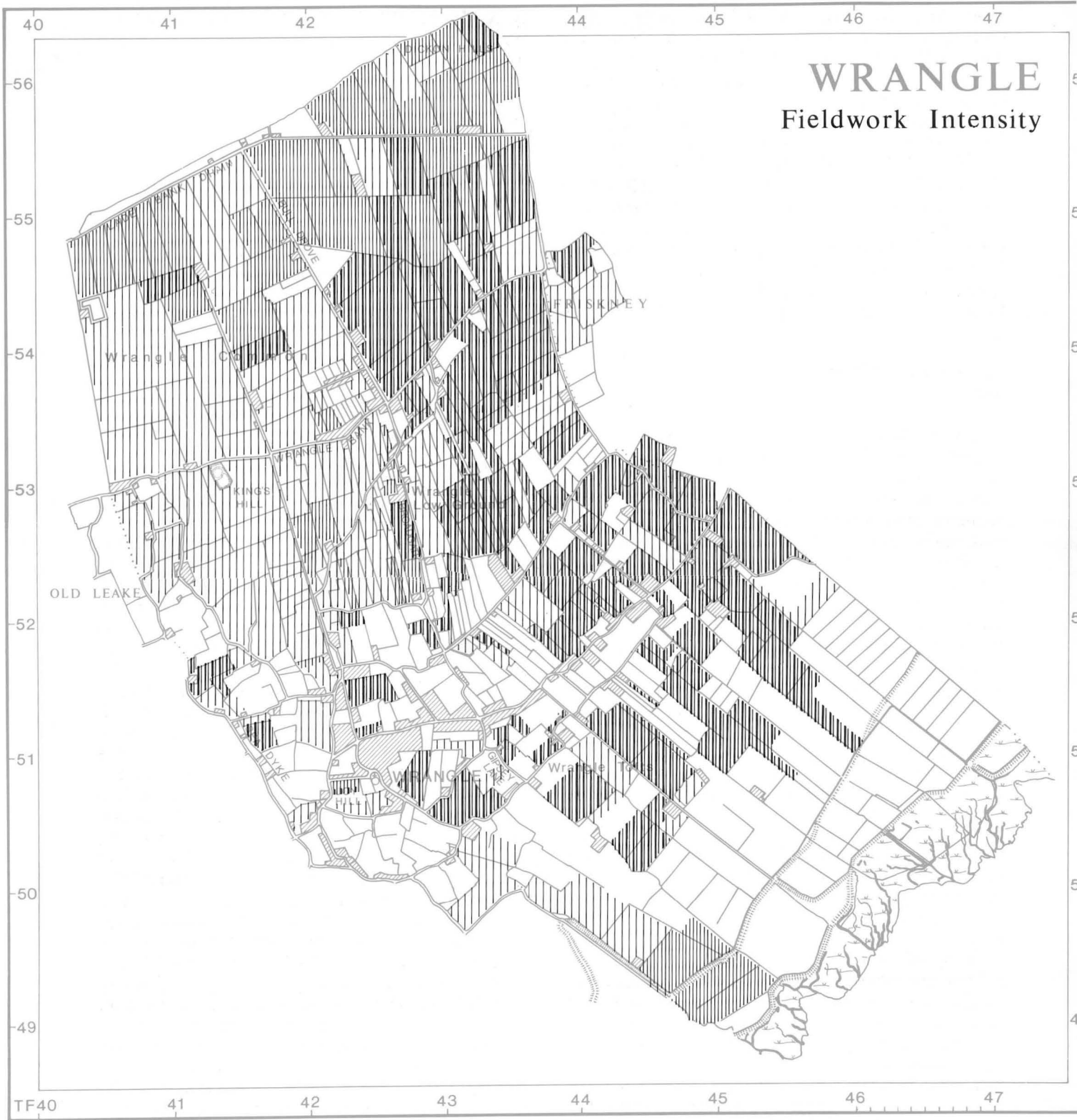


Figure 74 Wrangle: Fieldwork Intensity



extent, in the Iron Age. Traces of these settlements and salterns were found on land that is, in many cases, less than 2m above OD, and within 2.5km of the sea bank. It is almost certain that the coast has been modified in the post-Roman period. North of Gibraltar Point the presence of briquetage on the exposed peats and clays of the shoreline indicates a loss of land to the sea (Swinner-ton 1932, Ambrose and White 1981, Owen 1952; 1986). Nearer to Wrangle, at Wainfleet, Thompson (1856, 609) noted handbricks (briquetage) 'found in the foundations of an ancient church now covered by the sea'. Further incursions had occurred in Wrangle prior to 1086 for the *Domesday Book* entry for the parish states that 'some land is waste on account of the action of the sea' (Foster and Longley 1976, 183).

### III. Fieldwork Intensity

(Fig. 74)

Survey was undertaken during the late winter and spring of 1988. Artefacts in site concentrations were found on all landscape zones other than the latest reclamations and modern marshes. Therefore, survey was by necessity intensive. Many of the salterns north of Wrangle Bank were easily distinguishable at a distance due to conspicuous red soilmarks that resulted from the presence of huge quantities of fragmentary or pulverised fired clay.

Overall there was little in the way of background scatter of sherds north of Wrangle Bank, when compared to the main zone of medieval arable land nearer to the village and Tofts. In the latter areas the usual problems were encountered in deciding whether to designate as sites the apparent small concentrations of medieval sherds that occur within moderately dense background scatters. The difficulties were twofold; deciding whether small, apparent concentrations were real or created by chance, and whether definite concentrations were of contemporary sherds. The latter is never an easy question to answer in the field and was compounded in Wrangle by a high proportion of scattered medieval sherds originating from the nearby kilns at Toynton and thus bearing similarities through time in terms of fabric, and often design.

Towards the village and the Tofts, a number of Roman and earlier sites were partly buried by silts.

Cropping on the clays in the north was cereal based and thus accessible for survey, but towards the village, on the siltier soils and on the Tofts, there was an increasing dominance of crops such as bulbs and brassicas which are unsuitable for survey. For the first time a recent innovation in plant welfare was encountered; the practice of protecting and forcing crops under polythene sheets, some of which cover several hectares and render survey impossible.

Mapping of roddons was less straightforward than elsewhere. Such is the undulating, irregular nature of the pre-Flandrian surface that roddons formed in any of the three separate marine phases could, and seemingly do, appear as surface features. This has resulted in a broken pattern of fragmentary, discontinuous roddons (Fig. 75).

In Wrangle, as elsewhere on the survey in Lincolnshire, both officers worked separately and, in order to overcome the practical difficulties of designating unique site codes and numbers whilst operating in the same parish, it was decided to utilize separate prefixes for site codes. For sites located west of the agreed division (south along Bull Drove, Broadgate, Gypsey Lane and the dyke

by Toft Farm) a WRN prefix was used while WRA refers to sites to the east of that same line. 'A' and 'U' numbers are not duplicated.

### IV. Prehistoric

(Fig. 75)

The overall complexity of the surface deposits in and adjoining Wrangle is evident both from Figure 75 and the Soil Survey description (Robson 1985). On the Soil Survey sheet TF 45, a number of major creeks are represented by linear bands of mainly Wisbech Series soils. In the north of the sheet, outside the surveyed area, the overall trend of the former creeks is west-east towards Wainfleet and these are probable seaward continuations of the creeks that formed part of the earliest marine phase in Midville (Fig. 50). South from New Leake, on the western edge of sheet TF 45, a pattern of smaller, north-south aligning creeks was mapped by Robson and further plotted by the Fenland Survey officers. Study of air-photographs of East Fen suggests that these creeks belong to the second marine phase in Midville (Fig. 52). It is this phase that is blacked-in on Figure 75. The two marine episodes indicated by the surface pattern at Midville agree with the sequence identified during sub-surface investigations of this area (Waller, 1988a and b). The Wrangle pattern is, however, far more complicated.

Palaeoenvironmental investigations at Small End, just outside Wrangle in Friskney parish, identified three marine deposits (silts and clays), separated by two intercalated peat beds, all overlying a basal peat (Waller 1988a, 58). At Midville, the second marine phase is known to have occurred sometime after Q2563 3120 ± 70 BP (1485–1320 Cal.BC) (Waller 1988a, 58) and a comparable date of Q-2827 3135 ± 50 BP (1510–1355 Cal.BC) was obtained from the upper contact of the lower intercalated peat at Friskney (Waller, forthcoming). This would suggest that the middle marine phase at Small End corresponds to the second phase at Midville. Therefore, it is the final phase at Small End which did not extend to Midville. In fact the presence of the second stage Midville roddons as surface features in the west of Wrangle suggests that Wrangle Common is likely to mark the approximate western extent of the third episode seen at Small End. A date of Q-2825 2385 ± 60 BP (540–395 Cal.BC) from peat underlying the final phase flooding at Small End indicates deposition during the Iron Age. From surface evidence a precise boundary for the uppermost marine level in Wrangle could not be detected. This was not surprising for both episodes appear to have deposited similar sediments and, the latter being thin, the two would have become intermixed during ploughing. It is possible that the broad distribution of the Iron Age sediments coincides with the area of soils with thin, buried humose layers identified by Robson (1985, Soil Survey Sheet TF 45).

Overall, the pattern of roddons in Wrangle is indistinct but it now seems likely that those north of Lade Bank are related to the Iron Age phase. In many other parts of the parish the roddons are small, broken and form no coherent pattern. Even the origins of the substantial roddon along which Cragmire Lane runs are unclear. At its north-east extent, near Mill Farm, it ends abruptly.

One reason for the diversity of soils and sediments in Wrangle is the non-uniformity of the pre-Flandrian

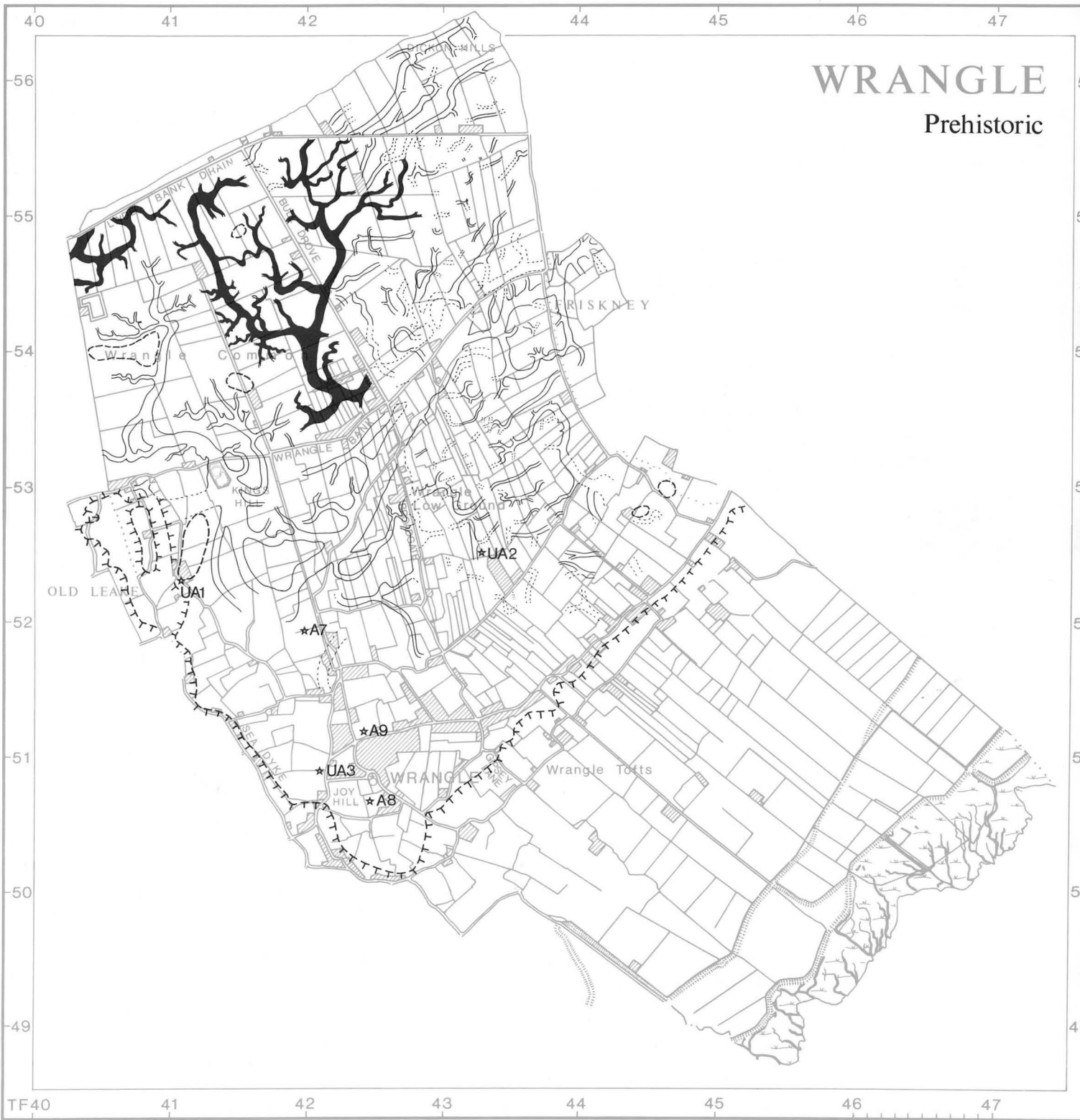


Figure 75 Wrangle: Prehistoric

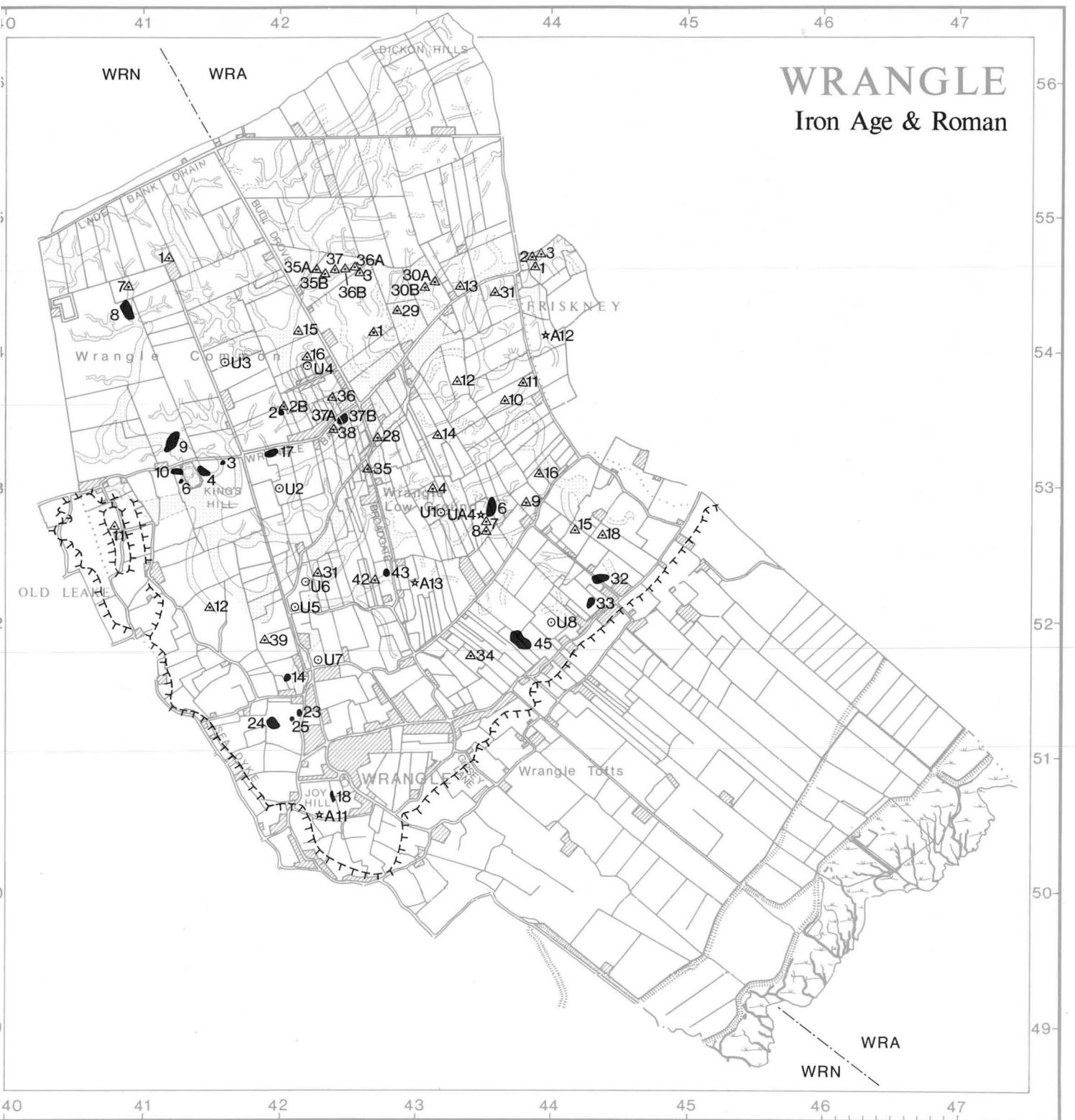


Figure 76 Wrangle: Iron Age and Roman

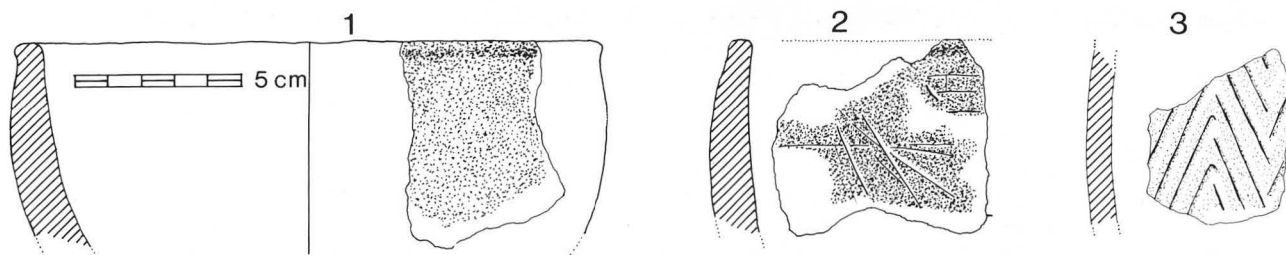


Figure 77 Undated pottery

surface. In a series of boreholes Waller recorded a fall in the pre-Flandrian surface from -1.50m OD at Small End to -4.16m OD near Gold Fen Dike Bank. However, towards the west of the parish, particularly on Wrangle Common, the till lies closer to the present day ground level. As a result glacial material has been incorporated into the modern ploughsoil over wide areas. Near to Gask's Farm, and also at Mowbray's Farm, Flandrian sediments are absent. In pasture, near to Brickpits, a local farmer, Mr Danby, pointed out another island, this time of sand. From close by came one of the three Early Bronze Age axe hammers known from the parish (UA1-3). These were from the central and western part of the parish, an area that would have probably remained free of inundation up to the middle or later part of the Bronze Age.

## V. Iron Age – Roman

(Fig. 76)

In this remote area of fenland, non-industrial pottery was probably less susceptible to rapid changes in decorative styles and technological advances than in less provincial areas, and therefore it is difficult to attribute individual sites to precise Iron Age or Roman dates. For this reason all the briquetage sites are shown together on one phase map (Fig. 76) but have been tentatively separated chronologically in Figure 87.

### Some undated pottery

(Fig.77)

1. **Rim sherd.** Hand-made. Hard-fired. Predominantly dark grey throughout but with slightly reddened interior and exterior surfaces. Flattened rim. V. sandy fabric with small grit inclusions. Possible Saxon. East Keal (EKE 9).
2. **Rim sherd.** Hand-made. Hard-fired. Dark grey with red internal and external surfaces. Rounded rim. V. sandy fabric. Decorated before firing with scored lines. East Keal (EKE 9).
3. **Body sherd.** Medium hard. Grey interior with red/brown exterior surfaces. Decoration constitutes a series of very shallow depressions. Wrangle (WRA 33).

Salt production was undoubtedly carried out in Wrangle during the Iron Age, though, unfortunately, the evidence to date the sites precisely is not plentiful. Iron Age salterns are recorded on the County SMR (U1 and U3) but there has been no time to review the dating evidence and compare the briquetage or associated domestic pottery with that collected as part of this survey. At Hogsthorpe, 8km north of Skegness, a radiocarbon date of HAR 3092 2490 ± 80 BP (805 – 420 Cal.BC) was

obtained from 'a sample of burnt soil from the lowest level of a hearth' on a saltern situated some 1.5km inland from the modern coast (Kirkham 1981, 9). The location of this saltern in relation to the present coast is comparable to a number of those in Wrangle although the position of the Roman coast is in doubt. Many of the sherds found during this survey could belong either to Iron Age or native Roman traditions. It is the briquetage (Appendix I) that has been used on this survey to infer either Iron Age or Roman dates, although less variation occurred within the Wrangle briquetage than within the assemblage from the western fen-edge (Hayes and Lane 1992). A single parish represents a small unit when attempting to elucidate information from distribution patterns. Nevertheless, salterns that are most probably (late?) Iron Age, that is those where the briquetage displays characteristics similar to those on Iron Age sites in the western fens, form an arc from Greenfield Farm to Rinder's Farm (Fig. 76, sites WRA 4, 6, 9, 15, 18 and WRN 2, 2B, 4, 9, 12, 14, 31, 35, 38, 39, 42 and 43. See also Fig. 87).

If the briquetage classification is accepted then Figure 87 indicates a general advance of Roman salterns to the north and east of those from the Iron Age. Much of the Roman settlement can also be seen to lie south-east of much of the Roman saltmaking. A similar, but more clearly understood pattern of horizontal stratification was recorded on the western fen-edge, particularly near Billinghamborough, and Pointon and Sempringham (Hayes 1985b, figure 8).

Of the Roman settlements, the largest in terms of quantity and area of discarded pottery sherds were WRA 33, 45 and WRN 4, 6, 9, 24A, 43. Other than WRA 33 all had associated briquetage, though that from WRN 4 and 9 fitted the criteria for Iron Age briquetage. WRN 4, 6 and WRA 33 all had a few non-industrial sherds of Iron Age type. Overall, the domestic pottery on these sites tended to date from earlier rather than later in the Roman period, and the Nene Valley Wares, so common on the western fens, were little in evidence.

A further sizeable Roman site was WRA 6. Again the surface finds indicated an early date. Only two pieces of colour-coated pottery were present out of a total of nearly 140 sherds. Like WRN 4 and 9, the briquetage had an Iron Age appearance. A coin previously found on the site dates to AD 98 (LMSMR). Currently the upper levels of the site are undergoing excavation by the Boston and District Archaeological Society, and therefore more information should be forthcoming.

Briquetage is discussed more fully in Appendix I but it is worth mentioning here that differences exist in the state of preservation of the Roman briquetage in particular

from that encountered on the western fen-edge. While vessels were again found to be fragmentary, the quantity of complete cylindrical supports was greater, to the extent that many were not collected on the Wrangle sites. By comparison, such objects on the sites of the western fens were rare. It is not necessarily the length of time particular fields have been in cultivation that has affected preservation, for Wrangle Common was ploughed well before the mid-19th century. It is also possible that the production techniques in Wrangle were different and required greater quantities of supports.

Although contemporary environments can be postulated for the Iron Age and Roman periods, the junctions and timing are far from clear and it may have proved misleading to have placed symbols indicating specific environments on Figure 76. It must be noted, however, that the lack of symbols does not serve to indicate that Wrangle was dry and drained land. Indeed, it can be considered as very much in a wetland context. Settlement would have been on the driest of the marshes. By late in the Iron Age the last of the marine phases recorded at Small End, the one which deposited no great depth of sediment, would have probably ended and been replaced by peat-forming freshwater conditions. Indeed, peat is likely to have blanketed the region north of the salterns. The presence of salterns is indicative of a marine influence and therefore perhaps a line between White House Farm and Wrangle Bank Farm may mark an appropriate junction between marsh and fen, but without further survey to clarify the areas both to the east in Friskney and Wainfleet, and to the west in Old Leake, such a junction must remain speculative.

The seaward extent of settlement is, of course, masked by the Tofts and later reclamations. Many of the sites in Wrangle, including the larger and long-lived examples, were active in the first half of the Roman period and there are signs that some continued later. Their success in such quantity in close proximity to a coast would have depended on very tranquil marine conditions or the presence of sea defences. It is more likely that the sites occupied a position inland, on or beside tidal creeks. Some of the land, and settlement, nearer the sea, has almost certainly been subsequently eroded as at Skegness and Ingoldmells, between 10 and 20km further north. The incursions which caused this may have been responsible for depositing the silts which partly bury some of the Roman sites close to the Wrangle Tofts.

It is of great significance that, although the Tofts lie adjacent to Roman settlement areas, no Roman pottery was found there. Similarly the earliest pottery found on the Leake Fold Hill 'toft' in Wrangle parish was Late Saxon. Had either areas been formed in the Roman period their respective altitudes would have made them natural settlement foci.

## VI. Late Saxon-Medieval (Fig. 78)

With the possible exception of one sherd (A10), no archaeological evidence of human activity between the Roman abandonment and Scandinavian settlement was found. Wrangle 'the crooked creek', is a place-name of Scandinavian origin (Fellows Jensen 1978, 145). Wolmersty, the deserted former settlement in Wrangle parish, would also appear to have a Scandinavian deriva-

tion. It began as a significant place for it provided an early, if shortlived, name for the Wapentake later called Skirbeck (Fellows Jensen 1978, 344; Foster and Longley 1976, 68). A seaward location for Wolmersty, on the borders of Friskney, is suggested by historical sources; sometime before 1186 Simon le Bret gave Waltham Abbey four acres of meadow in Wrangelcornfen next to *Wlmersti* abutting on the boundary with Friskney (Hallam 1965, 170); in 1274 the Abbot of Waltham claimed in Wrangle 'wrecks and wayffs and the goods from felons from Leake Bank [on the western parish boundary] to *Wolmersley*' (Thompson 1856, 594) presumably tying in the latter place to the eastern parish boundary. The location of Wolmersty is almost certainly that of the collective sites WRA 17, 26, 27A and 27B, near Greenfield Farm. WRA 17, which air-photograph evidence (Plate VII) indicates was once enclosed by a ditch, stands on a sub-circular, low mound of glacial clay, surrounded by marine silts. The earliest pottery from the mound has been dated to the Late Saxon period (H. Healey pers. comm.) and other finds include a lava quern and 70 animal bones. Some 'brick features' were apparently noted when the farmer dug into the mound some years ago.

Across Ivery Lane, nearer to Greenfield Farm, are the ploughed remains of an area once surrounded by a moat-like ditch (WRA 26). It was called The Iverys on the 1807 Enclosure Map where the 'moat' is indicated by dotted lines. Finds of pottery from the site were not especially numerous and mostly late medieval or early post-medieval. However, many tile fragments were noted, some of which were over-fired. To the north lie two further sites, WRA 27A and 27B, of which the former yielded Late Saxon wares. A 1946 RAF air-photograph (Plate VII) clearly shows the remains of a second ditched area further north within the same field (U9), and also traces of strips to the north and east. The sites and scatters flank a sinuous, shallow depression created by a now extinct watercourse, the line of which still delineates the Wrangle-Friskney boundary. Low islands of pre-Flandrian soils protrude through the marine silts around the area and no doubt contributed the 'ey' element to the place-name. Some late and post-medieval sherds are present but by then Wolmersty had declined in population. Evidently it was still recognised until after 1529 (Thompson 1856, 593) but by the turn of the 19th century had become deserted and the name lost.

Evidence for the Greenfield Farm/Wolmersty area being a Late Saxon foundation is overwhelming. Examination of the background scatter of sherds from the general area (by H. Healey) has resulted in the identification of Late Saxon and early medieval pottery including early Stamford Wares.

Further pre-conquest sherds were found near Wrangle village, from the vicinity of Joy Hill to the south and, to the north, on either side of Common Road and Gowt Bank. A third concentration came from the Leake Fold Hill silts in Wrangle. Perhaps surprisingly, 10th-12th century sherds were found scattered on the silty clays of Wrangle Low Ground east of Broadgate, opposite an area known as The Fellands.

By the time of the *Domesday* survey saltmaking was taking place in Friskney and Wainfleet to the north, and it is hard to imagine, despite no reference to it in the *Domesday Book*, that the industry was not already under way in Wrangle. Indeed, the archaeological evidence strongly suggests it had commenced for Late Saxon sherds

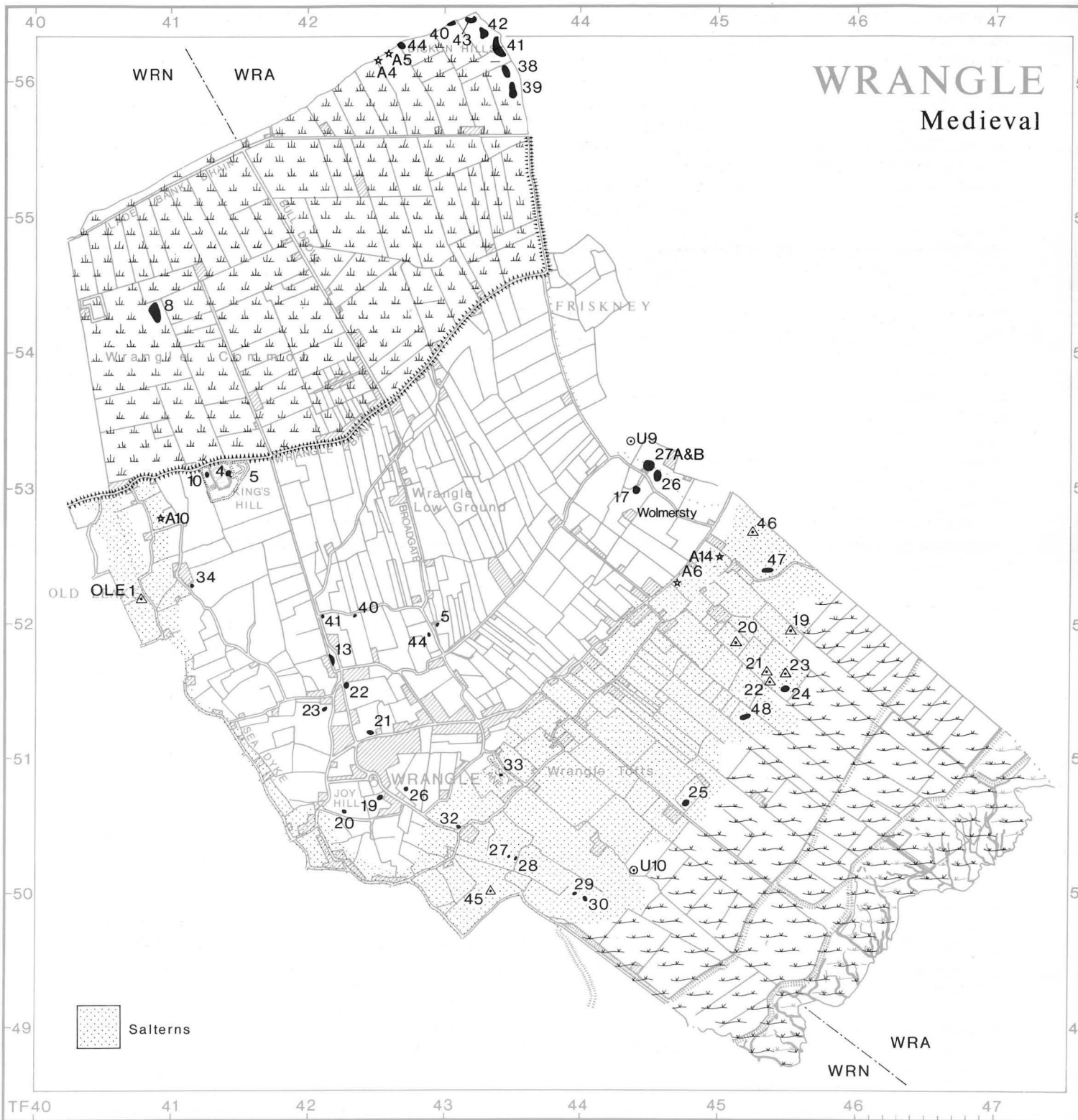


Figure 78 Wrangle: Medieval

were found on the landward edge of the Tofts near Sigtoft Farm (A6 and A14) and at Hall End (WRN 27). Also, several sherds were found north of Manor Farm on the Leake Fold Hill silts (Hayes and Lane 1988, 48). Among other finds there was a scatter of ashes and burnt clay, similar to finds on certain of the saltern mounds on the seaward Tofts. The Toftland was created artificially by dumping the silts taken from the unreclaimed marsh for the saltmaking process (Robson 1985, 53; Waller 1988a, 60, and forthcoming; Hayes and Lane, 1988) and therefore the pottery found on the surface must post-date or at best be contemporary with the saltmaking. That the Wrangle entry in the *Domesday Book* makes no mention of saltmaking may be due to control of the industry in Wrangle being in royal hands, or, perhaps, an early change in the parish boundary. Salterns at Leake Fold Hill (in Wrangle parish) may have been among the 41 attributed to Leake in the *Domesday Book*. The area of Leake Fold Hill covered by this survey lies upward of 2km inland from Wrangle village along 'the crooked creek', the course of which marks the Old Leake/Wrangle boundary. Augering at Leake Fold Hill showed the area to be formed of structureless, re-worked silts, similar in character to those of the Tofts (M. Waller pers. comm.).

Historical evidence of Wrangle's salterns has been synthesised in two publications by Hallam (1960; 1965). An outline of the methodology of salt processing on the Toft land has recently been published (McAvoy 1984, 37) following excavations on a mound at Wainfleet. Features relating to the industry were noted during the recent straightening of a dyke at Wrangle (U10) (Bannister 1983, 104). The extent of the re-deposited silt in Wrangle has been mapped as part of this survey and depicted on Figure 78.

Earliest known references to saltmaking in Wrangle date to the late 12th century. Grants of salterns were often accompanied by further provision of carts for importing turves and exporting the processed salt, beasts for traction and, in turn, pasturage for the beasts. A grant to Waltham Abbey in the late 12th century provided pasturage in Wrangle for oxen 'sufficient to maintain seven salterns at the rate of six oxen to each saltern' (Hallam 1965, 170). This need for salt water marshes, freshwater fens and pasturage, demonstrates the interactive use of the different Fenland environments and the importance to the economy of maintaining those environments. Even if the manpower and technical acumen to drain the medieval peat fens had been to hand, its implementation would have been akin to biting the hand that fed the medieval economy. The same could be said of the Roman period, when extensive deposits of peat were also required. The notion that the Romans drained the Fenland because they had sufficient labour and hydraulic engineering skills to do so, is one that suggests they failed to exploit an easy and economic use of the landscape.

Turves for the saltern industry along the coast came from East, West and Wildmore Fens. East Fen was the nearest and most substantial source of peat. Requirements for the saltern industry were great. Godwin (1978, 114) believed the deeps (or meres) of East Fen were created by peat extraction for salterns. Much of the industry came into the hands of the county's numerous religious foundations. Kirkstead Abbey and the Abbey of Waltham Holy Cross were predominant. Hallam equated a grange of the latter with King's Hill (WRN 5), a spectacular,

but enigmatic set of earthworks which abuts Wrangle Bank and is on a major roddon (Plate VI).

The King's Hill earthworks that are currently under pasture (Scheduled Ancient Monument No. 84) are all that remain of a once larger complex. Although no specific reference to the site is known from early sources, it has been cited recently to clearly constitute a motte and bailey castle and to represent a secular rather than an ecclesiastical interest (Healey and Roffe, forthcoming). Pottery was found, albeit sparsely distributed, on the ploughed surrounds of the monument. WRN 4, predominantly a Roman site from within the ploughed area of the former earthworks, also yielded tile and pottery sherds of medieval date. The wide variety of wares within this relatively small medieval assemblage is unusual in an area where the Toynton kilns dominate. In addition to Toynton, the products of kilns as far afield as Grimston, Scarborough and Lincoln were found, along with unrecognised fabrics and two sherds of possible French origin. Indeed an exotic mixed bag, from which a 13th–14th century date can be inferred for use of the site.

Further north along the same roddon, another major site (WRN 8) was discovered. Set comparatively high, it was a substantial Romano-British settlement and saltern before being re-established late in the Saxon period. Pottery is mainly of the local Toynton type but the earliest forms are Stamford Ware. Other than for its unusual location north of Wrangle Bank (the Old Fen Dyke) nothing is known about the site.

King's Hill lies on the seaward side of the Old Fen Dyke which, according to Hallam (1965, 91), had pre-Conquest origins, at least in the parishes north and east of Wrangle. A correspondingly early date for the bank may be implied from the survey evidence, for it was apparent that the waste silts from the saltmaking that make up Leake Fold Hill were dumped up to, but not across, the line of the bank. A second, noticeably elevated defence, Gold Fen Dike Bank, is undated but served to protect the populated areas of Wrangle and Wolmersty from the potential flooding from Wrangle Low Grounds. By the late 12th century a further fen bank lay outside the Old Fen Dyke. This would seem to correlate with the 'Fen Dyke Banke' on Dugdale's (1772, 423) map of East Fen where it is depicted as extending from the Sibsey-Stickney border, around the coastal parishes to Firsby. It is possible that Lade Bank may be Dugdale's 'Fen Dyke Bank' in Wrangle, but a stronger contender must be the northern parish boundary of Wrangle, a slightly irregular line, but called 'Fen Dyke Bank' on the 1807 Enclosure Award map.

Much of the area of Wrangle Common between the Fen Dykes was thought by Hallam (1965, 91) to have undergone division and conversion to enclosed meadow by at least AD 1200 and, furthermore, he notes intakes called the Rifts beyond the outer Fen Dyke. The conversion and intakes may relate to an unexpected group of settlements (WRA 38–44) located in the north-east of the parish in the vicinity of Dickon Hills. Pottery from these sites ranged in date from Late Saxon on WRA 38, 39, 41 and 42 through to the end of the medieval period. Unsurprisingly most of the pottery was Toynton Ware but with Nottingham and Potter Hanworth sherds present. Other than WRA 40 and 44, which seemed to rest on humose clays, these sites were constructed on a series of 'mounds'. Augering (by M. Waller) showed these mounds to be composed of laminated silts, suggesting the material



Plate VI King's Hill, Wrangle, showing earthworks in pasture. The full extent of the site is indicated by surrounding cropmarks. (*Cambridge University Collection: copyright reserved*)



Plate VII Wolmerstye? Cropmarks of former ditches surrounding medieval sites on Wrangle/Friskney boundary. (*Crown Copyright/RAF Photograph*)



is *in situ*. It must therefore be concluded that the line of mounds was originally a roddon which has been transformed. It may have been an early roddon breached by the Iron Age incursion or, perhaps limited digging had created a higher, firmer foundation on which to construct the Late Saxon and medieval dwellings.

The observation by West (1966) that the north-east corner of Wrangle was formerly known as Wrangle Waltham, may relate these sites to the Grange of Waltham Abbey which Hallam (1965, 86) has associated with King's Hill. Late Saxon sherds on a number of the sites in this area do, however, pre-date the ecclesiastical foundations. WRN 8 must also be a strong contender for being a Grange site. Nearer to Wrangle village is a farm called 'The Grange', set within the 'Grange Lands' of the 1807 Enclosure Map. It is not known if ecclesiastical connections exist for the farm and lands. Access to the area was comprehensively denied and therefore the existence or date of pottery scatters could not be verified. Manor Farm, near the Leake Fold Hill silts was surveyed and scatters on the fields to the south and east show the area to have been in arable use since at least the 13th century and earlier on the silts to the north.

The conversion of Wrangle Common into meadows by AD 1200, does not entirely accord with a later description of the Common, then called Wrangle Mere, in 1560. It was then 'a certain pasture and pischary' and, in a long, pleading letter it was observed that the farmers 'took the profits thense in such a manner as the times of the season would permit and suffer them; that is to say sometimes by fishing, sometimes by taking profits of turbarry, sometimes by grazing of her parkes, by bovage or agistment of cattle' (Thompson 1856, 598).

The peat covering Wrangle Common in the Middle Ages may have been acid in nature. Waller (1988a, 60) noted high pollen values for plant taxa characteristic of bog vegetation in the upper levels at Small End. Arthur Young (1813, 263), cited Wainfleet and Friskney as land where cranberries (typical of an acid peat environment) were commonly found. Descriptions of peats as mosses are also often indicative of bog vegetation. The 'mosses of Friskney' were referred to in 1392 (Thompson 1856, 621), 'le Mose' at Hilldyke in East Fen belonged to Sibsey in 1325 (Hallam 1965, 94) and a Moss Dyke is known from the fen side of Old Leake in the late 12th century (Hallam 1965, 88). All suggest a more widespread distribution of bog vegetation.

Wrangle village itself was inexorably bound up with salt water, rather than freshwater, environments. It grew from a sparsely populated *Domesday* settlement into a rich medieval port and haven. Hallam (1965, 73) suggested that the land south of Lockham Gate was once part of Wrangle Haven. Although the area is, like the surrounding land, covered by silt, both Roman and Late Saxon sites and scatters were found there. Wrangle Haven was probably much less extensive than Hallam implied and consisted, perhaps, of moorings on the side of the creek. Thompson (1856, 609) noted that 'it is traditionally asserted that vessels formerly sailed up the harbour to within a quarter of a mile of the church'. The bends in the 'crooked creek' would have offered protection to vessels moored near to the Joy Hill area, close to the village and church and, traditionally, the site of a medieval market.

Between village and fen the scatters of pottery delimit the medieval arable. 'Wranglecornfen' confirms arable utilisation by the late 12th century but field names in the

1807 Enclosure Awards are an evocative reminder of essentially watery surrounds; south of Gold Fen Dike Bank are Reedy Lands, Sweet Meer and Wet Riggs; south of Wrangle Bank are Fish Meer and Eel Pool Lane, while the area between Lade Bank and Fen Dyke Bank was, and remains, Toadland.

On Figure 78 the Toftland is indicated by stipple. Some plotting of individual mounds and allocation of site numbers (*e.g.* WRA 19–24) took place before it became clear that each mound was part of an overall group. These site numbers have been retained and appear on the medieval landscape map as saltern symbols but many more could have been added over the whole of the Toftland. In a number of places mounds have been levelled, as at Judegate Farm. At the time of levelling the farm manager noted nothing of archaeological significance other than a few 'ashy patches'.

## VII. Conclusions

Landscape survey enables the identification of widespread changes through space and time: changes of environment, recognisable through the type of sediment deposited, and changes in settlement location preferences. The term 'landscape' implies 'large-scale', and although Wrangle contains 2656 ha it still offers only a 'keyhole' perspective by comparison to other areas surveyed as part of the Fenland Project. Survey to the east and west of the parish would be illuminating. Survey to the north, on the peat land towards the East Fen parishes and Midville, is less of a priority but would assist in determining the extent and direction of the Iron Age marine episode.

In many ways the survey of Wrangle was successful; it has enabled the archaeology between East Fen and the sea to be studied, and, through collaboration with the Project's palaeoenvironmentalist, Martyn Waller, the archaeology has been related to the contemporary environments. The obvious benefits of a multidisciplinary approach to landscape studies have been reinforced at Wrangle. The recognition of the Toftland as wholly artificial, has meant, however, that none of the band of silts that border much of the Wash, of which the Tofts were originally thought to have been part, has been examined in the county, other than the inland fringes in Quadring, Gosberton and Pinchbeck. Survey in those parishes proved to be immensely valuable, particularly in respect of the discovery of an Early and Middle Saxon landscape (Hayes 1988; Hayes and Lane 1992).

Retrospectively, the Wash silts can be seen to have formed in the parishes south of Old Leake. Survey in that area may serve to produce results comparable with those from the Pinchbeck region. In the end, however, pressures of time and funding rule the roost.

Wrangle contains land, particularly in the north-west, that is buried by less than a metre of Flandrian sediment. This undulating early surface ensured that some land remained dry into the Bronze Age. During the Bronze Age an incursion deposited silt and clay over the south of East Fen. The area north-west of Wrangle did not finally become submerged until the mid/late Bronze Age incursion. A subsequent incursion, perhaps from the direction of the Steeping estuary in Wainfleet, enveloped at least the northern part of Wrangle in the Iron Age. Beyond the inland limits of these sediments, a long-lasting freshwater fen prevailed, maintained on the whole by high



Plate VIII Saltern mounds at Wrangle

ground-water, though at times apparently by precipitation. During the later periods bog vegetation developed. Sometime in the Iron Age, probably in the century or so immediately preceding Roman domination, the extraction of salt commenced. Pottery indisputably from the Iron Age is sparse, but nevertheless present. A number of sherds from Wrangle cannot safely be ascribed either to Iron Age or native Roman manufacture, but must belong within those periods. It is predominantly briquetage studies that have enabled the putative pre-Roman salterns to be identified. Much of the Roman settlement appears to be early, though some late sherds are known. Survey in Wrangle did not yield up the full Iron Age/Roman picture. In apparently claiming back some of the Roman land surface the sea has denied the opportunity to investigate the true Roman coast. What remains of the Roman surface probably belongs more to the inner (landward) rather than outer marshes.

The apparent desertion of Wrangle during the Early and Middle Saxon periods was followed by a Late Saxon

re-colonisation with centres at Wrangle and Wolmersty. Prior to the Norman Conquest, salt was processed by a method which required a large-scale expenditure of human effort in silt collection and disposal. This process led to the formation of Wrangle Tofts, and those of Friskney and Wainfleet. North of the Tofts was arable land, as evidenced by scatters of sherds derived, it is assumed, from manuring. Beyond the arable lay the meadows and finally the Fen, not a waste or a wilderness, but a source of fuel for the salterns.

Perhaps Wrangle, as much as any of the parishes investigated during the Fenland Survey, demonstrates the variety and variability of Fenland landscapes. Appendix VII, and the accompanying figure, indicate a range of activities on the coast. The salterns were, by necessity, based on the sea's edge, close to a limitless natural resource, but latent without the power of peat. They are, perhaps, the best example of the interdependence of marsh and fen and human need, and capacity, to utilize both environments.

# 5. Discussion

## I. The Northern Fens

After concluding the first phase of the Fenland Project up to 70% of the Lincolnshire Fenland remains unsurveyed. It is valid, therefore, to divide the discussion section in this final fieldwork volume for Lincolnshire between a regional assessment of the northern fens and fen-edge and, in part II, to make some observations on the larger, unsurveyed areas, in the light of the work that has been completed.

Figures 79 to 82 depict the changes through time of the environment and settlement along the northern fen-edge. The area including Dogdyke and Wrangle has undergone a sequence of profound changes to its landscape, transformations which gradually affected the lifestyle and prosperity of its inhabitants. Through the results of intensive survey, and palaeoenvironmental investigations of a mainly opportunistic nature, an outline picture of the developing landscape has been painted. Having started with a canvas that was virtually blank it is hardly surprising that a clearer perspective now exists. As yet, however, it remains no more than an outline, a framework partly infilled in certain areas but conspicuously blank elsewhere. The evolution of West Fen, for instance, lacks the more precise definition of its eastern counterpart. Partly this is due to survey in West Fen being limited to the area immediately adjacent to Stickney island. Moreover the apparently uninterrupted deposition of marine sediments in West Fen has precluded the formation of intercalated peats, therefore the potential for radiocarbon dates is limited.

These northern fens were dissimilar to corresponding marine landscapes of the western Fenland, in that no Iron Age, Roman or Saxon cultural remains were present on the fen surface to offer relative dates for the stabilizing of that landscape. It is possible that the surveyed part of West Fen had already returned to a freshwater dominated environment by the Iron Age, thus discouraging settlement. It is unfortunate that little is known about this 'upper' peat in that none survives. A previous assumption (Hayes and Lane 1984, 9) that the land surface of West Fen, which lay at c.1.5 to 2.0m OD, was too low to support Roman settlement, may now be in question after sites were found in Wrangle at about one metre OD (see also Silvester 1988b, 156 for Roman sites at 1.5m OD in Marshland, Norfolk). However, the principal reason for the assumption, that the surface was seasonally or permanently waterlogged, remains unchanged. If, as seems likely, peat already covered West Fen in the Roman period, it would have deterred settlement. The lack of any early settlement on peat was an observation made repeatedly during the survey. The Wrangle sites were nearer the influence of the sea and existed on the dry end of the marshes rather than fens.

The suggested Late Neolithic date for the onset of marine conditions in West Fen is based on available radiocarbon dates of Q-2568  $3810 \pm 70$  BP (2410–2140 Cal.BC) from basal peat near Bettinson's Bridge at the junction of Coningsby and Wildmore parishes and from basal peat at Gypsy Bridge in Thornton-le-Fen parish. The latter indicates that waterlogging commenced around

Q-2566  $4070 \pm 80$  BP (2835–2495 Cal.BC) with a marine incursion recorded approximately 250 years later.

The development of East Fen is more fully understood, chiefly because the marine sediments which overlies the basal peat subsequently became covered by peat. This has enabled both the onset and termination of sedimentation to be calculated by means of dating samples taken from the upper and lower contacts of the peats. All the dates from the northern fen-edge suggest marine environments had reached the inland limits of their advance in the later third and early second millennia BC. The advance of a second, separate, and short-lived marine incursion in East Fen was dated to Q2563  $3120 \pm 70$  BP (1485–1320 Cal.BC) at Hobhole site 'B' and a third, in Wrangle, to Q-2825  $2385 \pm 60$  BP (540–395 Cal.BC).

Peat which then formed in East Fen is likely to have attained a considerable thickness. At least some parts became acidic (Godwin 1978, 97). Towards the end of the 18th century Young (1813, 263) recorded about 300 acres (121.5 ha) of fen, chiefly common belonging to Wainfleet and Friskney, where cranberry and other 'mountain plants', including *Empetrum* (crowberry) were common but 'grew in no other parts of the fens'. Both cranberry and crowberry are indicative of bog vegetation.

Surface peat of sufficient thickness to make utilisation worthwhile could be found on West Fen in the Middle Ages. For instance, a number of early 13th century charters relate to grants of turbarry in West Fen (Hallam 1965, 163). In Wildmore Fen, between West Fen and the Witham, the early presence of peat, or 'moor', is implicit in the parish name.

The disappearance of peat, virtually without trace, from west of Stickney, could be the result of a high degree of exploitation in the medieval period, enhanced by early local drainage and reclamations around the enclosures belonging to the Abbeys at Revesby and Kirkstead. Remnants of surface peat survive in East Fen but are rapidly disappearing. Changes to East Fen were instigated by drainage and enclosure, and will conclude with the surface totally free of organic cover and resembling the surface of West Fen.

Prior to the formation of those wetlands, the area existed as a broad, low, plain incised by river channels. In the north-eastern fens surface soils were formed on a Devensian Till, occasionally overlain by thin sands and gravels (Robson 1985, 3).

A notable feature of the Mesolithic, and indeed later, landscape would have been the Stickney ridge, a narrow spur of higher land jutting south into the Fenland basin from the southern extremities of the Wolds. The earliest traces of Mesolithic people record their presence in a landscape unaffected by waterlogging. Comparatively dense scatters of distinct small blades and microliths found near East and West Keal identify frequent stopping-off places. These sandy summits must have been conveniently within range of the traditionally hunted or gathered supplies of food.

Mesolithic and Neolithic flints found on patches of sandy soils exposed by the vanishing peat in East Fen and Dogdyke, emphasise a widespread presence along the

northern fen-edge and a striking preference for light soils (e.g. the Mesolithic site at Anwick recorded by Chowne and Healy, 1983). Lighter soils are also favoured for early prehistoric settlement elsewhere in the county, notably in the Scunthorpe and Ancaster regions (May 1976, 36).

There can be little doubt that many Mesolithic sites lie beneath the Flandrian deposits of the northern fens but only where they had been sited adjacent to rivers is there much hope for the presence of accompanying organic remains. The majority of sites were abandoned in dryland conditions and several millennia passed before their inundation. Their burial has, however, shielded these sites from c. 4000 years of weathering and from the ravages of recent cultivation, thus their condition, and potential, greatly exceeds that of ploughed dryland sites.

Healy (p.103) has outlined the problems of identifying Earlier Neolithic sites from surface scatters. Although such sites are strikingly less evident within the overall lithic assemblages than those from preceding and succeeding periods it would be difficult to find reasons for a virtual abandonment of the northern fen-edge. It is much more likely that the area continued to prove attractive throughout the early prehistoric periods. Certainly evidence for Middle to Later Neolithic activity is widespread on the northern fen-edge.

During the third millennium BC, the changing landscape began to exert its influence on the local population. Encroaching waterlogged conditions would have forced the abandonment of sites in the Fenland Basin and it is these sites which offer the potential for the survival of buried, waterlogged remains. Discovery of at least some of the sites has been made in Midville where, due to their relatively short term of exposure to attrition by weather and cultivation, plant-gloss has been identified on certain of the flints. However, if any of these sites are to be further investigated, or preserved, it requires a research programme to enable discovery to be made before the sites undergo the deleterious effects of plough damage and dewatering. One method that could be used is dyke survey such as that recently undertaken in the fens east of Peterborough (Crowther *et al* 1985, French 1988 and 1989) and previously at Horbling, Lincolnshire (Chowne 1980). The method is opportunistic, that is, it can only be undertaken subsequent to the clearing of the dyke-side by the farmer or drainage board or the cutting of new dykes. It is also a haphazard technique of locating sites. However, it does afford opportunities to view and sample sections of the buried landscape which itself could well be termed an archaeological site, and to recover details of palaeogeography, palaeoenvironments, the Flandrian sedimentary sequences and buried soils.

It is not known how many Neolithic sites are buried by the Flandrian deposits of the fens. Much of the former surface of East Fen is composed of Till, similar to the surface geology on the Stickney ridge, where there was little evidence of Neolithic activity. But the Midville sites indicate that sandy patches exist in the area and attracted Neolithic settlement. Use of the land may have been tied in to cycles of clearance and regeneration of woodland but, given the density of lithic scatters on the high ground of the northern fen-edge, and of burial monuments in the interior, the area could have been well-populated, and the landscape and land-use ordered and organised just as it appears to have been in the Peterborough region (Pryor 1988).

Initially the gradual encroachment of fen may have

intensified the pastoral element within an established system but it would then have heralded a time of upheaval for communities living in the fen basin. The communities living furthest away from the highland edge would, naturally, have had to retreat first. Whether withdrawal from the slowly advancing fen was gradual with frequent relocations, each time on higher, firmer ground, or whether the communities travelled over long distances is not known, but it has a bearing on the number of settlement areas now buried. The idea that communities adapted to deteriorating environments by digging ditches or building mounds (Brandt and van der Leeuw 1987) may be feasible later in prehistory, but Neolithic people are less likely to have endured, and adapted to, the freshwater floods that preceded the marine incursions in the Fenland, particularly if their traditional lifestyle had not been one of permanent, long-term settlement.

What happened to sites in the Fenland Basin can only be assumed, but what is known is that there existed a string of Late Neolithic or Early Bronze Age sites along the limit of the contemporary fen, and their presence implies utilisation of the fen resources. Additionally, there is a dense concentration of lithics and some Bronze Age ceramics along the high ground to the north.

The continuation of settlement into the Bronze Age is marked by pottery sites along the sandhills in Hagnaby and Stickford. This early pottery has flint fragments incorporated into the fabric not unlike some of the finds made on the Norfolk fen-edge, and, in general, this undulating landscape is not dissimilar to that of the Norfolk and Suffolk fen-edges. Elsewhere on the fen-edge can be found limited indications of Early Bronze Age activity. Pottery evidence is matched by that from flint sites, both along the fen margins and on the overlooking hills (Fig. 79). Ring ditches on the East Keal-Hundleby border may be the remains of barrows, more of which once overlooked the upland valleys.

The distribution of ring ditches recorded by aerial photography and fieldwork along a transect in North Lincolnshire has highlighted a preference for constructing round barrows on the Chalk Wolds, rather than on the Jurassic limestone. Out of 51 ring ditch cropmarks recorded by Jones (1988, 19), 47 were from the Wolds and only 4 from the Jurassic limestone. In respect of artefacts a similar imbalance can be seen when comparing the northern fen-edge, which adjoins the Wolds, and the western margins which border the Jurassic limestone. The pre-Middle Bronze Age finds are heavily clustered in the north. However, artefacts from the Middle Bronze Age are more common on the western margins. Especially noticeable is the density of Middle-Later Bronze Age pottery sites, such as that at Billingborough (Chowne 1980). Some Billingborough-style pottery was found in the north, at Stickford (SKD 7), and scattered sherds were recorded in Wrangle, where the underlying Till had been ploughed through the thin marine sediments, but the general distribution of this type of pottery in the north is sparse.

During the Bronze Age, the marine influence in the northern fens abated and peat began to reform. It remains debatable as to what extent the reduction in settlement in the north can be attributed to the increasing isolation that the widespread growth of peat caused. There was very little evidence from field survey for a Late Bronze Age presence on the northern fen-edge. In a study of Bronze Age metalwork Gardiner (1980, 102) noted that

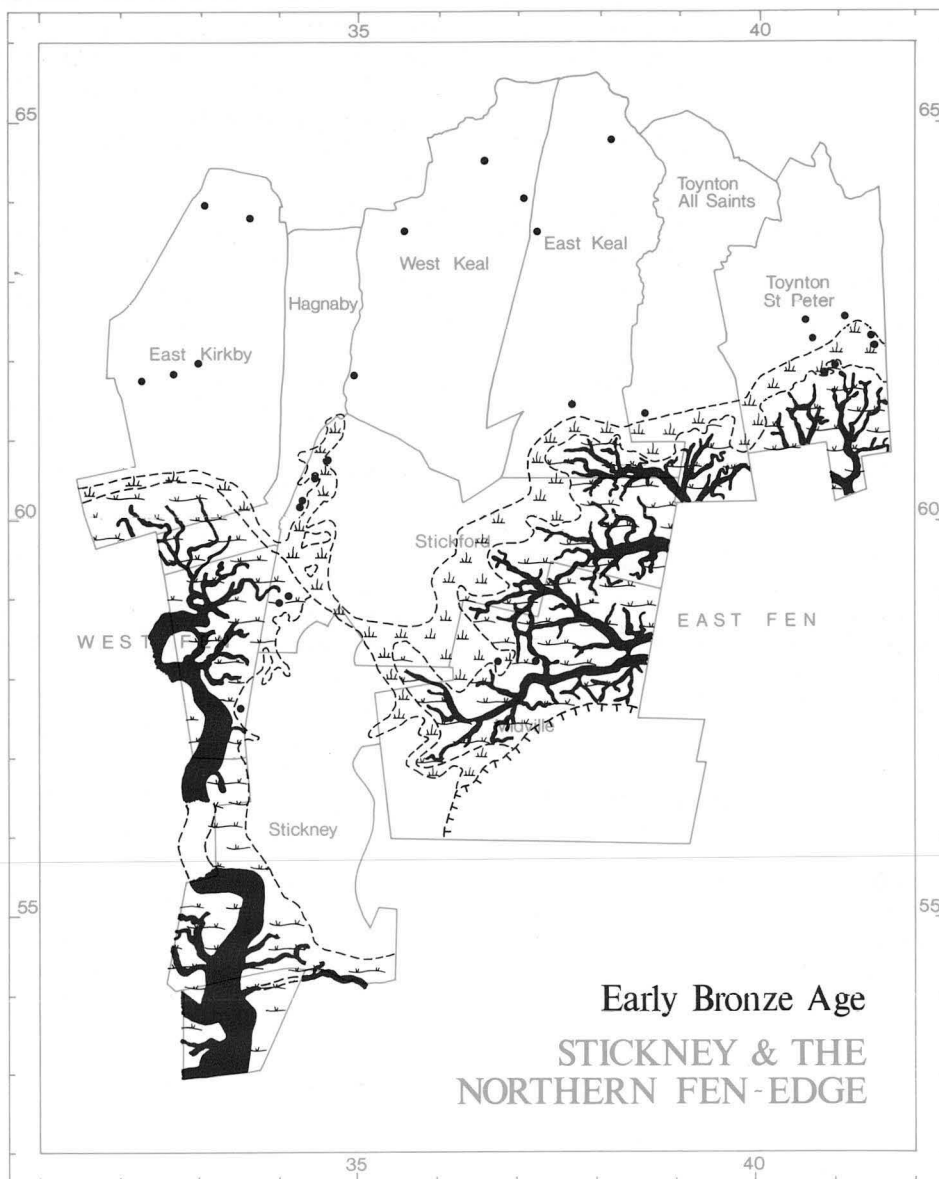


Figure 79 Stickney and the northern fen-edge: Early Bronze Age. Scale 1:100,000

the Wolds area was 'largely devoid of metalwork in the later [Bronze Age] periods'. Nevertheless, her distributions of Middle and Later Bronze Age metalwork indicates concentrations in the wetlands around the southern Wolds area (Gardiner 1980, figs 3 and 4). These, and the Witham Valley bronzes (see below) are peripheral to the Wolds and were deposited from there. Therefore, some activity producing wealth did continue in the Wolds throughout the Bronze Age.

For the early Iron Age there is a paucity of evidence both in the northern and western regions. On the western edge this was broken by Middle Iron Age settlements and salterns before the archaeological record resumes its blank appearance. Wrangle had salterns in the Iron Age, but precise dates are unknown. Elsewhere along the flood-free northern edge evidence for settlement is very sparse. Peat which spread south left the area isolated from the prime saltmaking zone.

Further inland, Horncastle was thought to have developed in the Late Iron Age (Field and Hurst 1983,

84; May 1984, 21), and a Late Iron Age defended enclosure, with extensive evidence of stock grazing, was excavated at Tattershall Thorpe south from Horncastle along the Bain Valley (Chowne *et al* 1986). Horncastle was one of a series of possible proto-urban centres which May (1984, 21) suggested marked the division of lands into subordinate chiefdoms during the 1st century BC.

A problem in locating Late Iron Age pottery, or, alternatively, its absence, was a feature of the western fen-edge (Hayes and Lane 1992; Lane 1988), and the material was similarly elusive on the northern margins. During a recent survey of the nearby Bain Valley 'not a single sherd of Iron Age pottery was found' (Chowne 1988, 186).

It is not envisaged that any major changes affected the fens on either side of the Stickney ridge during the Roman period. The landscape would have remained peaty and seasonally inundated.

The northern fen-edge Roman sites have received comment in Chapter 3, and here it can only be reiterated that they are generally small in area and lacking in

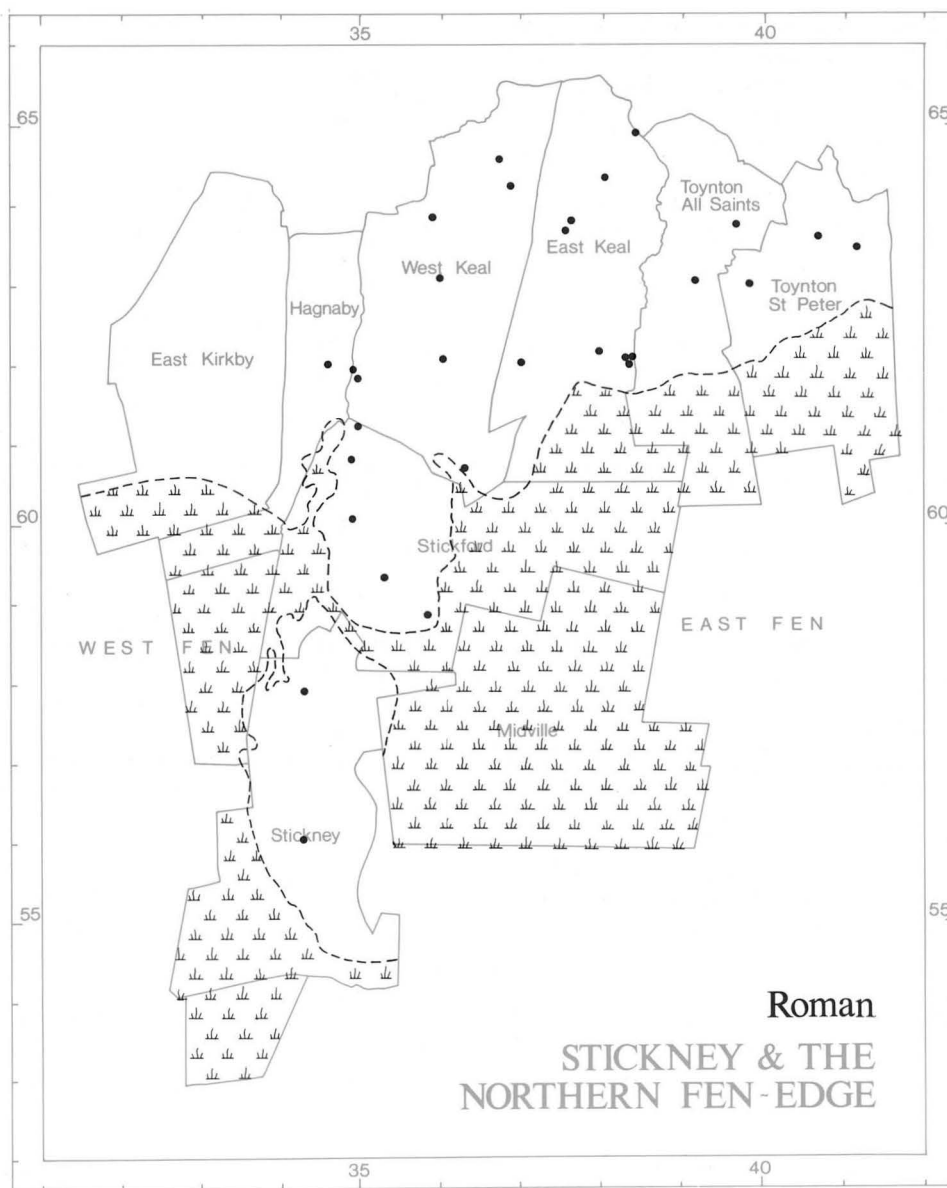


Figure 80 Stickney and the northern fen-edge: Roman. Scale 1:100,000

finewares. Even among the grey-wares are sherds from ill-made vessels, some with unusual fabrics. Other than in East Kirkby, one of the rare parishes where no Roman settlements were detected (although scattered sherds and a lead weight, Fig. 88 No. 6, were noted), the distribution of occupation sites is uncommonly even and embraces both the uphill and downhill zones (Fig. 80). The largest sites both in terms of area and quantity of sherds are WKE 16 and TOP 4, the remainder are small indeed.

A brief analysis of the Roman sherds found in West Keal gives an idea of the typical poor quality of the finds. A total of eight sites (including HAG 2, which straddles the parish boundary) yielded 581 sherds, to give a mean of 72.6 sherds per site. Of these 554 (95.4%) are grey-wares, 18 (3.1%) are calcite-gritted, 7 (1.2%) are colour-coated and 2 (0.3%) are mortaria. Not a single sherd of samian was found in West Keal. Off-site material was limited to 112 sherds, of which 32 (29%) were from the fields in which settlement sites were found and these sherds may have been outliers. Thus, it would seem that

arable agriculture, or at least the manuring which identifies it, was limited.

It may be that, rather than being farms, some of the downhill sites represent the temporary bases of people using the fen, for example herders or peat-cutters. It could be argued that the temporary accommodation areas used by such seasonal workers might not be expected to display the wealth created by their activities. But even the larger, more permanent looking 'farmstead' sites have little variety in their pottery assemblages. WKE 16A and B has 98 sherds, 92% grey-wares, 5% calcite gritted, 2% colour-coated, 1% mortaria. TOP 4 has 218 sherds, 98% grey-ware, 1% calcite-gritted and 1% colour-coated.

Over on the coast at Wrangle, the pottery from Roman settlements was marginally more varied without the sites being in any way ostentatious. The additional available produce, such as shellfish and salt, could account for this apparent slight increase in prosperity but the sites still lack the quantities of finewares recorded on the western fen-edge. However, it must be emphasised again

that some of the Roman land surface in Wrangle appears to have been lost to the sea and the lost part may have been the richer part. The pottery from 20 Roman sites in Wrangle was quantified. The sites included salterns where ten or more domestic sherds were present and, overall, the total number of sherds amounted to 3118.

In this analysis the main differences to the West Keal sites are a larger mean of sherds (155.9), the presence of samian (3.5%), and an increase, from 3.1% in West Keal to 6.2% in Wrangle, of calcite-gritted sherds. Corresponding values were recorded for colour-coated sherds while grey-wares fall from 95.4% in West Keal to 87.6% in Wrangle. These figures make an interesting comparison with those recorded on the western fens where, between Billingborough and Morton, the values for colour-coated pottery were more than 17% and for grey-wares less than 60%.

	<i>West Keal</i>	<i>Wrangle</i>	<i>Western Fens</i>
Grey-ware	95.4%	87.6%	58.3%
Calcite-gritted	3.1%	6.2%	19.9%
Samian	0	3.5%	3.1%
Colour-coated	1.2%	1.6%	17.1%
Others	0.3%	1.1%	1.6%

One reason for the difference in quantities of colour-coated pottery between the western and northern fens could be the proximity to kiln sources. Additional costs involved in transporting to the northern fens the colour-coated wares manufactured in the Nene Valley may have suppressed demand. However, corresponding values for imported samian in the western fens and in Wrangle might argue against this. Although distant from the Nene Valley, the northern fens are within market range of the Lincoln kilns which produced colour-coated wares, but on a smaller scale than the Nene Valley. The lack of recognised Lincoln wares in the northern fens is puzzling.

The percentages of pottery types calculated for the western fens include not only the finds from the fen-edge, but also those from out on the marshes. No equivalent settlement phase took place on the northern marshes. For Dunsby parish, on the western fen-edge, tables have been produced which show the percentages of the main pottery groups broken down into three environmental areas, fen-edge, roddon and silt-edge (Hayes and Lane 1992). The fen-edge sites in Dunsby offer the most accurate comparison with the West Keal sites.

	<i>West Keal</i>	<i>Dunsby (fen-edge)</i>
Grey-ware	95.4%	60%
Calcite-gritted	3.1%	25%
Samian	0	4%
Colour-coated	1.2%	10%
Others	0.3%	1%

There are major differences in the grey-ware and calcite-gritted values but even on the 'richer' western fen-edge, only 10% of the sherds were colour-coated. The Dunsby 'roddon' sites were on the marshes, in the saltern zone, immediately seaward of the peaty fen-edge. If it is accepted that the sea now covers some of the land that was available for settlement in Wrangle during the Roman period, then the 'roddon', or inner marsh sites in Dunsby offer the nearest equivalent in landscape terms to the sites recorded in Wrangle.

	<i>Wrangle</i>	<i>Dunsby ('Roddon')</i>
Grey-ware	87.6%	60%
Calcite-gritted	6.2%	25%
Samian	3.5%	4%
Colour-coated	1.6%	9%
Others	1.1%	2%

There remain large differences in the grey-ware and calcite-gritted values but the Wrangle sites are still poorer in terms of finewares. The richest area in Dunsby is the most seaward, the 'silt-edge' group, where 28% of the sherds were colour-coated, 19% calcite-gritted and only 48% grey-wares. The 'silt edge' in Dunsby would equate with the most seaward part of Wrangle, the part now lost.

There is a possibility that Roman pottery kilns existed on the northern fen-edge. A considerable industry had developed between Toynton and Bolingbroke, north of Hagnaby, in the Middle Ages and dominated the local markets. If there were local kiln sources in the Roman period their (grey?) wares may have been cheap enough to affect the colour-coat market. It must also be remembered that the high percentages of grey-wares, and generally low numbers of sherds, makes many of the sites virtually undatable within the Roman period. The use of some of the sites may pre-date the main production period of colour-coats, although this would not explain the lack of samian. Nevertheless, it is still likely that the overall lack of fine pottery on the northern fen-edge genuinely reflects the relative poverty of the inhabitants.

The Saxon picture now benefits from the discovery of settlements to match the cemetery at West Keal. Settlement inland, away from the immediate fen side, can be seen to be a feature of both the northern and western fens (Fig. 81).

The Early Saxon cemetery at West Keal was in use before AD 500, and the pottery has an apparent Anglian or Anglo-Frisian element (Thompson 1956, 196). A schematic zoomorphic figure on one of the urns is comparable to examples found at Lackford and at a Frisian *terp* (Thompson 1956, 192).

SKD 10 is perhaps the most significant new Saxon site located during the survey in the north. It spans the period between the Roman and Norman conquests. This is important for it was a frontier settlement, on the southern periphery of the kingdom of Lindsey, and occupying a strategic position that could control or monitor movements along the Stickney ridge, the main access into and out of the Fenland.

Wrangle produced no evidence of Early or Middle Saxon activity. Its pattern of Roman settlement appears to be truncated but the position of Late Saxon and medieval salterns between Wainfleet and Wrangle would suggest that no further erosion had taken place subsequent to their inception. The catastrophe that obliterated part of Wrangle would thus seem to have taken place in the Late Roman, Early or Middle Saxon periods. Further north, erosion is known to have affected the Roman coastline, although the loss of an apparent major Roman settlement near Skegness may not have occurred until as late as the 15th century (Whitwell 1970, 52).

Local conditions at the time of the foundation of the Late Saxon villages of Wrangle and Wolmersty are not known. The height of the saltern mounds precluded the need for a sea-bank in the Middle Ages and any Late Saxon sea defence would presumably now be obscured by the mounds. The presence of a Late Saxon sea bank would seem likely for, even if it was a notably placid time, the

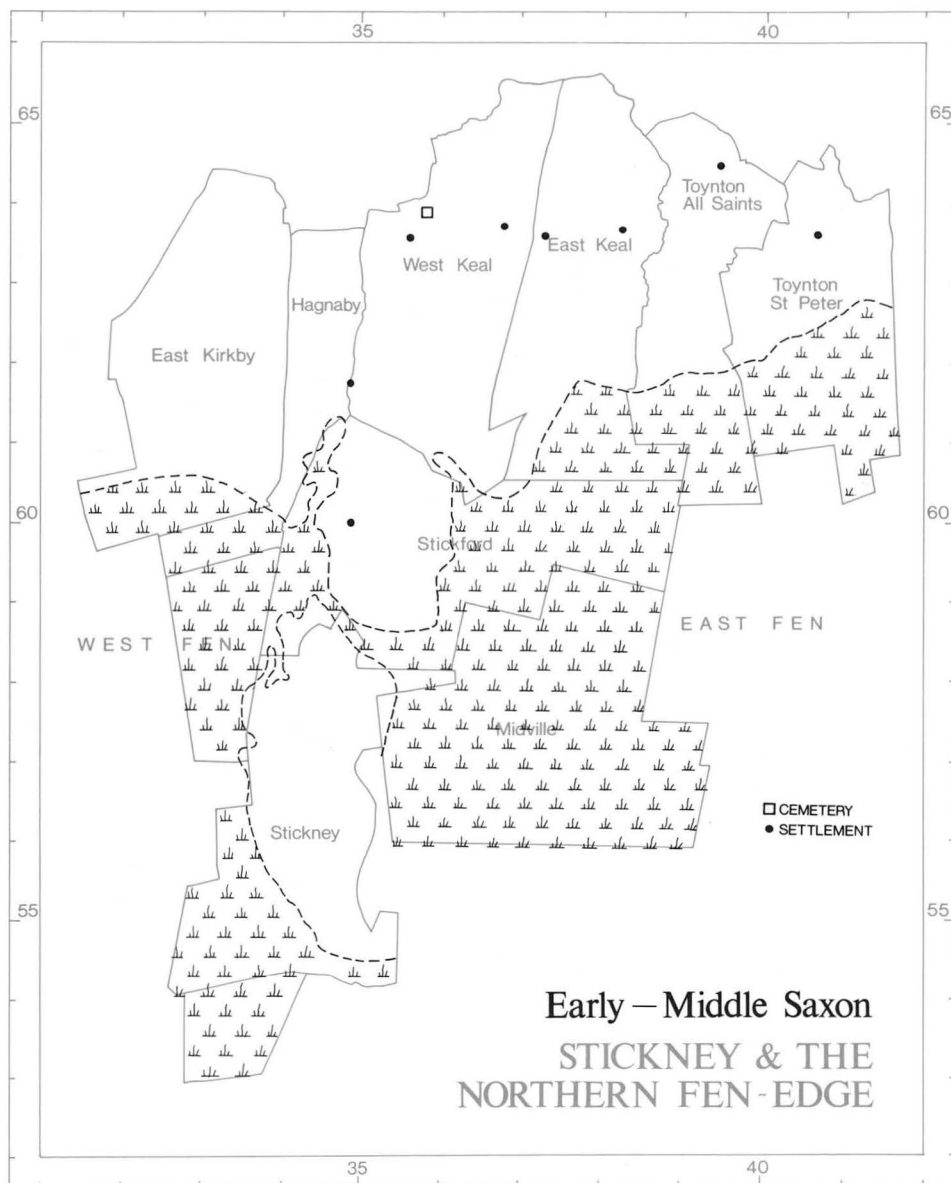


Figure 81 Stickney and the northern fen-edge: Early-Middle Saxon. Scale 1:100,000

effect of occasional spring-tide surges could have been calamitous. Some flooding had taken place shortly before the *Domesday* survey and a portion of Guy of Craon's manor was classed as 'waste on account of the action of the sea' (Hallam 1965, 125).

Seaward reclamations in Wrangle did not occur until the 17th century but, at the inland edge, the extensive bank which bordered East Fen at that time was the last in a series of fen banks which had been in existence prior to the 11th century. Land between the fen banks and the coastal salterns was by no means all arable; much was important meadowland. Thompson's description of Wrangle Common (p.79) in the late Middle Ages suggests that meadow formed part of the area and Hallam (1965, 148) refers to *Netherheng*, which, in the early 13th century was 'a place of meadow . . . abutting south on *fendike*' (Wrangle Bank?). Few traces of the medieval strips were found in Wrangle although the pattern of narrow fields on either side of Gold Fen Dike Bank suggests their more widespread existence. A rare

example was recorded in pasture at the north end of Gateroom Lane. In general the ditched strips of the Fenland, or *dylings*, were broader and straighter than those of the upland ridge and furrow.

Traces of ridge and furrow were common on the uplands, particularly on the clayier, downhill zone. The entire pattern was recorded on the flood-free area of Stickney island. No field systems were recognised in West Houses, the medieval enclosure adjoining Stickney Grange but Hallam (1965, 138) recorded the apparent expansion of neighbouring Sibsey's common fields into the reclaimed fen.

Little expansion south into the fen is known from the northern fen-edge, although there was some modification of the earlier landscape in East Keal and the Toyntons. This took the form of diverting the streams before they reached the fens, to make them flow across the fen-edge. This ensured a regular and controllable supply of water to the important meadows. A similar diversion was made in East Kirkby. The stream now



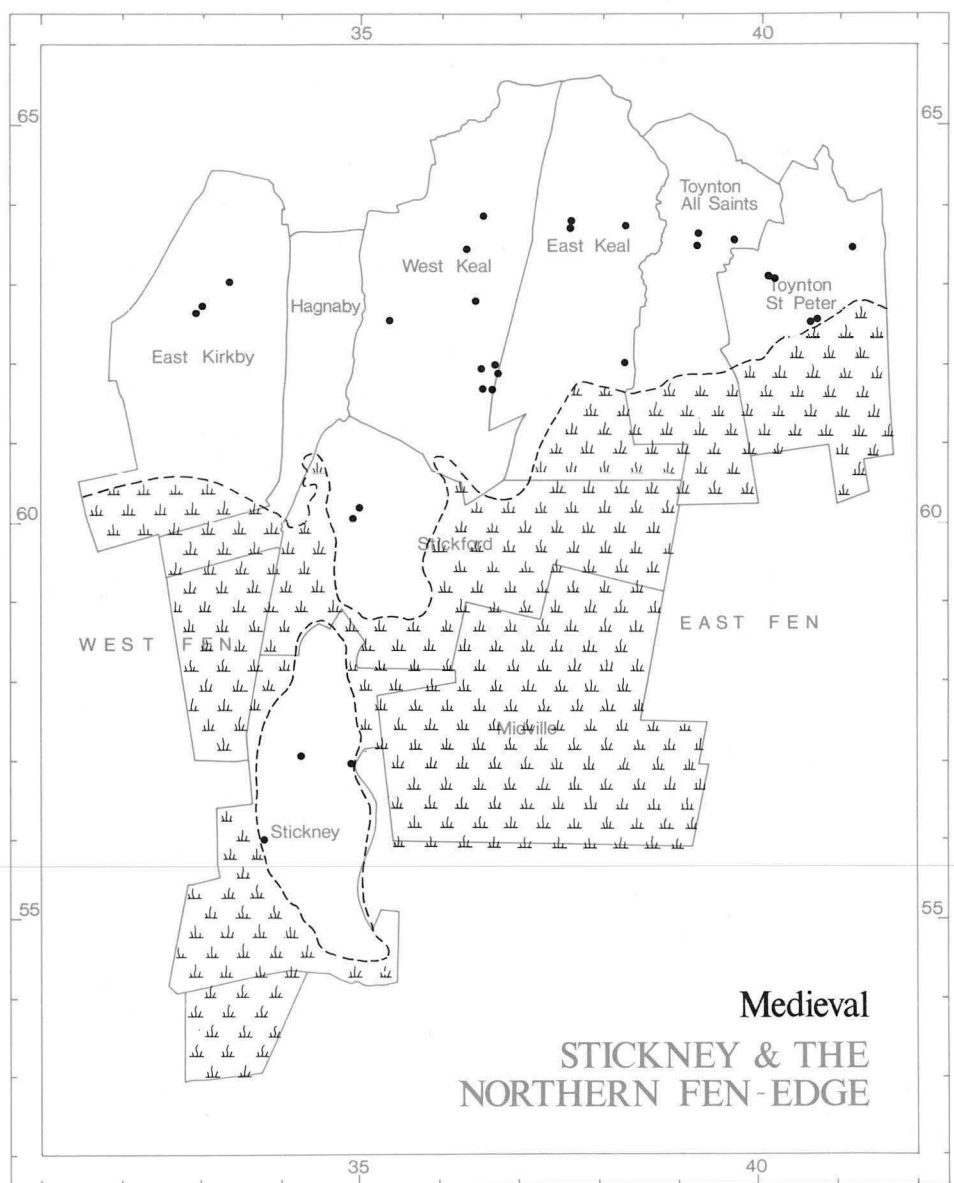


Figure 82 Stickney and the northern fen-edge: Medieval. Scale 1:100,000

running across the fen from west to east marked the division between arable and meadows. No scattered pottery was found south of the stream at Kirkby Fenside.

In the absence of a fuller historical record it is not clear how the economic development of the northern fen-edge progressed. Between the 11th and 13th centuries the silt fens of Lincolnshire and Norfolk experienced a rapid economic growth (Hallam 1965, 197; Silvester 1988b, 160, Williams 1982, 89). There is little to suggest that the northern fen-edge grew especially rich. Its churches, for instance, consistently fail to match the overall grandeur of those on the western edge or on the siltland. There are, however, traces of buildings that were seats of wealth and power on the northern fen-edge, notably the Abbey at Revesby and the castles at Old Bolingbroke and Tattershall. The northern fen-edge had its specialist industries, aside from the fen products. Pottery was made in the vicinity of Toynton All Saints and Old Bolingbroke, and from there distributed widely

(Healey 1984, 74). Wrangle also had sources of prosperity in its sea foods and the saltmaking, though much of the latter was in the control of religious institutions. Kirkstead Abbey had a great deal of interest in the salt production of Wrangle.

The northern fens continued to provide a means of supporting a local population who greatly resented and actively discouraged drainage and enclosure. Darby (1956, 46) records the opposition in the 17th century to the Adventurers. Young (1813, 256), the great champion of drainage and enclosure, is more vivid and describes how 'a large mob, under the pretence of playing at foot-ball, levelled the whole of the enclosures, burnt the corn and the houses, destroyed the cattle and killed many of those who occupied the land'. After they had 'proceeded to destroy the works of drainage' the 'country was again inundated as it formerly had been'. The reluctance to accept enclosure was also a measure of the Fenman's success in making a living from the opportunities offered by the Fenland.

Parliamentary enclosure of the open fields on the northern fen-edge was undertaken in the last quarter of the 18th century and the newly fenced fields must have made a stark contrast to the still open fenland. Eventually, at the beginning of the 19th century, work began on draining East, West and Wildmore Fens. The story of post-medieval drainage is not one that belongs in this volume; readable accounts exist elsewhere (Wheeler 1896, Darby 1956, Thirsk 1957, Dear and Taylor 1988). It is the damaging affect of drainage on the archaeology that is our concern. This damage has been outlined for the northern and western fens: what of the unsurveyed areas?

## II. The Unsurveyed Fenland

A reconnaissance survey of the sort described here is a vehicle for data acquisition to assist in establishing future strategies. This initial stage has now been completed for the northern and western margins. However, in the region of 70% of the Lincolnshire Fenland remains unsurveyed using the systematic methods adopted by the Fenland Survey. It is considered that a comment should be made concerning this larger area in the light of results obtained for the northern and western margins.

One of the questions left unanswered is the role of Bicker Haven in the early drainage of the fens. It was a considerable estuary, probably receiving a forerunner of the River Witham. Marine flooding sequences stemmed from it at widely differing periods. Results of survey on the western fen margins south from Billingborough (Hayes and Lane 1992) suggest that major marine flooding episodes in that area took place late in the Bronze Age or early in the Iron Age, and that Bicker Haven was the source. Among the evidence was pottery of Middle to Later Bronze Age date which was found partly buried by, and therefore predating, the deposition of marine alluvium in Rippingale Fen. By the 3rd–2nd centuries BC a considerable amount of sediment had been deposited and the land surface had sufficiently dried, enabling at least seasonal activities to take place in some areas. Further evidence for a late 2nd–early 1st millennium BC date for this deposition came from a radiocarbon date of HAR-1749 3010 ± 80 BP (1410–1145 Cal.BC) obtained from peat underlying marine deposits on the fen-edge at Horbling, north of Billingborough (Chowne 1980). This contrasts with the Late Neolithic–Early Bronze Age date for the incursion along the Witham Valley (see p.15), at a time when the Witham almost certainly debouched into Bicker Haven.

The difference in time may be explained by a combination of factors; not surprisingly, the earlier flooding took place closer to the major existing channels; subsurface geography, the height of the pre-Flandrian surface, also played its part. The occurrence of buried stream valleys and ridges was noted in the western fens during borehole investigations by Hayes (1985b) along with a further, partly submerged, ridge extending from Guthram in Bourne Fen to Dowsby, (Hayes and Lane 1992). Such localised features must have affected the nature and timing of the inundations. There is little detailed information regarding the pre-Flandrian geography of the northern fens.

The timing and extent of the complex marine incursions that deposited sediments between the northern and western edges is unknown, and it would require a

continuation of survey, perhaps with the support of a palaeoenvironmentalist, to acquire the data. Local variations in the pattern of sedimentation and peat development prohibit accurate assumptions as to the character and development of the fenland in the intervening 40km between Billingborough and Stickney. The diachronic evolution of these landscapes is all too evident from work already undertaken. East and West Fens are the perfect example; furthermore, there are distinct and diverse patterns of settlement on creek systems in Billingborough and nearby Rippingale Fens to confirm non-uniformity in the development of the Iron Age and Roman landscapes of the western fens.

Although an invaluable aid to survey in the peat fens, the use of air-photographs to identify creek systems is less successful on the marine sediments, where the colour-contrasts between the silt of the creeks and the surrounding silty clay soils are less pronounced. Usually only the small or the latest channels are visible. As an example, the wide roddon of the prehistoric River Witham cannot be detected on Plate III.

S.J. Hallam's general distribution map of the Roman Fenland (1970, Sheet k) indicates a broad division between the settlement patterns of the western and northern fens. Dense settlement is concentrated south of the 'Saltersway', a suspected Roman road leading east from Shoff Drove, Donington, through Horbling Fen towards Grantham. Far fewer findspots are recorded north of this line than to the south suggesting that the peat in East, West and Wildmore Fens, and the Witham Fens, once extended much further seaward than can be currently established (less fieldwork has also been undertaken in the north but many more chance finds would have been noted if the distribution of Roman sites was more widespread). Such conditions in the Roman period would have emphasised the isolation of the landward northern fen-edge and could have been a major factor in the area's apparently retarded economic development. The known Roman sites north of Boston, and in Holland Fen and Bicker Fen, would appear to be on the fringes of the silt, and contemporary sites may exist seaward of there, but would be wholly or partly buried. A return to active marine conditions late in, or soon after, the Roman period has been recorded in Swineshead parish. Transgressive overlaps (from peat to sandy silts) were dated to Q-2556 1660 ± 60 BP (315–425 Cal.AD) and Q-2558 1590 ± 60 BP (395–535 Cal.AD). It is not known how local these changes were, for the samples were taken in isolation. Nevertheless, similar dates have been inferred for localised marine inundation on the silt fringes in Quadring and Pinchbeck North Fen (Hayes and Lane 1992), and therefore the Swineshead dates may reflect wider marine activity.

The formation of the siltland, which extends from Old Leake, between Boston and Skegness, south to the county boundary with Norfolk, and inland as far as Swineshead, Donington, Pinchbeck and Spalding, is the result of a complicated series of marine inundations, with few intercalated peat layers from which to obtain radiocarbon dates and, thus, without a datum for the sequences.

Survey has been conducted on the siltlands of Lincolnshire only at their periphery between Quadring to Pinchbeck North Fen. Some insight into the archaeological development of the southern silts may be inferred from Silvester's (1988b) account of the adjoining Marshland area of Norfolk, but the northern silts, around

Boston, have not been subjected to any substantial amount of fieldwork. An extension of the field survey to cover the Wash silts would provide results to complement Hallam's (1965) thorough historical research and would provide a comprehensive assessment of this important zone.

Hallam (1954, 4) recorded 7th-century place-names on these northern silts. Subsequent fieldwork by Healey (1979, 80) located Middle Saxon pottery and six siltland villages (Algarkirk, Burtoft, Fishtoft, Fleet, Gedney, Frampton). Hayes (1988) summarised the finds of Early and Middle Saxon date on the inner silts and suggested a relationship between the finds and the Fenland tribe, the Spaldas.

Middle Saxon pottery on the Lincolnshire Fenland sites includes some Ipswich Wares, but a greater proportion of shell-tempered Maxey-types. The Norfolk sites are almost totally dominated by Ipswich Wares (*e.g.* at Hay Green, Terrington St Clement; Rogerson and Silvester 1986). Therefore, the changes in the pottery distribution occurring between Fleet, the southernmost of the Lincolnshire sites, and the north Norfolk siltland sites, may mark a territorial boundary of tribal groups. The discovery of non-Ipswich type Middle Saxon pottery at Tydd St Giles, Cambridgeshire (Hall 1987b, 3), hints that the boundary may be the River Nene, but at present this can be no more than conjecture.

The intervening fen between the northern silts and the northern fen-edge marks an obvious division between the Fenland tribes and the kingdom of Lindsey. Whether the influence of the Spaldas was ever felt in the northern silts has yet to be established. Of three villages with Anglo-Saxon place-names on the silts north of Boston, Leverton, Butterwick and Freiston, the last-named has definite continental associations and Ekwall's interpretation is simply 'the tun of the Frisians' (1960, 188).

Within the silts is at least one exposure of the pre-Flandrian surface (Fishtoft), and there are tantalising place-names such as Gedney. Clearly there is much to understand, archaeologically, about the silts. Environmentally, it remains the least understood region, as the forthcoming volume on Fenland palaeoenvironments will confirm.

One further area that has not received attention, but has shown itself to be increasingly significant, is the Witham Valley. The length of the broad valley, up to 30km between Dogdyke and Lincoln, makes it unlike any of the embayments of the southern Fenland. It is a finger of alluvial soils penetrating the uplands. Peat is now mainly confined to the upper Witham Valley, east of Lincoln, but it remains one of the most significant areas of organic soils left in the county (Burton and Hodgson 1987, 98). Inevitable and continuing loss of the peat is set to denude large areas of pre-Flandrian soils. Islands appearing in the peat have already been noted by Wilkinson (1987, 55).

On the west of the valley a continuation of the Car Dyke assumes an apparently natural course which follows

the 5m contour (for discussion of Car Dyke see Simmons 1979, 185). The modern course of the Witham is along the east of the valley. The date when the main central channel went out of use is not known, but the channel skirting the east of the valley has yielded a remarkable array of finds to suggest it may have existed since at least the Later Bronze Age. White (1979a, b and c) has compiled impressive lists of mainly weaponry that has been recovered during cleaning and straightening of the present channel. Foremost among these are the richly ornamented Witham Shield of the Late Iron Age, and the Tattershall Ferry carnyx (May 1976, 130–1). Swords of the Late Bronze Age and Iron Age have been found, their numbers further swelled by those recently recovered close to the Iron Age timber causeway at Fiskerton (Field 1986, 52). What can be inferred by the richness and quantity of this material? If not carelessness on a major scale, then perhaps ritual deposition. If so, then either the eastern channel was open in the Later Bronze Age or people thought it sufficient to make offerings to boggy ground or minor channels or pools rather than venture across to the main central channel. It is also worth noting that the offerings, if that is what they are, appear to have been made from the eastern side of the valley, where there is little evidence of later prehistoric settlement; no finds are known from the cleaning of the Car Dyke which occupies an equivalent place on the west of the valley and has the appearance of being, in that area, a natural channel. Chowne (1988, 181) has suggested the concentration of metalwork might represent a 'zone of contact between metalworkers and local communities'. He further suggests the valley may mark a later prehistoric boundary between mainly pastoralists in Lindsey and other groups practising mixed agricultural farming in Kesteven.

Within the Witham Valley are separate peat-filled embayments such as that west of Billingham and Walcott (Fig. 6), within which lies a large cemetery with *c.*25 round barrows. Other cemeteries are situated nearby on marginal land. Included in these is one already investigated at Anwick (Chowne and Healy 1983) and a second cemetery nearby recently discovered from air-photo evidence.

The quantity and richness of finds along the margins of the valley, and its ever decreasing potential for providing buried, waterlogged environmental evidence, marks the Witham Valley as deserving of further attention as soon as possible.

Within the 30% of the Lincolnshire Fenland that has been surveyed, enough has been discovered to revolutionise the view of the Iron Age and Saxon Fens. The remaining 70% can only be said to hold rich promise. In the meantime, the archaeological evaluations of around 50 sites are going ahead in an attempt to establish in more detail the nature and degree of surviving archaeological and palaeoenvironmental data.

## Appendix I: The Briquetage

by Tom Lane

For the first of the Lincolnshire Fenland Survey volumes, a system was devised for broadly dating the briquetage found on the western fens (Hayes and Lane 1992). It was hoped that the system, in which briquetage was classified by fabric and associated forms, could be applied in the northern fens but, overall, the assemblages from the north display a higher degree of homogeneity. As a result, classification was more difficult and results less definitive. Despite this, some observations can be made and a chronology suggested.

All the briquetage found during this survey in the northern fens came from Wrangle parish and adjoining fields in Friskney. The SMR housed at Lincoln Museum

contains details of previous finds made at Wrangle and these include salterns with Iron Age pottery. Iron Age salterns also occur further north along, and inland from, the coast.

Swinnerton (1932) published one of the earliest accounts of Iron Age salterns found along this coast. The sites had been exposed by shifting sands north of Skegness. Later, Baker (1960; 1975) reported on further finds. He also dated domestic pottery associated with a saltern which had been exposed on Ingoldmells beach in 1953, to the 4th century BC. Kirkham (1975) recorded sites inland from Ingoldmells, and later excavated a saltern at Hogsthorpe, 8km north of Skegness, from which a radiocarbon date of HAR-3092  $2490 \pm 80$  BP (805–420 Cal. BC) was obtained from 'burnt soil at the lowest level of the hearth' (Kirkham 1981, 9). Salt making sites in

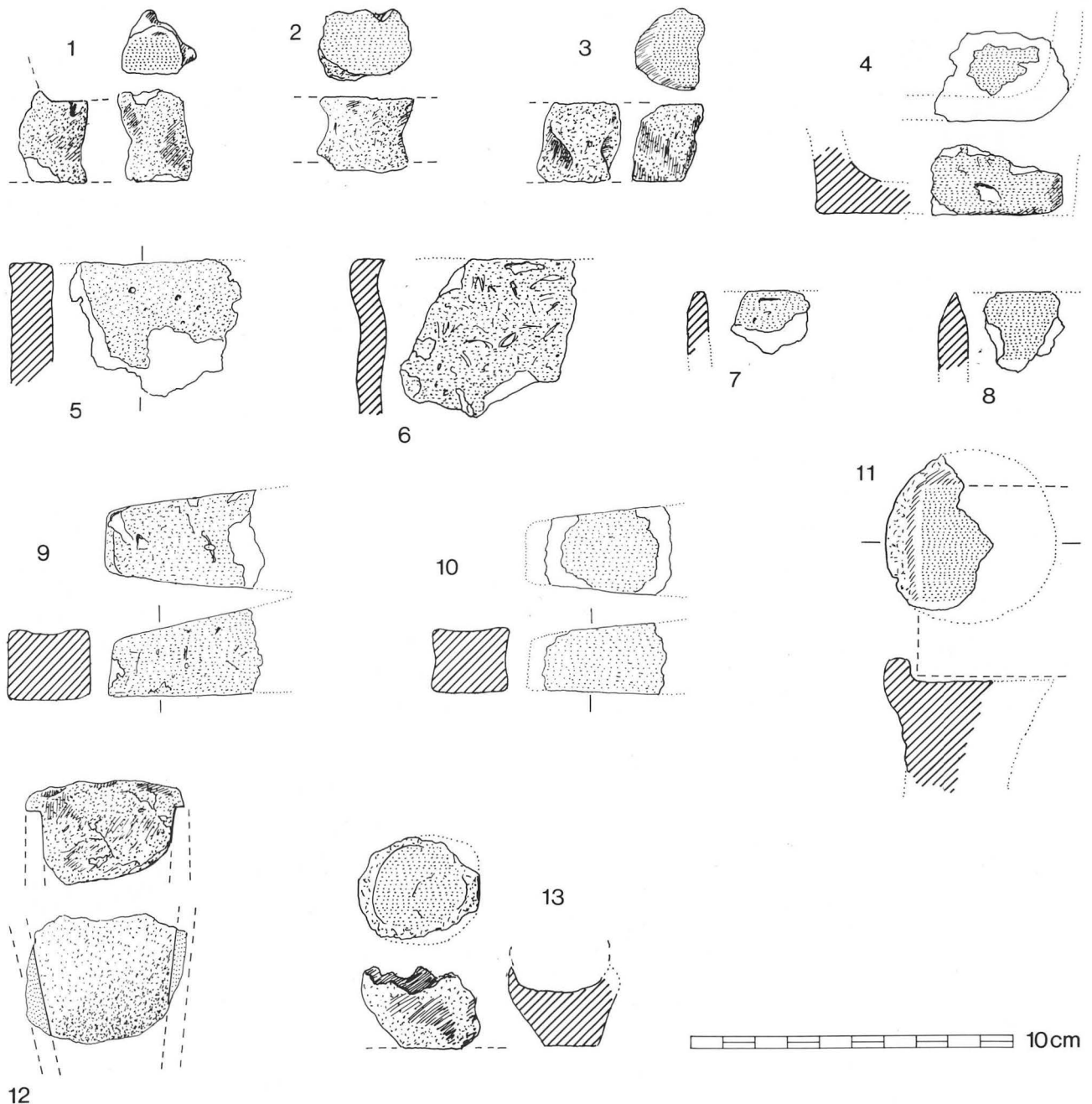


Figure 83 Briquetage from probable Iron Age salterns

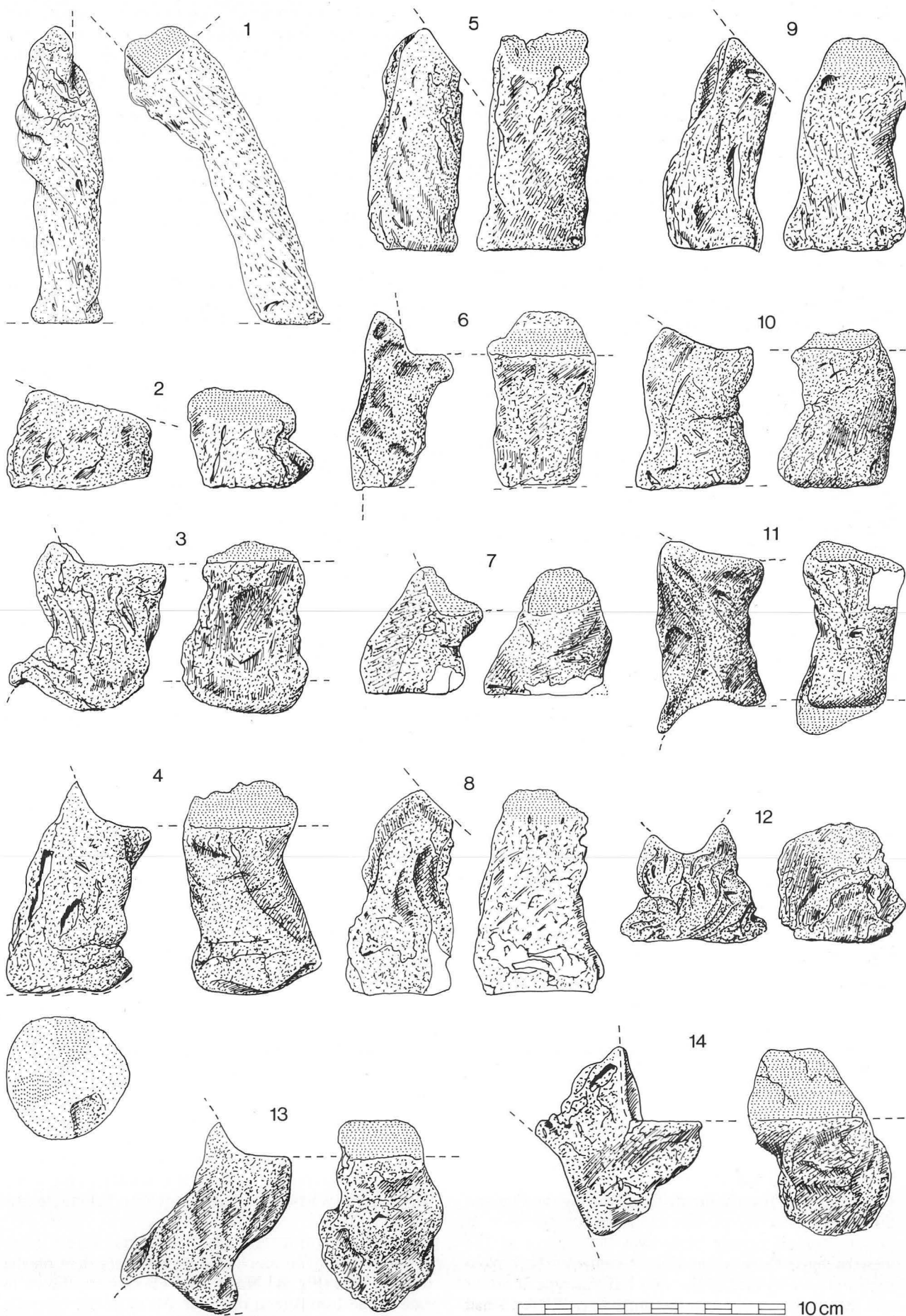


Figure 84 Briquetage: 'Supports' from probable Roman salterns

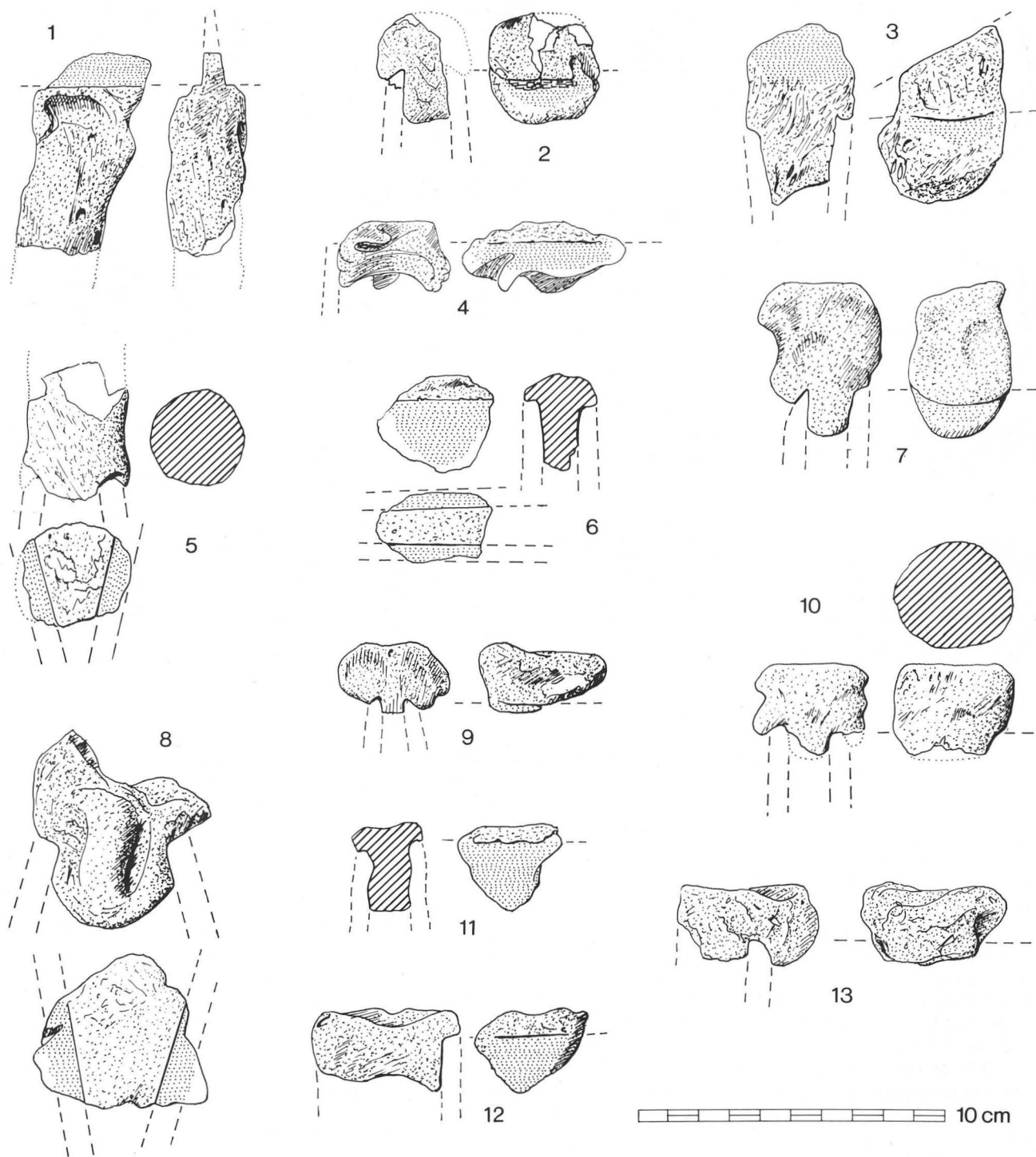


Figure 85 Briquetage: Clips or spacers

Wrangle were noted by Thompson (1856, 609) and by Simmons (1977; 1980, fig. 29), who described both Iron Age and Roman salterns.

Briquetage from Wrangle found during the Fenland Survey was severely plough damaged but, the state of preservation of certain items was better than in the western fens. Only a handful of complete or broken supports were located in the west but this type of object was extremely common in the north (*e.g.* WRA 13 had over 80, of which 20 were complete). However, little survived of the vessels or troughs either in the north or west. The designation of sites to either the Iron Age or

Roman periods was based on macroscopic studies of fabric and form; no associated pottery could be positively dated to the Iron Age although a number of sherds, in particular those from WRN 4 and 28, probably belong to the period.

Objects termed 'Hourglass Supports' were present in Wrangle, but in much smaller numbers than on the western fens (Fig. 83 Nos 1-3). These were shown to date to the Iron Age in the west. Many of the supports in Figure 84 are more typical of the 'Cylindrical' types recorded in the west where they were usually associated with salterns of Roman date.

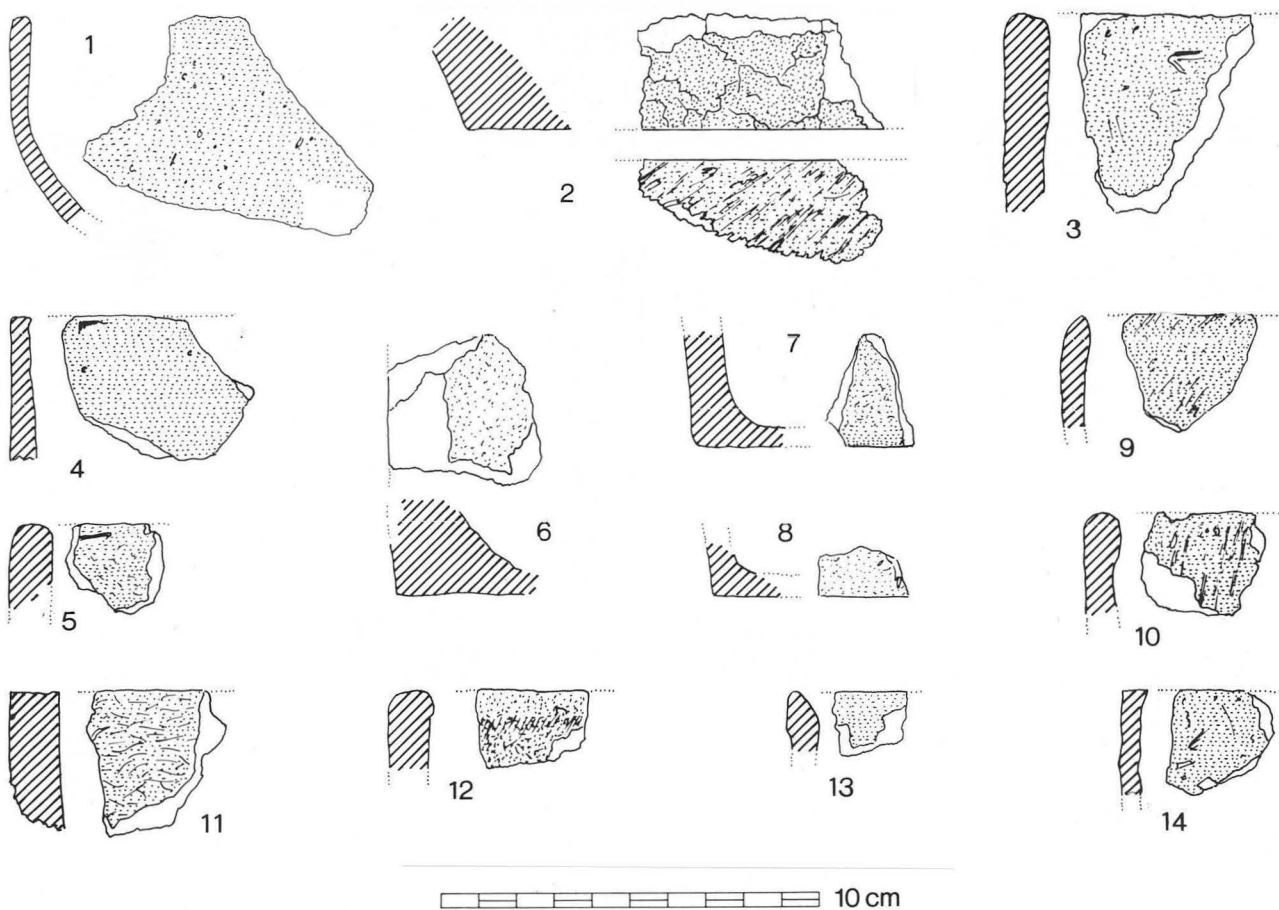


Figure 86 Briquetage: Vessel fragments from probable Roman salterns

In Wrangle there was a preponderance of 'Cigar-Shaped' bars of the type previously recorded by S.J. Hallam (1960) on sites in the south of the county. Their function remains unknown. It is suggested that the one complete example (Fig. 84 No. 1), which is 12cm in length, may have seen use as a support. However, their usual diameter, between 1.5 and 2.5cm would enable many to fit horizontally in the dished seats which are a feature of a number of other supports (*e.g.* Fig. 84 No. 12). The broken example shown as Figure 85 No. 1 would seem to have been used vertically as a support or spacer, and could have been used with the protruding top facing either up or down.

Like all the briquetage, the supports are irregularly shaped, crudely manufactured and could have been used in a variety of angles. The examples from WRA 4 (Fig. 83 No. 11) either stood on, or against, or supported, an object with a regular shape, possibly a tapering bar similar to those on Figure 83, Nos 9 and 10. These latter objects were a rarity in the north but commoner in the western fens.

A wider variety of clips or bridge pieces was found in the north (Fig. 85). Some had the broken rims of fired vessels adhering (*e.g.* Fig. 85 No. 2). Due to their fragile nature, vessels were generally very fragmentary. The largest rim, from FRI 1 (Fig. 86 No. 1), is straight at the top but then curves inwards. Not enough survived of the remaining vessel rims to determine if they were shaped likewise. A base sherd from WRN 2B (Fig. 83 No. 4) indicates a rounded corner.

Much of the briquetage was tempered with straw or other vegetation and some contained impressions of seeds. Mr R. Alvey kindly commented on selected pieces. From sherds of suggested Iron Age date the following identifications were made:

WRA 4	— Spelta, Bromus sp
WRA 6	— Bromus sp
WRN 2	— Wheat
WRN 35	— Wheat
WRN 42	— Avena sp

Suggested Roman pieces included:

FRI 1	— Avena sp
WRA 3	— Hordeum sp
WRA 13	— Spelta
WRA 16	— Hordeum sp
WRA 30A	— Avena sp
WRA 30B	— Spelta
WRA 35	— Spelta

The deliberate inclusion of cereal waste in briquetage is well attested elsewhere (for examples see de Brisay and Evans 1975; S.J. Hallam 1960 and 1970; Gurney 1986; Lane, 1992). Many of the salterns were situated well away from areas of settlement making the accidental inclusion of cereals unlikely. This does assume, of course, that briquetage was made on site and that cereal growing and saltmaking did not co-exist side by side.

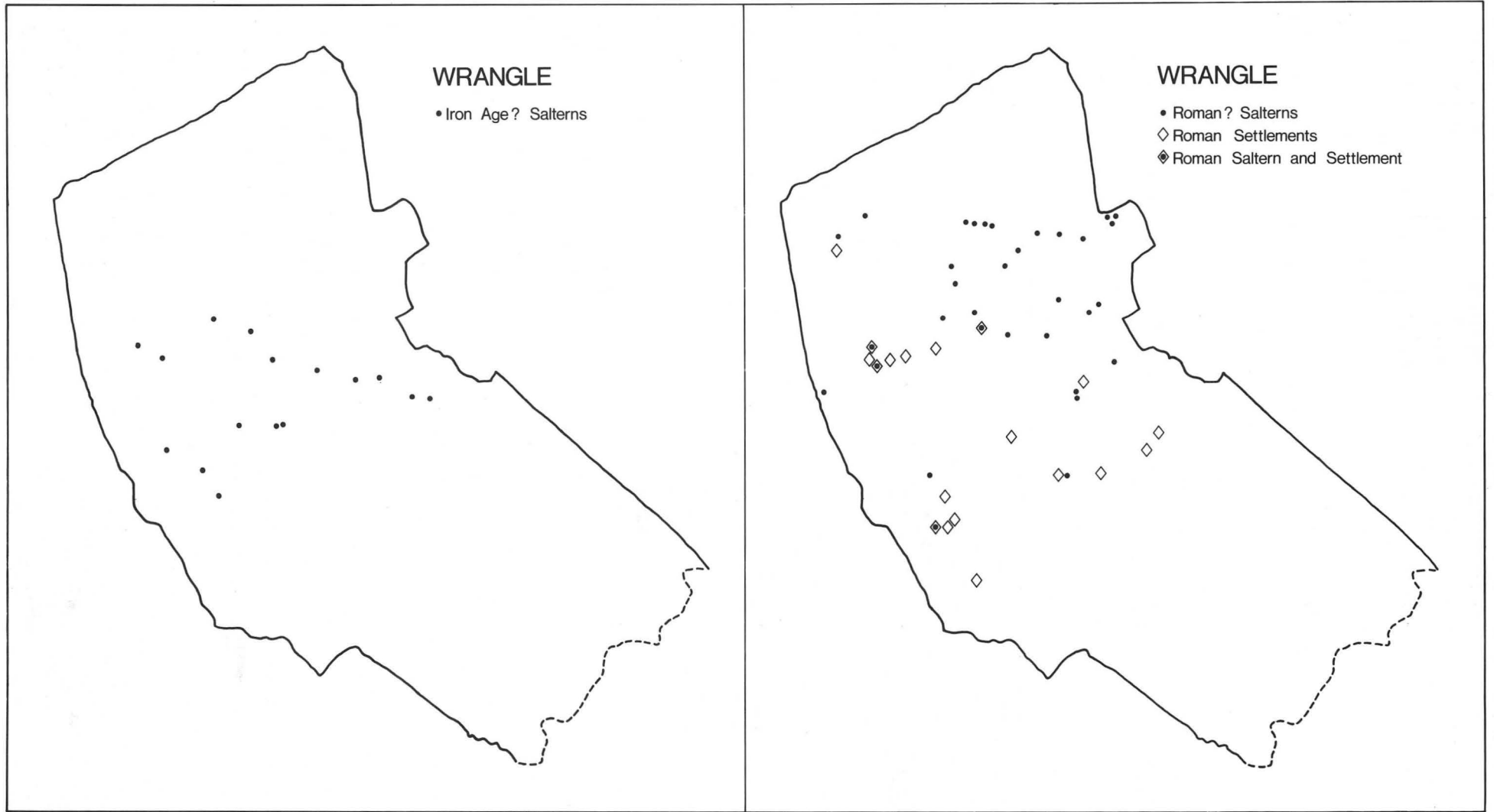


Figure 87 Distribution of salterns in Wrangle



The majority of the pieces contained evidence of vegetation having been incorporated into the fabric. Other inclusions were less common, but nevertheless present in certain assemblages. Some of the material from WRN 2, for instance, contained grog, flint and stone fragments. Marine shell fragments (*Venus* sp) were recorded in a vessel from FRI 1. The presence of crushed vessel fragments in certain of the supports (e.g. Fig. 84, No. 12) indicates that the sites were used for more than one firing but otherwise the duration of the use of the sites are not known.

Two further observations can be made in respect of finds associated with the briquetage; (1) fragments of jet were found on a number of sites; (2) many more sites in the north had sherds with a distinctive green glaze adhering to parts of the surfaces than had been found in the western fens. Such finds had previously been noted in the southern fens (e.g. Hall 1981b, 41).

No time has been available to study the existing museum collections of briquetage from the coastal area and therefore comparisons cannot yet be made between the Wrangle assemblages and other local material. However, the results of the long-term excavation of WRA 6, by the Boston and District Archaeological Society, should be of interest, not least because the domestic sherds from this site appear to be early Roman whereas the briquetage from the field surface relates more to the Iron Age group.

Distribution of the salterns in Wrangle is shown as Figure 87. The salterns of the Roman period extended further to the northeast than those of the Iron Age. Reasons for this are not immediately clear. The supposed loss of the coastal section of Roman Wrangle renders it difficult to accurately interpret the full nature of the contemporary landscape. Marine flooding of Iron Age date recorded at Small End (Chapter 4) may have originated from the haven at Wainfleet rather than directly inland from the Wrangle coast, and the apparent shift of the Roman salterns may have been a response to changes affecting that particular local area. Further survey in Friskney and Wainfleet would broaden the picture for that area. As it is, the abundance of surviving briquetage, albeit in a fragmentary state, and the density of known sites mean that opportunities abound for further research into the industry.

### Briquetage from probable Iron Age salterns (Fig.83)

1. **Support** or possible clip. Complete except for crumbling on lower surface. Buff colour. Patchy thin off-white surface deposit on upper stem. Organic inclusions. Wrangle (WRN 14).
2. **Support**. Complete. Red/buff. Organic inclusions. Wrangle (WRA 4).
3. **Support**. Complete. Red/buff. Organic inclusions. Wrangle (WRA 35).
4. **Base fragment**. Corner of possible trough. Hard fired pink tinged fabric with inner and outer surfaces off-white/yellow. Organic inclusions with very sparse white (shell?) fragments. Wrangle (WRN 2B).
5. Probable **rim** of vessel. Cut top surfaces. Orange/buff coloured fabric. Several small (c. 2.3mm dia) perforations in vessel wall, some incomplete. Wrangle (WRN 2B).
6. **Vessel rim**. Flat rim. Buff coloured fabric with pink tinge on interior surface. Abundant organic inclusions. Wrangle (WRN 2B).
7. **Vessel rim**. Hard fired. Buff coloured with red/brown external surfaces. Sandy fabric with organic inclusions. Wrangle (WRN 2B).
8. **Vessel rim**. Shaped by cutting. Red/brown throughout. Sandy fabric with organic inclusions. Wrangle (WRN 4).

9. **Tapering bar**. Complete end. Hard fired red/purple fabric, brown on exterior. Organic inclusions. Wrangle (WRN 2B).
10. **Tapering bar**. Incomplete. Grey/buff fabric, brown on exterior. Organic inclusions. Wrangle (WRN 2B).
11. **Support**. Incomplete. Red/brown fabric with no obvious inclusions. Top has impression of possible trough base resembling No.4, this figure. Wrangle (WRA 4).
12. **Clip**. Hard fired slightly sandy fabric with sparse organic inclusions. Buff coloured. Wrangle (WRN 2B).
13. **Support?** Complete. Slightly sandy with sparse organic inclusions. Red/brown colour, grey at top. Wrangle (WRN 38).

### Briquetage: supports (Fig.84)

1. Complete '**support**'. Position of use uncertain. Red/brown fabric with sparse organic inclusions. Wrangle (WRA 13).
2. Complete squat **support**. Hard fired. Red/brown with pink tinge on top and bottom, red/buff around stem. Wrangle (WRN 2).
3. Complete **support**. Hard fired. Red/brown with off-white/buff patchy surface coating. Sparse organic inclusions. Wrangle (WRN 1).
4. **Support**, complete except for chipping. Fabric red/brown with pink tinge. Off-white/buff patchy surface coating. Sparse organic inclusions. Dished top. Wrangle (WRA 13).
5. Complete **support**. Red/brown fabric with pink tinge near to the bottom of the object and patchy off-white/buff coating. Organic inclusions and very sparse grog (broken vessel fragments). Wrangle (WRA 13).
6. Complete **support**. Red/brown fabric with patchy buff coating. Wrangle (WRA 13).
7. Complete **support**. Very hard fired. Red brown fabric with pink/purple tinge on bottom surface. Small area of patchy off-white surface coating. Inclusions of grog (broken vessel fragments). Dished top. Wrangle (WRA 11).
8. Broken **support**. Edges flaked off. Red/brown fabric with pink tinges. Sparse inclusions of organic material and grog (broken vessel fragments). Wrangle (WRA 13).
9. Complete **support**. Red/brown fabric with pink/purple tinge on bottom surface. Organic inclusions. Wrangle (WRN 1).
10. Complete **support**. Red/buff. Organic inclusions. Wrangle (WRA 13).
11. Broken **support**. Grey interior, red/brown exterior with pink tinge on bottom surface. Organic inclusions. Dished top. Wrangle (WRA 13).
12. Complete **support**. Red/brown exterior but with pink/purple tinge on bottom surface. Inclusions of organic material and broken vessel fragments. Dished top. Wrangle (WRA 13).
13. Probable **support** or possible clip. Hard fired. Red/brown. Organic inclusions and grog (sparse broken vessels). Wrangle (WRN 1).
14. Complete **support**. Hard fired. Red/brown exterior but with pink/purple tinge. Organic inclusions, also sparse vessel fragments. Wrangle (WRA 28).

### Briquetage: clips or spacers (Fig.85)

1. Incomplete **clip**. Organic inclusions. Dark grey fabric, red/brown on exterior surfaces. Wrangle (WRA 13).
2. Incomplete **clip**. Organic inclusions. Red/brown. Traces of vessel rim adhering. Wrangle (WRA 31).
3. Complete **clip**. Sparse organic inclusions. Red/pink. Friskney (FRI 1).
4. Complete **clip**. Impression of vessel on one side only. Wrangle (WRA 16).
5. Incomplete **clip**. Sandy fabric. Red/pink. Circular section c. 3.3cm diameter. Wrangle (WRA 35A).
6. Complete **clip**. Hard fired sandy fabric with sparse organic inclusions. Red/brown with pink tinge at top. Wrangle (WRN 2B).
7. Complete **clip**. Hard fired with sparse organic inclusions. Red/buff colour, generally buff on lowest protruding surface. Wrangle (WRA 38).
8. Irregular shaped **clip**. Hard fired. Organic inclusions. Red/pink fabric with patchy off-white/buff external coating. Green vitrified material adhering to surface at one point. Wrangle (WRA 37).
9. Complete **clip**. Brown with pink tinge. Traces of vessel rim adhering to right hand slot. Friskney (FRI 1).

10. Incomplete **clip**. Red/brown. Organic inclusions. Wrangle (WRA 31).
11. Incomplete **clip**. Hard fired. Grey interior. Red/brown exterior with pink tinge. Sparse organic inclusions. Wrangle (WRN 37A).
12. Complete **clip**. Red/brown. Organic inclusions. Wrangle (WRA 31).
13. Complete **clip**. Red/brown with off-white/buff patchy surface deposit. Organic inclusions. Wrangle (WRA 13).

### Briquetage Vessels

(Fig.86)

1. **Rim sherd**. Off-white/yellow but red/brown at bottom. Fabric red and grey at bottom but yellow/buff nearer rim. Organic inclusions along with sparse unidentified stone and shell fragments. Friskney (FRI 1).
2. Probable **base sherd**. Hard fired. Red/brown fabric with off-white external coating. Organic inclusions. Vessel stood on vegetation prior to firing. Wrangle (WRN 37A).
3. **Rim sherd**. Red/brown. Organic inclusions. Wrangle (WRN 11).
4. **Rim sherd**. Light brown throughout but with patch of off-white external coating. Organic inclusions. Friskney (FRI 1).
5. **Rim sherd**. Off-white/buff throughout. Sparse organic inclusions. Friskney (FRI 1).
6. **Base sherd?** Red/brown fabric with general off-white coating on ?bottom surface, Wrangle (WRA 30b).
7. **Base sherd**. Red/buff throughout. Concretion (iron panning?) on inner surface. Wrangle (WRA 35A).
8. **Base sherd**. Red/buff fabric with off-white/buff external coating. Organic inclusions. Wrangle (WRA 35A).
9. **Rim sherd**. Red/brown throughout. Patchy off-white coating on external surface. Friskney (FRI 1).
10. **Rim sherd**. Red/brown. Organic inclusions. Wrangle (WRA 13).
11. **Rim sherd**. Cut rim. Red/brown throughout but pink tinge on inner surface. Wrangle (WRA 37).
12. **Rim sherd**. Red/brown with surface patches of off-white coating. Wrangle (WRA 35B).
13. **Rim sherd**. Off-white/buff exterior. Wrangle (WRA 35B).
14. **Rim sherd**. Red/brown throughout. Organic inclusions and also fragments of shell. Friskney (FRI 1).

## Appendix IIa: The prehistoric pottery

by Tom Lane

### Methods and Chronology

As with all the ceramic and lithic finds made during the survey, the prehistoric pottery underwent specialist examination (in this case by Peter Chowne) and a catalogue was produced for archive purposes.

The material was quantified and weighed as a first step towards compiling the gazetteer. In addition, the finds were broadly dated, where possible, and further grouped into sub-classes where appropriate (*i.e.* food vessel, beaker *etc.*).

Chowne's system involved the setting out of a series of 'period codes' 01–08 with upper and lower date ranges in calendar years. For easy reference these have been related to standard archaeological periods to produce the following list:

- 02 — 2850–2250 BC — Late Neolithic
- 03 — 2250–1850 BC — Earlier Bronze Age
- 04 — 1850–1000 BC — Later Bronze Age
- 05 — 1000– 400 BC — Late Bronze Age/Early Iron Age
- 06 — 400– 150 BC — Middle Iron Age
- 07 — 150 BC — AD 100 — Late Iron Age
- 08 — pre AD 100 — Undated prehistoric

It is only for the Bronze Age where this coding differs significantly from the terms in use within this volume.

Here it has been necessary to use the term 'Middle Bronze Age' in order to reflect conveniently the events that happened in East Fen at that time. Pottery within the 'period code' 04 has also been considered to be, and described as, 'Middle Bronze Age'. It is a relatively homogenous collection all of which embraces a date range of 1700–1200 BC in calendar years and is similar to the Phase 1 material excavated at Billingborough (Chowne, 1980), where an associated radiocarbon date of BM-1410 2348+57 BP (1520–1372 Cal.BC) was obtained from charcoal within an enclosure ditch filling. This type of pottery was also recovered during excavations at Old Somerby near Grantham (Chowne and Lane 1987), where it was related to a bronze bangle, the style of which resembled examples of the 'Taunton industrial phase' dated to the 14th–13th centuries BC (Burgess 1979, 270).

### The Pottery

In total 307 pre-Roman sherds were identified. Of these 162 (53%) were assigned to the 03 (Late Neolithic/Earlier Bronze Age) category. The majority of sherds were found on four sites. SKD 1, on the sandhills along Hagnaby Beck in Stickford parish, yielded 81, while a further 61 sherds came from WKE 3. These were all small abraded pieces, red/brown in colour. Few diagnostic forms were represented. Almost all the sherds had inclusions of flint fragments. Of the remaining sites SKD 3 was similarly located to its larger neighbour SKD 1. TOP 5 lay adjacent to the fen and from it came a sherd of Collared Urn, the original purpose of which may have been funerary. Of the remaining scattered and isolated sherds two could be further classified, a sherd of Food Vessel from the Roman site WKE 16A and a coarse Beaker sherd (WKE A6). Beaker pottery has previously been found on the uplands of West Keal (Clarke 1970).

Pottery from EKE 4 (53 sherds), from the uplands of East Keal, could only be classified as either 03 or 04. Of the 04 (Middle Bronze Age) sherds, 21 out of 32 came from another sandhill along Hagnaby Beck (SKD 7). By that time this location must have been relatively damp and unpleasant. Two of the remaining Bronze Age sherds had been ploughed out through shallow marine deposits at Wrangle. This 04 type pottery was typically red/brown on the exterior, black on the interior and relatively hard-fired. Sherds with grog inclusions were common.

No trace was found of Late Bronze Age or Early Iron Age ceramics. Indeed, of the prehistoric sherds only four later than Middle Bronze Age could be positively identified to a particular period. Those were from TOP 4 AD and dated by form to the Middle Iron Age (06). The site of TOP 4 also yielded 20 sherds which could not be dated at all and a relatively large Roman assemblage. In addition four sherds from the site were considered to be pre-Roman but their precise dates could not be determined. A further 50 sherds from the area were also listed under the 08 (undated prehistoric) classification. Many of these sherds were small and typically very abraded. Most were dark-grey/black and displayed no diagnostic characteristics.

Half of the total of 54 undated prehistoric sherds (08) were found on sites that yielded predominantly Roman assemblages and were sited on the downhill area of the northern fen-edge, below 6.5m OD. These sites included EKE 6A, 9, 10, 11, 12, STD 2 and TOP 4. It could be inferred from this that the occupation of many of these fen-side sites commenced late in the Iron Age and, indeed,

that may be the case but, given the impoverished nature of the assemblages and the underdeveloped nature of settlement in the area during the Roman period, it would be unwise to draw too much from them. However, the Late Iron Age may well be represented at EKE 10 where the dates suggested for a carinated bowl and rim fragments embrace the Late Iron Age/Romano-British transition. The site also boasts 'a Romano-British type sherd in Iron Age fabric' (J. Samuels pers. comm.).

A total of 92 sherds remained unidentified after examination by each of the pottery specialists (Fig. 77). Low-lying Roman sites were again represented (EKE 6A, 9, 11, SKY 3, SKD 8). Of these, twelve sherds came from two Saxon sites on the upland (WKE 13, TOA 8) and a further three from the largely Roman and Saxon EKE 5. A further 22 were from Iron Age salterns in Wrangle (WRN 4, 9, 14).

### Conclusions

Within the assemblages of prehistoric pottery from the northern fen-edge there has been little revelatory material. From the museum collections and the published works of such as Clarke (1970), it was known that the uphill area in particular was heavily settled during the Late Neolithic period and into the Early Bronze Age. It was expected that some pottery from the period would be retrieved, although the generally friable nature of such pottery and the continued cultivation it endures has meant that its chances of long-term survival are ever diminishing.

Museum records and literature also attest to an Iron Age presence at Wrangle, usually in association with salterns. Studies of the briquetage also support the existence of an Iron Age saltmaking phase. The unfamiliarity to researchers of the domestic pottery fails to mask the presence of Iron Age saltmaking and emphasises the need for excavation in order to establish a pottery type series.

### Appendix IIb: A note on the pottery dating

by Peter Chowne

Since the system of pottery dating by period code referred to above was devised in 1985 a number of developments have taken place that the reader should be aware of.

1) Radiocarbon determination BM-1410 (see above), a crucial date from Billingborough, was measured at a time when the British Museum was experiencing difficulties in its Radiocarbon Laboratory (Tite *et al.* 1987). It was hoped that as with many other samples it might be feasible to provide either a new date from the existing sample or a corrected date. Unfortunately, this has not been possible and the date should be disregarded (Bowman *et al.* 1990).

2) The calendar dates that appear in the table at the beginning of Appendix II, were established before the calibration curves of Pearson and Stuiver (1986) became available.

3) The prehistoric ceramics from Billingborough are, at the time of writing, undergoing further specialist examination in advance of the publication of the excavations. This has resulted in the development of a type series for the Bronze Age material which it is hoped will form a basis for future ceramic analysis in the Fenland (Clea forthcoming).

Full implications of the above will be discussed in detail in the Billingborough report (Chowne forthcoming) but it is necessary here to review briefly the dating of the Bronze Age pottery from Billingborough and the Fenland Survey in Lincolnshire.

The major change is that an earlier date for the use of the phase I enclosure at Billingborough can be accepted. As stated in Appendix II the '04' pottery strongly resembles that from Billingborough phase I. Stylistically it has always been felt by the writer that the bucket urns from Billingborough exhibit traits that suggest a date nearer to the 16–15th century BC than the 14–13th century implied by the dubious radiocarbon determination. The urns from the small ditched cremation cemetery at Stainsby on the Wolds between Horncastle and Louth, are similar to some of those from Billingborough both in fabric and form. These were associated with a fragmentary bronze razor and two faience beads suggesting a date of around the 15th century BC (May 1976, 77). At least one of the vessels from the excavated round barrows at Butterbump Farm (TF 494 723), on the Marshland at Willoughby, north-west of Ingoldmells, is also very similar to some of the Billingborough examples. However, the context of this vessel which was shown to the writer by the excavator, cannot be considered until more information about the site is available.

In conclusion it can be suggested that phase I pottery from Billingborough appears earlier in the Bronze Age than was previously thought. However, the study of prehistoric ceramics in Lincolnshire is still in its infancy and until more excavated sites are published and further research carried out, closer dating of surface pottery scatters will remain problematic.

### Catalogue of assorted artefacts

(Fig.88)

1. **Terracotta head.** Probably Romano-British. See Appendix VI for detailed description. Stickney (TF 3434 5540).
2. **Perforated stone** object from medieval site. Grey stone. Possible spindle whorl or weight. Wrangle (WRA 43).
3. **Bronze? object.** Possible leather mount or item of horse furniture. Romano-British? Wrangle (TF 409 527).
4. Complete **stone axe.** Neolithic. Green/grey colour. Traces of polish around blade tip extending upwards *c.* 4cm on one face. Ungrouped epidiorite. Li 472. East Keal (TF 3751 6113).
5. Bronze decorated **strap end.** Medieval (13th-14th century). East Keal (EKE 15B).
6. **Lead weight.** Decorated on upper surface with raised strips radiating from centre. Romano-British? East Kirkby (TF 3390 6279).

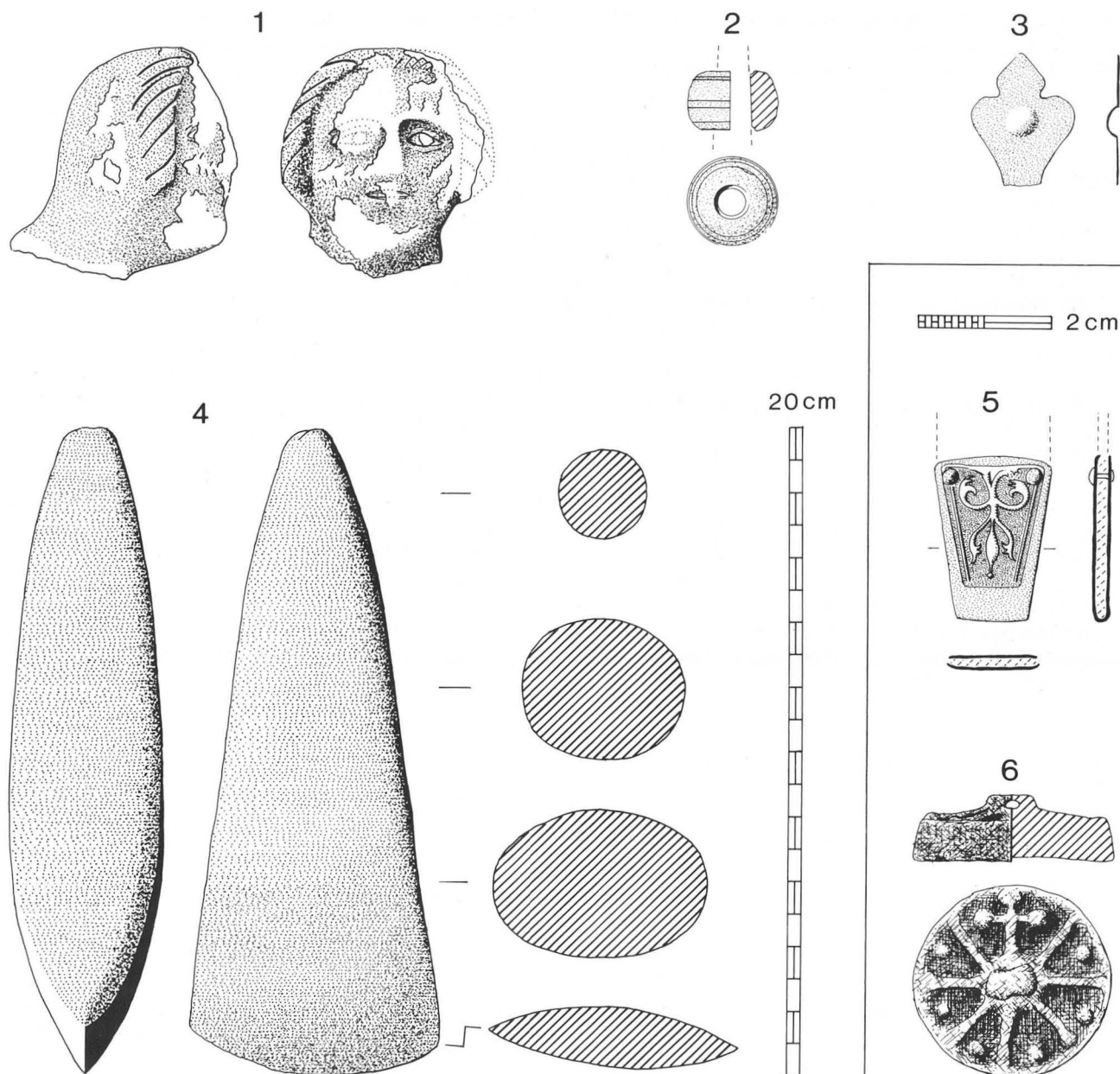


Figure 88 Assorted artefacts. No.1 Roman? terracotta head, Stickney; No.2 Medieval? stone weight, Wrangle; No.3 Roman? Bronze object, Wrangle; No.4 Neolithic stone axe (epidiorite), East Keal; No.5 Medieval bronze strap end, East Keal; No.6 Roman, lead weight, East Kirkby.

### Appendix III: Lithic Material

by Frances Healy

#### Notes:

Chronology is expressed in approximate years Cal. BC, derived from the tables of Pearson *et al.* (1986).

Non-site collections, *i.e.* dispersed material located to fields or groups of fields, are distinguished by 'F/C' (field collection), *e.g.* EKE F/C 51.

#### Condition

Most of the collection is from areas which have never been peat-covered, and tends to be heavily plough-damaged. The exceptionally good preservation of material from sites recently exposed in the fen is exemplified by three serrated blades from MID 2, which all retain clearly visible edge gloss.

#### Raw Material

Without local knowledge it is not possible to try to source or classify the flint of the collection with any precision. While some chalk flint may be present, the generally abraded state and varied texture and colour of the material indicate that it was collected from local till and gravel deposits. Thermal and other natural fractures are frequent and quality low. Most of the pebbles and fragments worked were originally small. A striking exception is formed by some of the flint from the adjoining parishes of Midville, Stickford and Stickney, where a mean artefact weight of 18g contrasts with that of 11g for the survey area as a whole. The artefacts from SKD 1, 2 and 3 are particularly large, and may reflect the presence of large nodules and fragments in the local till.

There is a suggestion of the selection, even perhaps the transportation, of a particular flint for axe manufac-

ture. Pale grey flint mottled with matt, granular cream inclusions is the raw material of both definitely post-Mesolithic axes from the survey area (a ground example (EKE A5) from EKE F/C 33 and a flaked one (SKY A3) from SKY F/C 12), as well as of the two flakes from ground implements (EKE F/C 19, SKD F/C 4) and of a core worked down from a ground implement (EKE F/C 41). This flint is relatively rare among the material from the survey area but becomes more frequent in collections made farther to the north and occurs in an extensive chalky till on the north Lincolnshire Wolds (information from Tom Lane and Peter Chowne).

The four stone implements include two from WKE F/C 32, one (WKE A3) a fragment of Group VI rock (Great Langdale tuff), possibly from an axe, the other (WKE A7) an axe fragment also probably of Group VI. TOA A1 is a further axe apparently of group VI, while EKE A4 is of ungrouped diorite (Fig. 88, No. 4).

### Predominantly Single-Period Collections

With the reservation that most surface collections are likely to incorporate the debris of many episodes of activity, an attempt has been made to identify those in which most of the material seems to derive from one broad period. The criteria employed are similar to those used for the Fenland Project collection from the Wissey Embayment of the south-eastern fen-edge in Norfolk (Healy 1991) and are drawn from, among others, Cleal (1984, 151), Ford *et al.* (1984), Green (1980), Healey and Robertson-Mackay (1983), Healy (1988, 45), Pitts (1978), Saville (1981), Whittle (1977, ch. 4).

*Mesolithic* (EKE 4; WKE 15, 18 + 18A): regular, often bipolar, blade cores; high frequency of blades, often with punctiform and other thin butts; microburins present, narrow range of retouched forms including microliths, truncated pieces, and burins.

*Earlier Neolithic* (?EKE 17): blade production still significant; restricted range of retouched forms dominated by scrapers, often long, and serrated blades.

*Later Neolithic or Bronze Age* (EKE 1, 3; EKI 4, 5, 10; MID 1, 3; SKD 1, 2, 3, 5, 6; TOA 1, 4; TOP 4, 5, 7, 9, 10, 11, 12, 13; WFE 1; WKE 5, 6, 11, 17): flakes predominantly broad and squat, with hinge fractures more frequent than among earlier material; retouched forms including 'thumbnail' scrapers, thick, steep, roughly-retouched scrapers, borers, plano-convex and scale-flaked knives and denticulates.

It has not proved possible to distinguish discrete Later Neolithic, Beaker or Bronze Age collections with any confidence, as was done among the Norfolk material. The date and affinities of this group as a whole are discussed under 'Chronological Overview' below.

Characteristics of these three groups and of the mixed or undated site collections and non-site material are summarised in Tables 1–5, which are compiled so as to permit comparison with the Norfolk collection.

### Mixed or Undated and Non-Site Collections

While these must represent the accumulation of material throughout the Flandrian, the bulk of both groups is aligned with the Later Neolithic and Bronze Age collections by low frequencies of blades (Table 1), high frequencies of hinge fractures (Table 3) and the range of retouched forms present (Table 5). Non-site collections are also close to predominantly Later Neolithic and Bronze Age ones in their high frequencies of retouched forms (Table 1) and of scrapers (Table 5). Scrapers in both include 'thumbnail' and possibly Bronze Age forms.

### Flint Use

The collection as a whole has a high frequency of cores, more than 16% overall, with a maximum of over 18% in predominantly Later Neolithic and Bronze Age collections (Table 2). This contrasts with the 3% of cores in the Norfolk Fenland collection and with comparably low percentages in most excavated domestic assemblages, (Healy 1991, Healy 1993). This is not a simple reflection of frequent breakage amongst plough-damaged material: the difference between 31% of unclassifiable or fragmentary cores (almost all of them fragmentary) in the

	cores	irreg waste	core trimming flakes	flakes	blades	retouched	TOTALS	no of collections	mean no of artefacts per collection	mean artefact weight (g)
Predominantly Mesolithic	182 15.5%	60 5.1%	19 1.6%	654 55.7%	216 18.4%	44 3.7%	1175	3	391	9
?Predominantly Earlier Neolithic	10 12.8%	0 0.0%	0 0.0%	47 60.3%	17 21.8%	4 5.1%	78	1	78	8
Predominantly Later Neolithic or Bronze Age	247 18.8%	116 8.8%	13 1.0%	748 57.1%	59 4.5%	128 9.8%	1311	25	45	14
Mixed or Undated	91 12.7%	56 8.0%	20 3.0%	450 61.0%	76 9.8%	47 5.5%	740	49	15	10
Non-site	413 16.2%	92 3.7%	40 1.6%	1536 61.3%	211 8.4%	222 8.8%	2514	162	16	11
TOTALS	943 16.2%	324 5.6%	92 1.6%	3435 59.1%	579 9.9%	445 7.6%	5818	240		

Table 1 Overall Composition

	Single-platform (A1 - A2)	Multi-platform (B - C)	Keeled (D - E, non-discoidal)	Levallois & Other Discoidal	Unclassifiable/ Fragmentary	TOTALS	No. with at least some blade scars
Predominantly Mesolithic	37 20.3%	60 33.0%	10 5.5%	2 1.1%	73 40.1%	182	74 40.7%
?Predominantly Earlier Neolithic	0 0.0%	6 60.0%	2 20.0%	0 0.0%	2 20.0%	10	2 20.0%
Predominantly Later Neolithic or Bronze Age	30 12.2%	67 27.9%	39 15.8%	2 0.8%	107 43.3%	247	37 14.9%
Mixed or Undated	15 16.5%	24 26.4%	11 12.1%	1 1.1%	40 43.9%	91	29 31.8%
Non-site	67 16.2%	89 21.5%	59 14.3%	2 0.5%	196 47.5%	413	97 23.5%
TOTALS	149 15.8%	246 26.2%	121 12.8%	7 0.8%	418 44.4%	943	239 25.3%

Table 2 Cores

	Cortical	Partly Cortical	Non- Cortical	TOTALS	Hinge Fractures
Predominantly Mesolithic	7 1.9%	186 51.0%	172 47.1%	365	88 24.1%
?Predominantly Earlier Neolithic	2 5.7%	18 51.4%	15 42.9%	35	9 25.7%
Predominantly Later Neolithic or Bronze Age	14 3.2%	252 58.4%	166 38.4%	432	169 39.1%
Mixed or Undated	6 2.2%	139 49.8%	134 48.0%	279	87 31.2%
Non-site	28 2.9%	460 48.0%	471 49.1%	959	344 35.9%
TOTALS	57 2.8%	1055 51.2%	958 46.0%	2070	697 33.7%

Table 3 Complete Flakes and Blades

	Punctiform	Faceted	Cortical	TOTALS	Flakes + Blades + Retouched
Predominantly Mesolithic	142 15.5%	12 1.3%	74 6.5%	228	914
?Predominantly Earlier Neolithic	16 23.5%	1 1.5%	15 22.1%	32	68
Predominantly Later Neolithic or Bronze Age	50 5.3%	11 1.2%	191 20.4%	252	935
Mixed or Undated	71 12.4%	7 1.2%	72 12.6%	150	573
Non-site	168 8.5%	30 1.5%	271 13.8%	469	1965
TOTALS	447 10.0%	61 1.4%	623 14.0%	1131	4455

Table 4 Punctiform, faceted and cortical butts expressed as % of flakes + blades + retouched forms

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	TOTALS
Predominantly Mesolithic	0	0	0	0	14	0	0	0	0	0	14	2	5	3	1	2	1	0	1	0	0	0	1	44
	0.0%	0.0%	0.0%	0.0%	31.8%	0.0%	0.0%	0.0%	0.0%	0.0%	31.8%	4.5%	11.4%	6.8%	2.3%	4.5%	2.3%	0.0%	2.3%	0.0%	0.0%	0.0%	2.3%	
?Predominantly Earlier Neolithic	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	4
	0.0%	0.0%	0.0%	0.0%	50.0%	0.0%	0.0%	0.0%	0.0%	0.0%	25.0%	0.0%	0.0%	0.0%	0.0%	25.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Predominantly Later Neolithic or Bronze Age	1	1	0	2	88	7	3	0	0	4	9	0	0	0	1	11	0	0	0	0	0	1	0	128
	0.8%	0.8%	0.0%	1.6%	68.7%	5.5%	2.3%	0.0%	0.0%	3.1%	7.0%	0.0%	0.0%	0.0%	0.8%	8.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	0.0%	
Mixed or Undated	1	0	1	0	23	1	1	0	0	0	9	0	4	0	0	5	1	0	0	0	1	0	0	47
	2.1%	0.0%	2.1%	0.0%	49.0%	2.1%	2.1%	0.0%	0.0%	0.0%	9.2%	0.0%	8.5%	0.0%	0.0%	10.7%	2.1%	0.0%	0.0%	0.0%	2.1%	0.0%	0.0%	
Non-site	1	0	1	6	141	1	6	1	1	7	23	1	2	0	0	20	1	1	6	2	0	1	0	222
	0.5%	0.0%	0.5%	2.7%	63.4%	0.5%	2.7%	0.5%	0.5%	3.1%	10.3%	0.5%	0.9%	0.0%	0.0%	8.9%	0.5%	0.5%	2.6%	0.9%	0.0%	0.5%	0.0%	
TOTALS	3	1	2	8	268	9	10	1	1	11	56	3	11	3	2	39	3	1	7	2	1	2	1	445
	0.7%	0.2%	0.4%	1.8%	60.4%	2.0%	2.2%	0.2%	0.2%	2.5%	12.6%	0.7%	2.5%	0.7%	0.4%	8.8%	0.7%	0.2%	1.6%	0.4%	0.2%	0.4%	0.2%	

- |  |                                  |                            |
|--|----------------------------------|----------------------------|
| 1 = Leaf Arrowhead                           | 11 = Serrated Piece              | 21 = Tranchet Axe          |
| 2 = Chisel Arrowhead                         | 12 = Burin                       | 22 = Other Heavy Implement |
| 3 = Barbed & Tanged Arrowhead                | 13 = Microlith                   | 23 = Hammerstone           |
| 4 = ?Unfinished Arrowhead or Arrowhead Blank | 14 = Microburin                  |                            |
| 5 = Scraper                                  | 15 = Truncated Piece             |                            |
| 6 = Borer                                    | 16 = Miscellaneous Retouched     |                            |
| 7 = Plano-Convex or Scale-Flaked Knife       | 17 = 'Fabricator' or Rod         |                            |
| 8 = Backed Knife                             | 18 = Tribrach                    |                            |
| 9 = Discoidal Knife                          | 19 = Axe/Adze                    |                            |
| 10 = Denticulate                             | 20 = Flake from Ground Implement |                            |

Table 5 Retouched Forms

Norfolk collection and 44% in the Lincolnshire collection is not great enough to account for a fivefold increase in core frequency.

Percentages of cores in the northern fen-edge collection are, however, similar to those among largely Later Neolithic and Bronze Age material from superficial contexts at Tattershall Thorpe, in the Bain Valley some 10km to the west of the survey area (Fig. 6). This seems to have resulted from the low quality of the Bain gravels: cores were not only initially small but were often abandoned after only a few removals had been made, apparently because they had split along latent thermal fractures. The low productivity of most cores meant that large numbers were used and discarded (Healy 1993). The same interpretation is feasible for the survey area material.

The same factors may also account for the collection's high frequency of cortical butts, which occur on 14% of flakes, blades and retouched forms (Table 4), in contrast to 5% in the Norfolk collection. Little attempt may have been made at platform preparation on cores which were initially small and likely to shatter.

Arrowhead manufacture is almost certainly represented by eight relatively large and heavy pointed bifaces such as that from East Keal (Fig. 89, L4) and others from EKE 18; EKI 4; WKE F/C 33, 36, 38, 46.

## Chronological Overview

### Mesolithic

Hall Hill, a promontory of Spilsby Sandstone on the upland of West Keal, has been known since the last century as a source of Mesolithic material. Clark (1932a, 36-37, figs 16-17) describes and illustrates a range of microliths dominated by obliquely-blunted and edge-

blunted points, with few geometric forms, with an industry including small, regular blade cores, some of them bipolar, core trimming flakes, scrapers, serrated flakes, burins, and microburins. He also notes that 'Among the surface implements to be found are forms typical of the Early Bronze Age such as barbed and tanged arrowheads and scrapers with the characteristic scale flaking of the period.'

WKE 15 (Fig. 35), on the southern edge of the hill just above the 60m contour, may have been the source of some of these finds. It is a substantial concentration of predominantly Mesolithic material, including L1 and L2 (Fig. 89), compatible with the larger collection published by Clark and with the relatively early Mesolithic date which he suggests for it (1932a, 37). There is also a small quantity of later material, including a 'thumbnail' scraper such as those described by him. Other collections from the general area of the hill (WKE 7 and 14, WKE F/C 21, 30, 35) all include Mesolithic or possibly Mesolithic material.

A comparable collection comes from EKE 4 (Fig. 36), 1.3km to the east, just below the 60m contour. The only other predominantly Mesolithic collection is WKE 18 and 18A (Fig. 35), in the extreme north of the parish. A geometric microlith, in the form of a minute triangle, from WKE 18 may suggest a later Mesolithic date. The collection also includes what may be the butt fragment of a tranchet axe. Elsewhere on the upland, Mesolithic or possibly Mesolithic material is widespread in collections dominated by later material. It generally occurs in the form of small, regularly-worked, sometimes bipolar blade cores and the blades struck from them. Microliths consist of two obliquely-blunted points (EKE 2, TOP F/C 14) and a scalene triangle (EKI 9).

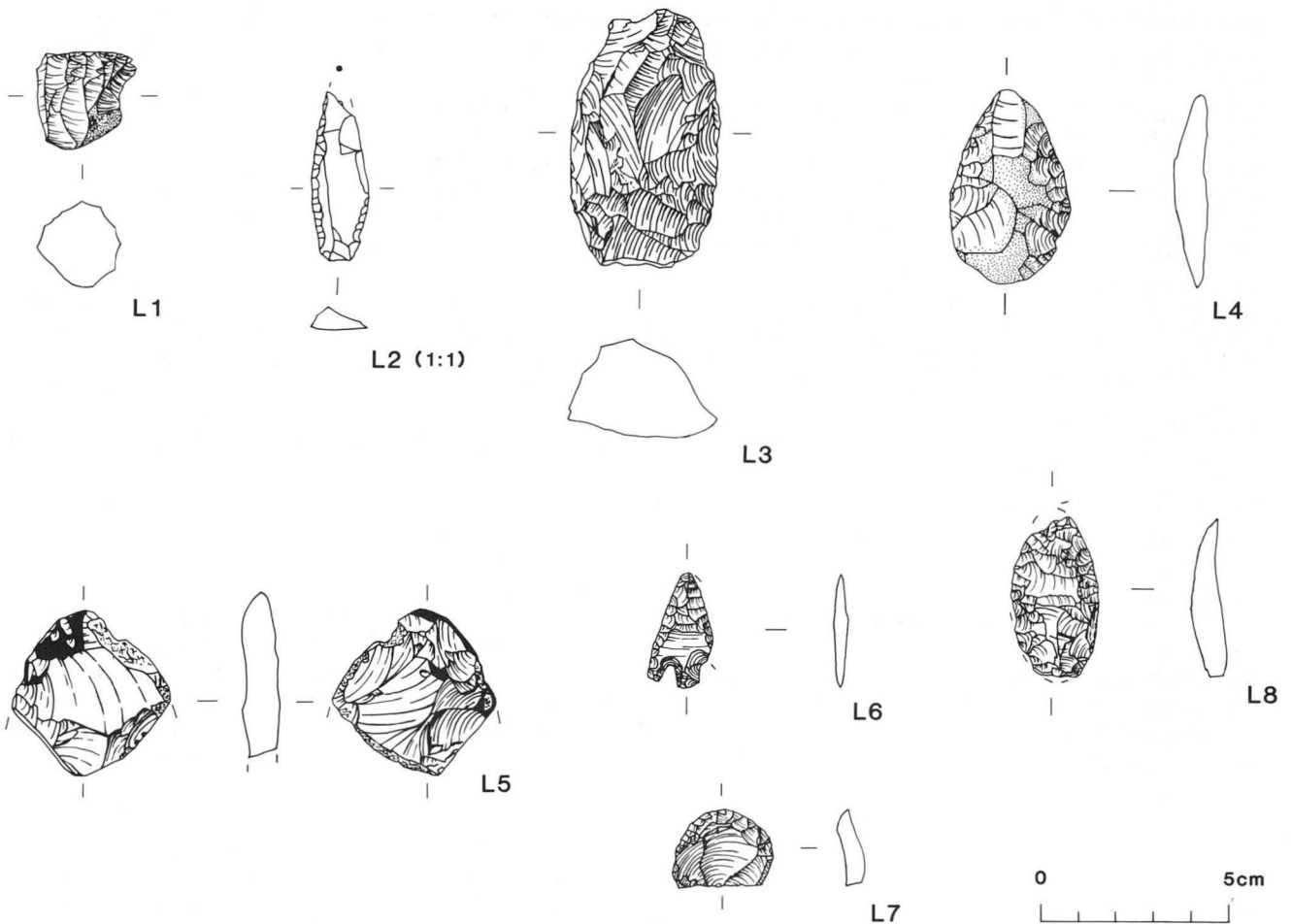


Figure 89 Lithic material from various collections.

Closer to the fen, one small, dispersed collection (SKY F/C 1) seems to consist entirely of Mesolithic material, in the form of a crested flake, two blade fragments, and two bipolar blade cores. The larger of the two cores, some of the final removals from which were 90mm long, is comparable in size and technology with the cores of Late Glacial long blade industries. The resemblance may, of course, be fortuitous, especially as the raw material of the immediate area is large by local standards (see above). Mesolithic material is otherwise relatively rare on the present fen-edge. Probably contemporary debitage forms a minority component of some later collections, while finished implements consist of a *tranchet* axe (Fig. 89 L3; SKD 10) and an edge-blunted point (STD F/C 6). There is also a microlithic rod from Dogdyke (DOG 2).

#### Earlier Neolithic

Only one site collection (EKE 17) seems to be dominated by material of this period. Two leaf-shaped arrowheads (EKE 2, 3) were found within 300m of it; a third comes from the upland of East Kirkby (EKI F/C 15). There is a possibly contemporary collection from MID 2, a sandy island in the fen. Such characteristics as it has (it comprises three cores, two fragments of irregular waste, nine flakes, seven blades and three large serrated pieces) would be compatible with an Earlier Neolithic date, but the

small quantity of material makes any attribution uncertain. It is included in the total of mixed or undated site collections. Debitage of uncertainly Mesolithic or Earlier Neolithic character occurs in a handful of later, undated or dispersed collections, one of them (SKD 1) close to the fen, most of them on the upland of East and West Keal.

#### Later Neolithic and Bronze Age

The bulk of the collection falls within this broad period. The upland, where it has been intensively surveyed, seems to carry a diffuse spread of contemporary material, within which are denser concentrations.

Traits characteristic of Later Neolithic industries, as seen at Storey's Bar Road, Fengate, Cambridgeshire and Ecton, Northamptonshire, to the south (Pryor 1978, 104–152; Moore 1975) or on the Yorkshire Wolds to the north (T.G. Manby 1974, 1975) are scarce. Prepared Levallois-like or other discoidal cores are rare (Table 2), as are the faceted-butt flakes struck from them (Table 4). One fragment, possibly of a chisel arrowhead, comes from SKD 3, a fen-edge site with Early Bronze Age pottery which also produced one of the few discoidal cores. Other possibly Later Neolithic implements are a tribach (TOP F/C 14) and a fragment of a discoidal or other edge-ground knife (Fig. 89, L5; WKE F/C 39), both from the upland.

Barbed and tanged arrowheads are represented only by Figure 89, L6 (EKE F/C 41) and a fragmentary smaller



example (EKE 2). In other respects, however, the upland spreads and concentrations seem to show more affinity with Beaker and Early Bronze Age industries than with Later Neolithic ones; they are, in other words, more likely to date from the later than from the earlier third millennium Cal. BC. They regularly contain small, sometimes scale-flaked, 'thumbnail' scrapers such as Figure 89, L7 (EKE F/C 41), the small size of which does not result from the size of available raw material, since they are outnumbered by larger scrapers. In addition these collections include three plano-convex knives, such as Figure 89, L8, (EKE 7, EKE F/C 41, 51) and three scale-flaked knives (EKE F/C 51, WKE F/C 23 and 39). One 'thumbnail' scraper (EKI 4) seems to have been made on a fragment of a fourth plano-convex knife. Their overall character recalls industries such as that associated with Beaker and Early Bronze Age pottery at Plantation Farm, Shippea Hill, Cambridgeshire (Clark 1933, 271–2).

Sherds previously collected from Hall Hill, West Keal, correspondingly consist mainly of Beaker, with a small quantity of Later Neolithic Peterborough Ware (Clarke 1970, corpus nos 491–2; Gibson 1982, 257–8, fig. W.K.1; Cleal 1985). Further Beaker pottery has been found at Bunkers Gorse in the same parish (Clarke 1970, corpus nos 489–90).

Alongside this material, although less numerous, are elements more familiar in non-Beaker Bronze Age industries such as that of Newark Road, Fengate, Cambridgeshire (Pryor 1980, 106–125). Debitage sometimes displays very rough hard-hammer flaking with frequent unresolved bulbs of percussion on both cores and flakes. Denticulates and thick, steep, roughly-worked scrapers are also present. This component is clearly represented at, for example, the neighbouring sites of EKI 4 and 10. If it is correctly identified it indicates continued activity over the same zone of the upland to perhaps 1200 Cal. BC.

Collections from sites on the present fen-edge (EKE 1; MID 1, 2, 3; SKD 1,2,3,4,5,6,7,8,10; TOA 1; TOP 5,6,7,9,10,11,12,13; WFE 1) are small, with a mean of twenty-one pieces each, and sometimes nondescript. Insofar as they can be assessed, they too seem dominated by Later Neolithic and Bronze Age material. Some possibly Mesolithic material is present, and there is a hint of Neolithic activity at MID 2 and SKD 3, both noted above. Most, however, are flake-dominated, and their debitage is sometimes rough and crude. Their technology would be compatible with the Early or even Middle Bronze Age date indicated by the pottery from SKD 1–3, SKD 7 and TOP 5.

Their retouched component resembles that of Later Neolithic and Bronze Age material from the upland in that it includes 'thumbnail' and possibly Bronze Age scrapers, borers and scale-flaked knives. Its composition, however, is different. When compared with the retouched forms of predominantly Later Neolithic and Bronze Age collections from elsewhere in the survey area, the fen-edge sites as a group have 47.4% of scrapers against 78.3% and 21.1% of serrated pieces against 2.4%; if the uncertainly-dated collection from MID 2 is omitted, the fen-edge sites still have 16.7% of serrated pieces.

## Discussion

### *Upland and fen-edge*

Although there are only fifty-seven retouched pieces from the fen-edge sites, the difference in balance of forms

between them and those of the upland collections seems substantial. It is unlikely simply to reflect the better preservation of finely serrated edges on the fen-edge sites, since serrated pieces are frequent in plough-damaged Mesolithic collections from the upland (Table 5). If the differences are functional, then microwear analysis of some of the material from Tattershall Thorpe (Bradley 1993) may suggest an interpretation: the three scrapers on which microwear traces could be identified had been used for various forms of hide-working; while two serrated blades had respectively been used to cut wet vegetable matter and fresh wood. Plant gloss was correspondingly present on serrated blades from the Abingdon causewayed enclosure, Oxfordshire (Whittle 1982, 38). The traditional interpretations of scrapers as hideworking tools and of serrated blades as sickle flints may sometimes be valid ones. If they are in this case, then the high frequency of serrated pieces from fen-edge sites may have resulted from reed-cutting or similar activities.

### *The overall picture*

The collection as a whole reflects an extensive Mesolithic presence, little perceptible Earlier Neolithic activity, and very substantial Later Neolithic and Bronze Age occupation. This pattern has emerged repeatedly elsewhere, both from field survey and from the study of old collections. Areas where it has been recorded include east Hampshire (Gardiner and Shennan 1985, 47–50, 62–68) and south Oxfordshire and east Berkshire (Ford 1987, 128–129). Identifiable Earlier Neolithic material is often scarce in surface collections, even in areas rich in contemporary monuments, the builders and frequenters of which surely worked, used and discarded lithic material (Healy 1987, 1–15).

The two phases regularly well-represented on the surface are the two marked by extensive land-use, although of very different character. Relatively mobile hunter-gatherers, drawing on a range of resources across the landscape, might be expected to make and to discard tools over a wide territory, especially where flint was readily available. From the Later Neolithic onwards, continuous spreads of lithic material, punctuated, as on the upland of the survey area, by denser concentrations, occur in many parts of England (Bradley 1987, 182–3). Edmonds suggests that they are the result of frequent relocation of living sites within a relatively restricted area (1987, 174). Pryor has argued that spreads of dispersed material, largely of Bronze Age date, without or away from nuclei, may have been generated by the spreading of (largely organic) domestic debris on fields (Pryor and French 1985, 305).

Earlier Neolithic settlement was clearly different. The available evidence for living sites away from communal monuments is summed up in Pryor's view of the contemporary occupation of the south-western fen-edge: 'small-scale settlement involving nuclear family units spaced around the developing Fen ... in secondary woodland and on terrain that may well have been cleared a number of times previously' (1984, 203–5). In the ploughsoil, such occupation might be expected to produce small, discrete concentrations of artefacts, such as those recorded in the Stonehenge area (Richards 1984, fig. 11.1), which could easily be obscured by the extensive spreads of later periods (Richards 1984, fig. 11.2).

Two further factors may have combined to lower the visibility of Earlier Neolithic lithics. Firstly, the

substantial technological continuity between Mesolithic and Earlier Neolithic flint-working (Pitts 1978, 186) often makes it difficult to ascribe the debris of blade-manufacture to one period or the other in the absence of distinctive finished implements. Secondly, there is some evidence that pits were more often dug in the Earlier Neolithic than in preceding and succeeding periods in lowland England, and that contemporary lithics and other material were regularly deposited in them, while those of other periods were more often discarded on the contemporary surface. If this generalisation is valid, then it would make for the under-representation of Earlier Neolithic material in the ploughsoil (Healy 1987, 14–15; Healy 1988, 108–112). Such circumstances seem to have obtained at Tattershall Thorpe, where a predominantly Later Neolithic and Bronze Age surface collection gave little indication of underlying Earlier Neolithic pits which were subsequently excavated (Chowne 1993).

#### *Relationship to the South-eastern Fen-edge*

Technological contrasts between the two collections, probably resulting from differences in raw material, are described under 'Flint Use' above.

#### Scope of collection

A major difference between the two collections is that the Lincolnshire survey covered the whole of substantially upland parishes bordering the fen, while the Norfolk survey was confined to the present fen and fen-edge. As a result the Norfolk Breckland counterparts of the extensive upland spreads described here were excluded from the survey.

#### Composition

Both collections are dominated by Later Neolithic and Bronze Age material, most of it dating from no earlier than the later third millennium Cal. BC. When compared with predominantly earlier collections in both areas, this material shows increased frequencies of retouched pieces overall and of scrapers as a proportion of retouched pieces. In Norfolk, more frequent retouch was interpreted as reflecting the import of blanks, finished implements, or both, to an increasingly peat-covered and flint-poor area. This cannot apply to the present collection, since most of it is made of local surface flint and comes from land which was never covered by peat.

Increased scraper frequencies on Norfolk fen-edge sites were interpreted, following Bradley (1978, 56), as reflecting the use of the fen as summer pasture and the concomitant practice of tasks such as butchery, and hide- and bone-working. This too is unlikely to apply in Lincolnshire, unless the spatial organisation of such activities was different, since scraper frequency is low in fen-edge collections and high in upland ones (see 'Chronological Overview').

Arrowheads make up only 1.3% (3.1% including probably unfinished forms like Figure 89, L4) of the retouched forms in the Lincolnshire collection, in contrast to 4.5% or 5.7% in the Norfolk collection. This mirrors the existing record. The south-eastern fen-edge, of which the Norfolk survey area forms a part, and the adjoining Breckland have over the years produced one of the largest and densest concentrations of flint arrowheads in Britain (Green 1980, 159–160). In Lincolnshire, on the other hand, previous arrowhead finds have been few on the northern fen-edge compared with the limestone of the Lincoln Edge, the chalk of the Wolds and, above all, the

sands of South Humberside (Green 1980, fig. 52). The significance of this disparity can only be guessed at. Such evidence as there is for the function of Neolithic and Bronze Age arrowheads suggests their use in human combat (Green 1980, 178–179) and for display (Edmonds and Thomas 1987). Hunting is likely to have been of minimal importance, given the overwhelmingly domestic composition of animal bone assemblages from contemporary living sites.

Flint and stone axes are slightly more frequent (1.6% of retouched forms) in the Lincolnshire collection than in the Norfolk one (0.6%). This too bears some relation to the previous record. Finds of stone axes, especially of Group VI, are concentrated around the edge of the whole Fenland basin, with less of a bias towards the south-east than that shown by arrowheads (Clough and Cummins 1988, maps 2, 6, 7, 17). Where local finds have been plotted, as they have in both counties (May 1976, fig. 29; Healy 1984, fig. 5.12), it is clear that the concentration is made up of both stone and flint axes. Previous finds from the survey area include three ground or partly ground flint axes (SKY UA5, TOP UA1, WKE UA5), a flaked flint axe (SKD UA4), three stone axes (SKY UA2, SKY UA4, WKE UA4) and a basalt axe-hammer (TOA UA1) (information from Tom Lane).

#### 'Pot-Boiler' Sites

The two 'pot-boiler' sites in the Lincolnshire survey area (EKI 3 and 6) contrast with over three hundred in the Norfolk one. While some Norfolk sites may have accumulated at any period, the location of others in areas later covered by peat suggests a Bronze Age or earlier date (Silvester 1991). This would be consistent with radiocarbon determinations which indicate an Early Bronze Age date (c.2300–1780 Cal. BC) for some Suffolk examples (Martin 1988, 358 and pers. comm.), an Early to Middle Bronze Age date (c.2800–1400 Cal. BC) for others in the West Midlands (Barfield and Hodder 1981, 198–199) and an Early to Late Bronze Age date (c.2400–770 Cal. BC) for a series of Irish ones (O'Drisceoil 1988, 672).

Such sites have traditionally been seen as cooking places, at which water contained in a trough, pit or skin was boiled and kept boiling by the addition of stones heated in a nearby fire. More recently, they have been re-interpreted as saunas (Barfield and Hodder 1987). Structural and faunal evidence from Fahee South, Co. Clare, and from Swales Fen, Mildenhall, Suffolk suggest that cooking, perhaps on a communal rather than a family scale, may have been the main function at both (O'Drisceoil 1988, 675–676; Martin 1988, 359). The sheer density of 'pot-boiler' sites in some areas, including the south-eastern fens (Silvester 1991) and in County Cork (O'Drisceoil 1988, 677) also seems more consistent with cooking than with bathing.

The location of EKI 3 and 6, 230m apart and 500m downslope towards the fen from a group of three scatters (EKI 4,5,10), two of which (EKI 4 and 10) include Bronze Age material, would be compatible with prehistoric use. Their rarity, however, suggests that the practices which they represent were less favoured here than further south.

#### Peat Wastage and Archaeological Visibility

A major difference between the two areas lies in the dating of sites on hillocks and ridges newly exposed by wasting

peat. In Lincolnshire finds from these are mainly of the Early and Middle Bronze Age, sometimes with substantial quantities of well-preserved pottery. Sites such as SKD 7 may represent settlements contemporary with the concentration of Middle Bronze Age metalwork long known from the fen of the survey area (Gardiner 1980, fig. 3). In Norfolk, on the other hand, many newly exposed sites are Mesolithic or Neolithic. Neolithic Bowl pottery outnumbers Beaker and Early Bronze wares (Healy 1991), although the latter were found in abundance in the area in the 1960s (Bamford 1982; Healy forthcoming). It is difficult to identify any settlement evidence corresponding to the mass of Middle and Late Bronze Age metalwork which has been recovered there.

While many factors must have combined to produce this distinction, the most significant must be different histories of sedimentation, drainage and peat wastage. The northern fens of Lincolnshire seem to be at a stage of erosion long since passed in the south-east of the basin. Unless contemporary conditions precluded occupation, they may preserve settlements comparable to those already in the process of destruction further south. Their potential for future investigation, and the case for their conservation, is thereby enhanced.

## Terms used to describe lithic material

### Debitage

Cores. Classified according to Clark and Higgs (1960, 216) with the addition of discoidal and Levallois:

#### Single-platform

- A1. Flakes removed all around
- A2. Flakes removed part of way around

#### Multi-platform

- B1. Two parallel platforms
- B2. Two platforms, one at an oblique angle
- B3. Two platforms at right-angles
- C. Three or more platforms Keeled
- D. Flakes struck from either side of a ridge
- E. As D, but with one additional platform or
- Discoidal As D, but struck all around the circumference of the core
- Levallois. Discoidal keeled core prepared for the detachment of flakes of predetermined shape

Unclassifiable or fragmentary

*Irregular waste.* Fragment produced during the breaking-up of a nodule or pebble.

*Core trimming flake.* Removal made to prepare a core platform for further flaking

*Flake.* Generally used to denote any removal from a core. Sometimes subdivided visually, for example in Table 1, into:

Blade. A proportionately narrow, parallel-sided flake, often with parallel arrises on the dorsal face.

Flake. Any other removal.

In Table 3 complete flakes and blades are divided according to the extent of previous flaking over their dorsal surfaces into:

- Cortical
- Partly cortical
- Non-cortical

Also recorded here are:

Hinge fractures. Flakes or blades in which the fracture plane turns abruptly up at the distal end, leaving a smoothly rounded tip.

In Table 4 butts (or striking platforms) are divided into:

Punctiform. Slender and of restricted area, likely to have been by a soft hammer or punch-struck blow

Faceted. With a series of negative bulbs along the dorsal edge, forming part of the flake scars truncated at the ventral edge by the detachment of the flake (Saville 1981, 6)

Cortical. Completely cortex-covered

### Retouched forms

Numbers are those used in Table 5. Brief notes of date and affinities are included where they are relevant to the text.

1. *Leaf arrowhead.* A bifacially-flaked point ranging in outline from pointed oval to piriform, and including kite-shaped and ogival forms, as defined by Green (1980, 22). Retouch may completely cover both faces, be confined to tips and edges, or occupy any intermediate extent, the bulb almost always being reduced.

Most frequently found in Earlier Neolithic contexts (Green 1980, 92–99).

2. *Chisel arrowhead.* Roughly symmetrical arrowhead of quadrangular or triangular outline, generally formed by bifacial retouch and retaining one unworked primary flake edge. Equivalent to forms E-I of Clark's (1934) petit tranchet derivative arrowhead classification (adapted from Green 1980, 30).

Most frequently found in Later Neolithic contexts, especially in association with Peterborough Ware and Woodlands subtype Grooved Ware (Green 1980, 108–114).

3. *Barbed and tanged arrowhead* (e.g. Fig. 89, L6). Bifacially flaked point of triangular or sub-triangular outline with two basal notches forming a central tang and lateral barbs.

Most frequently found in Beaker and Early Bronze Age contexts (Green 1980, 117–141).

4. *?Unfinished arrowhead or arrowhead blank* (e.g. Fig. 89, L4). Large, relatively thin and flat biface more likely to have been an arrowhead blank than a finished implement.

5. *Scraper.* Implement, part of the edge of which is bevelled by unifacial blunting retouch, forming an angle of approximately 20–90 degrees with the flat underside of the blank, the modified edge being usually convex (Saville 1981, 8–9).

Small, sometimes scale-flaked scrapers, traditionally referred to as 'thumbnail' forms (e.g. Fig. 89, L7) are prevalent in Beaker-associated industries (Clark and Higgs 1960, fig. 12; Healy 1986, 88–89).

Thick, steep, sometimes step-flaked variants, their edges formed by relatively large removals, characterise some Bronze Age industries (Fasham and Ross 1978, 59–61).

6. *Borer.* Implement with a narrow retouched projection, apparently used for perforation.

7. *Plano-convex or scale-flaked knife.* Sharp-edged implement of elongated outline with varying degrees of invasive, scale-flaked dorsal retouch. Subdivided into:

*Plano-convex knife* (e.g. Fig. 89, L8). Sharp-edged implement of thin, plano-convex section with sharp edges and generally of ovoid outline, scale-flaked over all, or almost all, of its dorsal face (Clark 1932b).

Most frequently found in Early Bronze Age contexts (Clark 1932b; Saville 1985, 129–130)

*Scale-flaked knife.* Of similar form to plano-convex knife, but less extensively worked, with regular, scale-flaked retouch along one or two lateral edges.

Most frequently found in Beaker and Early Bronze Age contexts (Healy 1986, 88).

8. *Backed knife.* A generally parallel-sided blank, one lateral edge of which is blunted by abrupt retouch, the opposite edge being either unretouched, although often worn, or modified by uni- or bilateral retouch.

9. *Discoidal knife* (e.g. Fig. 89, L5). Sharp-edged implement, generally of sub-circular outline, formed by bifacial retouch extending all around its edges and sometimes over both surfaces. Often finished by grinding.

Triangular, lozenge-shaped and quadrangular forms occur, especially among edge-ground variants (Clark 1929).

Relatively few associated finds, most of them Later Neolithic. Discoidal knives were made at Grime's Graves, Norfolk, by users of Grooved Ware (Saville 1981, 56) and have been found in association with Grooved Ware and Beaker at Carnaby Top site 12, Yorkshire (Manby 1974, 27–29) and with Grooved Ware at Lawford, Essex, and Creeping St Mary, Suffolk (Healy 1985, fig. 15).

**10. Denticulate.** Piece in the edge of which coarse teeth have been formed, sometimes by the working of contiguous notches, sometimes by the detachment of single flakes. Includes the more restricted classes of 'keel-ed) denticulated flakes' (Wainwright and Longworth 1971, 176) and 'denticulate scrapers' (Saville 1981, 9).

Most frequent in Bronze Age industries, such as that of Newark Road, Fengate, Cambridgeshire (Pryor 1980, 118–121).

**11. Serrated piece.** Straight-sided blank, generally a blade, with one or occasionally both lateral edges finely serrated by the removal of a single chip on either side of each tooth (Smith 1965, 108). This effect may be obtained by striking downwards onto the edge of the flake to be serrated with the edge of another flake held at right-angles to it.

**12. Burin.** Implement with a chisel-like edge formed by the intersecting angle between the bulbar end of a negative flake scar (or scars) and its platform (Saville 1981, 8).

**13. Microlith.** Small blade or flake fragment, its bulb normally removed, modified to a regular form by abrupt retouch.

Simple, non-geometric forms, mainly obliquely-blunted and edge-blunted points (e.g. Fig. 89, L2), were made throughout the Mesolithic; most geometric forms became current from c.9000 BP (Jacobi 1984, 46, 53).

**14. Microburin.** By-product of microlith manufacture, formed by working a notch in the edge of a blade over the edge of an anvil across which the proximal or distal end eventually breaks off, becoming a microburin. Characterised by truncated dorsal notch forming an acute angle with a ventral fracture facet (Tixier 1974, 15–19).

**15. Truncated piece.** Flake or blade the distal end of which is truncated, generally obliquely, by abrupt retouch.

**16. Miscellaneous retouched piece**

**17. 'Fabricator' or rod.** Uni- or bifacially-flaked, blunted-ended, parallel-sided implement, of thick plano-convex or biconvex section, sometimes relatively thin and edge-retouched only, sometimes heavily-worn. Includes all but the unilaterally retouched forms among 'rods', as defined by Saville (1981, 10).

**18. Tribach or Y-shaped tool.** Bifacially-flaked implement with two approximately equal arms and one longer one.

Almost all are surface finds, apparently part of the 'heavy' tool kit of the later Neolithic (Piggott 1954, 283; Gardiner 1987, 61).

**19. Axe or adze.** Relatively heavy cutting tool with transverse cutting edge, sometimes wholly or partly ground.

**20. Flake from ground implement**

**21. Tranchet axe (e.g. L3).** Relatively heavy cutting tool of sub-rectangular outline, often with slightly convex sides, flaked over both faces with cutting edge formed by removal of a transverse flake.

Characteristically found in Mesolithic contexts, perhaps remaining current into the Earlier Neolithic (Gardiner 1987, 59).

**22. Other or fragmentary heavy implement**

**23. Hammerstone.** Stone battered from use in flint-working, sometimes sub-spherical.

## Catalogue of Illustrated Lithic Material (Fig.89)

Entries are ordered as follows: category, raw material, descriptive or other comment.

*Hall Hill, West Keal, WKE 15, TF 3600 6376*

**L1** Single-platform (A2) core. Small pebble of dark, almost black flint with thin, rolled cortex.

**L2** Edge-blunted point with ancillary retouch. Translucent buff-orange flint.

*SKD 10, TF 3487 6004*

**L3** *Tranchet axe.* Orange flint with cream inclusions. Slightly corticated; recent damage to cutting edge unshaded.

*WKE F/C 39, centre TF 369 654*

**L4** ?Unfinished arrowhead. Translucent orange-brown flint with relatively fresh cortex. Flaked over most of unillustrated ventral face.

*WKE F/C 39, centre TF 369 654*

**L5** Fragment, probably of lozenge-shaped or sub-triangular discoidal knife, possibly of another edge-ground form. Indeterminate flint. Burnt: crazed and white throughout.

*EKE F/C 41, centre TF 3795 6475*

**L6** Barbed and tanged arrowhead. Translucent brown-orange flint.

**L7** 'Thumbnail' scraper. Translucent orange-brown flint with darker banding.

*EKE F/C 51, centre TF 3695 6490*

**L8** Plano-convex knife. Translucent buff-orange flint with opaque cream and dark grey inclusions.

## Appendix IV: The Roman Pottery

by John Samuels

The Roman pottery was classified using the system described in Hayes (1987b) and Hayes *et al.* (1992). This account is only an impression based on the examination of 195 analysis sheets from site and off-site contexts. However, despite some caution, a number of comments can be made about the material and some tentative conclusions put forward.

None of the groups analysed was as large or spectacular as some of the groups from the western fens. Consequently, there is a lack of range of pottery types and greater problems in dating. But, even in spite of this, there are some features which provide an interesting contrast to the previous analyses and those already carried out by Simmons (1975b) and Samuels (1983). Very little samian ware, Nene Valley Colour-Coated Wares, or grey-wares from the Nene Valley were identified. Apart from Dales Ware there was also little shell-gritted pottery. Only two amphorae sherds were found and not much more mortaria. But, in the case of mortaria, these seemed to come from as wide a range of sources as those from the western fens: Mancetter, Nene Valley, Swanpool and unidentified northern kilns.

Grey-wares predominate but the impression is of a more limited range of forms. Sources for these, as usual, are more difficult to identify, but they are probably Lincolnshire, from Lincoln itself and the Wolds around Market Rasen and Claxby (Bryant 1977).

One particular group (EKE 11) reflects the range of forms produced in the Market Rasen kilns. Nearby sites such as Dexthorpe, in Ulceby parish, 8km north of East Keal also yielded pottery which closely matched the range of products from the Market Rasen kilns (Whitwell 1979, 74). A handful of other sites, mainly from Wrangle, stand out as having more in common with groups from the western fens (*e.g.* WRA 45, WRN 6, 9, 24A). This is by virtue of displaying a wider range of vessel types than usual on the northern edge, and by the presence of Nene Valley Colour-Coated Wares.

The paucity of pottery does suggest that the northern sites are poorer than those in the west and it may also indicate that they are largely out of the main trading range of the Nene Valley pottery industry. The limited range of vessel forms is more typical of rural sites in central and north Lincolnshire where medium sized jars and wide-mouthed bowls are the predominant vessel types.

Dating such small groups of material is difficult but, with the exception of EKE 6B and 10, and WRA 45, which have possible 1st century AD pottery, the bulk of the material would seem to be 2nd–4th centuries. This is more typical of what is found in north Lincolnshire where forms produced become more limited in range in this period, and kiln production becomes more standardised.

## Appendix V: Saxon and Medieval Pottery

by Hilary Healey

### Introduction—method and analysis

All the Saxon and medieval sherds were counted, weighed and examined macroscopically with the aid of a hand lens where required. From this information an archive was produced giving the total number and weight of the pottery in each context. The fabric/type series was one introduced for the first phase of this survey, the western fens (Healey 1992). The classification is based according to texture and appearance, identifying the principal inclusions. Broad date ranges are expressed under the following headings:

Early Saxon 450–650 AD  
Middle Saxon 650–850 AD  
Late Saxon 850–1150 AD  
Early medieval 1150–1250 AD  
medieval 1250–1500 AD  
post medieval 1500 plus AD

In certain instances it is possible to relate fabrics directly to known wares or ware types and this has been noted. Information regarding distribution of the various wares referred to is derived from material collected for a thesis on Lincolnshire Medieval pottery (Healey 1975).

### Early and Middle Saxon wares

Early Saxon fabrics are generally classified as sand-tempered fabrics although with a wide range of different inclusions (Healey 1992). Middle Saxon wares fall chiefly into two main fabrics, the Maxey shell-tempered type wares (Addyman and Whitwell, 1970) and the finer Ipswich Wares, some of which have distinctive textures or inclusions (West, 1963). The two wares represent not only different fabrics but also different manufacturing techniques, Maxey Wares being hand-built and Ipswich Wares wheel-made. Sand tempered wares cannot be closely dated since they occur both of sites predominantly Early and on sites predominantly Middle Saxon.

Fewer Early and Middle Saxon sites were identified in the northern survey area to those on the western fens where many such sites were concentrated on former marine deposits. The equivalent landscape area in the northern fens was not occupied at this time. Most of the 11 Early or Middle Saxon sites in the north contained only a few sherds, the exceptions being SKD 10 with 346 Early Saxon sherds and WKE 13 with 72 sherds. No single period Middle Saxon sites were found and only two sites, EKE 5 and SKD 10, produced any quantity of positively identified Middle Saxon material (20 and 40 sherds respectively). On SKD 10 both Maxey types and Ipswich Wares were present with only Maxey types present in the EKE 5 collection. Both of these sites yielded Roman as well as Early Saxon pottery. Lack of later material suggests that EKE 5 did not continue after the 9th century but SKD 10 apparently remained in use with Late Saxon finds being recorded.

### Late Saxon and early medieval wares

The widespread presence of Late Saxon pottery on the Lincolnshire silts bordering the Wash was noted as early as the 1960s (Healey 1966). The principal fabrics known at the time were Stamford Ware (Hurst 1957), the shell-

tempered fabrics collectively named St Neots Ware (Hurst 1955), and the grey reduction fired Thetford types (Hurst 1956). Stamford Ware in particular has been found on many locations not only close to the core of the medieval village (as defined by the presence of a medieval church), but often in places such as moated sites away from the village centre. These basic categories still obtain for the material in the current survey, but a thin, oolitic-tempered, oxidised ware has also been noted in which the forms are similar to those in the shell-tempered fabrics. The only wares which can be safely assigned to the early medieval period, in the absence of any quantity of well stratified excavation assemblages from the area, are Developed Stamford Ware (Kilmurry 1970) and a thin sand-tempered fabric designated 'South Lincs gritty ware' (Healey 1975, 39). Here the early medieval fabrics have been almost entirely recorded in field collections alongside Late Saxon wares.

In the northern fen survey Late Saxon/early medieval pottery has been found on 17 sites. The largest collections are from WRA 17 and from SKD 10. The latter included Stamford Ware, Thetford type wares and imported Blau-grau Ware of the 10th century AD.

Finds from TOP 8, in the drove at Toynton St Peter, and WKE 23 near Keal Cotes, both sites towards the fen-edge, were chiefly Late Saxon to early medieval with little subsequent material; presumably they represent some particular activity taking place which required an establishment away from the village centre. On site EKE 15B there was a total absence of pottery of a later medieval date.

### Medieval wares

Continuity was apparent on most of those sites which had yielded Late Saxon pottery. TOP 8 and WKE 23 have already been referred to above. As already noted above, this phase of survey took place in locations which were in general closer to known medieval settlements than had been the case in the western fen survey area, and therefore had the potential of producing a larger number of sites of medieval date. In addition it includes one of the principal medieval pottery manufacturing centres in the county, Toynton All Saints (with part of Toynton St Peter). There was also such a centre in the western fen-edge, at Bourne, but with the smaller quantity of medieval material recovered in that area the influence of those kilns was not so apparent. At Toynton All Saints fourteen kiln or kiln waster sites were known before the survey (LM SMR). The industry operated principally between the late thirteenth and the seventeenth centuries, and although forms changed over this period the clay source, and hence the fabric, remained the same. This difficulty must qualify the dating information obtainable from the survey material, which often consists more of body sherds than of diagnostic forms. Toynton products, and more or less identical wares from the later medieval kilns nearby at Old Bolingbroke (together with even later but similar products from centres such as Boston) predominate amongst finds from sites in the region.

Despite the general uniformity of medieval wares collected, a few sites show a range of material from more distant kiln sources. Site WRN 4, in particular, which is adjacent to King's Hill earthwork, has wares from Lincoln, Scarborough, and Grimston (Norfolk) in addition to the usual Toynton types, as well as two sherds of imported French pottery from ?Saintonge. This would imply, as might be expected, a site of superior status (see

Ch.4). Wrangle's position as a coastal haven, as well as the proximity of the port of Boston, would make European continental imports more accessible than in the hinterland. Trading movement up and down the River Witham has been thought to account for the previously known distribution of Lincoln and Potter Hanworth Wares on sites between Lincoln and Boston (Healey 1975, map 17) and a large consignment of assorted medieval pottery apparently sunk at Short Ferry, Fiskerton (LM SMR) demonstrates the movement of pottery along this watercourse. Both Lincoln and Potter Hanworth fabrics appear on a number of sites in the survey area.

## Appendix VI: A Terracotta head from Stickney, Lincolnshire

by Martin Henig

During field survey as part of the Fenland Project, a terracotta head (Fig. 88 No. 1) was found on the south-west margins of Stickney island.

### Description

The head is of solid construction and retains a red colour-coat over much of its surface. Facial features combine a triangular nose, prominent almond-shaped eyes with pronounced lids and a slit-like mouth. The hair is finely striated over the left eye, but more coarsely so over right and down the right side of the face. Ears are not shown.

Damage has been caused to the left side of the head and most of the right eye, where a gash extends up to the hair. The nose has been rubbed and the mouth chipped. The head has been broken off at the neck and appears to have jutted forward markedly.

### Discussion

Although an element of uncertainty remains as to the date of the head, it may be pointed out that the general physiognomy, especially the rendering of the eyes, as well as the use of colour-coats, are found on Roman face flacons. Of these, as far as Britain is concerned, examples from the Oxford kilns are the best studied (see J. Manby 1975, 180-2; Draper and Chaplin 1982, 107). However, neither fabric, nor the detailing of face and hair on the example from Stickney, look especially like products of the Oxford workshops and its source might be expected to be further east in Britain. Examples are known from Colchester and Cambridge (Toynbee 1964, 406; May 1930, 167), the former with a ridge between hair and face, is particularly reminiscent of the Stickney head.

If the head *is* Roman it may be suggested as an irregular production from a pottery kiln for the piece is quite unlike the normal run of terracottas, which are generally hollow, and far more classical in appearance.

The head would almost certainly have had a religious connotation, though perhaps simply as an apotropaic object; it is, however, possible that it was a small cult-figure in its own right like those from Westbury, Wilts and Carlisle (Webster 1986, 104-6 pls 21 and 22).

More probably the head was attached to a pot like those from a vessel found at Burgh-by-Sands, Cumberland (May and Hope 1917, 171). Such a decorative use would be in accordance with a close resemblance between the Stickney head and the female masks embellishing face-flacons.

## Appendix VII: An Early Seventeenth Century Map of Wrangle Tofts and Marshes

by Tom Lane

Within the collections held in the Public Record Office is a fine map (MPG81 P FFP 273) illustrating Wrangle Tofts and the adjacent coast (Plate IX). It was surveyed by John Malyn and Richard Smith and drawn in 1606, apparently in response to a dispute between local landowners, the King and William Hanbye.

The comparative accuracy of the surveying has enabled the recognition of a number of surviving early roads and field divisions. A copy of the plan has been reduced to 1:10560 scale and the surviving features of the 17th-century landscape have been superimposed on a copy of the relevant part of the modern landscape (Fig. 90). Malyn and Smith's map is important on a number of levels. At its most basic it offers contemporary illustrations of Toft Mill (see Dear and Taylor 1988, 121 for early photograph of similar mill at Friskney), Wrangle Hall and several ships, including merchant vessels and smaller fishing craft.

Wrangle Hall, home of the Reade family, seems to have been a splendid building of brick or stone with a number of chimneys. The roof of the west wing appears to support a cross. Ordnance Survey Records indicate that the hall was associated with a chapel although that was believed to have stood in a field opposite. The record also notes that the present Wrangle Hall is modern, that the owner states it was built on the site of the former Hall which had been largely taken down c.1806, and that the

remainder was modernised in 1831. Perhaps most interesting in respect of the Hall in 1606 is that, on the evidence of the map, it appears to occupy a different site to that of the modern Hall. Identification of a number of early field boundaries that correlate to modern examples suggest the surveyors worked accurately and to scale.

On the reduction to 1:10560 the Hall is placed some 500m southwest of its present position, in a field at the junction of Hall Lane and the old Haven (although the latter feature is not included in the map). The surveyors' skill in recording accurately the field boundaries would suggest that they would be unlikely to make an error of 500m in locating something as significant as Wrangle Hall, and that, perhaps, a forerunner of the modern Hall once existed nearer the Haven. However, on the Enclosure Award Plan of 1807 the Hall does appear in its present position so the matter is unresolved.

Another building that appears on the 1606 map is the house at the end of Sea Lane, a forerunner of Marsh Farm, and there are two cottages further north along the edge of the Tofts. 'Krystead Tofte' identifies at least one of the locations at which Kirkstead Abbey made salt in the Middle Ages.

Though such details are of local historical consequence, the map also illustrates features of wider significance in terms of the landscape and economic history of the coastal parishes. Malyn and Smith have, perhaps inadvertently, indicated a succession of environmental zones and the economic uses to which they were put; uses that had doubtless changed little over centuries. From left to right on Figure 90 is depicted first the Tofts (stippled area on the modern landscape underlay), the

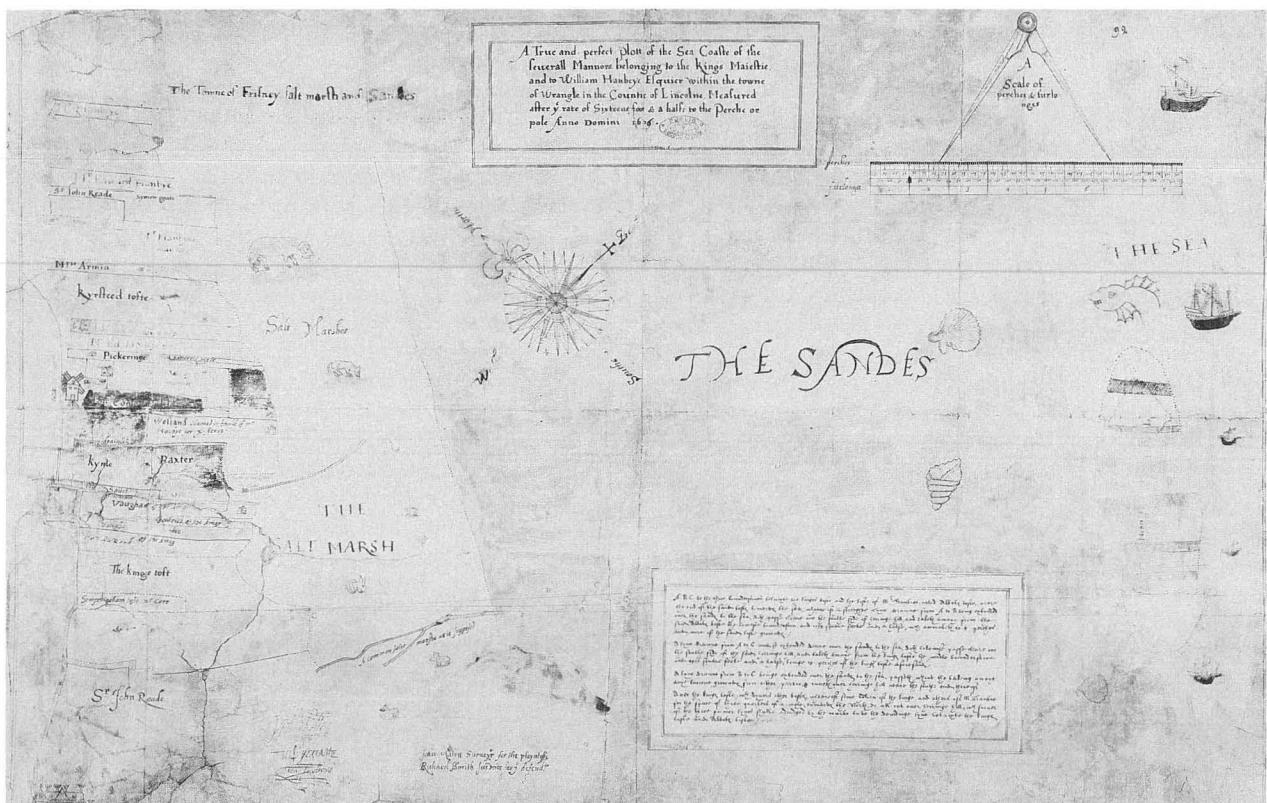


Plate IX Map of Wrangle, 1606.  
(Public Record Office, MPC 81. Crown Copyright photograph: reproduced with permission).

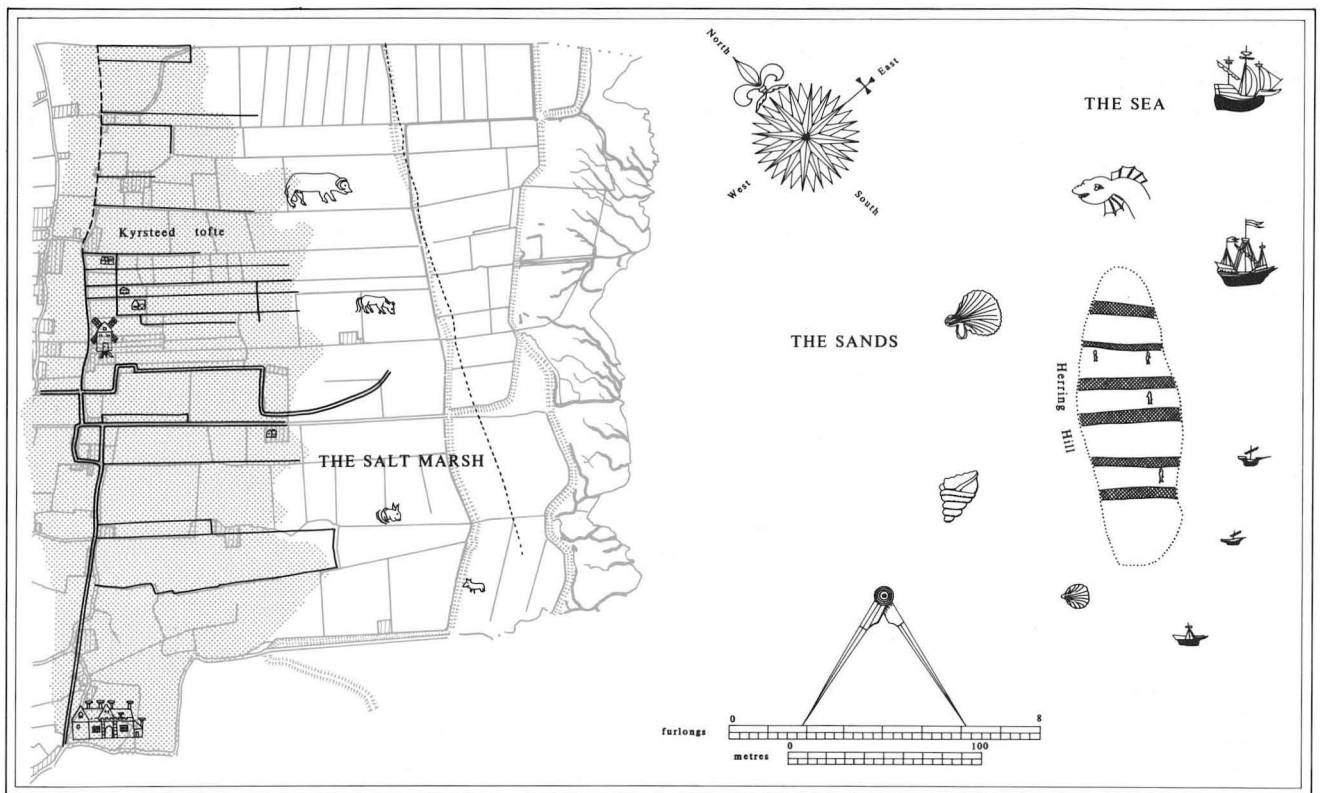


Figure 90 Wrangle coast combining 17th century and modern detail. Scale *c.*1:2500

zone of medieval salting, an industry which shows no sign of having continued into 1606. Next comes Salt Marsh, a prime grazing area as indicated by stylised representations of contented-looking sheep and horses. A dotted line on the map, in the general area of the modern sea-bank, separates the salt marsh from 'The Sandes' the tidal flats which yielded shellfish, and in particular it would seem, cockles and whelks. On a map of Marsh Chapel published by William Haiwarde in 1595 the corresponding zone east of the salt marshes was called the 'Cockle Sandes' (Beresford and St Joseph 1979, 263; Rudkin 1975, 37).

A sandbar with the name Herring Hill can be seen to the right of the map. It is shown with six nets staked out across it. Thompson (1856, 680) describes a sandbar, also called Herring Hill, at Freiston, a few kilometres to the south, and also outlines the method with which the herrings were harvested. An obvious similarity to Wrangle's Herring Hill makes the passage worth quoting in full.

Herrings are principally caught upon a sand named Herring-Hill which lies nearly opposite Freiston and is separated from the main by a channel called the clays. The Herring Hill is not more than a mile in length and a quarter of a mile in breadth. Upon it are fixed about a thousand stakes, in length about 10 feet and placed nine asunder. The fishermen secure their nets to these stakes, each net being fastened to about eight or ten stakes and thus the number of nets spread at any one time is nearly 100. The herrings are carried up the channel with the flood tide and as they return upon the ebb, which sets directly upon this hill, they get entangled by their gills

in the meshes of their nets. There are many sea birds and, were the fishermen to neglect the proper times of tide and daylight, the herrings would be quickly devoured by the birds. In stormy times it is not unusual to take 50,000 herrings in one night

Though scarcely believable, and doubtless overestimated, these figures nevertheless suggest high catches.

The sequence of environmental zones is completed by the open sea. Boats depicted thereon serve to remind that, in addition to the products previously mentioned, two further sources of income were available; sea fishing and commerce. The latter boosted the revenue of Wrangle in the Middle Ages when Wrangle Haven was one of a number of ports along this part of the coast.

The map also indicates a sluice on the main drainage channel (centre). Roddon-like traces of the channel east of the salterns were mapped during the survey and can be detected on air-photographs.

Wrangle benefited financially from each of the activities depicted on the 1606 map, and these had doubtless changed little through the Middle Ages. In addition, Wrangle also utilized its natural land-based products (see Chapter 4); archaeological evidence indicates large-scale salt production and some arable agriculture; historical sources allude to turbarry, freshwater fishing (for, among other things, the species indicated by the early road name Eel Pool Lane), meadows and pasturage. Additionally, naturally occurring plants such as samphire might be expected to supplement local diets along with the wild-fowl which flocked around the shores, inland pools and ditches. Reeds, rushes and withies would also have been locally available for building and basketry.



Whilst it may argue for some control in harvesting and maintaining such a diversity of products, it is their presence which is significant in Fenland studies. Throughout the Survey it has been clear that the Fenland did not represent a 'wasteland', but a storehouse of opportunities, a rich, if risky, environment. Wrangle just happens to provide evidence for many of those wetland enterprises but throughout the Fenland equivalent micro-environments would have provided similar scope for exploitation. Although Wrangle's evidence is mostly medieval and later, the same utilisation of resources took place during, and prior to, the Roman occupation.

Saltmaking was carried out from at least the Middle Iron Age on the western fen-edge (Lane 1988) where Iron Age or Roman peat cutting was also noted (Lane 1985, 57). The presence of shells, and the bones of domesticated animals (cattle, sheep, horse and pig) have been noted from Iron Age and Roman sites throughout the Fenland. Excavation could recover further details of exploitation of natural resources. In the meantime, documents such as Malyn and Smith's map provide ample indication of a controlled and systematic use of the harsh environments of the wetlands.

## Appendix VIII: The Pre-Enclosure Landscape of East Keal

by Peter Hayes

The details that form the basis of this Appendix are taken from a map of East Keal by John Grundy (LAO Misc. Dep. 2/1). These are listed below and reproduced on Figure 91, which has been drawn in the style of the Fenland Survey parish maps. Figure 91 forms a useful comparison with the medieval parish map of East Keal (Fig.66) on which the evidence for medieval strips was arrived at from surface observations and air-photographs.

### Key to names of fields, furlongs and enclosures in 1757

#### A. (a) The West Field

No on Map	Name
1	Beck Hill Foot furlong
2	Sand Acres furlong

3A	Ten Leas
3B	Ten Leas furlong
4	Swarth furlong
5	No name
6	Low Bassing Syke furlong
7	Keale Hill furlong
8	Short Riggham furlong
9	Long Riggham furlong
10	Hab Croft furlong
11	Barcliff furlong

#### (b) Enclosed by 1757 (formerly part of West Field?)

12	Keal Hill closes
13	Keal Hill closes
14	Keal Hill closes
15	Beck Hill close
16A	No name (Dr Wilson's)
16B	Coate's Fold

#### Notes

- 1) The road along the west side of 10 was called *Meere Bank*.
- 2) The road along the south side of 10 was called *Coates's Fold road*.

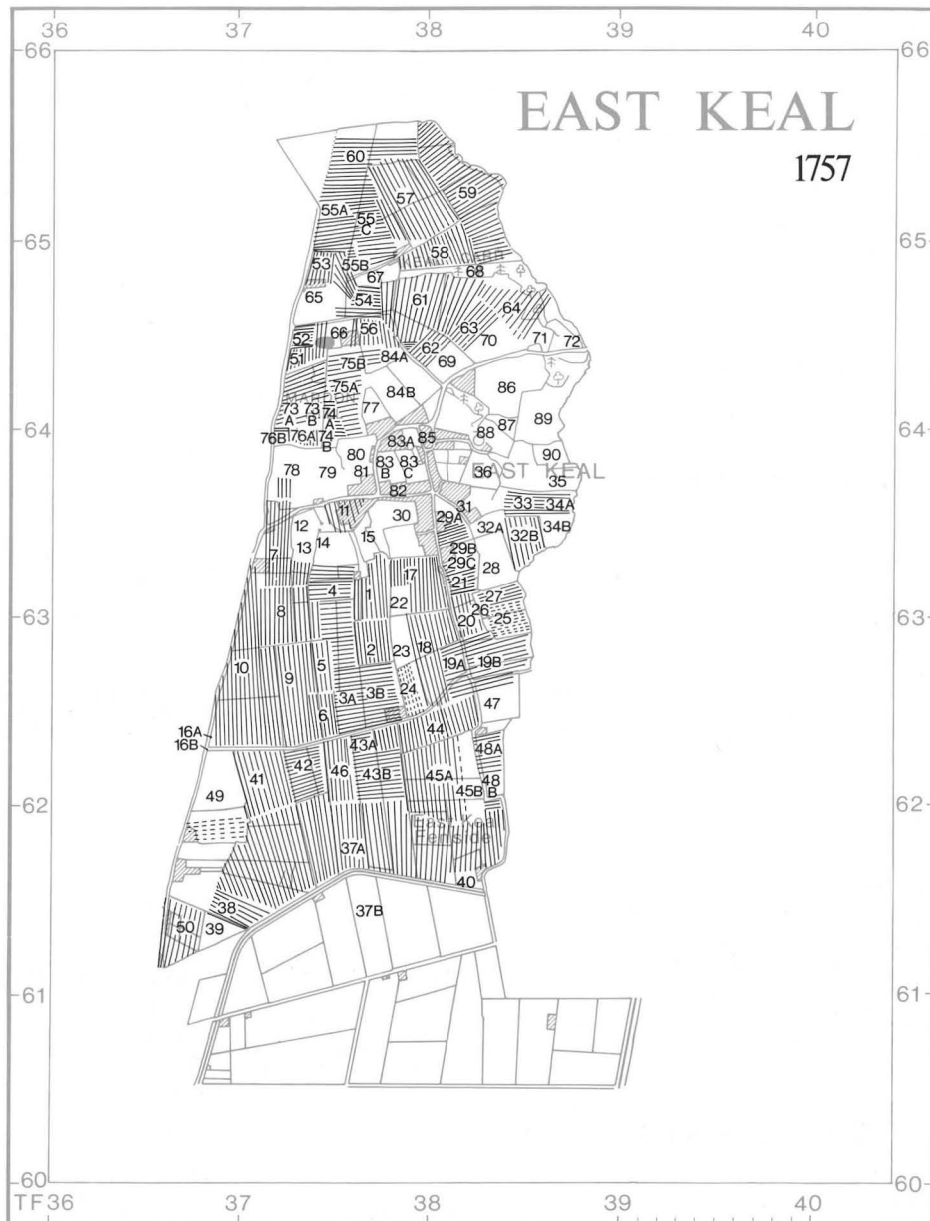


Figure 91 East Keal: 1757. Scale 1:40,000

## B. (a) The Field Called The East Field

17	Town End furlong
18	Sand Acres furlong
19A	West Hill Thorn furlong
19B	East Hill Thorn furlong
20	Mill Street furlong
21	Fyesykes furlong

## (b) Enclosed by 1757 (formerly part of East Field?)

22	High Close
23	Middle Close
24	Low Close
25	Beck Nook Close
26	Calf Close?
27	No name (Mr Alderson's)
28	New Close
29A	Butcher's Close
29B	No name (Dr Wilson's)
29C	No name (Mr Brackenbury)
30	Cole Hill
31	Various garths
32A	No name (Mr Petchell)
32B	No name (Mr Petchell)
33	High Cook's Close
34A	Low Cook's Close
34B	Low Cook's Close
35	Mill Close
36	The Walk or Hill Close

### Notes

- 3) The road south from the Village was *Broad Gate*, changing southwards to *Fen Road*.
- 4) The stream was called *Toynton Mill Stream* beside 19B.
- 5) A spring called *Maltby Spring* lay at the west end of 36.
- 6) The north-eastern boundary on the former East Field is unclear. 35 and 36 might equally be included in H (The Enclosures around the Village).

## C. (a) The Ings Meadow

37	The Ings Meadow
----	-----------------

## (b) Enclosed by 1757 (formerly part of The Ings?)

38	Long Acres
39	Pallis Snout (or Pallis Snought)
40	The Fenn Houses

### Notes

- 7) The Ings may have extended further south in the previous century: See West Ings Meadows (Toynton) (151). (Appendix IX)
- 8) 'East Keal Fen Side' on the OS map seems to be the successor of a hamlet composed of 40 and its Toynton equivalent (152A and B).

## D. (a) The East Field

41	Burn Croft furlong
42	Burn Croft furlong
43A	Short Swinney (or Swiney) Swath furlong
43B	Long Swinney (or Swiney) Swath furlong
44	Audy Gate furlong
45A	The Leas and Acresage Meadow
45B	Warsley Closes

## (b) Enclosed by 1757 (formerly part of The East Field?)

46	Burn Croft
47	Warstead close
48A	New Croft

48B No name: perhaps previously with 48A, perhaps part of 37

## E. Enclosures Near Keal Coates

49	Coates's Land
50	The Hurn Cut

### Notes

- 9) The *Ings Dyke* formed the southern boundary of the *Hurn Cut* and *Ings Meadow*.

## F. (a) The North Field

51	The Hanging Furlong
52	The Bottom of Hanging Furlong
53	Quadring Bottom furlong
54	Quadring Bottom furlong
55 A-C	Cross Gates furlong
56	Rush Dale furlong
57	Long Leas furlong
58	Carr furlong
59	Twenty Lands furlong
60	Redlands Bottom furlong
61	Carr furlong
62	Howe furlong
63	The furlong west of Firr Close
64	Franklin Corner

### Notes

- 10) Although 64 is not called a furlong it is treated as one in the text.
- 11) The stream is called *Twenty Lands Beck* beside 59.
- 12) *Vergins Well* is named but not precisely located just east of the Beck and just south of the lane to Hundleby.

## (b) Enclosed by 1757 (formerly part of The North Field?)

65	Folly Close
66	Mr Hastings's Pot Works
67	Mr Brackenbury's Carr Closes
68	No names (Carr Closes: Robt Holland and Dr Wilson)
69	Barley Close
70	Firr Close
71	The Warren or North Hills
72	No name: trees or woodland in 1757

### Notes

- 13) A road ran along the north-west side of 67, 58, 59, and was called *Market Street Road*. The lane past Glebe Farm on the OS map follows the same route. It came around the west end of 67 and cut across 54.
- 14) A road ran, along the line of the modern road, from the south-east corner of Rush Dale furlong (56) south-east past 62 *etc.* It was called '*The road to Clay Pit Lane*'.
- 15) The position of the boundary between 56 and 61 is unclear. The modern road seems too far east to be the same route as in 1757.

## G. (a) The Marden Field (or Mardin Field)

73A	The furlong on the Back Side of Marden
73B	Robert Scott's Gravel Pit land
74A	Gravel Pit furlong
75A	Marden Lane furlong
75B	Brick Clamp leas

## (b) Enclosed by 1757 (formerly part of Marden Field?)

76A	Top of Muchams
-----	----------------

76B Top of Muchams  
77 High Field Close or Town End

#### H. The Enclosures Around The Village

78 The Breams  
79 The Middle Muchams  
80 The First Muchams  
81 No name (the enclosure around Keal Hall)  
82 No name (the enclosure around John Jackson's house)  
83A The Garth  
83B The Hills

83C Low Hills  
84A Rush Dale Close  
84B No name  
85 Barrow Garth or Clay Pitt Hill  
86 No name (Mr Brackenburry's)  
87 No name (Dr Wilson's)  
88 No name (the enclosure around St Helen's Church)  
89 Church Close  
90 No name (Dr Wilson's)

#### Notes

16) The modern main road to Spilsby was called *Barrow Hole Lane* north of 86.

**Appendix IX: The Pre-Enclosure Landscape of Toynton All Saints and Toynton St Peter**

by Peter Hayes

The information is taken from 'The surveigh of the manour of Toynton 1614' (LAO 5ANC 4/A/4). As in Appendix VIII the information is listed below and reproduced as parish maps (Figs 92 and 93) in the style of the other maps in this volume. Comparisons can be made between these figures and the corresponding medieval parish maps (Figs 67 and 68), on which evidence for the pattern of medieval strips was arrived at independently.

**Key to names of fields, furlongs and enclosures**

**A. (a) The North Field (Northe Feilde)**

*No on Map Name*

- 91 Hundleby dike furlong
- 92 Howe Akham wong(e)?
- 93 Carre furlong
- 94 Long Akham furlong
- 95 Short Akham furlong
- 96 Cundyte (or Cundith) furlong
- 97 Sand pits (pittes) furlong?
- 98 Clay pits (pittes) furlong
- 99 East park(e) furlong
- 100 Low lands (Lowe landes) furlong

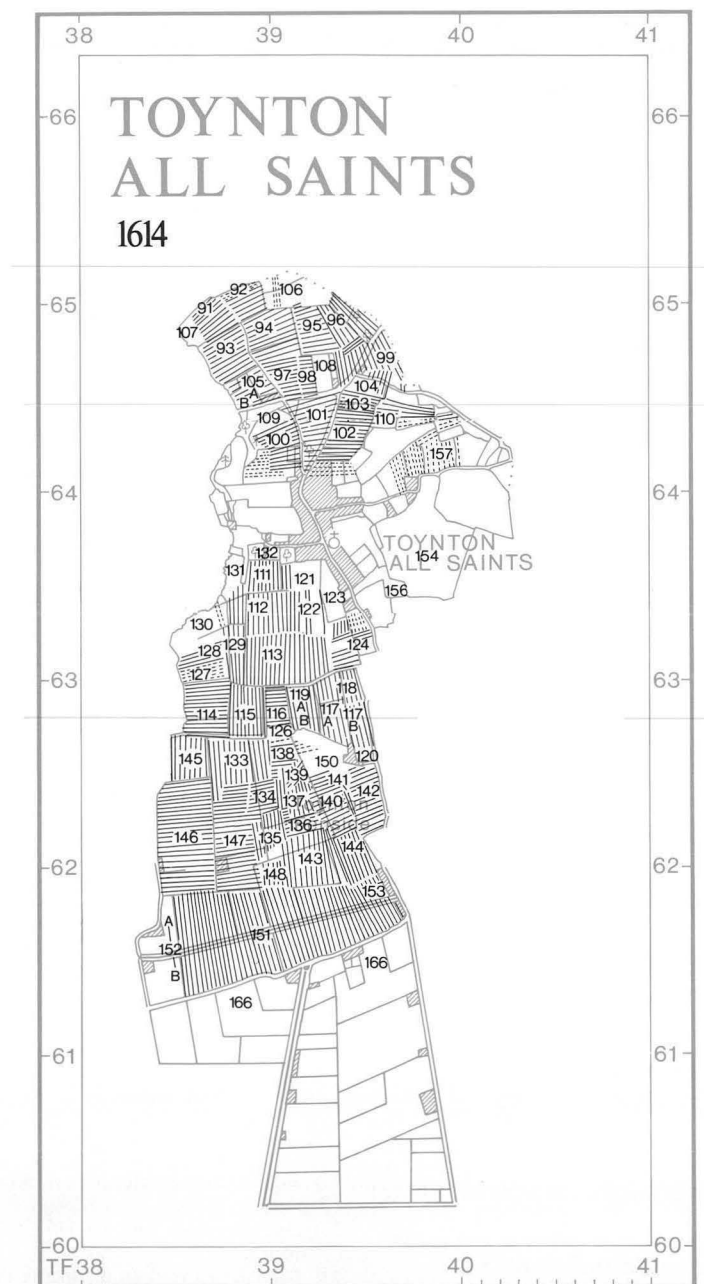


Figure 92 Toynton All Saints: 1614. Scale 1:40,000

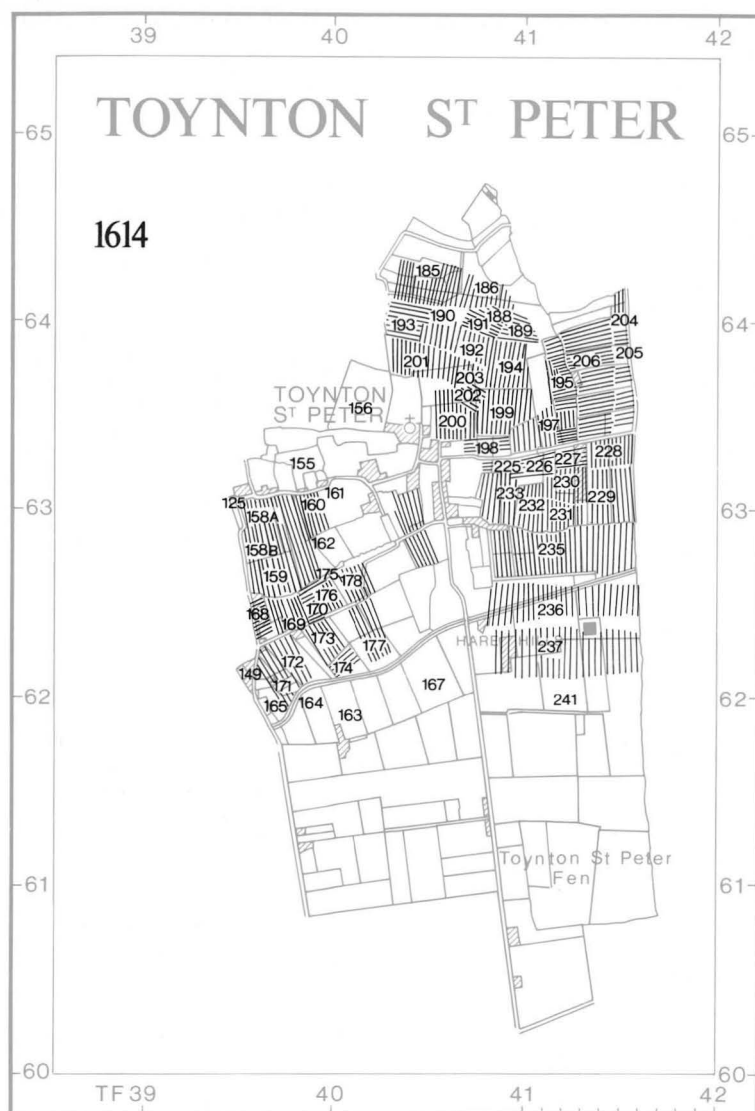


Figure 93 Toynton St Peter: 1614. Scale 1:40,000

- 101 Clay pits (pittes) furlong
- 102 No name (perhaps part of 101)
- 103 Turgraves mires arrable furlong

**Notes**

17) how Akham wong (92) is still treated as a furlong in the text, and part of The North Field, although it has been enclosed.

**(b) Enclosed by 1614 (formerly in North Field?)**

- 104 Turgraves mires (meadow)
- 105A Puddingholme
- 105B No name (small enclosure)
- 106 Dovecote wong(e)
- 107 Enclosures not named
- 108 Enclosures not named
- 109 Enclosures not named
- 110 Enclosures not named

**Notes**

- 18) Turgraves mires meadow (104) is treated as part of North Field in 1614 text.
- 19) Across some unnamed enclosures, including the east part of 110, is written 'towards *Goodrick inges* and *Mires closes*'.
- 20) The modern road to Spilsby is not shown on the plan, and 99 overlies its course. The text, however, refers to the highway from Toynton to Spilsby as the north boundary of 104. The existence of the modern

main road to Keal is indicated by an ochre line outside the boundary of Toynton Manor, and a similar one extended in the Spilsby direction.

**B. (a) The Bragate Field**

- 111 Bragate upper furlong
- 112 Middle (or Midle) furlong
- 113 Cross(e) hill furlong
- 114 Keale Beck corner furlong
- 115 Southbeck (or Sowthe Becke) furlong
- 116 Borden brig (or brigge) furlong
- 117A Milne upper furlong
- 117B Milne nether furlong
- 118 Nether Bragat furlong
- 119A Stinters north end
- 119B Stinters south end
- 120 Beck furlong

**Notes**

- 21) 'Bragate northe furlonge' is mentioned in the text but not on the plans.
- 22) The boundaries between 119A, 119B, 117A, 117B and 118 are unclear.
- 23) The road on the east of Bragate Field was 'Old Fenngate'.

**(b) Enclosed by 1614 (formerly part of Bragate field?)**

121	No name
122	No name. Considerable quantities of pottery found during survey.
123	No name.
124	No name. Survey and air-photos suggest N-S strips. Plan shows W-E strips.
125	No name. One building (house?) in 1614.
126	No name.
127	Chantry Close (Spilsby Chantry)
128	No name. The Chantry held land in this.
129	No name.
130	No name.
131	No name.
132	No name.

**C. (a) The Wollam Field**

133	Keale Beck(e) furlong
134	Old Fenngate furlong
135	Holewranklett (or Howe Ranclett) furlong
136	Holeranklet (or Howse Ranclett east) furlong
137	Harp(e) furlong
138	Little furlong?
139	Little furlong?
140	Tedd furlong
141	Myln furlong
142	Little beck furlong
143	Ings furlong
144	No name (perhaps part of 143)

**Notes**

24) 142 contained a house by the road in 1614.

**(b) Enclosed by 1614 (formerly part of Wollam Field?)**

145	Wollam Short leas furlong
146	Wollam long leas furlong
147	Wollam leas furlong
148	No name (perhaps part of 147)
149	No name (modern Toynton Fen Side)
150	No name

**Notes**

- 25) There were 4 houses in 1614 at what became Toynton Fen Side (149).
- 26) 149 and 142 were probably parts of furlongs stretching eastwards until the creation of the new road to the fen, replacing, presumably, an earlier route (to the west), through Old Fenngate furlong.
- 27) The text at one point mentions *Milne Wonge* but not Myln furlong. They may be the same.
- 28) 145, 146, 147 and 148 are coloured green, not ochre, suggesting grassland, not arable. Their southern boundaries are, in places, unclear.

**D. (a) The West Ings Meadows**

151	West Ings meadows (or West Inges Meadows)
-----	---

**(b) Enclosed by 1614 (formerly part of West Ings?)**

152A	No name. Enclosures and two houses which, with Keale's 152B 'fen houses' formed a fenside hamlet.
153	House and enclosure, a continuation of the other hamlet.

**Notes**

- 29) The southern boundary of 151, separating it from the East Fen, is coloured blue, indicating a watercourse. Its straightness suggests a dyke, perhaps a continuation of East Keal's Ing Dyke (in existence in 1757), though that lay further north.
- 30) The land which lay south of the Ing Dyke (Keal) in 1757 was then in East Fen. However, the 1614 Toynton plan shows the area as '*Parte of Westerkeale mannoure*', suggesting that, in 1614, Keal Ings had extended almost as far south as Toynton Ings, but that by 1757 they had contracted. The area in question (approximately) is marked 37B.

**E. The Upper and Lower Town Houses and Closes**

154	Toynton Park
155	Bacon Hall
156	No name
157	Tup Close

**Notes**

- 31) These are too numerous and complex to be considered in detail, so only a selected few have been numbered. Those on OS Sheet TF 46 SW (Toynton St Peter) are considered below (e.g. 161).
- 32) In Toynton Park (156) the internal field boundaries in 1614 were as shown on the OS map.
- 33) Air-photographs of the Bacon Hall area (155) showed what resembled a square, ditched, enclosure. Inspection on the ground showed clear signs of earthworks and ditches surviving in the unploughed pasture, but their plan was not clear, and a detailed survey is required.
- 34) The medieval site, TOA 4, on the boundary of 154 and 156 may represent outlying material from the house shown in 156.

**F. (a) The Witham Field**

158A	High(e) Witham furlong
158B	Middle furlong
159	Low(e) Witham furlong

**Notes**

- 35) It looks extremely likely that 158A and B were originally parts of the same furlongs as 118 and 117B (in Bragate Field), until severed by the creation of the new road to the Fen. 158A may also have stretched north, over the road to Toynton St. Peter, but that is less clear.
- 36) The boundaries between 158B and 158A and 159 are unclear.

**(b) Enclosed by 1614 (formerly part of Witham field?)**

160	Reede Close
161	Enclosures and houses of the Lower Town
162	No name

**Notes**

- 37) The name of 160 is puzzling, since it probably contains a Romano-British site and is on sloping, reasonably well-drained, ground.
- 38) 161 continues east into TF 46 SW. These enclosures could be included in section E. The 1614 plan, modern air-photos, and the survey evidence agree very closely. The house on TF 36 SE appears to be sites Top 2A and 2B. Site 2C, 2D and 2E were occupied in 1614 (2E is drawn as a larger house on the plan). 2F (possibly a kiln) is not shown on the plan, but may be on the air-photo.
- 39) There are no signs of the houses and enclosures (161) overlying earlier strips. Where strips occur they seem to have been worked in among the enclosures. The pottery from the house sites is later medieval.
- 40) 162 does not appear to have had any houses or strips.

**G. (a) Cowcrofte**

163	Cowcrofte demesnes
-----	--------------------

**Notes**

- 41) Cowcrofte was an area of meadowland, extending eastwards, divided into relatively large enclosures by dykes along the boundaries shown on the OS map, with an additional diagonal dyke. It was described in 1614 as: 'lowe grounde lying for the most parte under water being likewise part of the Lorde demesnes'.

**(b) Enclosed by 1614 (formerly part of Cowcrofte?)**

164	No name. Four small enclosures and two houses.
-----	--

**H. Commons**

165	The Common going to the Fen(n)
166	The East Fen(n) Common
167	Harre Hill Common

**J. (a) Haveram Field**

168	Short Awedlands (or Andlands) furlong
169	Long Awedlands (or Andlands) furlong
170	Haveram furlong

171	Awdlandes long(e) meadow(e) ?
172	Flayedale mead (or Flaye dales meadowe)
173	Middle furlong ?
174	Haveram hill mead
175	Four Land(e)s furlong
176	Water Furrow(e)s furlong
177	Homecroft Ings (Homecrofte ynges)
178	Waterine (or Watering) furlong

#### Notes

- 42) Only the easternmost part of New Lane existed in 1614. This agrees with the air-photos which show it cutting ridge and furrow.  
 43) 168 was almost certainly part of 142 before the new road existed.  
 44) On the 1614 plans only 169, 174 and 176 were coloured ochre (*i.e.* arable). 169 is specifically called 'arable'. Most of the area was grassland in 1614.  
 45) A small block of west-east strips was seen on the air-photos between 175 and 176, but this does not appear on the 1614 plan.  
 46) 178 is included in Haveram Field for convenience. In the text it was the only entry under the heading 'Lowe Feilde' or 'Little Feilde'. That field presumably once included some or all of nearby enclosures.

#### (b) Enclosed by 1614 (formerly part of Haveram Field?)

179	No name
180	No name
181	No name
182	No name
183	No name
184	No name

#### Notes

- 47) Ridge and furrow seen on survey in 179 (SW). Air-photos suggest the whole field had NW-SE strips. These presumably once formed part of *Low* or *Little field*, or both were originally part of a lost field.  
 48) The shape of 181 suggests an 'outgang' or exit into the fen, later enclosed. The presence of TOP 8 (Late Saxon) in its centre is problematical.  
 49) 182 still exists as an anomalous projection of grassland on the north of the Catchwater, which has cut and partly destroyed it. In 1614 it was bounded on all four sides by dykes. It contains some puzzling features preserved under grass.  
 50) 183 and 184 contained NW-SE strips before enclosure. It is not clear which field contained them—it might have been the Witham rather than Haveram field.

#### K. (a) The East Field (Easte Feilde)

185	Smytholme becke (or Smytholme Wathe or Smytham) furlong(e)
186	Rooker (or Roker) furlong(e)
187	Long rooker furlong(e) ?
188	Scundlandes (or Scadlandes) upper furlong(e)
189	Scundlandes (or Scawdlandes or Scadlandes) nether furlong(e)
190	Myres west furlong(e)
191	Myres north(e) furlong(e)
192	Mire (or Mires) furlong(e)
193	Royles bushe (or Royles Crofte?) furlong(e)
194	Midle furlong(e)
195	Gellpittes furlong(e)
196	Green meer(e) lyttle furlong(e) ?
197	Green meere (or Greate Grene Meere?) furlong(e)
198	Sike (or Sikes) furlong(e)
199	Long Buddle (or Long budle) furlong(e)
200	Shorte buddle furlong(e)
201	Bacon hall wong(e)
202	Tofte Furlong(e)
203	Tofte (or Tofte hill) furlong(e)
204	Halton nook(e) furlong(e)
205	Halton gate furlong(e)
206	Reede furlong(e)

#### Notes

- 51) *Smytholme* seems to refer to the whole of the northward projection of Toynton. The wath was presumably a ford where the track/road to Halton Hologate and Spilsby (now Peasegate Lane) crossed the beck.

- 52) 187 may be a remnant of the eastern part of 217.  
 53) 'Green meere' appears to mean green *boundary*. The wide strip of land south of 196 and 197 was 'the greene meere': now part of the road.  
 54) R-B and early Saxon pot found on survey at the southern end of the stepped boundary between 202 and 203 (*Toft furlong*).  
 55) North boundary of 193 and west of 203 uncertain.  
 56) The 1614 text treats 193 (*Bacon hall wong*) as part of the East Field. *Bacon hall* is numbered 155.  
 57) *Gellpittes furlong* contained 3 small 'furlongs': *Gellpittes little*, *Gellpittes leaes* and *Gellpittes leaes northe* furlongs.

#### (b) Enclosed by 1614 (formerly part of the East Field?)

207	No name. Formerly part of 206?
208	No name. East part formerly with west of 195?
209	No name
210	No name
211	No name
212	No name
213	No name
214	No name
215	No name
216	Patten (or Paten) hurn(e) furlong(e)
217	Long Rooker furlong(e) or meadow(e)

#### Notes

- 58) Under the heading 'The Easte Feilde' the text refers to 'Grasse grounde' lying on the north end and west side of Smytham furlong(e) (185?). This may refer to 213 and 214.  
 59) 215 may have been in the *North Field* rather than the *East Field*, separated by the track/road to Spilsby, which was clearly in existence and the principal west-east route in the middle ages.  
 60) 216 and 217 retained their furlong names, although enclosed. The area was known generally as *Roker meadow(e)*.  
 61) The stream on the north side of 217 no longer exists but its course was noted on air-photos.

#### (c) Smytholme Closes

218	No name
219	No name
220	No name
221	No name
222	No name
223	No name
224	The Chequer

#### Notes

- 62) These have their own plan, as have the *East Field* and the *Flayes Field*. All three are included in the first of the *divisions* or *precincts* into which the lands of the manor of Toynton are grouped for the purposes of the 1614 survey.  
 63) Although enclosed, the earlier strip system is clear from strips shown on the 1614 plan, soilmarks on air-photos, and the field boundaries on the OS map.  
 64) The text refers to "meadowe grounde lying in a place called *the Chequer*", and its approximate position was marked on one of the plans.

#### L. (a) The Flayes Field (The Flayes Feilde)

225	Short Sike (or Short Sikes) furlong(e)
226	Sike furlong(e)
227	Sheene howse (or Shene house) furlong(e)
228	Bagerhill (or Begerhill) furlong(e)
229	Leede yate furlong(e)
230	Clippes acre furlong(e)
231	Campsey willowes (furlong(e)
232	Beck(e) furlong(e)
233	Flaies (or Flayes) furlong(e)

#### Notes

- 65) The Flayes Field seems to be an extension of the arable land southwards, adding to the East Field. See note (62). See also note (53) concerning the *Green Meere* or *Greene Meare*, and (67), below.  
 66) The course of *the beck* south of 196 and 207 is not clear. It did not run through Flayes Field. Presumably it had been diverted east, then south down the parish boundary (as now), but this course was not shown on the 1614 plans.



- 67) *Short Sike furlong* (226) looks like part of *Sikes furlong* in the East Field (198). However, if it was, then at that time, at least, the *Green Meare* did not extend that far west.
- 68) The boundary between 232 and 233 is not clear.
- 69) In 229 'yate' was *not* written 'gate'.

**(b) Enclosed by 1614 (formerly part of Flayes Field?)**

234 No name

**Notes**

- 70) There is no evidence that these enclosures just east of the Lower Town (Toynton St Peter) ever formed part of the Flayes Field. Since the Field appears to be a relatively late extension of the arable strips, and since strips were visible as soil marks in Flayes furlong (233), both on survey and on air-photos, it seems likely (but not certain) that some evidence of strips would have survived in these enclosures had strips ever existed there.

**M. (a) The East Inga (The East Inges meadows)**

235 Harre furlong(e)  
236 Dyne furlong  
237 New Inges furlong(e)

**Notes**

- 71) Some north-south strips were visible on air-photos in the northern part of 235. From the survey evidence it is clear that 235 (Harre furlong) and the high ground in the modern Hare Hills Farm complex could have been used for arable farming in the medieval period, but almost all of Dyne furlong and all of New Inges furlong were too peaty and poorly drained for arable. All three furlongs are referred to as part of the East Inges meadows in 1614.
- 72) Each of the two westernmost strips in 237 (New Inges furlong) had been enclosed and contained a house in 1614. They are more or less within the existing Hare Hills Farm.
- 73) Air-photos suggested W-E strips on Dyne furlong, near Hare Hills Farm, but this is contradicted by the 1614 survey.

**(b) Enclosed by 1614 (formerly part of The East Ings?)**

238 No name. Perhaps part of 235  
239 No name  
240 No name (see note (72) above).

**Notes**

- 74) The house on 239 in 1614 is site TOP 14 of the survey.

**N. Outcroft (Outcrofte)**

241 Outcrofte

**Notes**

- 75) It is described as 'being pasture grounde lying for the moste parte under water being (parcel?) of the Lorde Demeasnes'.
- 76) The internal and external boundaries are marked in blue on the 1614 plan and were presumably dykes. They follow the lines of the dykes on the OS map with the addition of one cross dyke.
- 77) Note that it is described as pasture, not meadow, and no strips are shown.
- 78) Like Cow Croft (163) it is part of the Lord's demesnes.

**The Toyntons: Key to groupings and furlongs and enclosures (1614)**

(Figs 91 and 92)

**A. (a) The North Field (Northe Feilde)**

91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103

**(b) Enclosures (formerly North Field?)**

104, 105A, 105B, 106, 107, 108, 109, 110

**B. (a) The Bragat Field**

111, 112, 113, 114, 115, 116, 117A, 117B, 118, 119A, 119B, 120

**(b) Enclosures**

121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132

**C. (a) The Wollam Field**

133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144

**(b) Enclosures**

145, 146, 147, 148, 149, 150

**D. (a) The West Ings Meadows (West Inges Meadows)**

151

**(b) Enclosures**

152A, 152B, 153

**E. (a) The Upper and Lower Town Houses and Closes**

154, 155, 156, 157

**F. (a) The Witham Field**

158A, 158B, 159

**(b) Enclosures**

160, 161, 162, 182? 183?

**G. (a) Cowcrofte**

163

**(b) Enclosures**

164

**H. Commons**

165, 166, 167

**J. (a) Haveram Field**

168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178

**(b) Enclosures**

179, 180, 181

**K. (a) The East Field**

185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206

**(b) Enclosures**

207, 208, 209, 210, 211, 212, 213?, 214?, 215?, 216, 217

**(c) Smytholme closes**

218, 219, 220, 221, 222, 223, 224

**L. (a) The Flayes Field**

225, 226, 227, 228, 229, 230, 231, 232, 233

**(b) Enclosures**

234

**M. (a) The East Ings**

235, 236, 237

**(b) Enclosures**

238, 239, 240

**N. Outcroft**

241

# Bibliography

- Addyman, P.V. and Whitwell, J.B., 1970 'Some Middle Saxon pottery types in Lincolnshire'. *Antiq. J.* 1, 96-102.
- Alderton, A., 1984 'Environmental Report'. *Fenland Research* 1 19-22.
- Ambrose, T.M. and White, A.J., 1981 'Ingoldmells, a salt making site'. *Lincolnshire Hist. and Archaeol.* Vol.16, 71.
- Baker, F.T., 1960 'The Iron Age salt industry in Lincolnshire'. *Lincolnshire Architect. and Archaeol. Soc. Rep. and Papers.* 'n.s.' Vol.8 26-34.
- Baker, F.T., 1975 'Salt making sites on the Lincolnshire coast before the Romans'. In de Brisay, K.W. and Evans, K.A., (eds), *Salt: the study of an ancient industry.* 31-2 (Colchester).
- Bamford, H.M., 1982 'Beaker domestic sites in the fen edge and East Anglia', *E. Anglian Archaeol.* 16.
- Bannister, R.T., 1983 'Wrangle Tofts'. *Lincolnshire Hist. and Archaeol.* Vol.18, 104-5.
- Barfield, L. and Hodder, M., 1981 'Birmingham's Bronze Age' *Current Archaeology* 78, 198-200.
- Barfield, L. and Hodder M., 1987 'Burnt mounds as saunas, and the prehistory of bathing', *Antiquity* 61, 370-79.
- Barley, M.W., 1936 'Lincolnshire rivers in the Middle Ages'. *Lincolnshire Architect. and Archaeol. Soc. Rep. and Papers.* 'n.s.' Vol.1, 1-22.
- Barrett, J.C. and Needham, S.P., 1988 'Production, circulation and exchange: Problems in the interpretation of Bronze Age Metalwork'. In Barrett, J.C. and Kinnes, I.A. *The archaeology of context in the Neolithic and Bronze Age - Recent Trends.* 127-40 (Univ. of Sheffield).
- Beresford, M.W. and St. Joseph, J.K.S., 1979 *Medieval England. An aerial survey.* 2nd edition (1958) (Cambridge).
- Bowman, S.G.E., Ambers, J.C. and Leese, M.N., 1990 'Re-evaluation of British Museum radiocarbon dates issued between 1980 and 1984'. *Radiocarbon* 32, No.1, 59-79.
- Bradley, Richard, 1978 *The prehistoric settlement of Britain* (London, Routledge and Kegan Paul).
- Bradley, Richard, 1987 'Flint technology and the character of Neolithic settlement'. In Brown, A.G. and Edmonds, M.R., (eds), *Lithic analysis and later British prehistory*, Brit. Archaeol. Rep. 162 (Oxford), 181-186.
- Bradley, Rosemary, 1993 'The microwear analysis of flaked flint pieces from the second season of excavation at Tattershall Thorpe'. In Chowne, P., 'The excavation of a Neolithic settlement at Tattershall Thorpe, Lincolnshire' *E. Anglian Archaeol.* 57
- Brandt, R.W. and Leeuw, S.E. van der, 1987 'The Assendelver Polders of the Netherlands and a wet perspective on the European Iron Age'. In Coles, J.M. and Lawson, A.J., (eds), *European Wetlands in Prehistory.* (Oxford-Clarendon)
- Brears, C., 1928 'The Fen laws of Common'. *Lincolnshire Notes and Queries* Vol.XX, 58-77.
- Bryant, G.F., 1977 'A Romano-British pottery kiln at Claxby, Lincs: excavation, discussion and experimental firing'. *Lincolnshire Hist. and Archaeol.* Vol.12, 5-18.
- Burgess, C.B., 1979 'A find from Boyton, Suffolk, and the end of the Bronze Age in Britain'. In Burgess, C.B. and Coombs, D. (eds), *Bronze Age hoards; some finds old and new.* Brit. Archaeol. Rep. 67. 269-83 (Oxford).
- Burton, R.G.O. and Hodgson, J.M. (eds) 1987 *Lowland peat in England and Wales.* Soil Survey Spec. Surv. No.15.
- Chowne, P., 1980 'Bronze Age Settlement in South Lincolnshire'. In Barrett, J. and Bradley, R., (eds), *The British Later Bronze Age.* Brit. Archaeol. Rep. 83 (ii) 265-305 (Oxford).
- Chowne, P., 1988 *Aspects of Later Prehistoric settlement in Lincolnshire: A Study of the western Fen-margin and Bain Valley.* (Unpubl. Ph.D. thesis. Univ of Nottingham).
- Chowne, P., 1993 'The excavation of a Neolithic settlement at Tattershall Thorpe, Lincolnshire'. *E. Anglian Archaeol.* 57
- Chowne, P., forthcoming 'Excavations at Billingborough, Lincs. 1975-78'. *E. Anglian Archaeol.*
- Chowne, P. and Healy, F., 1983 'Artefacts from a Prehistoric Cemetery and Settlement in Anwick Fen, Lincolnshire'. *Lincolnshire Hist. and Archaeol.* Vol. 18, 37-46.
- Chowne, P., Girling, M. and Grieg, J., 1986 'Excavations at an Iron Age defended enclosure at Tattershall Thorpe, Lincolnshire'. *Proc. Prehist. Soc.* 52, 159-88.
- Chowne, P. and Lane, T.W., 1987 'Bronze Age cremation cemeteries at Old Somerby and Ropsley and Humby'. *Lincolnshire Hist. and Archaeol.* Vol.22, 35-40.
- Clark, G., 1933 'Report on an Early Bronze Age site in the south-eastern Fens'. *Antiq. J.* 13, 264-96.
- Clark, J.G.D., 1929 'Discoidal polished flint knives - their typology and distribution'. *Proc. Prehist. Soc. E. Anglia* 6, 40-54.
- Clark, J.G.D., 1932a *The Mesolithic Age in Britain* (CUP).
- Clark, J.G.D., 1932b 'The date of the plano-convex flint knife in England and Wales'. *Antiq. J.* 12, 20-52.
- Clark, J.G.D. 1934 'Derivative forms of the *petit tranchet* in Britain'. *Archaeol. J.* 91, 32-58.
- Clark, J.G.D., and Higgs, E.S., 1960 'Flint industry'. In Clark, J.G.D., 'Excavations at the Neolithic site at Hurst Fen, Mildenhall, Suffolk (1954, 1957 and 1958)'. *Proc. Prehist. Soc.* 26, 214-227.
- Clarke, D.L., 1970 *Beaker Pottery of Great Britain and Ireland* (CUP).
- Cleal, R., 1984 'The Later Neolithic in eastern England'. In Bradley, R. and Gardiner, J., (eds), *Neolithic studies, a review of some current research.* Brit. Archaeol. Rep. 133 (Oxford), 135-158.
- Cleal, R.M.J. 1985 *The Later Neolithic in eastern England.* Unpubl. Ph.D. thesis, Univ. of Reading.
- Cleal, R., forthcoming 'The Bronze Age Pottery'. In Chowne, P. Excavations at Billingborough, Lincs. 1975-78. *E. Anglian Archaeol.*

- Clough, T.H., McK. and Cummins, W.A. (eds), 1988 *Stone axe studies volume 2*. Council. Brit. Archaeol. Res. Rep. 67 (London).
- Coles, B. and Coles, J.M., 1986 *Sweet Track to Glastonbury*. (London, Thames and Hudson).
- Coles, J.M., 1984 *The archaeology of wetlands*. (Edinburgh, University Press).
- Coles, J.M., 1986 'Precision, Purpose and Priorities in Wetland Archaeology'. *Antiq. J.* Vol.LXVI, pt.II, 227-47.
- Coles, J.M., Orme, B.J., May, J. and Moore, C.N., 1979 'Excavations of Late Bronze Age or Early Iron Age date at Washingborough Fen'. *Lincolnshire Hist. and Archaeol.* Vol. 14, 510.
- Crowther, D., French, C. and Pryor, F., 1985 'Approaching the Fens the flexible way'. In Haselgrove, C., Millett, M. and Smith, I., (eds), *Archaeology from the ploughsoil*. 59-76 (Sheffield).
- Darby, H.C., 1956 *The draining of the Fens*. 2nd edition (1940) (Cambridge University Press).
- Darby, H.C., 1957 *The Domesday Geography of Eastern England*. 2nd edition (Cambridge, CUP).
- Darby, H.C., 1974 *The Medieval Fenland*. (1940) (Newton Abbot. David and Charles).
- Darby, H.C., 1983 *The Changing Fenland*. (Cambridge, CUP).
- Davey, P.J., 1973 *Bronze Age Metalwork from Lincolnshire*. Soc. Antiq. Rep. (London).
- Dear, J. and Taylor, T., 1988 *Aspects of Yellowbelly History. The development of settlement of the East, West and Wildmore Fens*. (Spalding, Chameleon International).
- de Brisay, K.W. and Evans, K.A. (eds), 1975 *Salt: the study of an ancient industry* (Colchester).
- Draper, J. and Chaplin, C., 1982 *Excavations Vol.1 — Dorset Nat. Hist. and Archaeol. Soc. Monograph series 2*. (Dorchester).
- Dugdale, W., 1772 *The History of Imbanking and Draining of divers Fens and Marshes*. (1662), 2nd ed. by C.N. Cole (London).
- Edmonds, M., 1987 'Rocks and risk: problems with lithic procurement strategies'. In Brown, A.G. and Edmonds, M.R., (eds), *Lithic analysis and later British prehistory*. Brit. Archaeol. Rep. 162 (Oxford), 155-180.
- Edmonds, E. and Thomas, J. 1987 'The archers: an everyday story of country folk'. In Brown, A.G. and Edmonds, M.R. (eds), *Lithic analysis and later British prehistory*. Brit. Archaeol. Rep. 162 (Oxford), 187-199.
- Ekwall, E., 1960 *The concise Oxford dictionary of place-names*. (Oxford-Clarendon).
- Enderby, J.M., 1977 'Palaeolithic hand axe, West Keal'. *Lincolnshire Hist. and Archaeol.* Vol.12, 78.
- Evans, C. and Serjeantson, D., 1988 'The backwater economy of a fen-edge community in the Iron Age: the Upper Delphs, Haddenham'. *Antiquity* Vol.62, 360-70.
- Everson, P., 1977 'Pottery with roller-stamped linked circle decoration from Lincolnshire'. *Medieval Archaeol.* Vol.XXI, 197-202.
- Everson, P., 1983 'Aerial photography and fieldwork in north Lincolnshire'. In Maxwell, G.S., (ed) *The impact of aerial reconnaissance on archaeology*. Council. Brit. Archaeol. Res. Rep. 49, 14-26.
- Everson, P. and Hayes, T., 1984 'Lincolnshire from the air'. In Field, N. and White, A., (eds), *A Prospect of Lincolnshire*. (Gainsborough).
- Fasham, P.J. and Ross, J.M., 1978 'A Bronze Age flint industry from a barrow site in Micheldever Wood, Hampshire'. *Proc. Prehist. Soc.* 44, 47-67.
- Fellows Jensen, G., 1978 *Scandinavian settlement names in the East Midlands*. (Akademisk Forlag, Copenhagen).
- Field, N., 1986 'An Iron Age timber causeway at Fiskerton, Lincolnshire'. *Fenland Research* 3. 49-53.
- Field, N. and Hurst, H., 1983 'Roman Horncastle'. *Lincolnshire Hist. and Archaeol.* Vol.18 47-88.
- Ford, S., 1987 'Flint scatters and prehistoric settlement patterns in south Oxon and east Berks'. In Brown, A.G. and Edmonds, M.R., (eds), *Lithic analysis and later British prehistory*. Brit. Archaeol. Rep. 162 (Oxford), 101-136.
- Ford, S., Bradley, R., Hawkes, J., and Fisher, P., 1984 'Flint-working in the metal age'. *Oxford J. Archaeol.* 3 (2), 157-173.
- Foster, C.W. and Longley, T., 1976 *The Lincolnshire Domesday and Linsey Survey*. (first published 1924) L.R.S. Vol.19 (Lincoln).
- French, C.A.I., 1988 'The southwest Fen dyke survey project'. *Antiquity* 62, 343-8.
- French, C.A.I., 1989 'The southwest Fen dyke survey project: an appraisal'. In Coles, J.M. and Coles, B.J., (eds), *The archaeology of the Rural wetlands in England*. (Exeter).
- Gallois, R.W., 1979 'Geological investigations for the West Water Storage Scheme'. *Rep. Inst. Geol. Sci* No.78/19
- Gardiner, J.P., 1980 'Land and social status — a case study from eastern England'. In Barrett, J., and Bradley, R., (eds), *The British Later Bronze Age*. Brit. Archaeol. Rep. 83 (Oxford), 101-114.
- Gardiner, J., 1987 'Tales of the unexpected: approaches to the assessment and interpretation of museum flint collections'. In Brown A.G., and Edmonds, M.R., (eds.), *Lithic analysis and later British prehistory*. Brit. Archaeol. Rep. 162 (Oxford), 49-66.
- Gardiner, J. and Shennan, S., 1985 'The Mesolithic, Neolithic and Earlier Bronze Age'. In Shennan, S., *Experiments in the analysis of archaeological survey data: the East Hampshire survey*. (Sheffield, Department of Archaeology and Prehistory), 47-72.
- Gibson, A.M., 1982 *Beaker domestic sites, a study of the domestic pottery of the later third and early second millennia B.C.* Brit. Archaeol. Rep. 107 (Oxford).
- Godwin, H., 1978 *Fenland: Its ancient past and uncertain future*. (Cambridge).
- Godwin, H. and Clifford, M.H. 1983 'Studies of the post-glacial history of British vegetation, i. Origin and stratification of Fenland deposits near Wood Walton, Hunts. ii. Origin and stratification of deposits in the Southern Fenland'. *Phil. Trans. Royal Soc.* 229B, 323-406.
- Green, H.S., 1980 *The flint arrowheads of the British Isles*. Brit. Archaeol. Rep. 75 (Oxford).
- Gurney, D., 1986 'Settlement, Religion and Industry on the fen-edge; Three Romano-British sites in Norfolk'. *E. Anglian Archaeol.* 31.

- Hall, D.N., 1981a 'Cambridgeshire Fenland: An intensive archaeological fieldwork survey'. In *The evolution of marshland landscapes*. 52-73 (Oxford).
- Hall, D.N., 1981b 'The changing landscape of the Cambridgeshire silt fens'. *Landscape History*. Vol.3, 37-49.
- Hall, D.N., 1987a 'Fenland landscapes and settlement between Peterborough and March'. *E. Anglian Archaeol.* 35.
- Hall, D.N., 1987b 'Field survey in the Cambridgeshire Fens 1986-87'. *Fenland Research* 4, 2-5.
- Hall, D.N., 1989 'The Fenland Project'. In Coles, J.M. and Coles, B.J., (eds), *The archaeology of rural wetlands*. 15-17 (Exeter, WARP, and London, English Heritage).
- Hallam, H.E., 1954 *The new lands of Elloe. A study of early reclamation in Lincolnshire*. (Leicester).
- Hallam, H.E., 1960 'Salt-making in the Lincolnshire Fenland during the Middle Ages'. *Lincolnshire Architect. and Archaeol. Soc. Reports and Papers*. 'n.s.' Vol.8, 85-112.
- Hallam, H.E., 1965 *Settlement and Society. A study of the early agrarian history of South Lincolnshire*. (Cambridge CUP).
- Hallam, S.J., 1960 'Romano-British salt industry in South Lincolnshire'. *Lincolnshire Architect. and Archaeol. Soc. Rep. and Papers*. n.s. Vol.8, 26-34.
- Hallam, S.J., 1970 'Settlement around the Wash'. In Phillips, C.W., (ed), *The Fenland in Roman Times*. R.G.S. Research Series No.5. 22-88.
- Hancock, T.N., 1978 *Bomber County. A history of the Royal Air Force in Lincolnshire*. (Lincoln).
- Harden, G., 1978 *Medieval Boston and its Archaeological Implications*. (Heckington S.L.A.U.).
- Hayes, P.P., 1985a 'Fenland Project Field Survey, Lincolnshire: The Western Fens (1)'. *Fenland Research* 2, 49-54.
- Hayes, P.P., 1985b 'Relating Fen edge sediments, stratigraphy and archaeology near Billingborough, South Lincolnshire'. In Fieller, N.R.J., Gilbertson, D.D. and Ralph, N.G.A., (eds), *Palaeoenvironmental Investigations. Research design, methods and data analysis*. Brit Archaeol. Rep. International Series 258, 245-69 (Oxford).
- Hayes, P.P., 1987a *The Archaeology of a Fenland Margin*. Unpubl. Ph.D. thesis, Univ of Sheffield.
- Hayes, P.P., 1987b Development in the analysis and presentation of survey results: Roman pottery in the south Lincolnshire Fens'. *Fenland Research* 4. 20-7.
- Hayes, P.P., 1988 'Roman to Saxon in the South Lincolnshire Fens'. *Antiquity* Vol.62, 321-6.
- Hayes, P.P. and Lane, T.W., 1984 'Fenland Project Field Survey 1983-4: Lincolnshire'. *Fenland Research* 1. 8-12.
- Hayes, P.P. and Lane, T.W., 1988 'Survey in the northern Fens - Wrangle, Lincolnshire'. *Fenland Research* 5. 46-9.
- Hayes, P.P. and Lane, T.W., 1992 'Lincolnshire survey. The South-west Fens'. *E. Anglian Archaeol.* 55
- Hayes, P.P., Lane, T.W. and Samuels, J.R., 1992 'Roman pottery and landscape archaeology in the South Lincolnshire Fens'. In Hayes, P.P. and Lane, T.W. 'Lincolnshire survey. The South-west Fens'. *E. Anglian Archaeol.* 55
- Healey, E., and Robertson-Mackay, R., 1983 'The lithic industries from Staines causewayed enclosure and their relationship to other Earlier Neolithic industries in southern England'. *Lithics* 4, 1-27.
- Healey, R.H., 1966 'Recent Saxo-Norman Pottery Finds in South Lincolnshire'. *Boston and South Lincs Archaeology Group Report 1965-6*, 5-9.
- Healey, R.H., 1974 'Pottery from Potterhanworth'. *Lincolnshire Hist. and Archaeol.* Vol.9, 30-1.
- Healey, R.H., 1975 *Medieval and Sub-Medieval Pottery in Lincolnshire*. (Unpubl. M.Phil. thesis, Univ of Nottingham).
- Healey, R.H., 1979 'Recent finds from South Lincolnshire. Middle Saxon pottery in the Fenland'. *Lincolnshire Hist. and Archaeol.* Vol.14, 80-81.
- Healey, R.H., 1984 'Toynton All Saints: Decorated Jugs from the Roses Kiln'. In Field, N. and White, A., (eds), *A Prospect of Lincolnshire*. 73-8 (Gainsborough).
- Healey, R.H., 1992 'The Saxon pottery'. In Hayes, P.P. and Lane, T.W. 'Lincolnshire survey. The South-west Fens'. *E. Anglian Archaeol.* 55
- Healey, R.H. and Hurcombe, L., 1989 'A Bronze Age Barrow group in Walcott, Lincolnshire'. *Fenland Research* 6, 17-20.
- Healey, R.H. and Roffe, D., forthcoming 'Some medieval and later earthworks in South Lincolnshire'.
- Healy, F., 1984 'Farming and field monuments: the Neolithic in Norfolk'. In Barringer, C., (ed), *Aspects of East Anglian Prehistory (Twenty Years after Rainbird Clarke)*. (Norwich, Geo Books), 77-140.
- Healy, F., 1985 'The struck flint'. In Shennan, S.J., Healy, F., and Smith, I.F., 'The excavation of a ring-ditch at Tye Field, Lawford, Essex'. *Archaeol. J.* 142, 177-207.
- Healy, F., 1986 'Struck flint'. In Petersen, F.F., and Healy, F., 'The excavation of two round barrows and a ditched enclosure on Weasenham Lyngs, 1972'. In Lawson, A.J., 'Barrow excavations in Norfolk, 1950-82'. *E. Anglian Archaeol.* 29, 80-89.
- Healy, F., 1987 'Prediction or prejudice? The relationship between field survey and excavation'. In Brown, A.G., and Edmonds, M.R., (eds), *Lithic analysis and later British prehistory*. Brit. Archaeol. Rep. 162 (Oxford), 9-18.
- Healy, F., 1988 'The Anglo-Saxon cemetery at Spong Hill, North Elmham, part VI: occupation during the seventh to second millennia BC'. *E. Anglian Archaeol.* 39.
- Healy, F., 1991 'Appendix I. Lithics and pre-Iron Age pottery'. In Silvester, R.J., 'Norfolk survey: the Wissey Embayment and the Fen Causeway'. *E. Anglian Archaeol.* 52
- Healy, F., 1993 'The struck flint'. In Chowne, P., 'The excavation of a Neolithic settlement at Tattershall Thorpe, Lincolnshire'. *E. Anglian Archaeol.* 57
- Healy, F., forthcoming 'The Wissey Embayment: evidence for pre-Iron Age occupation accumulated prior to the Fenland Survey'. *E. Anglian Archaeol.*
- Heaven, F.W., in press *Soils of Lincolnshire VII. Sheet TF 36 (Old Bolingbroke)*. Soil Survey Record No.103.
- Henig, M., 1973 'An intaglio from West Keal, Lincolnshire'. *Lincolnshire Hist. and Archaeol.* Vol.8, 45-6.

- Hodder, I. and Shand, P., 1988 'The Haddenham long barrow: an interim statement'. *Antiquity*. Vol.62, 349-53.
- Hurst, J.G., 1955 'Saxo-Norman Pottery in East Anglia Part 1. General Discussion and St. Neots Ware'. *Proc. Cambridge Antiq. Soc.* 49, 43-70.
- Hurst, J.G., 1956 'Saxo-Norman Pottery in East Anglia Part 2, Thetford Ware'. *Proc. Cambridge Antiq. Soc.* 50, 29-60.
- Hurst, J.G., 1957 'Saxo-Norman Pottery in East Anglia Part 3, Stamford Ware'. *Proc. Cambridge Antiq. Soc.* 51, 37-65.
- Jacobi, R., 1984 'The Mesolithic of northern East Anglia and contemporary territories'. In Barringer, C., (ed.), *Aspects of East Anglian Pre-History (twenty years after Rainbird Clarke)*. (Norwich, Geo Books), 43-76.
- Johnson, S., 1980 *Later Roman Britain*. (London, Routledge and Kegan Paul).
- Jones, D., 1988 'Aerial reconnaissance and Prehistoric and Romano-British archaeology in northern Lincolnshire - A sample survey'. *Lincolnshire Hist. and Archaeol.* Vol.23, 5-30.
- Jukes-Browne, A.J., 1885 *Geology of south west Lincolnshire*. (London HMSO).
- Kelly's Directory of Lincolnshire 1930
- Kilmurry, K., 1980 *The Pottery Industry of Stamford, Lincs. c. AD 850-1250*. Brit. Archaeol. Rep. 84 (Oxford).
- Kirkham, B., 1975 'Salt making sites found in north east Lincolnshire since 1960'. In de Brisay, K.W. and Evans, K.A., (eds), *Salt: the study of an ancient industry*. 41-2 (Colchester).
- Kirkham, B., 1981 'The excavation of a prehistoric saltern at Hogsthorpe, Lincolnshire'. *Lincolnshire Hist. and Archaeol.* Vol.16, 5-10.
- Lane, T.W., 1985 'Fenland Project Field survey: 1984-5. Lincolnshire the western Fens (II)'. *Fenland Research* 2, 54-8.
- Lane, T.W., 1988 'Pre-Roman origins for settlement on the Fens of South Lincolnshire'. *Antiquity*. Vol. 62, 314-21.
- Lane, T.W., 1992 'Iron Age and Roman Salterns in the south-western fens'. In Hayes, P.P. and Lane, T.W., 'Lincolnshire survey. The South-west Fens'. *E. Anglian Archaeol.* 55
- Manby, J., 1975 'Some moulded-face flagons from the Oxford kilns'. *Britannia* 6, 182-8 Pl.XI-XII.
- Manby, T.G., 1974 *Grooved Ware sites in Yorkshire and the north of England*. Brit. Archaeol. Rep. 9 (Oxford).
- Manby, T.G., 1975 'Neolithic occupation sites on the Yorkshire Wolds'. *Yorkshire Archaeol. J.* 47, 23-59.
- Martin, E., 1988 'Swales Fen, Suffolk: a Bronze Age cooking pit?'. *Antiquity* 62, 358-359.
- Martin, E and Murphy, P., 1988 'West Row Fen, Suffolk: a Bronze Age fen-edge settlement site'. *Antiquity* Vol.62, 353-8.
- May, J., 1976 *Prehistoric Lincolnshire*. History of Lincolnshire 1 (Lincoln).
- May, J., 1984 'The major settlements of the Iron Age in Lincolnshire'. In Field, F.N. and White, A.J., (eds), *A Prospect of Lincolnshire*. 18-22.
- May, T., 1930 *Catalogue of the Roman pottery in the Colchester and Essex Museum*. (Cambridge).
- May, T. and Hope, L.E., 1917 'Catalogue of the Roman pottery in the Museum Tullie House, Carlisle'. *C. and W.A.J.A.S.* No.5.
- McAvoy, F., 1984 'The marine salt extraction industry in the late medieval period at Wainfleet, Lincolnshire'. *Fenland Research* 1 37-9.
- Miller, S.H. and Skertchly, S.B.J., 1878 *The Fenland past and present*. (London).
- Moore, W.R.G., 1975 'The flints'. In Moore, W.R.G., and Williams, J.H., 'A Later Neolithic site at Ecton, Northampton'. *Northamptonshire Archaeol.* 10, 19-26.
- Myers, J.N.L., 1969 *Anglo-Saxon pottery and the settlement of England*. (Oxford).
- Myers, J.N.L., 1986 *The English Settlements*. (Oxford, Clarendon Press).
- O'Driscueil, D.A. 1988 'Burnt mounds: cooking or bathing?'. *Antiquity* 62, 671-680.
- Owen, A.E.B., 1952 'Coastal erosion in East Lincolnshire'. *Lincolnshire Historian* Vol.1, No.9. 330-41.
- Owen, A.E.B., 1986 'Mablethorpe St. Peter's and the sea'. *Lincolnshire Hist. and Archaeol.* Vol.21, 61-2.
- Owen, D.M., 1975 'Medieval Chapels in Lincolnshire'. *Lincolnshire Hist. and Archaeol.* Vol. 10, 15-22.
- Owen, D.M., 1984 'The beginnings of the port of Boston'. In Field, N. and White, A., (eds), *A Prospect of Lincolnshire*. 42-5 (Gainsborough).
- Padley, J.S., 1882 *The Fens and Floods of Mid Lincolnshire*. (Lincoln, Akrell).
- Pearson, G.W., Pilcher, J.R., Baillie, M.G.L., Corbett, D.M. and Qua, F., 1986 'High precision 14C measurement of Irish oaks to show the natural 14C variations from AD 1840 to 5210 BC'. *Radiocarbon* 28 (2B), 911-934.
- Pearson, G.W. and Stuiver, M., 1986 'High-precision calibration of the radiocarbon time scale, 500-2500 BC'. *Radiocarbon* 28, No.2B, 839-862.
- Petch, D.F., 1956 'Archaeological Notes for 1955'. *Lincolnshire Architect. and Archaeol. Soc. Rep. and Papers* VI, 69-71.
- Pevsner, N. and Harris, J., 1973 *The buildings of England, Lincolnshire*. 2nd edition (1964) (London, Penguin).
- Phillips, C.W., 1936 'The excavation of Giants' Hills long barrow, Skendleby, Lincolnshire'. *Arch.* 85. 37-106.
- Piggott, S., 1954 *The Neolithic Cultures of the British Isles*. (CUP).
- Pitts, M.W., 1978 'Towards an understanding of flint industries in post-glacial England'. *Univ. London Inst. Archaeol. Bull.* 15, 179-197.
- Platts, G., 1985 *Land and People in Medieval Lincolnshire*. (Lincoln, History of Lincolnshire Committee).
- Potter, T.W., and Jackson, R.P.J., 1982 'The Roman site of Stonea, Cambridgeshire'. *Antiquity* Vol.56, 111-20.

- Pryor, F., 1978 *Excavations at Fengate, Peterborough, England: the second report.* (Toronto, Royal Ontario Museum Archaeology Monograph 5).
- Pryor, F., 1980 *Excavations at Fengate, Peterborough, England: the third report.* (Northampton, Northamptonshire Archaeol. Soc. Monograph 1; Toronto, Royal Ontario Museum Archaeology Monograph 6).
- Pryor, F., 1984 *Excavations at Fengate, Peterborough, England: the fourth report.* (Northampton, Northamptonshire Archaeol. Soc. Monograph 2; Toronto, Royal Ontario Museum Archaeology Monograph 6).
- Pryor, F.M.M., 1988 'Earlier Neolithic organised landscapes and ceremonial in lowland Britain'. In Barrett, J.C. and Kinnes, I.A., (eds), *The archaeology of context in the Neolithic and Bronze Age — Recent Trends.* 63–72 (Univ of Sheffield).
- Pryor, F.M.M. and French, C.A.I., 1985 'Archaeology and environment in the lower Welland Valley'. *E. Anglian Archaeol.* 27.
- Pryor, F.M.M., French, C.A.I. and Taylor, M., 1986 'Flag Fen, Fengate, Peterborough 1: Discovery, reconnaissance and initial excavation (1982-85)'. *Proc. Prehist. Soc.* 52, 1–24.
- Richards, J., 1984 'The development of the Neolithic landscape in the environs of Stonehenge'. In Bradley, R. and Gardiner, J., (eds), *Neolithic studies, a review of some current research.* Brit. Archaeol. Rep. 133 (Oxford), 177.
- Robson, J.D., 1985 *Soils in Lincolnshire IV. Sheet TF45 (Friskney).* Soil Survey Record No.88 (Harpenden).
- Robson, J.D., George, H. and Heaven, F.W., 1974 *Soils in Lincolnshire 1: Sheet TF 16 (Woodhall Spa).* Soil Survey Record No.22 (Harpenden).
- Rogerson, A. and Silvester, R.J., 1986 'Middle Saxon occupation at Hay Green, Terrington St. Clement'. *Norfolk Archaeol.* 39 (3) 320–2.
- Rudkin, E.H., 1975 'Medieval salt making in Lincolnshire'. In de Brisay, K.W. and Evans, K.A., (eds), *Salt: the study of an ancient industry.* (Colchester).
- Russell, E. and Russell, R.C., 1985 *Old and new landscapes in the Horncastle area.* (Lincoln).
- Samuels, J.R., 1983 *The production of Roman pottery in the East Midlands.* Unpubl. Ph.D. thesis, Univ of Nottingham.
- Saville, A., 1981 *Grimes Graves, Norfolk, excavations 1971–72: volume II the flint assemblage.* (London, Department of the Environment Archaeological Reports II).
- Saville, A., 1985 'The flint assemblage'. In Field, N., 'A multi-phased barrow and possible henge monument at West Ashby, Lincolnshire'. *Proc. Prehist. Soc.* 51, 127–131.
- Shennan, I., Bilham-Boult, A., Donoghue, D. and Innes, J., forthcoming a 'Wildmore Fen and West Fen'. In Waller, M., *The Fenland Project: Flandrian Environmental Change in Fenland.* *E. Anglian Archaeol.*
- Shennan, I., Waller, M., Alderton, A., Bilham-Boult, A., Donoghue, D. and Innes, J., forthcoming b 'North-western Fens'. In Waller, M. *The Fenland Project: Flandrian Environmental Change in Fenland.* *E. Anglian Archaeol.*
- Silvester, R.J., 1988a 'Settlement earthworks at Hilgay and the ring ditches in the silt fens'. *Norfolk Archaeol.* 40, pt.4, 194–99.
- Silvester, R.J., 1988b 'Norfolk Survey, Marshland and the Nar Valley'. *E. Anglian Archaeol.* 45.
- Silvester, R.J., 1991 'Norfolk survey: the Wissey Embayment and the Fen Causeway'. *E. Anglian Archaeol.* 52
- Silvester, R.J. and Hall, D.N., 1985 'Roddons or Rodhams?' *Fenland Research* 2, 66–7.
- Simmons, B.B., 1975a 'Salt making in the silt fens of Lincolnshire in the Iron Age and Roman periods'. In de Brisay, K.W. and Evans, K.A., (eds), *Salt — the study of an ancient industry.* 33–6 (Colchester).
- Simmons, B.B., 1975b *The Lincolnshire fens and fen-edge north of Bourne.* Unpubl. MA thesis, Univ of Leicester.
- Simmons, B.B., 1977 'Ancient coastlines around the Wash'. *South Lincolnshire Archaeology* 1.
- Simmons, B.B., 1979 'The Lincolnshire Car Dyke. Navigation or Drainage?' *Britannia* Vol.X, 183–96.
- Simmons, B.B., 1980 'Iron Age and Roman coasts around the Wash'. In Thompson, F.H., (ed.), *Archaeology and Coastal Change.* Soc. of Ants. Occasional Paper (n.s.) 1. 56–73.
- Skertchly, S.B.J., 1877 *The Geology of the Fenland.* Mem. Geol. Survey Grt Britain.
- Smith, A.G., 1970 'The stratigraphy of the northern Fenland'. In Phillips, C.W., (ed.), *The Fenland in Roman Times.* R.G.S. Research Series No.5, 147–60.
- Smith, I.F., 1965 *Windmill Hill and Avebury. Excavations by Alexander Keiller 1925–39.* (Oxford).
- Stuiver, M. and Pearson, G.W., 1986 'High-precision calibration of the radiocarbon time scale, AD 1950–500 BC'. *Radiocarbon* Vol.28, 805–38.
- Sturman, C.J., 1984 'Salt-making in the Lindsey Marshland in the 16th and 17th centuries'. In Field, F.N. and White, A.J., (eds), *A Prospect of Lincolnshire.* 50–6 (Gainsborough).
- Swinerton, H.H., 1932 'The prehistoric pottery sites of the Lincolnshire coast'. *Antiq. J.* 239–53.
- Thirsk, J., 1957 *English peasant farming.* (London. Routledge and Kegan Paul).
- Thirsk, J., 1965 *Fenland farming in the sixteenth century.* (Leicester)
- Tite, M.S., Bowman, S.G.E., Ambers, J.C. and Matthews, K.J., 1987 'Preliminary statement on an error in British Museum radiocarbon dates (BM-1700 to BM-2315)'. *Antiquity* 61, 168.
- Thompson, F.H., 1956 'Anglo-Saxon sites in Lincolnshire: Unpublished material and recent discussions'. *Antiq. J.* 181–96.
- Thompson, P., 1856 *The history and antiquities of Boston and the Hundred Skirbeck.* (Boston).
- Tixier, J., 1974 *Glossary for the description of stone tools with special reference to the epipalaeolithic of the Maghreb.* (Pullman, newsletter of Lithic Technology: special publication no. 1).
- Todd, M., 1973 *The Coritani.* (London, Duckworth).

- Toynbee, J.M.C., 1964 *Art in Britain under the Romans*. (Oxford).
- Valentine, K.W.G. and Dalrymple, J.B., 1975 'The identification, lateral variation and chronology of two palaeocatenas at Woodhall Spa and West Runton, England'. *Quaternary Research* 5, 551–590.
- Wainwright, G.J., and Longworth, I.H., 1971 *Durrington Walls: excavations 1966–1968*, Rep. Res. Comm. Soc. Antiq. London 29.
- Waller, M., 1988a 'Palaeoenvironmental Report'. *Fenland Research* 5 55–61.
- Waller, M., 1988b 'The Fenland Project's environmental programme'. *Antiquity* 62, 336–43.
- Waller, M., forthcoming 'The Fenland Project: Flandrian Environmental Change in Fenland'. *East Anglian Archaeol.*
- Webster, G., 1986 *The British Celts and their Gods under Rome*. (London).
- West, F., 1966 *The social and economic history of the East Fen village of Wrangle 1603–1837* (Unpubl. Ph.D. thesis Univ of Leicester).
- West, S.E., 1963 *Excavations at Cox Lane (1958) and at the town defences, Shire Hall Yard, Ipswich (1959)*. Proc. Suffolk Inst. Archaeol. 29, 233–303
- Wheeler, W.H., 1896 *A History of the Fens of South Lincolnshire*. 2nd Edition (Boston).
- White, A.J., 1978 *Abbeys of the Witham Valley: a guide*. (Lincoln, Lincs Museums).
- White, A.J., 1979a *Antiquities from the River Witham. Part 1 Prehistoric and Roman*. Lincolnshire Museums Information Sheet Archaeology Series No. 12 (Lincoln).
- White, A.J., 1979b *Antiquities from the River Witham. Part 2 Anglo-Saxon and Viking*. Lincolnshire Museums Information Sheet Archaeology Series No. 13 (Lincoln).
- White, A.J., 1979c *Antiquities from the River Witham. Part 3 Medieval*. Lincolnshire Museums Information Sheet Archaeology Series No. 14 (Lincoln).
- White, A.J., 1980 'Toynton All Saints'. *Lincolnshire Hist. and Archaeol.* Vol.15, 79.
- White, A.J., 1984 'Medieval Fisheries in the Witham and its Tributaries'. *Lincolnshire Hist. and Archaeol.* Vol. 19, 29–35.
- White, W., 1856 *White's 1856 Lincolnshire*.
- Whittle, A.W.R., 1977 *The Earlier Neolithic of southern England and its continental background*, Brit. Archaeol. Rep. S35 (Oxford).
- Whittle, A.W.R., 1982 'The flint industry'. In Avery, M., 'The Neolithic causewayed enclosure, Abingdon'. In Case, H.J. and Whittle, A.W.R. (eds), *Settlement patterns in the Oxford region: excavations at the Abingdon causewayed enclosure and other sites*. Council. Brit. Archaeol. Res. Rep. 44 (London), 35–43.
- Whitwell, J.B., 1970 *Roman Lincolnshire* (Lincoln, History of Lincolnshire Committee).
- Whitwell, J.B., 1979 'The Coritani: Some aspects of the Iron Age tribe and Roman Civitas'. (Unpubl. Ph.D thesis, Univ of Leeds).
- Whitwell, J.B., 1982 *The Coritani. Some aspects of the Iron Age tribe and Roman Civitas*. Brit. Archaeol. Rep. 99.
- Wilkinson, T.J., 1987 'Palaeoenvironments of the Upper Witham Fen: a preliminary view'. *Fenland Research* 4, 52–56.
- Williams, M., 1982 'Marshland and Waste'. In Cantor, L., (ed.), *The English Medieval Landscape* (London, Croon Helm).
- Young, A., 1813 *General view of the Agriculture of the County of Lincolnshire*. 1970 reprint (Newton Abbot, David and Charles).

# Index

Places are in Lincolnshire unless otherwise indicated

- Abingdon (Oxfordshire), 103  
aerial photography, 5, 9, 29, 71, 88, 89  
  medieval field systems, 7, 63, 64, 112  
  ring ditches, 82  
  Witham Valley, 16, 17, 19, 20, 22  
  Wrangle, 75, 110  
agriculture  
  arable, 1, 14, 29, 35, 43, 69, 71, 75, 82, 84  
  fenland, 3, 5, 9  
  medieval, 3, 7, 63, 64, 79, 86, 112, 115  
  open field, 65  
  pastoral, 37, 56, 59, 65, 66, 67, 77, 79, 83, 89, 104, 110  
  post-medieval, 20  
Alderlands, 63  
Algarkirk, 89  
Alvey, Mr R., 93  
Amber Hill, 14–15  
Ancaster, 82  
Ancholme Valley, 29  
Anglian Water, 9  
antler (cheek pieces), 14  
Anton's Gower, 16  
Anwick, 13, 82, 89  
arrowheads, 101, 102, 104  
artefacts, 1, 6, 7–8, 98 (Fig. 88)  
axes, 31, 37, 43, 50, 66, 74, 98–9, 101, 102, 104  
  
Bain river and valley, 3, 17, 83, 101  
Bardney Abbey, 20, 23  
Barlings, 13  
'Barroway Drove Beds', 5  
barrows, 13, 37, 47, 82, 89, 97  
Beaker, 99, 103  
Beat's Plot, 14  
Berkshire, 103  
Bettinson's Bridge (West Fen), 16, 41, 81  
Bicker Haven, 16, 20, 88  
Billingborough, 57, 59, 67, 74, 82, 85, 88, 96, 97  
Billinghay, 3, 14, 89  
blades, flint, 99, 100, 101, 102, 103, 104  
Bolingbroke, 59, 63, 85  
bone, animal, 6, 22, 75, 104, 111  
borers, flint, 99, 103  
Boston, 20, 21, 69, 88–9, 108  
Boston and District Archaeological Society, 7, 31, 74, 95  
Bourne, 21, 22, 88, 108  
Bower, Anthony, 7  
Breckland (Norfolk), 104  
Brickpits (Wrangle), 74  
briquetage, 71, 74–5, 80, **90–3** (Figs 83–6), 95–6, 97  
British Museum, 97  
Broadgate (Wrangle), 71  
Bronze Age, ix, 14, 22 (Pl. III), 29, 31, 79  
  Early, 16–17, 18, 19, 41, 43–9, 55, 66, 74  
  Middle, 47, 50–1, 66  
  Late, 50, 88, 89  
  cremations, 31, 47  
  deep peat, 3  
  lithic material, 41, 99–101, 102–3, 104  
  maps, 7  
  marine phases, 6  
  metalwork, 82–3, 105  
  pottery, 47, 66, 82, 96, 97, 102, 103, 105  
bronze objects, 96, 98  
Bull Drove (Wrangle), 71  
Bunkers Gorse, 103  
Burgh-by-Sands (Cumberland), 108  
burials, 1, 13–14, 31, 37, 47, 51, 66, 82, 85, 89, 97  
  *see also* Hall Hill (West Keal)  
Burtoft, 89  
Bury St Edmunds: Westgarth Gardens, 59  
Butterbump Farm, 97  
Butterwick, 89  
  
Caistor-by-Norwich, 59  
Cambridge, 108  
Cambridge Committee for Aerial Photography, 9  
Cambridgeshire Archaeological Committee, 1  
Camden, William, 6–7  
Candleshoe (Wapentake), 69  
Car Dyke, 89  
Carlisle, 108  
Carrington, 3  
Catley Abbey, 13  
cemeteries *see* burials  
cereals, 21, 35, 71, 93  
chalk, 24, 82, 98, 99, 104  
Chapel Hill, 3, 14, 19, 21, 22, 23  
Claxby, 107  
clays, 1, 3, 5, 24, 41, 47, 50, 75  
  East Fen, 6, 67, 79  
  pottery manufacture, 55, 108  
  soils, 14, 30, 31, 37, 43, 64, 71, 86, 88  
  West Fen, 66  
  Witham river and valley, 13, 15, 16, 17, 19, 20, 22  
  Wrangle, 69, 71  
'Cockle Sandes' (Wrangle), 110  
cockle shells, 22  
coins, 66, 74  
Colchester, 108  
Coles, Dr John, 1  
Coningsby parish, 14, 81  
cores, flint, 99–100, 101, 102, 103  
Cork, County, 104  
Cragmire Lane (Wrangle), 71  
cranberries, 79, 81  
cropmarks, 5, 19–20, 29, 47, 49 (Pl. V), 78 (Pls VI–VII)  
Crowland, 5, 57, 67  
Cuckney (soil), 31  
  
Danby, Mr, 74  
de Umfraville, Gilbert (Earl of Angus), 21  
'Deepes', 3, 7, 63  
denticulates, 99, 103  
Devensian Till, 30, 31, 69, 81  
Dexthorpe (Ulceby parish), 107  
Dickon Hills, 69, 77  
Dissolution of the Monasteries, 63  
ditches, 1, 3, 14, 19, 20, 47, 75, 82  
Dogdyke, ix, 3, **12–23** (Figs 4, 7, 9, 10, 12), 81, 89, 102  
*Domesday Book*, ix, 16, 20, 59, 71, 75, 77, 79, 86  
Donington, 88  
Dowsby, 88  
Dunsby parish, 85  
dykes, 1, 14, 16, 19, 24, 63, 71, 77, 82  
  
earthworks, 6, 59, 77, 78, 108  
East Fen, ix, 3, 4 (Pls I–II), 5, 21, 24, 37, 41, 43, 50, 59, 63, 65, 66–7, 77, 86, 88, 96  
  aerial photography, 71  
  clays, 79  
  description/topography, 6–7, 30, 31  
  peat, 69, 81  
  settlements, 47, 55  
  soils, 9, 82  
East Keal, 3, 7, 8–9, **24–67** (Figs 17, 27, 36, 45, 56, 66), 86, 96, 98, 101, 102, 107  
  Mesolithic/Neolithic, 37, 39 (Fig. 36), 81  
  Early Bronze Age, 45 (Fig. 45)  
  Roman period, 53 (Fig. 56)  
  medieval period, 59, 61 (Fig. 66), 64, 65  
  and Hundleby border, 47, 49, 82  
  pre-enclosure landscape, **112–14** (Fig. 91)  
East Kirkby, 3, 9, **24–67** (Figs 14, 24, 33, 42, 53, 63) 84, 86–7, 98, 102  
  Mesolithic/Neolithic, 38 (Fig. 33)  
  Early Bronze Age, 44 (Fig. 42)  
  Roman period, 52 (Fig. 53)  
  Saxon/medieval period, 60 (Fig. 63), 63, 65–6  
  airfield, 5, 29  
  lithic sites, 47  
  topography, 31  
Eastville, 3, 5



- Ecton (Northamptonshire), 102  
enclosures, 3, 7, 65, 67, 69, 81, 87–8, 109  
  maps, 8–9, 59, 75, 77, 79  
  pre-enclosure landscape, 112–19  
English Heritage, 1  
epidiorite, 37, 98
- Fahee South (Co. Clare), 104  
Felcey, M., 29  
Fellands, The (Wrangle), 75  
‘Fen Clay’, 5  
Fen Dyke, 77, 79  
fieldwalking, ix, 6, 7, 8, 14, 35  
Fieldwork Intensity, 6, 7, 16–17 (Figs 7–8), 32–7 (Figs 24–32), 70  
  (Fig. 74), 71  
Firsby, 77  
fisheries, 20, 21, 22, 23, 66 (Fig. 72), 87, 110  
Fishtoft, 30, 89  
Fiskerton, 14, 89, 108  
Flag Fen (Cambs.), 1, 3  
flakes, flint, 99, 100, 102, 103  
Flandrian deposits, 3, 5–6, 47, 69, 79, 82, 99  
  pre-Flandrian, 14, 16, 24, 30, 35, 41, 43, 71, 74, 75, 88, 89  
Fleet, 89  
flints, ix, 6, 15, 19, 29, 43, 66, 81–2, 95, 96, **98–104**  
  Mesolithic/Neolithic, 37, 67  
  Neolithic/Early Bronze Age, 41  
  Early Bronze Age, 47  
Frampton, 89  
Freiston, 89, 110  
Frilford soils, 31, 37  
Frisians, 85, 89  
Friskney, 7, 9, 69, 71, 75, 79, 80, 81, 90, 95, 109  
Frithville, 3
- Gask’s Farm (Wrangle), 74  
Gateroom Lane, 86  
Gedney, 89  
geology, ix, 1, 3, 5, 6, 7, 14, 16, 19, 22, 24, 30–1, 47, 50, 69, 71, 74,  
  77, 79, 81, 82, 85, 88, 89  
Giants’ Hills barrows (Skendleby), 37  
Gibraltar Point, 71  
Gold Fen Dike (Wrangle), 69, 74, 77, 79, 86  
Gosberton, 79  
Grantham, 88  
Great Langdale tuff, 99  
Greenfield Farm (Wrangle), 74, 75  
Grimston (Norfolk), 77, 108  
Grundy, John, 9, 65, 112  
Guthram (Bourne Fen), 88  
Guy of Craon’s manor, 86  
Gypsy Lane (Wrangle), 71  
Gypsy Bridge (Thornton le Fen), 16, 81
- Haddenham (Cambs.), 3  
Hagnaby, 3, 9, **24–67** (Figs 15, 25, 34, 43, 54, 64)  
  Mesolithic/Neolithic, 38 (Fig. 34)  
  Bronze Age, 44 (Fig. 43), 66, 82  
  Roman period, 52 (Fig. 54)  
  medieval period, 60 (Fig. 64), 85  
Hagnaby Beck, 5, 24, 30–1, 43, 47, 50, 96  
Hagnaby Hall (Hagnaby Priory), 28–9  
Haiwarde, William, 110  
Hall End (Wrangle), 77  
Hall Hill (West Keal), 7, 29, 31, 47, 51, 59, 85, 101, 103  
Halton Hologate, 65  
Hampshire, 103  
Hanbye, William, 109  
Hannah-cum-Hagnaby, 29  
Hart’s Grounds (and Pelham’s Lands), 3, **12–23** (Figs 5, 8, 11, 13)  
Haven Bank area, 22  
Hay Green (Terrington St Clement), 89  
herrings, 21, 110  
Hilldyke (East Fen), 79  
Historic Buildings and Monuments Commission, 1  
Hobhole, 3, 6, 7, 24, 50, 81  
Hogsthorpe, 74, 90  
Holland Fen, 14, 88  
Horbling, 82, 88  
Horncastle, 55, 57, 59, 83, 97
- ‘Hourglass Supports’, 92  
Hundleby-East Keal border, 47, 49, 82
- Ingoldmells, 75, 90, 97  
*intaglio*, 55  
Iron Age, ix, 14, 66, 79, 88, 89  
  pottery, 31, 51, 83, 96–7  
  salterns, 7, 74, 90, 92, 95  
  settlements, 57, 71, 81, 83  
  Wrangle, 73 (Fig. 76), 74–5, 79, 80, 93, 111
- jet, 95  
Joy Hill (Wrangle), 75, 79  
Judegate Farm (Toftland), 79  
Jurassic limestone, 82
- Keals, 63  
  *see also* East Keal; West Keal  
Kesteven, 89  
kilns, 6, 7, 21, 55, 63, 66, 71, 77, 85, 107, 108  
King’s Hill (Wrangle), 77, 78 (Pl. VI), 79, 108  
Kirkby Fenside, 65, 87  
Kirkstead Abbey, 77, 81, 87, 109  
Kirton parish, 14  
knives, flint, 99, 103  
Kyme Eau, 3, 14, 21
- Lackford, 85  
Lade Bank, 3, 41, 69, 71, 77, 79  
Langrick, 21  
Langrville, 3  
Laythorpe, 59  
Le Bret, Simon, 75  
lead weight, 98  
Leake Fold Hill (Wrangle), 75, 77, 79  
Leland, John, 23  
Leverton, 89  
  limestone, 22, 37, 66, 82  
Lincoln, 14, 20, 23, 29, 89  
  Museum, 90  
  pottery, 21, 22, 77, 85, 107, 108  
Lincolnshire Archaeology, Trust for, 9  
Lincolnshire Archives Office, 8  
Lincolnshire Museums, 7, 9  
Lindsey, ix, 59, 69, 85, 89  
lithic material  
  41, 43, 47, 81, 82, **98–106** (Fig. 89)  
  *see also* flints; stone  
Lockham Gate (Wrangle), 79  
loomweights, 59  
Louth, 97
- Malyn, John, 109, 111  
Mancetter: pottery, 55, 107  
maps  
  Dugdale (1772), 3, 59, 66, 77  
  enclosure, 8–9, 59, 75, 77, 79, 109  
  medieval, 63, 64–5  
  Ordnance Survey, 6, 7, 8, 21  
  parish, 7, 8 (Fig. 3), 112, 115  
  Pitchford (1734), 23  
  roddons, 35, 50, 71  
  Roman Fenland, 88  
  soils, 5–6, 69  
  Witham, 16  
  Wrangle Tofts and Marshes, 109–11
- Market Rasen kilns, 107  
Marsh Farm (Wrangle), 109  
Marshland (Norfolk), 81  
Maud Foster Drain, 21  
Meare, The, 65  
medieval period, 6, 14, 58, 59–66, 85, 98  
  cropmarks, 19  
  field systems, 7, 112, 115  
  pottery, 7, 71, 107–8  
  ridge and furrow, 3, 7, 9, 29, 31, 63, 64, 86  
  salterns/salt-making, 6, 7, 69, 109–10  
  Stickney, 87  
  West Fen, 81  
  Witham river, 20–3

- Wrangle, 75–9, 80, 109–11  
 medieval/post-medieval period: pottery, 21, 22–3  
 Mesolithic period, ix, 31, 37–43, 66, 67, 81–2, 105  
   Dogdyke, 18 (Fig. 9)  
   lithic material, 99–101, 102, 103–4  
   Witham Fens, 14–16  
 metalwork, ix, 14, 82–3, 89, 105  
 microwear analysis, 103  
 Midville, ix, 3, 5, 6, 7, **24–67** (Figs 22, 32, 41, 50, 52, 71), 71, 79, 82  
   Mesolithic/Neolithic, 43 (Fig. 41)  
   Bronze Age, 49 (Fig. 50), 50, 51 (Fig. 52)  
   medieval period, 63, 65 (Fig. 71)  
 Mill Farm (Wrangle), 71  
 Morton, 85  
 Moss Dyke, 79  
 Mowbray's Farm (Wrangle), 74  
 mussel, 22  
  
 Nene river and valley, 55, 85, 89, 107  
 Neolithic period  
   Dogdyke, 18 (Fig. 9)  
   lithic material, ix, 67, 81, 99–101, 102, 103–4  
   pottery, 47, 96, 97, 105  
   saltmarshes, 3  
   settlements, 82  
   Stickney/Northern Fen-Edge, 30, 37–43, 47, 66  
   Witham Fens/Valley, 14–16, 23  
 Neolithic period, Late, 5, 14–16, 47, 66, 81, 88, 96, 97  
 New Leake, 71  
 New Marsh (Wrangle), 69  
 Newark Road, Fengate (Cambs.), 103  
 Nocton, 16, 20  
 'Nordelph Peat', 5  
 Norfolk, 81, 88, 89, 99, 101, 104, 105  
 North Fen, 63  
 Nottingham, 21, 22  
  
 Old Bolingbroke, 9, 87, 108  
 Old Fen Dyke, 77  
 Old Leake (Wrangle), 69, 75, 77, 79, 88  
 Old Somerby (near Grantham), 96  
 Oxford kilns, 108  
 Oxfordshire, 103  
 oyster, 22  
  
 Palaeolithic period, 31  
 peat, ix, 1, 8, 71, 83  
   Dogdyke, 14, 15, 21  
   East/West Fen, 3, 5, 6, 7, 35, 55, 59, 67, 69, 79  
   extraction, 77, 111  
   formation/development, 24, 41, 47, 50, 66, 75, 81, 82, 88  
   as fuel, 63, 66, 80  
   wastage, 104–5  
   Witham valley and river, 13, 16, 20, 22, 23, 29, 89  
 Pelham's Lands *see* Hart's Grounds  
 Peterborough (Cambs.), 82  
 Pinchbeck, 5, 79, 88  
 Plantation Farm, Shippea Hill (Cambs.), 103  
 Pointon, 74  
 pollen, 41, 79  
 'pot-boiler' sites, 104  
 Potter Toynton, 63  
 pottery  
   prehistoric, **96–7**  
   Neolithic, 47, 103, 105  
   Bronze Age, 47, 50, 66, 82, 88, 97, 102, 103, 105  
   Iron Age, 31, 51, 74, 80, 83, 90, 92  
   Roman, ix, 19, 51, 55–6, 57, 74, 80, 84–5, 96, 97, **107**  
   Saxon, 28, 58, 59, 75, 77, 79, 89, **107–8**  
   medieval, 21, 63, 64, 65, 66, 71, 75, 77, 79, 87, 89, **107–8**  
   medieval/post-medieval, 20, 21, 22–3  
   undated, 74 (Fig. 77)  
   amphorae, 107  
   Beaker, 47, 96, 103, 105  
   Blau-grau Ware, 108  
   calcite-gritted, 84, 85  
   colour-coated, 55, 74, 84, 85, 107  
   Dales Ware, 107  
   finewares, 84, 85  
   food-vessels, 47  
   grey-wares, ix, 19, 55, 84, 85, 107  
   Ipswich Ware, ix, 58, 59, 89, 107  
   Lincoln fabrics, 108  
   Mancetter, 55, 107  
   Maxey, 58, 89, 107  
   mortaria, 55, 84, 107  
   Nene Valley Ware, 55, 74, 85, 107  
   Nottingham sherds, 77  
   Oxford-type sherds, 56  
   Peterborough Ware (Late Neolithic), 47, 103  
   Potter Hanworth, 22, 77, 108  
   St Neots Ware, 108  
   samian, 55, 57, 84, 85, 107  
   shell-tempered, 22, 89, 107–8  
   'South Lincs gritty ware', 108  
   Stamford Ware, 75, 77, 107, 108  
   stamps (Saxon), 58–9  
   Stickford, 47, 59  
   Swanpool, 107  
   Thetford types, 108  
   Toynton Ware, 77  
   urns, 47, 59, 85, 96, 97  
 prehistoric period, 3, 31, 35, 66, 89  
   cropmarks, 49 (Pl. V)  
   Dogdyke site, 15  
   pottery, **96–7**  
   River Witham, 14, 16, 17, 19, 23  
   Wrangle, 71–2  
  
 Quadrin, 5, 79, 88  
 quarrying, 14  
 querns, lava, 59, 75  
  
 radiocarbon dating, 1, 5, 9, 13, 15–16, 41, 47, 50, 67, 71, 74, 81, 88, 90, 96, 97, 104  
 Reade family, 109  
 Redman, Mr Brian, 7  
 Reed Point, 17, 19–20  
 Revesby Abbey, 63, 81, 87  
 ridge and furrow, 3, 7, 9, 29, 31, 63, 64, 86  
 Rinder's Farm (Wrangle), 74  
 ring ditches, 47, 82  
 Rippingale Fen, 88  
 roads, 29, 59, 63, 69, 109  
   A16 (Boston-Grimbsby), 35  
   A52 (Skegness-Midlands), 69  
   East/West Keal, 65  
   medieval, 64, 66  
   'Saltersway' (Roman road), 88  
   Spilsby-Coningsby, 28  
   trackways, 43, 50, 66  
 Roman period, 5, 6, 7, 16–17, 50, 55–7, 98, 108  
   pottery, ix, 19, 51, 55–6, 57, 74, 80, 84–5, 96, 97, **107**  
   River Witham, 19–20  
   salterns, ix, 74, 91, 92, 93  
   settlements, 29–30, 51–5, 58, 59, 66, 67, 79, 81, 83–4, 88  
   Wrangle, 69, 71, 73 (Fig. 76), 74–5, 77, 80, 81, 95, 111  
 Romney series (soils), 69  
 Rudkin, Mrs: flint collection, 29  
  
 St Edmund, 66  
 St Nicholas chapel (Chapel Hill), 21  
 salterns/salt-making, 51, 59, 63, 66, 71, 84, 86  
   Iron Age, 74, 83, 90, 92, 95, 97  
   Iron Age/Roman, 7, 74, 75  
   Roman, ix, 85, 91, 92, 93, 95  
   Late Saxon/medieval, 69  
   medieval, 6, 7, 79, 85, 110  
   Wrangle, 74, 77, 80 (Pl. VIII), 87, 94 (Fig. 87), 95, 109–11  
 saltmarshes, 50, 69, 110  
 samphire, 110  
 Sandstone ridge, 28  
 Saxon period  
   Early/Middle, 58, 59, 86, 89  
   Late, 23, 59, 65, 69, 75, 77, 79, 85, 107–8  
   cemetery (Hall Hill), 7, 31, 59, 85  
   pottery, 28, 58–9 (Fig. 62), 65, 75, 77, 89, 97, **107–8**  
   settlements, ix, 6, 23, 56, 57, 59, 66, 79, 80, 85  
 Scandinavian settlers, 23, 28, 29, 59, 66, 69, 75  
 Scarborough (Yorkshire), 77, 108

- scrapers, flint, 99, 101, 103, 104  
 Scunthorpe, 82  
 Sea Lane (Wrangle), 109  
 Sempringham, 74  
 Sharpe's Bridge, 16  
 shells, 22, 84, 95, 111  
 shipping, 20–1, 22, 69, 109, 110  
 Shoff Drove (Donington), 88  
 Short Ferry (Fiskerton), 108  
 Sibsey, 3, 30, 31, 57, 63, 77, 79, 86  
 sickle, flint, 103  
 Sigtoft Farm (Wrangle), 77  
 Skegness, 69, 75, 85, 88, 90  
 Skendleby: Giants' Hills barrows, 37  
 Skirbeck (Wapentake), 69, 75  
 Slea, River, 3, 14, 23  
 Sleaford, 3, 29  
 Small End (Wrangle), 69, 71, 74, 75, 79, 95  
 Smith, Richard, 109, 111  
 Soil Survey, 5, 7, 9, 16, 20, 23, 69, 71  
 Soil Survey and Land Research Centre, 9, 13, 31  
 Somerset Levels, 43  
 South Humberside, 104  
 Spaldas (Fenland tribe), 89  
 Spalding, 88  
 spearheads, 50  
 Spilsby, 5  
 Spilsby Sandstone, 24, 30, 31, 49 (Pl. V), 101  
 Stainfield parish, 13  
 Stainsby on the Wolds, 97  
 Steeping river & estuary, 66, 69, 79  
 Stickford, 3, **24–67** (Figs 20, 30, 39, 48, 51, 59, 69), 96, 98  
   Mesolithic/Neolithic, 41 (Fig. 39)  
   Bronze Age, 7, 47 (Fig. 48), 50 (Fig. 51), 51, 82  
   Roman period, 55 (Fig. 59)  
   medieval period, 63 (Fig. 69)  
   pottery, 47, 59, 82  
 Stickney, 3, **24–67** (Figs 21, 23, 31, 40; Pl. IV), 77, 88, 98, 108  
   Mesolithic, 81  
   Early Bronze Age, 48 (Fig. 49), 83 (Fig. 79)  
   Roman period, 55, 56 (Fig. 60), 83–4 (Fig. 80)  
   Early/Middle Saxon, 86 (Fig. 81)  
   medieval period, 63, 64 (Fig. 70), 87 (Fig. 82)  
   Grange, 63–4, 86  
   island, 4 (Pl. I), 24, 31, 81, 86  
   ridge, 82, 85  
 stone  
   axes, 43, 98, 104  
   buildings, 22, 55  
   fragments, 95  
   implements, 99  
   weights, 22, 98  
 Stonea (Cambs.), 3  
 Stonehenge, 103  
 Storey's Bar Road, Fengate (Cambs.), 102  
 Swales Fen, Mildenhall (Suffolk), 104  
 Swanpool: pottery, 107  
 Swineshead parish, 14, 88  
 Switsur, Dr Roy, 9  
 swords, 89  
  
 Tattershall, 14, 31, 87, 89  
 Tattershall Thorpe, 83, 101, 103, 104  
 'Taunton industrial phase', 96  
*tegulae*, 19  
 terracotta head, 55, 98, **108**  
 'Terrington Bed' silts, 5  
 Terrington St Clement (Norfolk), 89  
 Thomas, Sir Anthony, 3  
 Thorney (Cambs.), 5  
 Thornton-le-Fen, 3, 81  
 Thorpe Fen, 69  
 tiles, 19, 55, 75, 77  
 timber, 1, 14, 43, 89  
 Timberland Fen, 16  
 Toadland (Wrangle), 79  
 Toynton All Saints  
   3, 9, **24–67** (Figs 18, 28, 37, 46, 57, 67)  
   Mesolithic/Neolithic, 40 (Fig. 37)  
   Early Bronze Age, 46 (Fig. 46)  
   Roman period, 54 (Fig. 57)  
   medieval period, 7, 62 (Fig. 67), 63, 87  
   pottery, 108  
   pre-enclosure landscape, **115–19** (Fig. 92)  
 Toynton St Peter  
   3, **24–67** (Figs 19, 29, 38, 47, 58, 68)  
   Mesolithic/Late Neolithic, 40 (Fig. 38)  
   Early Bronze Age, 46 (Fig. 47)  
   Roman period, 54 (Fig. 58)  
   medieval period, 7, 62 (Fig. 68)  
   pottery, 108  
   pre-enclosure landscape, **115–19** (Fig. 93)  
 Toyntons, ix, 8, 29, 31, 59, 64, 65, 86  
   pottery, 21, 22, 55, 66, 71, 77, 85  
   *see also* Toynton All Saints; Toynton St Peter  
 trade, 20–1, 22, 23, 55, 57, 59, 108, 110  
 trees *see* woodland  
 Trent Valley, 23  
 turves, 21, 77  
 Tydd St Giles (Cambs.), 89  
  
 Wainfleet, 16, 43, 69, 71, 75, 77, 79, 80, 81, 85, 95  
 Walcott, 89  
 Waltham Abbey, 75, 77, 79  
 Wapentakes, 59, 69, 75  
 Wash, the, x (Fig. 1), 3, 22, 23, 69, 79, 89, 107  
 Washingborough, 13, 14  
 West Fen, ix, 3, 4 (Pl. I), 9, 21, 24, 28, 43, 50, 59, 65, 66, 67, 77, 88  
   Bettinson's Bridge, 16, 41, 81  
   description/topography, 5, 6–7, 30, 31  
   settlement, 47, 55  
 West Houses, 86  
 West Keal, 3, 9, **24–67** (Figs 16, 26, 35, 44, 55, 61, 65), 102  
   Mesolithic/Neolithic, 37, 39 (Fig. 35), 81  
   Bronze Age, 45 (Fig. 44), 47  
   Roman period, 53 (Fig. 55), 84, 85  
   Saxon period, 7, 31, 57 (Fig. 61), 59, 85  
   medieval period, 59, 61 (Fig. 65)  
   Hall Hill, 7, 29, 31, 47, 51, 59, 85, 101, 103  
   pottery, 59, 96  
 West Row (Suffolk), 3  
 Westbury (Wiltshire), 108  
 Westgarth Gardens (Bury St Edmunds), 59  
 Westville, 3  
 White House Farm (Wrangle), 75  
 Wick soils, 47  
 Wildmore, 3, 14, 16, 21, 22, 81  
   Fen, ix, 3, 23, 66, 77, 81, 88  
 Willoughby, 97  
 willows, 66  
 wine, 21  
 Wisbech Series (soils), 71  
 Wissey Embayment, 99  
 Witham Fens, 3, **13–23** (Figs 5–13; Pl. III)  
 Witham Fourth Internal Drainage Board, 9  
 Witham, River, 3, 13–14, 16, 17, 19, 20–3 (Pl. III), 47, 50, 88, 108  
 Witham Valley, ix, 3, 13–14, 15 (Fig. 6), 29, 66, 83, 89  
 Wolds, 3, 24, 29, 37, 57, 66, 81, 82–3, 99, 102, 104, 107  
 Wolmersty, 69, 75, 77, 78 (Pl. VII), 80, 85  
 woodland/trees, 37, 41, 66, 82, 103  
 wool, 21  
 Wrangle, ix, 3, 5, 66, 68 (Fig. 73), **69–80** (Figs 74–6, 78), 81, 98  
   prehistoric period, 71, 72 (Fig. 75)  
   Iron Age/Roman period, 73 (Fig. 76)  
   Roman period, 84–5, 95, 111  
   medieval period, 76 (Fig. 78), 109–11  
   King's Hill, 77, 78 (Pl. VI), 79, 108  
   pottery, 82, 96, 107  
   salterns/salt-making, 80 (Pl. VIII), 83, 87, 90, 92, 93, 94 (Fig. 87),  
   95, 97, **109–11**  
   seaward reclamation, 86  
   soils, 7, 9  
 Wrangle Bank, 69, 71, 75, 77, 79  
 Wrangle Common, 71, 74, 75, 77, 79, 86  
 Wrangle Hall, 109  
 Wrangle Tofts, 5, 6, 69, 75, 77, 80, **109–11** (Pl. IX; Fig. 90)  
 Wren Booth, 23

## East Anglian Archaeology

is a serial publication sponsored by the Scole Archaeological Committee. The Norfolk, Suffolk and Essex Units, the Norwich Survey and the Fenland Project all contribute volumes to the series. It is the main vehicle for publishing final reports on archaeological excavations and surveys in the region. Copies and information about the contents of all volumes can be obtained from:

Centre of East Anglian Studies,  
University of East Anglia,  
Norwich, NR4 7TJ

or directly from the Archaeology Unit publishing a particular volume.

### Reports available so far:

- |               |      |   |                |      |   |
|---------------|------|---|----------------|------|---|
| Report No.1,  | 1975 | Suffolk: various papers   | Report No.35,  | 1987 | Cambridgeshire: The Fenland Project No.2: Fenland Landscapes and Settlement between Peterborough and March                  |
| Report No.2,  | 1976 | Norfolk: various papers   | Report No.36,  | 1987 | Norfolk: The Anglo-Saxon Cemetery at Morningthorpe, Norfolk: Catalogue  |
| Report No.3,  | 1977 | Suffolk: various papers   | Report No.37,  | 1987 | Norwich: Excavations at St Martin-at-Palace Plain, Norwich, 1981  |
| Report No.4,  | 1976 | Norfolk: Late Saxon town of Thetford  | Report No.38,  | 1987 | Suffolk: The Anglo-Saxon Cemetery at Westgarth Gardens, Bury St Edmunds, Suffolk: Catalogue                                 |
| Report No.5,  | 1977 | Norfolk: various papers on Roman sites  | Report No.39,  | 1988 | Norfolk: The Anglo-Saxon Cemetery at Spong Hill, North Elmham, Norfolk, Part VI: Occupation during the 7th-2nd millennia BC |
| Report No.6,  | 1977 | Norfolk: Spong Hill Anglo-Saxon cemetery  | Report No.40,  | 1988 | Suffolk: Burgh: The Iron Age and Roman Enclosure  |
| Report No.7,  | 1978 | Norfolk: Bergh Apton Anglo-Saxon cemetery   | Report No.41,  | 1988 | Essex: Excavations at Great Dunmow, Essex: a Romano-British small town in the Trinovantian Civitas                          |
| Report No.8,  | 1978 | Norfolk: various papers   | Report No.42,  | 1988 | Essex: Archaeology and Environment in South Essex, Rescue Archaeology along the Gray's By-pass 1979-80                      |
| Report No.9,  | 1980 | Norfolk: North Elmham Park  | Report No.43,  | 1988 | Essex: Excavation at the North Ring, Mucking, Essex: A Late Bronze Age Enclosure  |
| Report No.10, | 1980 | Norfolk: village sites in Launditch Hundred   | Report No.44,  | 1988 | Norfolk: Six Deserted Villages in Norfolk   |
| Report No.11, | 1981 | Norfolk: Spong Hill, Part II  | Report No.45,  | 1988 | Norfolk: The Fenland Project No. 3: Marshland and the Nar Valley, Norfolk   |
| Report No.12, | 1981 | The barrows of East Anglia  | Report No.46,  | 1989 | Norfolk: The Deserted Medieval Village of Thuxton, Norfolk  |
| Report No.13, | 1981 | Norwich: Eighteen centuries of pottery from Norwich   | Report No.47,  | 1989 | Suffolk: West Stow, Suffolk: Early Anglo-Saxon Animal Husbandry   |
| Report No.14, | 1982 | Norfolk: various papers   | Report No.48,  | 1989 | Suffolk: West Stow, Suffolk: The Prehistoric and Romano-British Occupations   |
| Report No.15, | 1982 | Norwich: Excavations in Norwich 1971-1978; Part I   | Report No.49,  | 1990 | Norfolk: The Evolution of Settlement in Three Parishes in South-East Norfolk  |
| Report No.16, | 1982 | Norfolk: Beaker domestic sites in the Fen-edge and East Anglia  | Report No.50,  | 1993 | Proceedings of the Flatlands and Wetlands Conference  |
| Report No.17, | 1983 | Norwich: Waterfront excavations and Thetford-type Ware production, Norwich  | Report No. 51, | 1991 | Norfolk: The Ruined and Disused Churches of Norfolk   |
| Report No.18, | 1983 | Norfolk: The archaeology of Witton  | Report No. 52, | 1991 | Norfolk: The Fenland Project No. 4: The Wissey Embayment and Fen Causeway   |
| Report No.19, | 1983 | Norfolk: Two post-medieval earthenware pottery groups from Fulmodeston  | Report No. 53, | 1992 | Norfolk: Excavations in Thetford, 1980-82, Fison Way  |
| Report No.20, | 1983 | Norfolk: Burgh Castle: excavation by Charles Green, 1958-61   | Report No. 54, | 1992 | Norfolk: The Iron Age Forts of Norfolk  |
| Report No.21, | 1984 | Norfolk: Spong Hill, Part III   | Report No. 55, | 1992 | Lincolnshire: The Fenland Project No. 5: Lincolnshire Survey, The South-West Fens   |
| Report No.22, | 1984 | Norfolk: Excavations in Thetford, 1948-59 and 1973-80   | Report No. 56, | 1992 | Cambridgeshire: The Fenland Project No.6: The South-Western Cambridgeshire Fens   |
| Report No.23, | 1985 | Norfolk: Excavations at Brancaster 1974 and 1977  | Report No. 57, | 1993 | Norfolk and Lincolnshire: Excavations at Redgate Hill, Hunstanton; and Tattershall Thorpe                                   |
| Report No.24, | 1985 | Suffolk: West Stow, the Anglo-Saxon village   | Report No. 58, | 1993 | Norwich: Households: The Medieval and Post-Medieval Finds from Norwich Survey Excavations 1971-1978                         |
| Report No.25, | 1985 | Essex: Excavations by Mr H.P.Cooper on the Roman site at Hill Farm, Gestingthorpe, Essex  | Report No. 59, | 1993 | Fenland: The South-West Fen Dyke Survey Project 1982-1986   |
| Report No.26, | 1985 | Norwich: Excavations in Norwich 1971-78; Part II  | Report No. 60, | 1993 | Norfolk: Caister-on-Sea: Excavations by Charles Green, 1951-55  |
| Report No.27, | 1985 | Cambridgeshire: The Fenland Project No.1: Archaeology and Environment in the Lower Welland valley                                   | Report No. 61, | 1993 | Fenland: The Fenland Project No. 7: Excavations in Peterborough and the Lower Welland Valley 1960-1969                      |
| Report No.28, | 1985 | Norwich: Excavations within the north-east bailey of Norwich Castle, 1978   | Report No. 62, | 1993 | Norfolk: Excavations in Thetford by B.K. Davison, between 1964 and 1970   |
| Report No.29, | 1986 | Norfolk: Barrow excavations in Norfolk, 1950-82   | Report No. 63  | 1993 | Norfolk: Illington: A Study of a Breckland Parish and its Anglo-Saxon Cemetery  |
| Report No.30, | 1986 | Norfolk: Excavations at Thornham, Warham, Wighton and Caistor St. Edmund, Norfolk   | Report No. 64, | 199* | Norfolk: The Late Saxon and Medieval Pottery Industry of Grimston: Excavations 1962-92                                      |
| Report No.31, | 1986 | Norfolk: Settlement, religion and industry on the Fen-edge; three Romano-British sites in Norfolk                                   | Report No. 65, | 1993 | Suffolk: Settlements on Hill-tops: Seven Prehistoric Sites in Suffolk   |
| Report No.32, | 1987 | Norfolk: Three Norman Churches in Norfolk   | Report No. 66, | 1993 | Lincolnshire: The Fenland Project No. 8: Lincolnshire Survey, the Northern Fen-Edge   |
| Report No.33, | 1987 | Essex: Excavation of a Cropmark Enclosure Complex at Woodham Walter, Essex, 1976 and An Assessment of Excavated Enclosures in Essex |                |      |   |
| Report No.34, | 1987 | Norfolk: The Anglo-Saxon Cemetery at Spong Hill, North Elmham, Part IV: Catalogue of Cremations                                     |                |      |   |

---

# Contents

THE SOUTH-EAST WITHAM FENS,  
STICKNEY AND THE NORTHERN FEN-EDGE,  
WRANGLE.

---

ISBN 0 948639 11 3