THE ISLE OF AXHOLME

HISTORIC LANDSCAPE CHARACTERISATION PROJECT

A REPORT COMMISSIONED BY

THE COUNTRYSIDE COMMISSION

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BY

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THE ISLE OF AXHOLME HISTORIC LANDSCAPE CHARACTERISATION PROJECT

SUMMARY

Aims and objectives

The Isle of Axholme Historic Landscape Characterisation Project is being undertaken by the Countryside Commission in order to create a framework for future management of the landscapes in the area, in particular the ancient open strip fields that survive there. At the same time, it is designed to serve as a pilot study, testing and refining the methodology of Historic Landscape Character Assessment and its application to relatively small areas. The area covered by the study is 550 square kilometres, forming about a third of the Humberhead Levels Countryside Character Area. This first report presents the results of Part 1 of the project, consisting of a Historic Landscape Character Assessment. This examines historic phases of landscape development, identifies what survives and assesses its contribution to present landscape character, examines how historic landscape information might guide future landscape management, and makes recommendations for further action. It also incorporates an account and assessment of the methodology and sources used.

Findings

Research. The study identified a wide range of sources and information relating to historic landuse, much of it previously unpublished. In particular, the open strip fields and parish turbaries have been largely unresearched and unrecognised, and the present study represents the first methodical research into these important examples of historic landuse.

Landscape Characterisation. Drawing on historic sources and current fieldwork, the study identifies a range of Historic Landscape Character Types, Zones and Areas and assesses their significance at a local, regional and national level. Recommendations are made for further research and for landscape conservation management, including situations where continued developments threaten the survival of nationally or internationally important areas of special historic landscape interest.

Chief amongst these areas of special historic landscape interest are the ancient open strip fields and the peat moors, parish turbaries and moorland allotments.

The open strip fields. The study confirms the national significance of the Axholme area's open fields, showing them to be the largest and most varied survival of open-field strip-cultivation in the country, and also the most threatened by current agricultural and building developments. The survivals encompass two contrasting types of open-field landscape: along the main riversides, and on the Isle of Axholme, where they are also distinguished by the survival of open-field customs and associated folk traditions. Further work on the present condition of the open strip fields, patterns of ownership, farming practice, and management potential are scheduled for Part 2 of the project, which will also explore comparative experience with the few other surviving open strip field systems in England and Wales.

Other areas of special interest. Other elements of the historic landscape identified by the study as especially significant at a regional and national level are: the lowland peat Moors and Turbaries; the Moorland

Allotments (the name given here to the characteristic enclosures created on the peat moors from the medieval period onwards); pre- and post-medieval settlement patterns along the riversides and on the Isle of Axholme (including deserted and shrunken medieval villages); patterns of post-medieval and early modern enclosure and settlement on the drained lowlands; and landuse associated with the medieval and later hemp and flax industry.

Wetland research. The subject of early wetland archaeology, which is of fundamental importance for the historic landscape of this area, is not dealt with in detail here, since it is currently being researched by the Humber Wetland Project. However, the present study demonstrates the value of extending wetland research to encompass the relationship of "dryland" settlements to the wetlands they exploited, and for extending it into medieval and post-medieval times, when wetland exploitation still made a significant contribution to the local communities, distinguishing them from their exclusively dryland neighbours.

Methodology. The Axholme area proved to be a good testing ground for the scale and methods of Historic Landscape Characterisation, and shows that these methods would be relevant to rural areas elsewhere throughout the country, especially those large sections where progressive farmland enclosure has had a significant impact. The study confirms the effectiveness of an approach using a system of identifying Historic Landscape Character Types, Zones and Areas, and provides a number of modifications to the characteriation techniques. In particular, it demonstrates the value of historic maps for landscape work, both for historic interpretation and for guiding future management strategies. The study also shows that the Historic Landscape Character method is applicable at a local level for groups of parishes, and that it can guide management strategies for the whole spectrum of landscape features, from the largest to the smallest.

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ABBREVIATIONS:

AOSF - Ancient Open Strip Field Zone
EEL - Early Enclosed Land Zone
HLCA - Historic Landscape Character Area
HLCT - Historic Landscape Character Type
HLCZ - " " " Zone
HWP - Humber Wetlands Project LLCA - Local Landscape Chracter Area
LAO - Lincoln Record Office
MA - Moorland Allotments
PRO - Public Record Office
REL - Recently Enclosed Land Zone
RM&T - Raised Mire and Turbary Zone
WHHL - *The Wetland Heritage of the Humberhead Levels* (Van de Noort & Ellis, 1997)

ISLE OF AXHOLME HISTORIC LANDSCAPE CHARACTERISATION PROJECT

PART 1: INTRODUCTION AND DATA GATHERING

INTRODUCTION

In 1996 the Countryside Commission published "A Living Countryside - our strategy for the next ten years" (CC 1996b). One of its themes is "Encouraging Local Pride", the aim of which is to "protect and strengthen the character of each part of the English countryside." As part of this work, the Commission recently published a Working paper "Views from the Past" which addresses the importance of landscape history for future management.

Research projects investigating the historic dimension of landscape have been undertaken by the Countryside Commission in Cornwall, as part of the Countryside Character Programme (CC 1994), and by English Heritage in Oxford, Durham, Avon and the Peak District, as part of its Historic Landscape Project (Fairclough et al. 1996). The growing body of work on Historic Landscape Characterisation also includes papers exploring techniques of landscape and time-depth analysis (CC/MM 1995a-b, 1996a). The various studies cover a range of approaches and methods, some more successful than others. A broad consensus is developing on the aims and approaches of Historic Landscape Character Assessment, but much still remains to be done to clarify research parameters and tools.

This study of the Isle of Axholme area is a contribution to the work on Landscape Character Assessment and the objectives outlined in "A Living Countryside" and "Views from the Past". Its aim is twofold. Firstly, to undertake a Historic Landscape Character Assessment of the Isle of Axholme area, with a view to improving the conservation management in the area, in particular of the Isle of Axholme itself. Secondly, to serve as a pilot study, investigating and evaluating the methods for a relatively short, intensive Historic Landscape Character Assessment, which is the most likely form for landscape assessments to be commissioned by bodies involved with landscape management.

Appropriateness of the study area

The study area is especially useful for a Historic Landscape Character Assessment pilot study. In landscape character terms it offers a mixture of the distinctively unique and the relatively commonplace. Within a fairly small area it contains a variety of landscape types, from the deeply rural to modern industrial, from ancient lightly-managed moorlands to intensively-managed farmland where even the landform itself is a recent creation. The texture of the landscape is very variable too: some of its contrasts are stark and extreme, others very subtle.

And whilst in many respects it exemplifies the rural lowlands of Eastern England, the area also has characteristics that give it a wider relevance. With its peatlands and industrial and commercial developments, it shares certain features (and management problems) more usually associated with moorlands and urban fringe areas.

The study area thus provides a good testing ground for the methods and scale of Historic Landscape Characterisation. The approaches described in the following report would be appropriate over much of the country,

particularly those areas where farmland enclosure has had a major impact. More generally, given the extremes of this area, if Historic Landscape Character Assessment methods can work here, they should be able to work anywhere.

Background to the study

The initial incentive for work in this area arose in the context of Countryside Stewardship Regional Targeting discussions. These demonstrated a strong need here for countryside management, and for more comprehensive historical guidance for management strategies in this area of complex landscape change.

A particular concern, shared by bodies with an involvement in the area, is the loss of the strip-cultivated open fields on the Isle of Axholme through intensive farming and new housing development. Another concern, highlighted by Stewardship applications for field boundary work, is the issue of hedgerow restoration on the intensively-farmed lowlands. Initial discussions between the Countryside Commission, ADAS/Countryside Stewardship, English Heritage and North Lincolnshire Council focused on Axholme's open-field system, but it soon became apparent that this is only the most prominent of a number of problems. There are serious concerns on a broad range of conservation and management issues relating to land-use, village design, historic buildings, modern commercial and residential development, environmental and ecological conservation, countryside amenity and public rights of way.

It is also clear that before effective action can be taken, there is a need to improve our understanding of the historical evolution of the landscape in all its aspects. This is best achieved through a methodical landscape character assessment, identifying landscape components and evaluating their relative importance. This would then provide a firm grounding for developing a management strategy, identifying the forces for change currently facing the landscape, and exploring the options for action. At the same time the study would provide an opportunity to assess the methodology of Historic landscape Character Assessment.

THE AIMS OF THE STUDY

These can be summarised as:

- to identify historic landscape components and see how these contribute to landscape character. Within the study area, the open strip fields of the Isle of Axholme are specifically identified as an area of historic landscape in need of assessment, with a view to undertaking conservation management.

- to examine how information on the historic landscape might help guide future landscape management.

- to evaluate the methodology of historic landscape characterisation and its application to part of a Landscape Character Area.

It was decided to approach this with a two-part study. **Part 1** would consist of a Historical Landscape Characterisation, with recommendations for further action and an evaluation of the methodology. **Part 2** would specifically address issues of management, planning and conservation, and other points arising from Part 1.

This study represents **PART 1**, and comprises:

1. Historical Landscape Characterisation

(i) A landscape historical time-depth analysis for the area: examining the historic phases of landscape development and their "signature" on the present landscape, i.e. what survives of them and what each phase contributes to the landscape we see today.

Included in this analysis are assessments of the farming landscape and of the built environment, addressing questions of settlement form and pattern, and building design.

(ii) A historic landscape characterisation. The identification of Historic Landscape Types and Zones, and LLCAs, primarily through mapping, field observation and matrix analysis.

(iii) An assessment of the extent of change of the landscape over the last 50 years, and the current condition of its historic character.

(iv) An evaluation of the relative importance of Historic Landscape Components, Zones and Areas (with priority given to the Axholme open strip fields), using standard criteria to assess their survival, rarity and significance, in a local, regional and national context.

2. Recommendations for further action.

(i) Identifying the most appropriate options to translate these findings into management strategies, based on conservation, enhancement or creation strategies, and identifying targets for action. Again, the Axholme open strip fields to be a priority.

3. Evaluation of the methodology.

(i) An assessment of the methodology of Historic Landscape Characterisation based on the model developed in the Cornwall Landscape Assessment project, using the system of Historic Landscape Characterisation of Types, Zones and Areas (CC 1994), and describing any modifications that are found to be necessary.

(ii) An evaluation of the method's scale of application: specifically, its effectiveness in identifying and assessing relatively small-scale component historic landscapes within Character Areas, in this case to an area making up about a third of the Humberhead Levels Countryside Character Area.

PART TWO of the study, based on the findings of the present study, will include:

(i) An analysis of forces for change in the landscape.

(ii) Identification of landscape management options.

The methodology and procedure is described in the first section of the report, with a summary in Appendix 3, and examples of the Time-depth matrices in Appendix 4. Similarly, the account and assessment of the Axholme open strip fields is included in the section on individual Historic Landscape Character Zones, under Ancient Open Strip Field (AOSF) Zone, with proposals for further action summarised in Appendices 1 and 2.

THE STUDY AREA.

Location and extent.

The area, covering approximately 520 square kilometres, is bounded by the River Trent in the east, the River Ouse in the north, the River Don in the north-west, Thorne and Hatfield Moors and their flanking lowlands in the west, and the River Idle in the south.

Although the initial focus of concern was the strip-cultivated open fields of the Isle of Axholme, they represent part of a complex landscape and it is little use studying them in isolation. Their development - and that of the Isle in general - has been intimately associated with the changing land-use of the surrounding Ouse and Trent Levels and peat moors. In recognition of the wider landscape inter-relationships, these adjacent areas are therefore included within the study area.

The size of the study area in relation to Historic Landscape Characterisation and Assessment.
The study area thus defined is large enough to cover a range of settlements and landscape types, and to be able to recognise patterns and inter-relationships between different areas and different historical periods. Put in Historic Landscape Character terms, the area is large enough to encompass a series of HLC Zones and Local Landscape Character Areas. With its wide range of land uses and complex history of land management, it also presents a range of pressing conservation management issues (see p.7). It proved to be a useful scale for Historic Landscape Characterisation, both in terms of data availability, mapping and zoning, and for identifying conservation management strategies. The present study thus makes a useful contribution to the development of Historic Landscape Characterisation methods and to the debate about the appropriate size areas for character assessment (Fairclough et al 1996, 15-16, 88, 94).

The study area in the context of other landscape designations.
The study area makes up the eastern part of the Humberhead Levels (HHL) Countryside Character Area, which corresponds to the English Nature Natural Area of the same name (CC 1996d). Within the study area are three of the four regionally significant Local Landscape Character Areas provisionally identified within the Humberhead Levels Countryside Character Area: the Isle of Axholme, and parts of The Ouse and Trent Levels, and Doncaster Heaths and Carrs LLCAs (CC/MM 1996a). The Isle of Axholme has also been previously identified as a Historic Landscape Character Area, and a Historic Landscape, for its open field systems (CC/MM 1996b). In the classification used in a recent landscape assessment for the Humberside area (Gillespies 1996, 9/1-12), the study area falls within the proposed Ouse and Trent Levels Regional Landscape Character Area, and includes four of its five Local Landscape Types. One of these, the Isle of Axholme area, corresponds with the LLCA identified in the present study (p.96), but beyond that there is little similarity in terms of landscape designations. (There are, though, similarities in observations and recommendations). The present study is much more detailed than the 1996 one. Its designations more closely reflect historic landscape character and they are also more closely integrated with the landscape designations for the region as a whole which are currently evolving through the Countryside Character programme.

ADMINISTRATIVE AREAS, BOUNDARIES AND PLACE-NAMES

County, District and Parish boundaries.

The study area lies at the meeting of three historic counties: Lincolnshire, Nottinghamshire and Yorkshire West Riding, represented today by four authorities: North Lincolnshire, Nottinghamshire, South Yorkshire and East Riding of Yorkshire. Most of the area is in North Lincolnshire and the East Riding, unitary authorities created in 1996 from the former county of Humberside.

Parishes were used as a principle unit for plotting land-use information for this study, because despite the various boundary changes mentioned below, the terminology is familiar, the areas have identifiable boundaries and a traceable historic lineage, and they are still a basis for local administration, archaeological records etc.

Present (1996-7) county and parish boundaries are used in the study, but there have been a number of recent changes. The most significant of these were alterations in the 1980s and 1995 which saw the merging of parishes in the Old River Don area, finally abandoning part of the ancient Lincs/Yorks boundary along the Old Don in favour of a new one further north. After 20 years of being part of Boothferry District in Humberside, the area has once again been divided into Yorkshire and Lincolnshire, but with the former Yorkshire parishes of Haldenby and Fockerby now in North Lincolnshire.

Historic land-use and landscape processes like open-field farming, enclosure and warping, were related to earlier boundaries and administrative areas. They thus make a useful contribution to Historic Landscape Character Type and Zone identifications. In this area boundaries are also especially notable for following relict river courses and dikes. But boundaries are not only significant historically, they also have an impact on present-day management, most noticeably in connection with planning development control and conservation.

Earlier boundaries have been noted where possible, but it has not been feasible in the time available to examine or map the many boundary changes. Given the opportunity, it would be very useful to extend mapping of earlier boundaries, along with the period maps (see p.32-4). A first priority would be preparing a definitive base-map of 19th century boundaries (as described in the Oxford study, Fairclough et al 1966, 54).

PLACE-NAMES AND TERMINOLOGY

Any regional study is likely to encounter problems with place-names whose use and definition varies both within the region and beyond. Here this problem is particularly acute, partly because of the various administrative boundaries cutting across the landscape, and partly due to differences between local and outside perceptions of the area.

Isle of Axholme

From the viewpoint of most administrations and outsiders, the term "Isle of Axholme" was formerly taken to mean the area covered by the former Isle of Axholme Rural District Council, i.e the whole of the area of Lincolnshire lying west of the Trent and extending north to the former course of the Old Don. The use still persists today among some historians (e.g. Bennett and

Bennett, 1993). However, this use does not accord with physical geography, or with local usage, and has become increasingly problematic with modern boundary changes, so it is not followed here. Instead, the present study follows the more geographically-based terminology used by local people. Thus for present purposes **The Isle of Axholme**, **Axholme** or **The Isle** is taken to mean the area centred on the higher land, extending into the flanking lowlands, comprising Crowle, Belton, Epworth, Haxey and Owston Ferry parishes. Locals sometimes insist that the northern limit of the Isle is Belton, and that Crowle occupies a separate "island". As the present study shows, there is some justification for such a distinction, both now and in the past, and **South Axholme** is a useful shorthand term for the main southern portion of the Isle, excluding Crowle. The term **isle proper** is occasionally used here as a topographical term for the central area of higher ground above the 5m. contour.
The corresponding Countryside Character designation is the **Isle of Axholme Local Landscape Character Area**, within the Humberhead Levels Countryside Character Area (See p.103).

The Lowlands.
Lowland areas, mostly below 5m. OD, extend from the isle proper in all directions. The areas stretching east to the Trent and north to the Old Don, formerly part of the Isle of Axholme Rural District, have much in common with the adjoining lowland and riverside parishes. The eastern area forms part of the *Trentside*, whilst that to the north of the Old Don, extending to the Ouse, is an area known as *The Marshland*, formerly in the West Riding, now East Yorkshire. The lowlands extending south and west from the Isle into Nottinghamshire and South Yorkshire are known as *Carrs*, usually specified by township or parish name. The term *Moors*, originally applied to the largest and least productive commons, is still used, again specified by local name. The term *Levels* is also used for the South Yorkshire areas. However, the name *Hatfield Levels* is usually taken to mean the whole southern and western part of the study area that was drained in the 17th century, and the term *Levels* or *The Levels* has also come to be used more generally for the low-lying flat areas throughout the Humberhead Levels. Also relevant here is *Hatfield Chase*, the name of the royal forest centred on Hatfield Moors: the *Chase* and its purlieus covered and virtually define the study area.

This bewildering variety of terms has been simplified for the present study. Specific names like *Misterton Carrs, Thorne Moors* etc. are used in their historic context. These low-lying areas are collectively referred to as **the lowlands** or **the Levels**, (sometimes specified, as in Ouse Levels).

Within these lowlands/Levels, two main areas have been distinguished: **The Riversides** or **Riverside Levels**, covering the floodplains of the Trent, Ouse and Old Don on the east and north sides of the study area (incorporating the Yorkshire Marshland and its Lincolnshire equivalent), and the **Heaths and Carrs** on the west of the area.
The corresponding Countryside Character designations are the **Ouse and Trent Levels** and the **Doncaster Heaths and Carrs Local Landscape Character Areas**, within the Humberhead Levels Countryside Character Area (See p.104-5).

The Study Area
For the area covered by this study, the title **The Isle of Axholme Area** is a convenient one, preferable to terms such as "the east part of the Humberhead Levels". It is referred to throughout this report as **the study area.**

INTEREST OF OTHER BODIES IN THE CONSERVATION MANAGEMENT OF THE AREA

The study area includes a range of land uses with a complex history of land management. They present a range of pressing conservation issues - environmental, archaeological, architectural, public amenity - which have attracted the attention of a number of regional and national bodies, as well the local authority (see following paragraphs). It has a strong sense of community and local identity, particularly in the Isle of Axholme where there are a number of thriving historical and amenity societies. The potential for local support is good. Also important is the interest of N Lincs Council which in 1996 inherited the area from another authority.

English Nature (EN).
EN is actively involved in conservation within the area, where there are a number of SSSIs and nature reserves, most of them on relict landscapes like riverside reedbeds, peat moors/raised mires and turbaries. Its most direct involvement is at Hatfield Moors and Thorne Moors where it owns a large area of the raised mire, an internationally important ecological site.

English Heritage.
Besides being concerned for the management and conservation of individual archaeological sites and historic buildings in the study area, English Heritage fund the work of the Humber Wetlands Project (see below). English Heritage are also involved, together with the Countryside Commission, in the developing study of Historic Landscape Characterisation.

A recent English Heritage study of rural settlement patterns singled out this area (the Lower Trent / Humber Marshes) as one which posed a number of questions which need further research (Roberts and Wrathmell 1995, 56-7).

North Lincolnshire Council
N Lincs inherited the area from Boothferry District Council and Humberside County Council. The new authority is preparing a new Unitary Plan and policies for development, village design and regeneration schemes, and for building and countryside conservation, all of which recognise the need for historic landscape character input. At the time of writing, however, the authority Environment Team is underpowered, and has no full-time officers dealing with Buildings Conservation or Tree Preservation.

Humber Wetlands Project (HWP).
The extensive research programme carried out by the HWP in the Humberhead Levels from 1995-97 forms part of the survey of the wetlands in the Humber Basin Lowlands commissioned by English Heritage in 1992. The survey objectives are to identify the archaeological and palaeo-environmental potential of the areas, and the threats to their survival, in order to provide a basis for management and preservation of the most important sites and landscapes. The HWP investigation, involving desk research, borehole analysis, fieldwalking and excavation, represents the most intensive archaeological research to have ever been undertaken in the Humberhead Levels, and is significantly extending our knowledge of early exploitation of wetland areas. The results of this work have recently been published for the western section of the Humberhead Levels (WHHL), which includes the lowlands on the western half of the area covered in this study. As well as providing valuable data on early archaeological and palaeo-environmental remains, the HWP project provides a context for further historical landscape research and a firm basis for archaeological management of wetlands.

THE METHODOLOGY OF THE HISTORIC LANDSCAPE CHARACTERISATION

Introduction

The methodology is based on the system developed in the Cornwall pilot study (CC 1994), which identifies Historic Landscape Character Types, Zones and Areas (see definitions on the following page). Various modifications have been made in the present study to adapt the method to this particular landscape, to the data sources, and to the study objectives. At the same time, it was important not to create a method so tailored to the needs of the study that it simply "gave us what we were looking for", or had no application to other landscapes beyond the immediate area.

The investigations and modifications made for this study are of more than local relevance, and could apply to any regional study. The main modifications concerned time-depth matrices, historical parameters, data sources and mapping. (See Mapping: p.11, 16-19, 32-4, and Appendix 4).

Study procedure

1. Initial consultations with experts to outline main objectives, define study area, suggest main avenues of research and methodology.

2. Initial familiarisation with area through site visit and review of maps and of literature recommended in 1. Site visit undertaken with others with an interest in the project, and with locals with detailed knowledge, to discuss different aspects and viewpoints.

3. Initial identification of land-use Types/Zones by a set of key characteristics or components. Initially undertaken for trial sections of the study area, using modern 1:25,000 OS maps, aided by local history publications. This increased familiarity with the area and provided a basis for a preliminary broad identification of HLC Zones and Types, giving a framework for further investigation and designation.

4. Identification of HLC Zones throughout the area, using key characteristics or components. These were identified, defined and mapped at 1:25,000 scale, with the aid of information from geology, archaeology and historical studies. In addition to the modern 1:25,000 base maps, earlier editions and larger-scale maps were used for selected areas to produce period and phase/process maps (pp.16-9).

5. Refining and testing the characterisation of HLC Zones through more interpretive means, and modifying where necessary.
   The main desk-based methods were: further map-based historical research using primary documentary sources, aerial photographic research, and time-depth matrix analysis. These helped to trace Zone evolution, to distinguish extant, buried and visible landscape features/components and to assess their contribution and value to the present landscape.

6. Field visits to test matrix and map analysis, testing zones and boundaries, and modifying where necessary. Essentially an assessment of present visual character as it relates to historical phases.

7. Preparation of final report and maps.

HISTORIC LANDSCAPE CHARACTERISATION: DEFINITIONS

Following the Countryside Commission (1994), it is possible to view the historic fabric of the land on three scales: Historic Landscape Character Types, Zones and Areas.

TYPES characterise the current land use within the context of its historic origin and represent the finest resolution of historic character.

ZONES represent larger units dominated by by one or a number of related historic processes, and represent generalisations of the historic landscape. They need to demonstrate individual distinctiveness and internal consistency in terms of components, historical processes etc.

AREAS represent broad (and fairly subjective) characterisations, usually embracing a set of related Zones, and have a defined historic, visual/scenic and cultural identity.

Each is related to a specific concept:

Types - **land use** in its historic context.

Zones - historic **process.**

Areas - historic **identity.**

The different scales of characterisation are appropriate for related landscape management:

Types - local land management guidance and interpretation.

Zones/sub-Zones - local and district landscape policy and strategy.

Areas - regional/national strategy and policy guidance, broad scale landscape interpretation.

Generally speaking, HLC Zones are the most useful and important of the three for assessing, understanding, presenting and managing the historic landscape.

Characterisation by Types and Zones

The characterisation of landscape into Zones requires the landscape to be viewed from the perspective of the historic processes that have operated within it over time. "Process Families" can be identified, such as enclosure, management, settlement and industrialisation, and these can be further sub-divided into specific historic landscape character Types. These landscape process/land use criteria are selected both to reflect and to generate the distinctiveness of HLC Zones, and they form the framework for landscape character assessment through **description, mapping** and **matrix analysis.** These different formats demonstrate variations in components and processes and present coherent "pictures" of the Zones. They can show, for instance, how two Zones that are visually similar have different histories and different non-visible components. (See Appendix 4 for a fuller account of historic landscape process categories and time-depth matrix analysis).

MODIFICATIONS TO THE METHODOLOGY

The modifications to the Historic Landscape Character Assessment methods developed in the course of this study can be summarised as:

1. Use of primary historical documents, particularly maps, to provide "base-line" period data, and to guide Historic Landscape Character Type and Zone designations. (See p.11, 16-19).

2. Creation of period maps and phase/process maps as a prelude to, and base-line reference for, Zone designation and mapping, and as a tool for conservation management. (See p.16-19).

3. New categories in the time-depth matrices, primarily in two areas:

   (i) on the theme / function axis, to distinguish the degree of land management on a graduation from unmanaged "natural" habitats to semi-natural and managed ones.

   (ii) on the chronological axis to give greater recognition to post-medieval phases.

   Scoring on the matrices with graded lines and key words was also found to be useful. (See Appendix 4).

4. Detailed consideration of certain basic HLC Components - settlements, buildings, hedgerows - in an area-wide context:
   (i) as a step towards identifying HLC Zones and LLCAs.
   (ii) for identifying common themes and inter-relationships.
   (iii) for developing general and local management strategies.
   (See pp. 63-6, 88-100).

5. Use of Zones or intermediate Type/Zone or sub-Zone HLC categories for small areas with high landscape significance (e.g. Design/Ornamental parklands, Turbaries, industrial developments), and for areas where historic landscape character, perhaps as a result of later modification, is a mixture, and land-use management could enhance either aspect (e.g. Moorland Allotments, Turbaries, Consolidated AOSF). This level of detail and definition reflects the scale of the study and its intended use as a tool for landscape management at all levels - local, regional and national. (See pp.9, 36, 45, 71-4).

Top-down and bottom-up analysis.

The present study could be described as a "bottom-up analysis", but this would be an over-simplification. It also involved a top-down approach, notably at the beginning when defining terms, aims and objectives, and again when making final evaluations. The experience of the study is that the task of historic landscape character assessment involves a mixture of both top-down expert overview and bottom-up data analysis. The two are aspects of one common approach: to an extent, bottom-up data evaluation and interpretation is implied in top-down analysis, and top-down is implicit in the procedures of plotting, interpreting and extrapolating historic landscape character. In practice, the task of historic landscape character assessment involves the researcher continually passing backwards and forwards in each direction.

INFORMATION SOURCES

MAPPING

Introduction

Map analysis provides the starting point and context for other avenues of research, and the framework for landscape character designations and management strategies. The contribution of the various information sources for landscape history - geology, archaeology etc, detailed below - can be usefully seen in relation to initial mapwork.

The use of maps for historic landscape analysis

The study confirmed the value of the 1:25000 OS map as a basic tool of landscape analysis, but this has to be combined with earlier sources and a reading of the landscape itself. Whilst initial map analysis helps considerably with identifying landscape research priorities, it is not viable to identify Types and Zones from modern map evidence alone.

By itself any standard map has clear limitations for historic landscape analysis. It does not for instance distinguish between different building or boundary materials such as walls, fences or hedges. Nor does it show the small variations in relief in lowlands such as those in the study area, where a metre or two difference in height can significantly effect landuse.

A more fundamental problem (and one that effects landscape assessment in general) is that landscape changes, both in the past and more recently, may have obscured earlier phases, making it hard to identify historic character. This issue is usefully described by Fairclough in terms of the "opacity" and "transparency" of the layers in the historic landscape (Fairclough 1994). For instance, much of the early, pre-medieval, archaeology of the study area relates to buried sites, rather than visible surface features that might appear on conventional maps. In other words, the present landscape is generally "opaque" to these early phases, and information on them needs to be sought in the geological and archaeological record. It was only in this way, for example, that the significance and high potential of the wetland archaeology of the area could be appreciated.

Similarly, it is impossible from contemporary map evidence alone to identify whether an area with a rectilinear "drawing-board" field pattern represented former commons enclosed in either of the two great 17th and 19th century drainage episodes, or whether it was earlier enclosed land modified in the late 20th century. More surprisingly, without knowledge of historic land-use and local topography, it is equally hard to distinguish former medieval-type open fields from recently created "arable prairie-land": both are similarly extensive and hedgeless. To provide details on aspects such as these, research was extended into published studies, earlier maps and aerial photographs.

The limits of map-based information are even more obvious when it comes to evaluating the visual impact of landscape components and aspects such as cultural association. For these, field visits are indispensable.

Further detailed comments on mapping methods appear in Section 2, p.23.

MAIN FIELDS OF RESEARCH

Information on the processes of landscape change has been sought in the main fields:

1. geology and relief
2. archaeology
3. history
4. ecology

The following sections describe the methodology and procedure for geological, archaeological and historical research, with a list of the sources used and an evaluation of their usefulness for historic landscape characterisation. This is followed by a description of the post-glacial geology, archaeology and history of the study area in chronological phases. The sources and methods used are given in detail in order to leave a clear record for external assessment and as a basis for further action.

The field of ecology and the natural environment has not been treated separately, due to shortage of time and the fact that these aspects are the subject of intensive research and management studies by English Nature, the Humber Wetlands Project and others at Hull and Sheffield Universities. Wherever possible, ecological information has been integrated with HLC Zone accounts. Ideally, ecological aspects should be evaluated alongside the historical, and in comparable detail: as the Zone accounts show, there are many points of convergence and shared management objectives. (See Appendix 1, p.120).

Recommendations for further desk- and field research in the various fields are included in the relevant sections below, and collected in Appendix 1: Recommendations, pp. 110-129.

GEOLOGY AND RELIEF

Introduction

As well as forming the basis of its relief and drainage, the geology of the area has had a profound effect on settlement and agriculture, building materials and industrial development. See sections on HLC Zones, Settlements and Buildings.

The basic patterns of solid and drift geology, and their relationship to landform and land-use, is relatively straightforward here. Less clear are the processes of alluvial deposition and raised mire development in geologically recent times corresponding to the period of human occupation (i.e. the post-glacial Holocene period from c.10,200BP.) These are at present the focus of research projects by HWP and others at Hull and Sheffield Universities.

A summary account of the geology and relief of the study area is included on p.23-4, drawn primarily from Gaunt (1994) and WHHL.

Sources for geology and geomorphology

- Geological Survey maps of 1887 and 1971 (1-inch scale), and the detailed Memoir accompanying the 1971 map (Gaunt 1994).

- HWP report "Wetland Heritage of the Humberhead Levels" (Ellis and Van de Noort 1997), referred to throughout this study as WHHL.

- For warplands: local histories (Read, Stonehouse), Gaunt 1994, WHHL; Enclosure and Drainage Award documents.

- Sources for geomorphology, relief and drainage were primarily OS maps, local histories and WHHL.

Geological evidence: evaluation

Geological information has proved essential to an understanding of the basic landform, and of patterns of settlement and land-use.

Most readily accessible and useful for this present historic landscape characterisation is the local Drift Geology map, along with summarised accounts in the accompanying Geological Memoir. Especially useful are the Memoir summaries about warping and economic geology (Gaunt 1994, 130, fig.46, 131-4), although some of details there are now being revised in the light of this present study and work currently underway by the Humber Wetlands Project (see the comments on warping in the AOSF and REL Zone texts).

ARCHAEOLOGY AND HISTORY

Sources for Archaeology

1. SMR data from Humberside Archaeology Partnership and South Yorkshire Archaeology Service

2. HWP data and publications (Van de Noort & Davies 1993; WHHL).

3. other published accounts (primarily Loughlin and Miller, 1978).

The majority of the study area lies within the areas covered by the South Yorkshire and Humberside Sites and Monuments Records (the latter covering North Lincolnshire and East Yorkshire). Additional information was provided by HWP, both directly from their data record, and from their publications (Van de Noort & Davies 1993; WHHL). Their work represents the most intensive archaeological research to have been carried out in this area, and their information is especially useful since it includes much that has not yet been fed into the county SMRs.

The SMR information was obtained in the form of computer print-outs with one-line summaries of all sites and finds for the area. These give details of the range of archaeological material and its period, and provide a reference if further details are required. However, to be useful for Historic Landscape Characterisation, this raw data requires synthesis. This is most usefully done through mapping and description. It was found that mapping SMR data by hand was very time consuming, though it does have the benefit of enabling descriptive labels or annotations to be added to the map. Digitised computer mapping is much more efficient, and the task of synthesising archaeological data has been helped considerably by the HWP who provided digitised maps showing archaeological sites and finds by period.

Archaeological distribution maps are a useful resource for a rapid survey such as this. However, because of the variation in the archaeological record, such maps require careful interpretation and need to be accompanied by descriptions. They serve, in effect, as a form of base-line period map, and their main use is to provide a reference point for time-depth analysis and Zone descriptions (see Research on Earlier Maps, pp.16-19).

Archaeological evidence: evaluation

Buried evidence.

The archaeological data shows that evidence for pre-medieval periods is almost entirely in the form of buried deposits, or of surface finds and cropmarks related to buried sites. Most significant for the present study is the evidence (much of it from recent research) showing early settlement to have been much more widespread and at lower elevations than was hitherto suspected. Some patterns of settlement, e.g. the preference for riverside levees, has continued from pre-medieval times down to the present day.

In terms of present landscape character, pre-medieval archaeological sites here, being buried, play no significant part visually in the present historic landscape of the study area. However, it is now widely accepted

that buried archaeological material is an integral part of the historic landscape, and that it needs to be regarded as part of our "cultural capital". It can thus be evaluated in terms of its actual or potential cultural association or value to landscape character. The issue is especially pertinent to wetland archaeology, whose threatened survival and high value as a historical resource have been well demonstrated by the HWP.

Medieval and later periods: sites versus landscapes.

The most significant periods for the present historic landscape character of the study area are the medieval and post-medieval. However, the archaeological record provided for these periods by the SMRs and HWP is much more variable than for earlier ones. This is due in part to the traditional focus of archaeology on earlier periods, and to the "Sites and Monuments" approach which, for later periods especially, requires selecting special "site" features from increasingly extensive survivals of historic landscapes. Thus discreet historic landscape features or components, like a priory site or an area of open-field ridge and furrow, can be recorded as a site, but the system baulks at designating the whole of the Axholme open-field system as a "site". An alternative term "historic landscape" is not generally regarded as appropriate, since all landscapes are "historical" (Fairclough 1996, 1-10, 84-5). This question of "sites versus landscapes" is one that landscape characterisation specifically seeks to resolve.

Wetland research

Similar issues arise in connection with the present programme of wetland research in the Humberhead Levels, which, with its focus on wetland sites, has tended to overlook the history of adjacent "dryland" settlement and periods later than high medieval. There remains a need for wetlands research to study the relationship of "dryland" communities to the wetlands they exploited, whether these communities were nearby or more distant, as with peat exploitation in medieval times. There is a corresponding need for research to be extended into later medieval and post-medieval times. Although wetlands exploitation was then at a low level compared with earlier periods, it still made a significant contribution to the social and economic life of the local communities, distinguishing them from their exclusively dryland neighbours. Later sources such as Parliamentary Enclosure and Drainage Awards also provide information relevant to earlier periods on "wetland" activities such as warping, draining, hemp and flax processing etc.

Archaeological evidence, conclusion

Sources of archaeological evidence for earlier periods in the study area are good, and in the case of some wetland areas, exceptionally good. For medieval and later periods the archaeological record is very variable and demonstrably incomplete, especially with regard to more extensive landscape features such as field systems, boundaries etc. This shortfall has to be redressed by additional research on later periods (discussed in the following sections on medieval and later phases, pp.16-22).

Generally speaking, to be useful for historic landscape characterisation, archaeological data requires specialist interpretation and synthesis into forms such as distribution maps, time-depth matrices, and phase/period descriptions.

RESEARCH ON EARLIER MAPS, for medieval and later phases

Introduction

The lack of consistent archaeological and historical information for the post-medieval and later periods compared with earlier phases, together with the fact that these later periods played such a significant role in the creation of the present landscape, indicate a clear priority for research in these areas.

Research into historic land use was extended back into the post-medieval and medieval periods through maps and associated documentary sources such as Enclosure Awards. The focus throughout was not on individual sites but on topography, land-use and the processes of land-use change that form the basis for the Historic Landscape Character Zones.

This stage of the work was crucial. It enabled a much more accurate identification of land-use at different periods and thus built up a fuller picture of processes through time. This then provided a firmer basis for Zone testing, matrix analysis and fieldwork. It led, for instance, to the identification of additional areas of former open-field landscape which were initially identified as Parliamentary Enclosures.

A similar " Zone testing" procedure investigated whether broad categories of settlement could be usefully subdivided. Initially, settlement was divided into three categories: towns/urban, villages/hamlets and isolated units, but it was found possible to make further useful differentiations in period and form (e.g. between dispersed, nucleated, polyfocal and linear settlements). These distinctions then helped to characterise and define the HLC Zones and Local Landscape Character Areas within the study area.

Selection of maps for this study.

Time constraints meant that it was only possible to investigate the early map evidence for a limited part of the study area.
Selection of maps was guided by four main considerations:

1. Availability and accessibility. In this case, this meant either original maps available for consultation at Lincoln Record Office (LAO), or as copies from various sources, or in published form.

2. The existence of a series of maps for an area, permitting checks on detail and comparisons over time.

3. The need to select sample areas from which findings could be extrapolated.

4. The need for detailed information on the South Axholme open fields.

The Lincolnshire section of the study area was selected as a priority for documentary research since it covers the largest area, has the most comprehensive series, and contains the material for the Isle of Axholme. The Lincoln material, together with copies of material from the PRO and published sources, also provided a good selection for sampling the lowland Carrs and Riverside Levels.

Description of the maps consulted

The data sources listed here were not all identified at the outset: the need for documentary study became increasingly apparent and led to the discovery of additional primary information, much of it previously unused by historians. Original maps, photographic copies and published versions were all used. The maps consulted are listed below, with the latest first, followed by an evaluation of their usefulness for Historic Landscape Character Assessment.

1. OS 1:25,000 and 1:10,000 maps, surveyed 1960s - 70s, and earlier editions of 1:25,000 and 1:10560 "County Series" maps surveyed in 1880s-early 1900s. **See map 3.9.**

2. smaller-scale late 18th - early 19th century maps: the OS First Edition One-inch map (1824), covering the whole area. **See map 3.8.** Bryant's map of Lincolnshire (1824) and Jeffreys' map of Yorkshire (1771) were also used. All show roads, settlements, outlying farms, place-names, some details of vegetation (e.g. moors); Bryant shows parish boundaries.

3. Tithe Award maps for Haxey and Epworth, 1840s. **See map 3.7.** Highly-detailed large-scale maps showing roads, buildings, location of individual open-field strips, enclosed fields, ponds etc.

4. Enclosure Award plans, all at a large scale, for:

   i) South Axholme: Epworth, Belton, Haxey and Owston Ferry parishes, 1803. (LAO Epworth parish 17).
   A series of 18 large-scale coloured maps accompanying the Enclosure Award. Covers parts of each parish, showing individual open-field strips, old enclosures, newly allotted enclosures, roads, paths, hedges, buildings. **See map 3.6.**

   ii) Luddington and Garthorpe, 1803. (LAO).
   Covers whole of Luddington parish, which then included Garthorpe township and the deserted village of Waterton, showing field boundaries, roads, paths, buildings.

   iii) Crowle and Eastoft, 1822 Enclosure Award plan (LAO).
   Covers Crowle and Eastoft parishes, showing buildings, roads etc., areas of old enclosures (not with fields delineated), new enclosed fields. Published by Russell (1987).

   iv) Amcotts 1779-80; Derrythorpe 1830-32, and Keadby 1858 (both now in Keadby-with-Althorpe parish). **See map 3.5.**
   Small-scale redrawn plans showing the areas before and after Enclosure, included in published summaries (Russell 1987). Original maps (in LAO) not consulted.

5) Maps of South Axholme covering the parishes of Epworth, Belton, Haxey and Owston Ferry (including West Butterwick), 1787 and 1800 (PRO MR 292, MR 1687).
   Both show pre-Enclosure land-use: roads, watercourses, settlements, commons, Participants Lands, piece-meal enclosures, main boundaries, and open strip fields (though not individual strips).

6) Josias Arlebot's 1639 map of the Level of Hatfield Chase.
Shows the new watercourses and the enclosures of former common land associated with the drainage of the Level of Hatfield Chase carried out by Vermuyden in the 1620s. Published in Stonehouse (1839), Read (1856) and, most accurately, in Dunston (1910). See **map 3.3.** Similar maps of 1633, showing the drainage, are in the PRO (MR 332 & 336).

7) 1596 map of the southern section of the Isle of Axholme (PRO MPB 16). Redrawn version in Dunston (1910). See **map 3.2.**
The map is fragmentary and only covers the area from Haxey and Owston, south to Misterton, along with sections of the lowlands to the east and west of the Isle. Shows commons, blocks of enclosures and arable field, bird's eye views of buildings.

8) Early 15th century maps of Inclesmoor (covering Thorne Moor and the Yorkshire Marshland, the northern part of the study area.) Published in Beresford (1987). Originals in PRO (MPC 56).
Two maps, one a small scale outline, the other a larger pictorial representation, showing many details of land use, with bird' eye views of settlements along the Rivers Ouse and Old Don. See **map 3.1.**

Source maps: commentary and assessment.

The earlier 1:25000 and 1:10560 OS maps (1) were especially useful for showing details of earlier field boundaries, such as the reversed S curve of former open field strips, which help to identify enclosures of ancient open strip fields (AOSF). The First Edition "County" 1:10560 maps also very usefully show mature hedgerow trees on field boundaries, enabling comparisons to be made with earlier and later evidence.

Comparison of the early and later editions of the 1:25000 and 1:10560 OS maps gives a graphic indication of the changes to the landscape during the present century. These maps are one of the main tools for the preliminary identification of Historic Landscape Character Zones, providing a working framework for further investigation.

The earlier maps were more varied in their coverage and level of detail. The small-scale maps in (2) provided a valuable general view, with Bryants and the OS maps containing the most detail. However, their scale limits their usefulness in terms of Type and Zone identification. The much larger-scale Tithe Award maps (3) and the pre- and post-Enclosure maps (4, 5) were very useful for reconstructing and mapping precise details of land-use and settlement. The Enclosure plans, in particular, represent useful base-line period maps. Since they relate to the all-important enclosure process - which here forms the basis of a number of primary Historic Landscape Character Zones - they are an invaluable aid for Zone mapping. Indeed, the large maps of South Axholme virtually delineate the historic base-line Zones for whole of the southern part of the study area. "Old Inclosures" (corresponding to the Early Enclosed Land Zone) are generally marked on Enclosure plans; if not, they can usually be identified by reference to the Enclosure Award Schedule. It is very fortunate (and unusual) to have both Parliamentary Enclosure and Tithe Award plans for South Axholme: usually it is a case of either one or the other. South Axholme has both because the open strip fields remained unenclosed and still liable for tithes after Parliamentary Enclosure in 1803.

Arlebot's map (6) represents an invaluable guide to Vermuyden's 17th century drainage works and the associated Participant's enclosures - the first large-scale planned enclosures on the Levels. Although often cited and reproduced in published accounts, the map has never been closely correlated to the present landscape. However, the present study, using the sequence of other Axholme maps described above, has been able to trace many details of the 17th century works down to the present day, and shows that this aspect would repay further study throughout the Hatfield Chase area.

The 1596 and Inclesmoor maps (7,8) provide simple detail that can be related to later maps and the present landscape. They are especially valuable for showing watercourses, land-use and settlement prior to Vermuyden's drainage.

Potential for map research

Collections of maps and associated documents relevant to the study area are held in archive offices at Lincoln, Wakefield, Doncaster, Beverley and Sheffield, with smaller amounts at Grimsby, Leeds, Northallerton, Scunthorpe.

The material consulted is only a small proportion of that available for the area, not only for Lincolnshire, but also for neighbouring Yorkshire and Nottinghamshire. The Yorkshire collections include a fine range of maps for Parliamentary Enclosures in the Ouse Level parishes, some of which are up to half a century earlier than the equivalent Trentside ones (English 1985). These maps, along with others for the Thorne and Hatfield areas, would help define areas of Old and New Enclosure and throw light on the processes of drainage, land reclamation and colonisation of the peat moors which form the basis of the HLC Zones in this part of the study area. Further work on these sources is recommended.

Use of early maps, conclusion and recommendations for further work.

Early maps have been shown to be a valuable and efficient method of identifying Historic Landscape Character Types and Zones. The potential for further map research is very good.
High priority should be given to transcribing information already obtained onto period base maps, and to extending map research into areas not yet studied.

PUBLISHED HISTORICAL ACCOUNTS

Published accounts consulted

The Isle of Axholme has attracted an unusually high number of local histories, dating from the early 19th century to the present. Time constraints meant that study of these was restricted to Read (1858), who repeats and updates much of Stonehouse's 1839 history; Cory (1985), and WHHL. These and other sources used in the study are quoted in the text and listed in the bibliography.

Published accounts: commentary and assessment

WHHL is a detailed, topographically-based study focusing on the pre-medieval period, whilst the earlier publications concentrate on medieval and later periods, but with very variable topographical detail. Specialist studies on the area have been mainly concerned with its drainage history, ecology and palaeo-ecology and early archaeology (usefully summarised in WHHL). The most relevant to landscape history, beside WHHL, are Thirsk's paper on farming before Vermuyden's drainage (1953), the Geological Memoir, with sections on drainage and warping (Gaunt 1994), and Lyons' study (1988), which contains a discussion of Axholme drainage and enclosure, and excerpts from 18th and 19th century accounts of agriculture on the Isle. WHHL contains extensive bibliographies for the area. The forthcoming volume from the HWP covers the lower Trent valley, and includes a section on the Isle of Axholme.

Published sources: conclusion

Published local histories and specialist studies make an essential contribution to Historic Landscape Character Assessment. They provide additional historical data and a context for information obtained from primary sources such as Enclosure Maps. This is especially important because historic landscape analysis is concerned with landscape processes, not just the appearance of the landscape as mapped at different times.

For the study area the earlier sources are very variable in coverage and reliability, and require careful and critical use. In the time available only a small proportion of published works could be examined, and further research on the remaining sources should be a priority.

SOURCES FOR TRACING MORE RECENT LANDSCAPE CHANGE

The main primary sources used for tracing landscape changes over the last 50 years, apart from fieldwork and the OS maps mentioned above, were the 1961-7 Second Land Utilisation Survey maps, and aerial photographs (APs).

The Second Land Utilisation Survey of Britain

The Second Land Utilisation Survey (SLUS) maps provide a detailed record of the agricultural and industrial land-use of the study area in 1961-7. Three maps were published for the study area: sheets 677 (Goole), 667 (Thorne) and 655 (Hatfield Moors), corresponding to 1:25000 sheets SE 62/72, SE 61/71 and SE60/70, covering the area extending north from Haxey to Goole, and including the majority of the Isle of Axholme and the neighbouring raised mires and Levels to the west and north. **See map 3.10.**

As a resource, the Second Land Utilisation Survey deserves to be much better known. Overseen by Alice Coleman at King's College, London, it represents the most ambitious and detailed land-use survey so far attempted in Britain. Field survey was undertaken at 1:10560 scale, employing 250 categories of land-use, and final maps were published in colour at 1:25000 scale employing 70 categories of land use. It represents a major advance

on Dudley Stamp's First Land Use Survey of the 1930s, published at a 1-inch scale and employing far fewer land-use categories, and it is significantly more detailed than more recent surveys like that in Cornwall.

The value of the SLUS maps are their ability to show subtleties of land-use unrepresented by other means, such as APs, OS maps or MAFF data. They actually show, at a glance, the material and functions of the landscape. The survey uses the earlier 20th century 1:25000 OS series as a base, and thus also provides a good indication of the extent of field amalgamation or subdivision by the 1960s. It catches the study area at a critical time when modern arable farming was making an increasing impact, but there was still a wide variety in agricultural land-use, from small-scale market gardening to mixed farms and large-scale arable cultivation. The Survey is particularly valuable for its detailed depiction of strip-cultivation in the area. Its detailed recording of land-use types means that it shows what might be termed "soft" field boundaries between crops, not just the "hard" ones like hedges and drains shown on OS maps and plans. The published SLUS sheet 655 provided the basis for the map of Axholme strip fields published in 1979 (Miller and Loughlin 1979).

Due to lack of funding, final SLUS maps were only published for a small part of the country, and it is very fortunate that they include those covering much of the study area (the western part). Although final maps for the eastern part of the study area were not published, the original 1:10,560 field survey maps for the whole area are accessible for study. These "Field Sheets" are highly detailed, specifying for instance not just categories of crop, like field vegetables (as in the published version), but the actual type of vegetable. **See map 3.11.** Industrial land-use is similarly detailed in its coverage. Only one Field Sheet has been seen for the present study: further examination would be very worthwhile.

Second Land Utilisation Survey: evaluation

The Second Land Utilisation Survey is an important resource for landscape history, and uniquely useful here for its record of strip cultivation and pasture, moorland scrub etc. The field survey maps (Field Sheets) would be especially useful for tracing land use and management of the Ancient Open Strip Fields, and further research is recommended.

Aerial Photographs (APs)

Aerial photographic coverage and availability is variable for this area. It includes a variety of oblique photos in archaeological collections (summarised in WHHL 402), and several vertical surveys which are particularly useful for HLC analysis. **See photos 7.1 - 3.**
Five sets of vertical aerial photographs were located during this study:

1947 RAF
1967 Meridian Airmaps
1971-3 Hunting Surveys/ Aerofilms
1976-8 BKS/Meridian Airmaps
1984 Cambridge University Collection

None of these sets give complete coverage of the study area. Some, like the 1967 series, give only very limited cover.

Given the time constraints of the present study, and the fact that aerial photographic coverage is partial, the photos have been employed here on a sampling basis in the same way as historical maps, whose coverage is similarly partial. As well as providing details for specific areas at specific times, APs enable comparisons to be made over a period, and help in extrapolating into other areas. Sufficient coverage is available to trace recent landscape changes, and to help define Zones and their characteristics. APs have been specifically used here to provide details on field amalgamation and hedge removal. With further study it would be possible to trace more fully the landscape processes over the last 50 years. APs also provide valuable information on earlier land-use, in the form of soil- and crop-marks of relict features such as former watercourses, field boundaries and ridge and furrow.

Also, given the large area to be covered and the limited amount of time available for fieldwork, APs are the best way of determining the current condition of Historic Landscape Components such as the open strip fields.

The most recent vertical photographic survey available for the present study were taken in 1984, and more recent coverage is needed. A set believed to have been taken within the last few years for Humberside County Council could not be located. Fuller coverage could be obtained by further searches, and by commissioning new aerial surveys for the present study.

Satellite photographs are another possibility. Preliminary examination of Landsat Thematic Mapper satellite images, obtained from MAFF for the southern part of the study area, indicates that they can provide useful information on general patterns and trends of settlement and landuse. The larger landblocks are clearly distinguished - Recently Enclosed Land, with its large fields and embanked drains etc. shows especially well. However, the image resolution (25 metres) means that smaller components, such as strip fields, are less easy to identify, and for areas of dense mixed use, such as the Isle of Axholme, the picture is less clear. Further work is needed to explore more fully the potential of satellite images and maps for tracing recent landuse changes in different Zones.

APs: evaluation

APs are a valuable resource for identifying recent changes to the landscape, and determining its present condition. Only a small proportion of the AP resource was used, and further work should have a high priority.

OTHER POTENTIAL SOURCES FOR RECENT LANDSCAPE HISTORY

Sources for recent landscape change include: information from local authorities, the Ministry of Agriculture, Drainage Boards/Environment Agency, local history collections in libraries, museums. Although in a short study there is not time to follow up such sources for a whole area, it may be possible to investigate them for target areas, as was done here for the Isle of Axholme.

One of the most important potential sources is local people. Again, in the present study there has been insufficient time to explore this, but Part 2 of the study presents an opportunity to consult and collect information from the local population on local history and land management practices.

ISLE OF AXHOLME HISTORIC LANDSCAPE CHARACTERISATION PROJECT

PART 2: HISTORIC LANDSCAPE CHARACTERISATION

The information obtained from the sources described in Part 1 has been synthesised and represented in five ways in the following sections:

PERIOD/PHASE DESCRIPTIONS

Introduction

Drawing on information gathered from the sources described above, the following section summarises phases of landscape development for the study area. Geology and Relief, included here as the first of the period/phase accounts, sets the scene. This is followed by a chronological account divided into significant phases in the evolution of the study area. Each phase description gives an account of landscape changes both natural and man-made, and lists key characteristics and Historic Landscape Components. The main processes mentioned in the period/phase summaries are described at greater length in the Zone Descriptions, where references are given. Information on vegetational changes is mostly derived from pollen analysis of peat samples from Thorne Moor, summarised in WHHL.

The period phases are also represented in the time-depth matrices (App. 4).

GEOLOGY AND RELIEF OF THE STUDY AREA

The landscape of the study area (and of the Humberhead Levels as a whole) owes many of its characteristics to two main factors: firstly, to the geological conditions resulting from the last glacial period and subsequent sea-level rises, and secondly, to extensive modification by human activity.

The Isle of Axholme is a raised outcrop of Mercia Mudstone (formerly known as Keuper Marl), forming gently undulating land rising to 41 m. OD at High Burnham, and extending in a low ridge to the Trent at Owston Ferry. Crowle stands on a separate hill rising to 20m. OD, with another much smaller and lower outcrop between the two larger ones at Hirst, 3-4m. OD.
Most of the surrounding area lies under 5m. OD and is crossed by a series of rivers, many now re-aligned and canalised. Here the bedrock is covered by glacial, lacrustine and alluvial sands, silts and gravels deposited during the last glacial and subsequent post-glacial Holocene phases.
Around c.18,000-11,000 BP, during the last glacial period, ice sheets in the Vale of York and North Sea blocked drainage and created Lake Humber, which spread across the area of the Humberhead Levels. The lake finally silted up around 11,000 BP, leaving a broad plain across much of the study area, crossed by a series of meandering rivers and interrupted by the hills of the Isle of Axholme and low "islands" of glacial sand and gravel.

A series of these morainic sand and gravel islands, marking the southern limit of the last ice sheet to penetrate the area, carry settlements at Thorne and Wroot, with smaller ones between them at Lindholme, Bradholme and Tudworth. The alluvial plain is also marked by a series of raised levees formed by the meandering rivers. In the north and east of the study area, the large levees of the Trent, Ouse and Old Don carry a string of villages, whilst relics of smaller banks and levees of the Old Torne, Don and Idle in the west and south carry series of farmsteads.

In the Late Glacial / Upper Palaeolithic period, large amounts of blown sand were redeposited throughout the area, especially on the west-facing slopes of the Isle of Axholme where the sand is often still visible; elsewhere it is often covered by alluvium and peat. A string of farmsteads at Goole Fields, and scattered isolated examples like Sand House at Eastoft, are on deposits of sand or silt and clay rising almost imperceptibly above the surrounding lowlands.

Around 4000 BP, during the Bronze Age, rising sea level and climatic deterioration impeded drainage, causing peat to form on Thorne and Hatfield Moors. Woodland occupying the area was drowned and preserved *in situ*. With widespread inundation of the lowlands, the Isle of Axholme effectively became isolated by the surrounding rivers Idle, Torne, Don, Trent and their associated wetlands. However, the area was not isolated in terms of human settlement, and there is evidence of occupation from the Late Upper Palaeolithic and Mesolithic period onwards, both on the higher ground and in the lowlands.

Artificial drainage has probably gone hand in hand with farming here since late prehistoric times. No works from pre-medieval periods have been clearly identified, although it has been suggested that the northern arm of the River Don to Turnbrigg was cut by the Romans. For the Middle Ages there is documentary evidence of navigable drains between the Ouse and Inclesmoor (the medieval name for Thorne Moor and the area to the north), and between the Old Don and Trent, made by Selby Abbey to facilitate peat shipments and commercial development at Crowle.

Over the last 350 years the landscape has been more radically altered through the processes of peat removal, draining and warping (raising the land with artificially deposited material). Two warping methods were used. The most widespread was one in which specially embanked areas were deliberately flooded from the tidal Trent and Ouse to build up the ground with deposits of river silt; up to a metre a year could be gained this way. This "floodwarp" covers several square kilometres in the north of the area, and in the south, beside the Trent and south of Haxey. The other method was "dry" or "cart" warping: excavating alluvium and dumping it on the land to be raised. The system was used on the east sides of Crowle and Hatfield Moors, where material dug from the extinct course of the Old Idle at West Carr left a depression which became Lindholme Lake. Dumping is still used to a small extent today, as observed by the writer near Kelfield Grange near Owston Ferry in winter 1996, on a previously un-warped field in an extensively floodwarped area. (See p.63 for further comments on warping.) Since last century, agriculture has been maintained over much of the area by extensive pumped drainage systems. Much of the land, especially in the Levels and Carrs, is categorised as Grade 1 and 2 in the MAFF land classification scheme, i.e. of high agricultural quality, supporting a highly productive arable farming industry.

HISTORIC PHASES

- Post-Glacial - Neolithic: c.8000 - 4000BC.
- Neolithic - Bronze Age (or Early Bronze Age): 4000BC - 1500BC.
- Later Bronze Age - Iron Age: 1500BC - c.AD70.
- Romano-British: c.AD70 - c.450.
- Early medieval: c.450-1066
- Medieval: 1066 - 1540
- Post medieval: 1540 - 1750
- 1750 - 1850
- 1850 - 1918
- 1918 - 1950
- 1950 - 1997

PHASE DESCRIPTIONS

Post-Glacial - Neolithic: c.8000 - 4000BC.

In the late glacial and early post-glacial Upper Palaeolithic - Mesolithic period the area was one of meandering rivers in fairly narrow incised channels and floodplains, bounded by areas of comparatively dry ground. Much of the area was covered in mixed forests, with pine and birch on lighter soils and oak, elm etc. on heavier clays. From the Early Mesolithic (c.8000BC) onwards, the area was used by transient or seasonal hunter-gatherers. Finds of their material are closely associated with streams and rivers, indicating that the rivers were exploited for their rich fish and fowl resources, perhaps on a seasonal basis, with dryland sites on the Isle of Axholme and elsewhere providing alternative resources.

Neolithic - Early Bronze Age: 4000BC - 1500BC.

The period which saw the introduction of agriculture here, with woodland clearance and mostly pastoral farming. The progressive infilling of the incised river channels, together with sea-level rises, spread the wetlands onto surrounding land, and mire developed, initially in the floodplains, and then in other low-lying areas. Raised mire began developing at Thorne and Hatfield Moors from c.3500 - 1100 BC, continuing into the post-medieval period. The peat drowned the earlier woodland, preserving it *in situ*. From the later prehistoric period onwards there was a dramatic increase in the quantity and diversity of wetland habitats. Finds from this period come from the raised areas of the Isle and from the lowlands, where they are concentrated on riversides. In low areas, artifacts are increasingly being brought up by ploughing which is now cutting into buried land surfaces as the soils desiccate and shrink under the impact of intensive drainage. There is some evidence for the former presence of ritual or funerary earthwork monuments on the Isle, but none have been identified for certain: generally speaking, such sites are likely to have been obscured or erased by later agriculture. Any equivalent sites in the low-lying areas are likely to be buried by later deposits.

Mid Bronze Age - Iron Age: 1500BC - c.AD70.

A period of expanding settlement and developing social organisation and metalworking technology. Widespread forest regeneration followed by woodland clearances, mainly for pastoral and mixed farming. No sites of ritual or funerary monuments have yet been identified. Evidence of Iron Age settlement from neighbouring areas shows a pattern of farmsteads with regular fields and, later, nucleated settlements. There were probably similar developments here but less extensive because of constraints of relief and drainage.

Romano-British: c.AD70 - c.450.

The period of Roman occupation here. Evidence from neighbouring areas beyond the study area shows characteristic development of military sites, towns and roads, and in rural areas, villa estates and farmsteads with regular field systems. Major Roman sites and roads lie just outside the study area, around Doncaster and Rossington to the west and along Ermine Street to the east, but their influence would have been felt here, along with that of traffic along the Ouse and Trent to the regional capitals of York and Lincoln. There is evidence from the study area for expansion of farming, and also for sizeable linear riverside settlements along the Old Don near Crowle and at Adlingfleet, probably with similar occupation on other major riverbanks. Settlement in the low lying areas would have involved drainage works, and the former northern arm of the River Don to Turnbridge may be Roman in origin.

By the end of the Roman period the primary forest on all but the most marginal land had been cleared for agriculture, creating an open landscape of mixed arable and pastoral farming, with dikes and drains. Evidence from Sandtoft indicated that:

> By the Roman period, areas of river bank must have differed little from the over-managed species-poor fringes of many fenland streams of the present day.. the evidence combines to imply a mixed-farming economy in a wholly cleared landscape, perhaps not too dissimilar from the modern one (Buckland and Sadler 1985, 246, quoted in WHHL 41).

Deforestation and agricultural intensification may have been partly responsible for flooding in the late Roman and post-Roman period, whilst on sandy areas, over-grazing could have led to wind erosion (WHHL 41).

Early medieval: c.450-1066.

The post-Roman phase of settlement by Germanic and Scandanavian immigrants from northern Europe, encompassing periods variously known as Saxon, Anglo-Danish, Anglo-Scandanavian etc. The Scandanavian influence is especially significant in these areas easily accessible by river from the North Sea, and both the Trent and Ouse were important routeways for Scandanavian armies and traders. Increased flooding from late Roman times led to a retreat of settlement from the more marginal areas, followed later by a recovery of agricultural activity corresponding to the period of Saxon settlement. Hemp and flax were introduced for textiles production. Direct

archaeological evidence for this period is lacking from the study area, but evidence from elsewhere indicates that settlement in the earlier period was characterised by individual farmsteads, and became steadily more nucleated in later centuries. Most villages in the area were in existence by the late 11th century. Along with this came the development of the manorial system of land holding and estate management. The period also saw the introduction of Christianity, (with a likely Saxon monastery known as *Donaemuthe* - "Don-mouth" - at Adlingfleet), and the development of the parish system. There was increasing maritime trade and some urban riverside development, not apparently within the study area, but upstream on the Trent at Torksey. The rivers in the area also served as major boundaries. The Trent was a boundary of the Saxon kingdom of Lindsey and, from the 10th - 11th centuries, of the shire counties of Lincolnshire and Nottinghamshire and the smaller territorial units known as Wapentakes. Axholme, originally perhaps a Saxon territory distinct from Lindsey, initially constituted a separate Wapentake which was later combined with Manlake Wapentake, east of the Trent. The Old Don marked the boundary bretween the counties and diocese of Lincoln and York. The Nottinghamshire boundary south of axholme is a later line through previously shared commonland, following medieval or earlier artificial watercourse: the now extinct Heckdike and the Bickersdike arm of the River Idle.

Medieval: 1066 - 1540.

From the Norman Conquest to the Dissolution of the monasteries under Henry VIII. This period saw the development of increasingly sophisticated and powerful military, social and religious institutions, represented here by castles at Owston Ferry and Thorne, moated sites, manor houses, parish churches, chapels, monasteries and monastic "granges" or farms. There was further development of the manorial, parish and township systems, with complex patterns of ownership and tenancy, both secular and ecclesiastical. Most known villages in the area were recorded in the 1086 Domesday Survey; others were first recorded in the 12th and 13th centuries, but were almost certainly in existence earlier, by late Saxon - early Norman times. Most villages were "townships", with their own blocks of land farmed by the inhabitants as a single agricultural unit. Each had its own communally organised farming system, with shared strip-cultivated open arable fields, meadows, and common pastures. As well as providing grazing for stock, the commons supplied peat, wood, fish and wildfowl. Some of the larger moors were shared or "intercommoned" by neighbouring townships. As well as a fuel, turf was used for field walls and for buildings, along with reeds for thatching. Sods and clay were used for manuring lighter soils. Fish and eels were obtained from the rivers, pools and dikes. Fisheries are recorded in Domesday (when Axholme had the highest concentration in Lincolnshire), and in medieval monastic grants, like those for the local priories at Hirst and Henes, near Sandtoft. Palaeobotanical evidence indicates a resurgence of woodland, together with scrub clearance and agricultural intensification, with mixed farming with an emphasis on arable, including cereals and hemp.

Grants of land, manors and churches were made to monastic houses both near and far, especially in the 12th century when new monasteries were being founded. Selby Abbey and St Mary's Abbey, York, in particular, became major landowners in the north Axholme - Marshland area. The most important monasteries situated within the area were Melwood or Axholme Priory, near

Owston Ferry, one of England's few Carthusian "Charterhouses", and two others on the northern edge of the Isle at Belton - the small Augustinian Priory at Hirst, and a Templar's Preceptory at Temple Belwood. There is evidence of town and village planning in 12th and 13th centuries, including the deliberate development of market centres by the major landowners, notably at Crowle by the Abbot of Selby and at Epworth by Lord Mowbray. Others, just outside the study area, were Gainsborough and Bawtry. Medieval population on the Isle was especially high, with 500 or more inhabitants in the three main parishes of South Axholme - Belton, Epworth and Haxey, a picture comparable to the Lincolnshire coastal marshes and fens, all with higher populations than the bulk of the adjacent "dryland" areas. But population within the area was not static: some smaller villages suffered shrinkage and desertion from the 14th century onwards. Methodical commercial exploitation of peat (again mostly by monasteries) was carried out on a large scale on Inclesmoor (the area centred on Thorne Moor). Some drainage work was undertaken, including one or two large-scale drainage/ navigation schemes by Selby Abbey linking with the Ouse and Trent to ship peat and other goods. Further south, Bickersdike was cut from the Trent to the Idle, creating a shorter route to the new market town of Bawtry.

Post-medieval: 1540-1750.

The Tudor, Stuart and Early Georgian period. The period is characterised in this area by two opposing strands - on one side the continuation of an insular and essentially medieval form of land-use and culture, and on the other, a series of major changes to the landscape and local economy instigated by outsiders. There was also an increasing impact on the landscape by individual landowners: firstly by major landowners, through their involvement with drainage schemes and enclosure and their creation of country houses and parks (some on former monastic sites), and secondly by the many freeholders in the area, carrying out piece-meal enclosures in the arable fields and pastures, a prelude to later larger-scale Parliamentary Enclosures. After the Dissolution of the monasteries, former monastic lands passed into the hands of the gentry. The sites of monasteries at Low Melwood, Hirst Priory and Temple Belwood were taken over for country houses, and monastic granges at Melwood and Thornholmes, south of Owston, for farms. Villages at Tetley and Waterton, already partly depopulated in the Middle Ages, become largely deserted apart from one or two farmsteads. A large-scale drainage scheme for Hatfield Chase was undertaken for the Crown by the Dutch engineer Cornelius Vermuyden and his fellow drainage "Participants" in the 1620s, involving the creation of artificial rivers and dikes and the stopping of the Rivers Idle, Torne and Don. The drainage, and the acquisition and enclosure of large areas of commonland by the Crown and the Participants, brought social unrest and far-reaching changes in the local economy and land ownership.

The commons continued to provide turves, wood, reeds and osiers, for fuel, building and basket-making; sand, sods and clay to manure arable lands, and fish, fowl, rabbits etc for domestic consumption and trade. Hay was cut in some areas. Most important was the use of to commons for grazing stock. By using the commons, along with grazing on the arable fields and meadows, stock could be kept all year round. Before the drainage, the inhabitants of Epworth and Westwood manors, covering much of South Axholme, shared 14,000 acres of lowland common, and were able to keep 12,000 cattle besides sheep and pigs during the winter. Crowle's extensive commons had enough

feeding capacity to enable the town to take in stock from "foreyn Townes" (Thirsk 1953). As a result of Vermuyden's drainage, the Isle commons were reduced to between a half and a third of their former size. Epworth Common's 14,000 acres became 5,900, and Crowle's 3000-4000 acres became 1,814. Moreover, familiar patterns of flooding and dry land were disrupted, drinking water for stock was no longer as freely available, and the loss of regular flooding with silt-laden riverwater reduced the fertility of the land. The loss of fishing and fowling was also a grievance. In the 1630s Axholme's inhabitants were compensated for their loss of fishing by an award to assist the poor in making sack cloth, whilst Crowle's inhabitants were eventually compensated by grants of land north of the town, still known as Fishing Grounds.

Despite the effects of the drainage, the wetlands still made a significant contribution to the social and economic life of the local communities, distinguishing them from their exclusively dryland neighbours. Fishing and fowling still figured prominently in the economies of many households. Another major occupation was domestic hemp and flax production, with communities of weavers producing a range of cloth. Along with the southern Fens, this area was one of England's main production centres. Population levels on the Isle remained high. Whilst the population of north-west Lincolnshire as a whole fell slightly during much of the 17th century, that of Axholme rose by 15%. During the 17th and 18th centuries, Haxey, Belton, Crowle and Epworth were consistently among the five largest places in North Lincolnshire, with Haxey and Belton heading the list: in 1603 they had over 200 families in each parish. There was much new building on the Isle: between about 1590 and 1640 100 additional cottages were built in Epworth manor, and Crowle gained 40 new households. Much of the increase came from areas of population stagnation or desertion beyond the area, attracted by the generous common rights. In 1675 it was claimed that the right to cut turves "drawes multitudes of the poorer sort from all the counties adjacent to come and inhabite in this Isle." (Neave 1990, 381). For others, the attraction was the hemp and flax trade. This population trend, which continued well into the 18th century, was also encouraged by the structure of society in the Axholme area, composed of many small free-holders, offering many opportunities to the newcomer of acquiring land bit by bit. During this period, brick and tile began to replace the traditional vernacular building materials of timber-framing, mud walling and thatched roofs, and new building styles spread throughout the area, starting with the houses of the wealthier inhabitants. The process was a gradual one, and only really began to have an impact on the rest of society in the Georgian and Victorian period.

1750-1850.

Late Georgian - early Victorian period was characterised by rapid developments in agriculture, transport and industry. Major changes in the landscape, local economy and society were brought about by private and Parliamentary Enclosure and by further drainage improvements and warping. Every parish in the study area was affected by Parliamentary Enclosure during this period, with private enclosures also making a significant impact in many areas. As a result, many thousands of hectares of countryside were re-designed and re-allocated amongst landowners. Unusually, the parishes in South Axholme and on the Riversides maintained strip-cultivated open-fields whilst enclosing the rest of their land. In

these areas the strip fields supported a large number of small holders, proportionately far more than was found in other places after enclosure.

The period saw major development of the market towns in and around the area. In the mid 18th century Crowle and Epworth still held weekly markets and, together with Belton and Haxey, hosted annual fairs that dealt in hemp and flax. Epworth market flourished until the depression in prices after the Napoleonic Wars, when farmers had to turn to Doncaster for buyers. The increasing role of the larger centres, at the expense of the smaller local markets, went hand in and with the development of improved transport and communications. New waterways linked with the Trent: the Chesterfield Canal to West Stockwith 1771-7, the Stainforth and Keadby Canal, 1792-1802, which joined the Don near Doncaster. Links to industrial Yorkshire were further improved by the creation of the port and town of Goole in 1826. Regular packetboat services were introduced on the main rivers, and the first rail links came to Doncaster in the 1840s. A new road bridge opened in 1790 at Gainsborough replaced Newark as the lowest bridging point on the Trent. But there were no turnpike roads within the study area, and roads here remained poor until the 1830s on the Isle, and later in the lowlands. There was considerable rebuilding in local brick and tile of existing settlements, and new building associated with industrial and agricultural development, notably the new farmsteads on the recently-enclosed land. Farming was mixed arable and stock-keeping, though by 1850 grass land amounted to only about a seventh of the lowland areas. Crops included wheat, beans, turnips, flax and increasing amounts of potatoes, which by 1850 was a major crop. There was some development of small-scale farming-related industries such as milling, malting, brewing, seed crushing and agricultural engineering, focused mainly at Crowle, Epworth and on the Trentside at Owston. More substantial was the hemp and flax industry which continued to develop in the late 18th-early 19th century, with widespread home-weaving and small factories for manufacturing sacking and sailcloth at Owston and Epworth. The trade declined in the early 19th century due to increasing imports, but in 1850, there were still many hemp and flax producers and merchants listed in trade directories for the towns and villages both on the Isle and in the Marshland.

1850-1918.

The Victorian - Edwardian period saw the consolidation and extension of processes begun in the previous phase, with widespread rebuilding, colonisation of new farmland and continued intensification of agriculture. There was increasing impact from developing rail, road and river transport, along with industrialisation of nearby areas, notably iron and steel production at Scunthorpe from the 1850s, and coal mining on the nearby South Yorkshire coalfield early this century. Brick and tile works operated in many parishes, with the largest works at Crowle. Railways expanded into the area, with links opened between Lincolnshire and Doncaster in the 1850s-60s, and the Isle of Axholme Light Railway, built 1902-9, linking the Axholme and Marshland villages with the main lines at Goole and Doncaster. In 1909 a branch was built to Hatfield Moors to transport peat. By then the rail system in the area had reached its greatest extent: every village and nearly every farm was within three miles (5km) of a railway station. In 1916 the rail-only bridge across the Trent at Keadby was superceded by a combined road and rail bridge, replacing Gainsborough as the lowest bridging-point on the Trent for road traffic,

and bringing the main Scunthorpe - Doncaster road across the area. Keadby and Ealand developed from hamlets into industrial villages served by water transport, road and rail. Improved transport brought an increasing markets for agricultural produce exported from the study area, mainly vegetables (especially potatoes), cereals and oil seed. The Agricultural Depression beginning in the 1870s had a serious impact on local communities and slowed down developments here through to the end of century, but the area (especially the Isle) suffered less than many parts of Lincolnshire and Yorkshire because of the large number of smallholders here able to grow their own food. As in the southern Fens, there were very few landed estates here - just two modest country house estates at Hirst Priory and Temple Belwood in Belton parish, and smaller ones at Ousefleet and Swinefleet. None of the parishes in the mid 19th century could be classed as "closed" ones, dominated by a single landowner. They were "open", with many landowners, mostly small freeholders and labourers, most of whom lived in the villages: there were few estate or farm cottages.

1918 - 1950.

The rural landscape felt the increasing impact of mechanisation on farming, still essentially within the landscape delineated by 18th and 19th century Enclosure, but with increasing removal of Enclosure hedgerows. Strip cultivation continued in South Axholme and some Ouse and Trentside parishes, often for field vegetables. The sinking of Thorne Mine (1925) and the building of a large coal-fired power station at Keadby (1948-52), was accompanied by new housing developments, most substantially at Thorne and Moorends. Otherwise the area had a relatively low rate of building development. Peat extraction at Thorne and Hatfield Moors was still on a relatively small-scale.

1950 - 1997.

The second half of this century has seen the further mechanisation of farming and the increasing dominance of arable relative to grassland. This has brought widespread amalgamation of fields into larger units, along with the removal of hedgerows, trees and dikeside vegetation. The amalgamation of farms has made many small village farmsteads redundant and led to the abandonment of some farmsteads outside the villages. From the 1980s, the decline of market gardening has brought the increasing amalgamation of surviving open-field strips on the Isle of Axholme and along the Trent and Ouse banks. More intensive land drainage has lowered the water table in the low lying farmland, peat moors and turbaries. Desiccation and shrinkage of drained farmland has led to plough damage of buried landsurfaces. The introduction in the 1970s of large-scale mechanised peat-cutting on the raised mires, together with increased drainage, has brought serious threats to wildlife and palaeo-environmental remains, prompting the establishment of nature reserves and the designation of SSSIs. The opening of the M18 and M180 motorways in the late 1970s - early 1980s linked the area with Yorkshire and the East Coast, and has brought dramatic changes, especially to the Isle of Axholme, in the form of increased residential and light industrial development and the growth of the commuter and retired population. There continues to be widespread new building and alteration of older properties, in towns, villages and farms throughout the area, with the greatest impact, again, being on the Isle.

MAPPING LANDSCAPE HISTORY

The landscape history information obtained from the sources described above has been mapped in four different ways:

1) **date-specific "period" maps**: according to a specific date, or dates.

2) **composite phase/process maps**: according to process, representing phases of landscape development.

3) **extrapolation**: extrapolating data from known sample areas to less known areas.

4) **present Historic Landscape Character**: collating data to show the "present historic" landscape character.

1. Date-specific Period Maps.

These are simply maps depicting an area at a particular time. Original documents, like the historic maps consulted for this survey, are the primary date-specific sources, and provide the ultimate base-line reference points. (See **maps 3.1-12.**) It is sometimes feasible to work directly from originals or copies, but in practice, in order to clarify locations and enable comparisons to be made, details from original maps often need to be replotted onto standard OS maps, or converted to standard scales. (See **map 4.1.**). Relevant details can also be collated and transcribed onto maps from other historical and archaeological sources such as SMRs or APs. Care needs to be taken not to distort the picture by "fitting" historic data onto modern maps. By depicting period data on overlays, or in colour on a monochrome modern base map, the two aspects can be made distinct.

The production of date-specific period maps will depend on the quality and availability of historic sources, which for the study area is good. Inevitably, the source maps provide partial views at irregular intervals. The 1824 OS map, for instance, catches the study area during the Enclosure process, with some areas enclosed and neighbouring areas still unenclosed. Such a map needs careful interpretation and description, providing details of context and process, if it is to serve as a basis for historic landscape characterisation. This is made easier if there are a series of maps of different dates, as there are for the study area. Generally speaking, however, the task of historic landscape characterisation is better achieved through maps which synthesise and collate data from historic "date-specific" sources, as in options 2 and 3, below.

Nevertheless, date-specific or "time-slice" period maps provide an essential base-line reference for the historic landscape, and constitute an important resource which in practice needs to be frequently referred to. Where possible, copies of original historical documents need to be obtained for reference. For the present study, copies were obtained for some maps, whilst others were consulted at archive offices. In both cases, relevant details were plotted onto the 1:25,000 or 1:10,000 base maps.

2. Composite Phase/Process Maps

These involve collating data from different dates in order to show the landscape processes which characterise HLC Zones and/or chronological phases. Processes such as enclosure, warping and arable conversion affect different places at different times. Composite phase/process maps are designed to accommodate these differences in order to represent a particular process throughout an area.

For example, maps were made for parts of the study area showing the landscape before and after Enclosure, combining evidence for different parishes enclosed at different times. In the study area the date range for Parliamentary Enclosure is over a century, with neighbouring parishes enclosed up to 70 years apart. The method can deal with even greater ranges: the distinctive process of lowland drainage and enclosure that forms the basis of the Recently Enclosed Land Zone spans over two and a half centuries, and this can be represented in composite map form. Similar methods can be used to map landscape processes such as drainage, warping, and the growth of settlement and transport networks. **(See maps 4.1, 4.2).**

3. Extrapolation

For this, information is extrapolated from places or periods for which it is most fully available to those where it is not, in order to give a more comprehensive picture of the landscape over a wider area or wider period. The success of this depends on availability of evidence, the sampling strategy, and skills in landscape interpretation. In the study area, selected parishes on each of the main rivers has been used as a basis for Zone extrapolation to riverside areas for which documentation was lacking, or where there has not been time to examine it. In further work, a priority should be the examination of more sample areas to refine and check these extrapolations.
An example of "chronological" extrapolation to an earlier period is the use of Enclosure and Tithe Award documents, OS maps and AP evidence, to reconstruct the earlier, fuller pre-enclosure system of open strip fields and commons.

In practice, options 2 (composite) and 3 (extrapolated) can be combined on one map, so that information collated and mapped from various dates and sources can be used as a basis for extrapolating to the rest of the area. This was done for pre- and post Enclosure landscapes in the study area, to identify the base-line farmland Zones of Ancient Open Strip Fields, Early Enclosed Land and Recently Enclosed Land.

4. Present Historic Landscape Character

The results of maps prepared in 2 and 3 above, when checked and brought up-to-date by field observation, recent aerial survey etc., provide the basis for representing present Historic Landscape Character in the form of Types, Zones and Components. HLC Zones can be shown by shading, colour-coding, overlays etc. Smaller HLC Components can be shown by symbols or labelling. These maps, showing the present condition of the landscape, serve as the basis for landscape conservation management work. **(See maps 5 and 6.)**

For the present study, Zone maps were drafted on 1:25000 maps reduced to 1:50000 scale, with Zones etc. distinguished by colour shading, and then further reduced and adapted for monochrome reproduction with this report.

Scale and level of detail

Primary sources, like APs, early Tithe and Enclosure maps, and field observation, often provide sufficient information to identify HLC Types at a detailed level. Time permitting, these can be mapped on a "field by field" basis at a detailed scale (1:25000, 1:10,000 or larger), as a means towards identifying Zones. However, working at this level of detail can be time-consuming and, in practice, mapping often needs to be done using larger units over wider areas. In the present study, time constraints have meant that mapping HLC Types field-by-field has only been possible for parts of Southern Axholme and the adjacent Trentside, where 1:25000 historic period and phase/process maps have been produced. The present unavailability of recent APs and lack of time for fieldwork has meant that similarly detailed coverage has not been possible for the contemporary landscape. This is scheduled for Phase 2 of the study.

In general, therefore, mapping is by Zones, which are essentially "super Types" (see the following section, Zone Descriptions).

Landscape history maps: conclusions

Four mapping techniques for synthesizing and representing historic landscape information were defined and explored in the course of this study:
1) date-specific maps
2) composite phase/process maps
3) extrapolated maps
4) present Historic Landscape Character maps

All make an important contribution to Historic Landscape Character Assessment, both by providing a historic record, and by serving as tools for analysis and definition of HLC Components and Zones.

In the time available, practical work had to be limited to sample areas - the Isle of Axholme and the Trentside parishes. The period and phase maps for these areas are only in draft form.

Priorities for further work are:

- the completion and copying of 1:25000 base-line period maps for the Isle of Axholme and Trentside. This is a prerequisite for management action in these areas, including the open strip fields.

- fieldwork and study of recent APs to determine the current condition of the landscape and amending the Zone maps as necessary.

- extension of period and Zone mapping into remaining parts of the study area, most important of which, in management terms, are the Trent and Ouse Riverside Levels and the Moorland Allotments.

ZONE TEXTS AND DESCRIPTIONS

Introduction.

The fullest consideration is given in this report to the Zones which are most significant in terms of historical importance and contribution to landscape character, and in terms of their vulnerability and need for conservation management. Since this is overwhelmingly an agricultural area, these "primary" HLC Zones relate to farmland and the countryside. They are: Ancient Open Strip Fields (AOSF), Early Enclosed Land (EEL), Recently Enclosed Land (REL), Raised Mire and Turbary (RM&T), Moorland Allotments (MA), dealt with in the first part of the following section. There has not been time to give such detailed treatment to Industry and Commerce, Transport and Communications, and Design/Ornamental. For these Zones the focus is on character description and landscape conservation management. Ideally, all Zones should have equal consideration.

The present study has followed the general guideline used in the Cornwall study, that a Zone should comprise 80% or more of one or a number of related Types (CC 1994, 10). However, as the same study points out, Zones are essentially "super Types" and the distinction between Zones and Types is not a rigid one. The scale, detail and definitions of a historic landscape characterisation reflect local conditions and the objectives and uses of the study. Here, these factors - especially the focus on landscape conservation management - have led to some landscape components being identified as Zones which in a larger-scale study might have been regarded as Types. Examples are the small areas of ornamental parkland, remnant moorland, industries and lines of communication. Similarly, some larger areas - Turbaries, Moorland Allotments, Consolidated AOSF - are identified here as sub-Zones. In each case, their significance for landscape character has been judged to be significant enough for these areas to have Zone or sub-Zone status on the maps and texts, rather than being absorbed as a subordinate component into a larger neighbouring Zone.

From the point of view of land-use management, identifying these components as Zones gives recognition to their dynamic role as landscape processes and to their potential for change. It thus takes account of situations where historic landscape character is a mixture, (perhaps as a result of later modifications, as with Moorland Allotments), where conservation management faces choices between diverging or conflicting processes.

LIST OF HLC ZONES described in the texts and represented on the Zone map

- Ancient Open Strip Fields (AOSF): 1) Isle of Axholme, 2) Riverside
- Early Enclosed Land (EEL)
- Recently Enclosed Land (REL)
- Raised Mire and Turbary (RM&T)
- Moorland Allotments (MA)
- Design/Ornamental
- Industrial/commercial
- Transport and communications: main roads, railways, waterways

The terms AOSF, EEL and REL are equivilant to those used in the Cornwall study, and although they are over-simplifications, they are useful as shorthand descriptors. Further comment on terminology, and on possible alternatives, is found in the Zone texts.

ZONE TEXT SUB-SECTIONS

The text for the main Zones is broken down into sections similar to those used in the Cornwall study, but here with some headings combined to save repetition.

- Introduction: definition, date, location, distinguishing attributes of Zone
- Historical outline / principal historical processes
- Main historical and archaeological components, their coherence, condition and survival
- Past interaction of Zone with other Zones
- Visibility / contribution to present landscape character
- Values and perceptions of the Zone
- Extent of research and documentation
- Potential for research
- Potential for amenity and education
- Rarity and importance of Zone and components in local, regional and national terms
- Existing conservation designations / vulnerability
- Forces for change within the Zone
- Recommendations for landscape management

Some Zone texts contain discussions about related subjects:

- The REL text contains sections on Warplands and Hedges which are also relevant to other Zones.
- The RM&T Zone Text contains a section on Moorland Allotments.
- The AOSF Zone text contains an extended historical account of the Axholme open strip fields, with further discussion and recommendations in Appendices 2a and 2b.
- Settlements and buildings are discussed in a separate section, after the Zone texts.

(See list of contents for page references)

There is no separate Zone for Woodlands: the woodlands in the area are treated here as part of their "parent" Zones - e.g. Ornamental Parklands, enclosed farmland (EEL/REL) or moorland (RM&T).

ANCIENT OPEN STRIP FIELDS (AOSF)

Definition, date, location, distinguishing attributes.

AOSF are areas still surviving as open arable fields with cultivation strips, even though strips may have been amalgamated. Of medieval origin, they were originally laid out in and around the main settlements, most of which are documented in the Domesday Book.

Found in two main areas: (1) in the "heartland" of South Axholme, spreading across the three parishes of Belton, Epworth and Haxey, where they cover around 13-14 square kilometres, and (2) along the riverside levees of the villages beside the Trent and Ouse, where they cover up to 5 square km alongside each river (depending on the Zoning of these fields, see p.43-5).

The open arable strip field areas are arranged into two to four large Fields for each township (eg. Epworth Church Field and Ellers Field, Belton North Field), each of which was historically farmed and pastured as a unit. Originally, each of these open Fields was "enclosed" as a whole, in the sense of being separated from other land, in order to control pasturing. Some of these "external" boundaries - dikes or hedges - survive.

These Fields were in turn arranged in parcels of strips, or furlongs, known from documentary sources and sometimes marked on the ground by a change in strip direction or strip width, or a track or mere (see below). Generally, however, the furlong boundaries are not prominent, especially in the fields where the strips run in a similar direction, as in the riverside fields at West Butterwick, and some sections of the Epworth and Haxey fields.

The strips, known here as 'lands', vary widely in size. They are usually arranged so that the strips follow the groundslope. The mid 19th century Tithe Maps delineate each strip carefully and are still used today as a basis for strip identification in land sales. The average strip size appears to be around an acre (0.4ha), but many are less than half an acre (0.2ha). The amalgamated strips are correspondingly larger. Their component 'lands' can be identified from the earlier maps. On the ground, the strips are delineated only by 'soft' boundaries formed by distinctive changes in crop or cultivation. There are no significant 'hard' physical boundary features between the strips, unlike the situation in the few other surviving examples of open strip fields in England and Wales, where there are baulks or lynchets (as at Forrabury, Braunton and Portland), marker stones or stakes (as at Braunton and Laxton), (see Appendix 2). Formerly the Axholme strips were defined by the furrows in the ridge and furrow; originally they may have been marked by stakes, as at Laxton. Modern ploughing has removed surface signs of the ridge and furrow in the cultivated areas, as in has in country's other surviving open strip fields. However, aerial photos show the ridge and furrow pattern underlying parts of the cultivated strip fields and adjoining closes of Early Enclosed Land, where some still also survives as earthworks in pasture (see EEL).

The original narrow strips may have been amalgamated into larger blocks but the key characteristics of the fields remain: long, often curving, cultivation strips with "soft" boundaries and an open unenclosed appearance.

Settlements cover a broad range. Being the main agricultural heartland, this Zone, together with EEL, contains the main area of ancient settlement.

TERMINOLOGY

Alternative terms for the areas of open-field strip cultivation on the Isle of Axholme and Trent and Ouse banks are: open fields, common fields and strip fields. **Open fields** is probably the most academically correct, but outside specialist circles the term runs a strong risk of being misundertood as fields that are simply "open" or spacious - as in "open countryside". **Common fields**, properly speaking, implies a common or collective farming practice (which apparently has not been the case here in Axholme for over a century, apart perhaps from supervision of the meres, tracks etc.). It might also be mistaken for "commons", but it does have a positive echo of "common heritage". To most people, neither of the terms **open** or **common fields** would present a distinctive image of the landscape in question, nor do they clearly differentiate it from the surrounding farmland, which although enclosed is often spaciously "open". **Strip fields** is the most graphic and least ambiguous term of the three, and presents an image that would be immediately understandable to most people. The term has been used for this type of landscape by the Royal Commission on Historic Monuments (e.g. on the Isle of Portland), although some writers use the term specifically for enclosed fields made from former open-field strips. This potential confusion with enclosed strip fields could be avoided by using the term **open strip fields.**

· It is suggested that for general use (and specifically for public use and for conservation management purposes) the terms **open strip fields, open-field strip farming / strip cultivation** be adopted for these historic landscape features.

· For the time being, the terms **open fields, open-field farming** and **open-field strip cultivation** may continue to be the best for academic or general historic discussions.

There is also the question of the use of the term **"Ancient"**. Open strip cultivation and the associated field pattern here have been continuously changing for many centuries. Indeed, as the Historical Outline shows, the open strip fields, by their very nature, have been more flexible and changeable in their ownership and landuse than any other type of farmland in the area. (In the past this flexibility was a major factor in their survival. Now, ironically, it means the strips can be easily amalgamated for larger scale intensive cultivation.) However, whilst the "content" of the fields has changed over the centuries, their basic form and pattern still survive in many places. They still retain the medieval field layout, much of which was probably established by the 11th - 12th century. The piecemeal ownership and cultivation here, and the customary administration of the meres and paths etc., also continues traditions stretching back to the early post-medieval and medieval periods. In these respects, the open strip fields are clearly "ancient" relative to other farmlands here. Whilst parts of the Early Enclosed Land may also be medieval in origin, and the Raised Mire and Turbary areas too may retain features of the medieval commons, <u>in terms of Zones as a whole</u> the open strip fields are the most consistently ancient of the farmlands.

The term **ancient** has therefore been adopted as the simplest way of, firstly, <u>distinguishing the Zone in terms of its historic character</u>, and secondly, of <u>highlighting its historic importance</u>.

The Isle AOSF: distinguishing attributes

The two areas of surviving AOSF - South Axholme and the Riverside - share much of their history and key landscape characteristics, but have important differences. For clarity, the two areas are dealt with individually, starting with the Isle. Much of the Historical Outline, derived primarily from accounts of the Isle, is relevant to the Riversides as well.

The Isle fields are spread across the undulating slopes and onto the flanking lowland, with groups of strips that vary widely in size and direction and have dense networks of roads, lanes and paths. See photos 7.1-2. Some tracks have wide verges ("meres") traditionally let for hay, though some meres are now incorporated into the adjacent arable fields. The dense track networks are typical of an open-field landscape: unlike other places, they have not been simplified and rationalised by enclosure.

In South Axholme, settlements range from the small town of Epworth and large, polyfocal villages of Belton and Haxey, to dispersed hamlets. Beyond these, and within the fields themselves, settlement is limited to occasional isolated 19th century windmill towers and enclosure farmsteads, along with occasional late 20th century houses.

In South Axholme there is busy activity focused on the main settlements and roads; the fields beyond are much quieter.

These AOSF areas are a major component of the Isle of Axholme LLCA (p.103). For Riverside areas, see pp. 43-5.

Historical outline

The open strip fields here were originally laid out in the Middle Ages in and around the main settlements, most of which are documented in the Domesday Survey; others were smaller townships first recorded in the early 1300s, but probably in existence much earlier. The basic field layout is the "long strip" system, found elswhere in the region (English and Miller 1991), and represents an impressive feat of medieval landscape planning. Each township seems to have had its own two- three- or four-field system, even very small hamlets like Belton Woodhouse and Derrythorpe on the Trent. In Haxey parish the situation was extreme: beside Haxey itself, Low Burnham, Westwoodside, Craiselound and East Lound each had open strip fields lying adjacent to each other, forming a large continuous block.

The origins of open-field farming lay in a communal society with a strong sense of community co-operation that contrasts with the later, more individualistic society of self-contained farming families with an independent attitude towards property and livelihood. The open strip fields in the Axholme area represent a stage in the process of change from collective to independent farming, and have characteristics of both.

A key characteristic of open-field farming is that although the strips were individually owned or tenanted, the fields were used by each township for shared (i.e. common) pasturing of stock after harvest and on fallow land. This arrangement governed much of the collective regulation of the open-field agricultural system, stipulating times for ploughing and harvesting, when stock should have access, and when fields should lie fallow. Here, though, the fields were subsequently adapted for independent cultivation by farmers, and they could thus adopt different cropping regimes on their

strips, unrestricted by common grazing requirements. The rich arable lands yielded well, with neither regular fallowing nor common grazing by sheep and cattle found necessary to maintain fertility. The loss of this arable pasture apparently presented no problem here, since there was plentiful rich meadow and common pasture on the nearby lowlands - indeed, the existence of extensive commons here may have encouraged the move away from common grazing of arable (as it did in the south Lincolnshire fens). The arrangement for independant farming enabled more intensive use of the open arable fields, including continuous cropping. This produced a distinctive land use, with a patchwork of strips carrying a variety of crops.

The date and process of the transition from communal to "individual" farming is not yet known. It may have started in the medieval or early post-medieval period, as in some other parts of Lincolnshire, where communities undertook a range of modifications, from piecemeal cultivation and pasturing of sections of open strip fields to enclosure of small plots (Platts 1985, 91-6). Similar modifications may have been made here, especially adjacent to settlements and on the borderland between arable fields and pastures (see Early Enclosed Land, below). Some fenland communities with extensive commons, like those around the Wash, abandoned common pasturing of arable fields in favour of individual cultivation. Some accounts suggest that common pasturing on the arable was not undertaken here in later centuries (Baker and Butlin 1973, 62; Lyons 1988, 31: Lindley 1982, 17-18), but arrangements must have varied at different times and places. The continued and extensive survival here of the early strip pattern and the meres suggests that the main arable open strip fields continued to be collectively organised well into the post-medieval period. Arthur Young clearly mentions rights of common (i.e. pasturing) in the open fields in the 1790s (Young 1813, 101). Later still, it was reported that at Epworth, common rights of pasture were exercised on one of the four open strip fields, that used for wheat, for a month after harvest, until the 1850s (Slater 1907, 56). Whether this was the last area on the Isle to be used in this way is not yet known, but the account does suggest that the movement away from common pasturing had been a gradual one, adopted in individual fields until it had spread across the whole area. There is clearly much scope for further research here.

The 1840s Tithe Award maps (**map 3.7**) carefully delineate and number each of the strips. The earlier Enclosure Award plans for South Axholme (**map 3.6**) show that some strip amalgamation had occurred by 1803, more in some fields than others. But the general picture is of extensive narrow-strip cultivation over a wide area in the three adjacent parishes of Belton, Epworth and Haxey. Even where amalgamation was well advanced by 1803, in parts of Belton's fields, the area still remains open and unenclosed down to the present day. Owston Ferry parish was also included in the 1795 South Axholme Enclosure Act, but there had already been large areas of piece-meal enclosure (probably associated with Melwood Priory and High Melwood Park). Large areas of Owston's open strip field were apparently enclosed privately shortly before the 1803 South Axholme Enclosure Award, and the village then had only small areas of true open strip fields surviving on the riverside, together with more extensive areas at Gunness and West Butterwick, also in Owston parish. The remaining open fields at Owston and West Butterwick were apparently privately enclosed about 1810. However, some of these "enclosed" riverside fields, even those classed as "Old Inclosures" in 1803, in practice remained still open and unenclosed, and are still so today, (see section on Riverside, below).

Arthur Young, inspecting the Axholme area for the Board of Agriculture and Internal Improvement in the 1790s, wrote:

> As to property, I know of nothing more singular respecting it, than its great division in the Isle of Axholme. In most towns there, for it is not quite general, there is much resemblance of some rich parts of France and Flanders. The inhabitants are collected in villages and hamlets; and almost every house you see, except very poor cottages on the borders of commons, is inhabited by a farmer, the proprietor of his farm, from four or five, and even fewer, to twenty, forty and more acres, scattered about the open fields, and cultivated with all that minutiae of care and anxiety, by the hands of the family, which are found abroad, in the countries mentioned. They are very poor, respecting money, but very happy respecting their mode of existence. Contrivance, mutual assistance, by barter and hire, enable them to manage these little farms, though they break all the rules of rural proportion. A man will keep a pair of horses that has but three or four acres, by means of vast commons, and working for hire... They do nearly all the work themselves; and are passionately fond of buying a bit of land. Though I have said they are happy, yet I should note that it was remarked to me that the *little* proprietors work like negroes, and do not live so well as the inhabitants of the poorhouse; but all is made amends for by *possessing* land. (Young 1813, 19-20)

Young praised the enclosure of the Axholme commons in 1803 (see p.60). He regarded the resistance to enclosing the open fields here as a "barbarous omission", and goes on to explain that there was a "singular" customary right here which enabled locals to enclose parcels of open-field land, "notwithstanding the rights of common upon it, while open, and accordingly many do it, when, by purchase, they get five or six acres together, of which I saw many instances; and could not but admire their beautiful quick hedges, which are very fine, and must have been well preserved (i.e. protected) while young" (Young 1813, 101). The closes he saw were probably those on the margins of the open strip fields, or in the blocks of enclosed land described in the section on EEL, below.

About a century later, Royal Commission inspectors, enquiring into the condition of farming on the Isle during the Agricultural Depression, recorded more details of the open-field system (Royal Comm. 1881, 384-91; Royal Comm. 1895, 1-28). The general picture they painted was similar to that recorded by Young. The strips were owned and leased by large farmers and small freeholders alike, and many were owned by shopkeepers and other business people who farmed or let their land. Crops were varied, with root vegetables, especially potatoes, grown for fodder and export. Strips changed hands frequently (especially during the Depression years), and amalgamated holdings were often subdivided again for sale. The ready availability of these small plots meant that even relatively poor people could own farmland, and the system provided a first step for fledgeling farmers. Despite the relatively low production of scattered strip-farming compared with conventional enclosed farms, the locals seemed content with the system, and it was recognised that any attempt to enclose would be so fraught with difficulties as to be virtually impossible.

Outside opinion on the system varied. Young's criticism of the islanders' reluctance to enclose their open fields was echoed by the local historians Stonehouse (1839) and Read (1858), who championed land improvement and condemned the smallholder's poverty and conservatism. Yet, like Young, quoted above, they admired the locals' husbandry and had to concede that the system worked well for them. The Royal Commission also criticised the small farms as uneconomic, producing a poverty-stricken class of small proprietors, and they too noted with some bemusement that such an anachronistic system could survive, and that, despite its apparent inefficiencies, it could command such widespread local support. Clarke's mid 19th century survey of Lincolnshire agriculture reported more favourably, "It is true that in some respects the open field lands are not so well cultivated as the larger farms; underdraining cannot be well done where nearly every land (5, 10 or 20 yards in width) belongs to separate men, and neither can the grazing of sheep be practised; but in the tillage and pulverisation of every inch of the soil, and the constant and complete cleaning of the land and the crops, the small farmers have a good substitute for many agricultural improvements...They are very industrious, and...usually meet with success in their cropping" (Clarke 1851, quoted in Lyons 1988, 115-6). Some later commentators, writing at a time of renewed interest in smallholdings and "land for labourers", praised Axholme as an example of a smallholding system that encouraged good husbandry, allowed room for the small cottager and aspiring farmer, and which had beneficial social effects, fostering independence and self-reliance. Changes in farming and society since then have made these Edwardian writers' views seem rather sentimental, yet they often showed a clearer understanding of Isle smallholder society than the specialist agricultural commentators. (Slater 1907, 52-60; Rider Haggard 1906, 189-91; Jebb 1907, 18-27).

A broadly similar picture of land-use to that recorded last century was still in evidence at the time of the Second Land Utilisation Survey in the early 1960s **(see maps 3.10-11)**. A wide variety of field vegetables was being grown, along with cereals and smaller amounts of brassicas. The continued use of the area for market gardening until the 1970s-80s meant that the strips were still viable for cultivation, especially by smallholders. Since then, the retirement of the older smallholders, together with changes in land prices and farming policies, have brought about the almost complete loss of market gardening here and the increasing consolidation of strips by larger farmers. In recent years, some farmers have deliberately set out to purchase and consolidate strip holdings.

Open-field customs

Although their land is no longer cultivated or grazed in common, the Isle villages still retain elements of a collective agricultural system. They include the letting of the meres and the maintenance of certain tracks and paths. Until the advent of Internal Drainage Boards, they also included maintenance of drains. These functions, survivals of the earlier, more comprehensive manorial "customs", are overseen by groups for each township. At Haxey and Burnham this is done by the "townsmen", a group quite distinct from the parish council. At Epworth and Belton the responsibility is carried by sub-committees of the parish councils; the one at Belton (the Private Roads Committee) also oversees the Turbary, (see p.74).

At Haxey, these customary survivals tie in with other folk traditions: the meres are let at an Easter "Candle" or "Pin" auction, whilst in the

remarkable New Year's "Haxey Hood" contest, held on an open strip field, the number 13 that features so prominently in the ritual is said to relate to 13 strips of land given by Lady Mowbray in the Middle Ages. The survival of these "customary" administrations and folk rituals, like that of the strip fields, reflects the former isolation of the area and the strength of local tradition. And, like the field system, their survival is a rarity.

RIVERSIDE ANCIENT OPEN STRIP FIELD: a possible SUB-ZONE

Definition, location, distinguishing attributes

Open strip fields modified by piecemeal enclosure with cultivation in amalgamated strips and blocks. Boundaries are mostly "soft" - visible only as changes in agricultural land-use, with occasional hard lines in the form of tracks or dikes.

The main areas of survival are on the Trentside between Owston and Althorpe, and along the Ouse in the Swinefleet - Reedness area, with more sporadic survivals elsewhere along the riversides.

The overall character is similar to the fields on the Isle proper, though here they form a distinctive linear band occupying, and virtually defining, the slightly higher ground of the riverside levees. **See photo 7.3.**

Field layout and track networks are very simple compared with the Isle fields. The fields lie between the riverbank and a back lane or dyke on the landward side, beyond which are the enclosed fields of the former meadows or commons. Access is from the riverbank road, back lane or occasional cross tracks linking the two. The strips run from the riverbank down to the lower ground. Early maps **(e.g. map 3.4)** show them extending onto the riverside; some strips at Swinefleet and Owston still extend each side of the riverside road, with small sections running right up to the river-bank (see Historical Outline, below). As on the Isle, no ridge and furrow survives in the arable areas, though some traces can be seen as soilmarks on aerial photographs. Furlong divisions may still exist but are not readily apparent. In general, AOSF here is more modified by post-medieval and modern enclosure than AOSF on the Isle, and the fields have large blocks of cultivation, the result of greater strip amalgamation.

Settlement is largely confined to the riverbank, and consists of villages and hamlets with a distinctive linear layout along the bankside. These often have a fringe of gardens and EEL. Outside the village centres the open strip fields are generally free of buildings, apart from occasional isolated 19th century farmsteads, windmill towers, small pumping stations and 20th century houses, some of which are particularly intrusive (e.g. Althorpe, Butterwick).

Riverside areas tend to be situated away from main roads, and are generally quiet, apart from occasional cars on the riverbank road, the drone of tractors in the fields, and the occasional passing boat on the river.

These areas of AOSF form a major component of the Trent and Ouse Levels Local Landscape Character Area (see p.104).

Historical outline: Riverside AOSF

The general origins, history and land-use is similar to that described above. In the 1870s the Trentside fields in the Owston - Butterwick area were described:

> The fields in those days [i.e. 18th century, pre-Enclosure] were all open, many of them are still so, and the numerous freeholders, among whom the arable land was divided, held it in long, narrow slips (*sic*), called *lands*. Each of these lands was raised by continual ploughing one way into a high ridge for the purpose of drainage, and the furrow between them was a sufficient boundary. The highway cut across these strips, leaving a small bit of land belonging to each allotment between the river and the road. These were, and are still, usually called land ends, and from their nearness to the river, and the extreme richness of their soil, were very valuable. Their size fitted them exactly for spade labour" (Peacock 1870, 279).

The Trentside open strip fields at Gunness, Owston, Kelfield and Butterwick are represented on the 1803 Enclosure maps as either operative open fields (most extensively at West Butterwick) or as Old Inclosures. As on the Isle proper, the open strip fields here were unaffected by the South Axholme Parliamentary Enclosure of 1795-1803. However, the areas were instead privately enclosed both before and after 1803, and as a result, strip amalgamation has generally proceeded further here than on the Isle. These private "inclosures" were the result of piecemeal enclosure where owners reached mutual agreement on consolidation of holdings by exchange and purchase, and also on the cessation of common grazing on these arable fields after harvest. As with the Isle, this loss of arable pasturing would have been amply compensated by the ample lowland commons. The change from collective to individual farming on these lands may relate to a time when arable farming was particularly profitable, as in the early 19th century. However, the dates of these changes could range from the late medieval period to the later 19th century: the subject of open-field farming organisation here has never been investigated, and requires more research. Nor did this method of enclosure necessarily mean that strip cultivation ceased. In many areas of Old Inclosure, like the stretches north of Owston and at West Butterwick, strip cultivation continued as the most convenient method.

Gaunt's map of warped land, showing the whole of the Trentside strip (including the AOSF) as an area of floodwarp, implies that this is all a relatively new land surface, and thus Recently Enclosed Land (Gaunt 1994, 130-4, fig.46). However this is incorrect. The error stems from the difficulty of distinguishing between natural alluvial and artificial floodwarp. Examination of early maps and Enclosure Awards for the present study has clearly shown that "enclosure" warping was confined to the lowest meadowland and commons behind the slightly raised area of the riverbank / levee. The open arable fields on the levee itself have not been warped in this way. Recent soil research by HWP supports this observation.

Ease of access to these fields, and their simple layout, no doubt contributed to the survival here of strip cultivation into the post-war period. On the Ouse, the 1960s Second Land Utilisation Survey map shows series of strips, some very long and narrow, at Swinefleet and Goole

Fields. Some still survive at Swinefleet, extending both sides of the riverside road. (However, some of the wider strips shown on the map further south may represent Moorland Allotments rather than open-field strips, see RM&T text). On the Trentside, the best surviving areas of AOSF are between Butterwick and Owston. North of Owston are some riverbank "land-ends" cultivated by hand, just as described by Peacock, above.

Limited map- and fieldwork on the Trent and Ouse-side indicates a pattern of modified or consolidated AOSF extending along the riversides, interrupted with areas of EEL and REL. Even where the former strip fields have been consolidated into larger fields, they are rarely enclosed in the sense of having a physical boundary like a hedge or ditch. Like the strips, their boundary is often simply marked by a change in crop, and often follows the reversed "S" shape of the former strips.

This pattern can be tentatively extrapolated to the remaining riverside areas. However, as explained below, these areas of AOSF are not easy to define without further research. Examination of Enclosure maps and other, unpublished, SLUS survey maps, would more clearly define their history and extent, and more detailed field observation and study of APs would help define their present condition.

There are also places where former open strip fields can be recognised alongside the meandering course of the Old Don. These areas have been extensively enclosed, and for present purposes they are designated EEL or REL rather than AOSF, although further research may change this. Again, some parts of the former open strip fields appear to have never been enclosed in the traditional sense, and they may qualify as Modified/ Consolidated AOSF. This is of more than academic interest, since their Historic Landscape Character status has a direct bearing on any conservation schemes for boundary work. Further research, using Enclosure maps, APs and fieldwork, will help clarify the situation.

Notes on the consolidation and enclosure of open strip fields, and the question of sub-Zones.

The terminology of enclosure presents problems when applied to open strip fields. At the time of Parliamentary Enclosure, large parts of the riverside open fields were technically "Old Inclosures". However, apart from small areas around settlements, the open strip fields were not really enclosed in the accepted sense, i.e. separated by being hedged, fenced, walled or ditched. **Consolidated** or **amalgamated** (i.e. with consolidated or amalgamated strips) would be a more accurate term than "enclosed".

In some Riverside areas consolidation has removed all traces of strip cultivation except their reversed S shape perpetuated by tracks or ditches. In places this process has been taken a stage further this century, with the fields remodelled with straight boundaries. These could be considered as REL. On the other hand, the land here, despite the absence of strips, still retains the open, unhedged appearance it has had for centuries, which might be regarded as a more significant characteristic, justifying its designation as AOSF, but perhaps specified as being **AOSF Consolidated (or Modified) in the 20th century.** The basis of such a designation requires further research, particular into present condition. Since there are no hard boundaries between strips, it is not always easy to identify different

strips, crop units of ownerships. Indeed, multiple ownership of strips may be obscured if a tenant has amalgamated adjoining strips rented from different owners (as was reported at Belton Town Field in 1986). Alternatively, a consolidated area may be divided by a farmer into strips for cultivating different crops, particularly field vegetables.

Thus the real extent of strip cultivation, and more particularly, the potential for strip cultivation, can only be determined through specific research into ownership, tenancy and farming practice. Until this work is done, it would be unwise to distinguish these modified/consolidated areas as a fully separate Zone category: they are still essentially open strip fields in appearance, if not farming practice, and are thus categorised as AOSF. For present purposes, the Riverside AOSF is differentiated from the Isle AOSF on the Zone maps, in recognition of the differences in landscape character and management concerns.

AOSF: Main components and their coherence, condition and survival.

The distinguishing characteristic of the AOSF Zone is the archaic farming landscape of hedgeless open fields lying close to the main settlements, with separate cultivation strips mostly defined simply by changes in cultivation, and sometimes by dikes and tracks.

On the Isle: undulating open fields spreading out from the settlements onto the hillsides and down to the lowlands; a variety of strip sizes and alignments in separate furlongs, with a range of different crops. Intricate networks of roads, tracks, paths and meres. Archaeological finds from pre-medieval periods in the ploughsoil.

On the Riversides low-lying open fields spreading from settlements along the band of gently-sloping land beside the river, bounded by tracks and drains. Long strips and blocks of cultivation, occasionally with dikes and tracks between them.

Coherence

Despite losses through enclosure and strip consolidation, this Zone retains its coherence in most areas. The relationship between the fields and the lanes, paths, and settlements is still clear. This is often true even where much strip amalgamation has taken place, as on the Riversides. Whilst consolidated open strip fields might superficially resemble REL, the AOSF and REL Zones have quite different histories, as well as differences of landscape detail. Moreover, it is only the loss of hedges in REL thart has makes it resemble AOSF: previously, the open strip fields would have been distinguished by their lack of hedges, compared to the regularly-hedged enclosure landscape.

Condition and survival

Some areas survive comparatively well, but there has been considerable loss and damage to the open strip field pattern in recent years through amalgamation of strips. At the same time, the reduction in the range of crops, notably field vegetables, in favour of large areas of cereals, beet etc., has greatly reduced the varied texture that was previously such a distinctive feature of the open strip field landscape.

The meres have also been reduced through arable conversion. In one recent case in Haxey this involved destruction of mature mere-side hedges.

The introduction of inappropriate development or land-use has also had a damaging effect. The most prominent examples are: an intrusive modern grassed enclosure hedged in leylandii north-west of Epworth; plots colonised by houses and paddocks south of Epworth; areas fenced for paddocks in Belton Fields; a strip planted with conifers at East Lound.

Past interaction with other Zones
The open arable strip fields formed the heartland of the former common agricultural system, with the meadows and commons beyond them providing hay and grazing land. The AOSF Zone was, and to a large extent still is, the hub of relations between the various parts of the countryside. The changes wrought by enclosure and later farming developments on the surrounding areas have not obscured the historic relationship of the AOSF to neighbouring Zones. Thus Early Enclosed Land and Raised Mires/Turbaries can still be recognised, and the former commons are distinguishable by the characteristic field patterns of Recently Enclosed Land.

Evidence for time-depth
The relative antiquity of the AOSF landscape is most clear where the strip and track networks are most visible, and where the landscape forms a clear contrast to other Zones, particularly to the regularity of the REL.

The Isle: The maturity of the AOSF on the isle is readily apparent. With its varied and distant views from undulating fields, the Zone has many lines of intersection with other periods, represented for instance by villages, churches, farmsteads, modern development and lines of communication etc., and by the contrasting textures of EEL, REL and RM&T.

Riversides: Whilst the open strip fields along the riversides are clearly visible from the adjacent riverbank roads, the AOSF here as a whole forms less of a contrast with other Zones (partly because of the flatness of the land and the general lack of visible boundary features in the area), and time-depth is generally less obvious than on the Isle. Heightened differentiation between the Zones (through an increase in strip cultivation, and hedge restoration on EEL and REL) would significantly increase visible time-depth.

The Zone has no visible evidence of pre-medieval settlement, apart from surface archaeological finds.

Visibility / contribution to present landscape character
Considerable. AOSF is very visible, and its contribution (both on the Isle and the Riversides) is strong. Along with the local topography, AOSF is one of the most distinctive characteristics of the Axholme area.

Values and perceptions of the Zone.
The Axholme fields are little-known, even within the region. The Riverside open strip fields are even less known; indeed, the present study is probably the first occasion outside the locality that they have been recognised as a historic landscape feature.
Locally, the Axholme open strip fields seem to be largely taken for granted. Many people, especially newcomers to the area, may be quite unaware of it as a historic landscape feature. Certainly, very few people

indeed realise its regional and national rarity or importance. It has featured occasionally in local publications and possibly in newspaper articles, but generally as a curiosity, not as something of major significance. Nor has the problem of its loss been aired in public.

Extent of research and documentation
Very little published research. Apart from the brief published accounts mentioned in the historical outline, the Axholme fields appear to have only received passing mention in agriculture history studies, and these refer to the Royal Commissions and Thirsk's studies, not to original research. The open strip fields were first mapped and flagged up as a historic landscape conservation issue in 1978 (Loughlin & Miller 1978, 148-9). This study represents the first significant attempt to research the subject. Further research is needed on historical and contemporary processes, including important questions concerning past and present ownership, social organisation and land-use. The recording and mapping of the strip fields is a priority.

Potential for research
Considerable. Good documentation remains to be exploited, especially from the late 18th century onwards. Much potential for field survey and aerial photographic research, and for oral and documentary research into past and present farming practice and customs.

Potential for amenity and education

Amenity. The areas are working farmland. On the Isle, the rolling topography and the many paths and roads provide easy visibility and access to many areas of AOSF. Footpaths require maintenance and the cooperation of farmers. There are sometimes problems with the status and management of some of the meres and open-field paths in the Axholme open strip fields, notably in Belton and Haxey where public footpaths cut across the strips. Recently these have occasionally led to antagonism between the farmers, parish councils and the general public, and sometimes even to costly legal action. Both the strips and meres and the networks of tracks and paths are integral parts of the same ancient landscape. The paths have developed over many centuries within and across the fields, some clearly being overlain on the early medieval strip pattern, and dense networks such as these inevitably bring problems of access and duplication etc. There may be occasions when the needs of the paths and strips and meres are in conflict, or, conversely, where path management provides opportunities to improve the conservation management of the strip fields (for instance, by enhancing the survival of strips through better working access or by running paths between the strips, or by improving public access). It is therefore important that the future management of paths takes account of the need to conserve open-field strips, and that both aspects are integrated.

Education. Increasing public awareness of the AOSF will form an important part of any conservation management schemes. The potential for education is very good, both for schools (at primary and secondary level) and the public at large. The historic farming and social system that AOSF represents could be explained to the public through publications, information boards, guided walks etc. At present, public presentation of the open strip fields is limited to short accounts in two recent local history booklets, and mention in a sound/slide presentation created in the late 1980s for visitors to the Wesley Rectory at Epworth.

Rarity and importance of zone and components
The Ancient Open Strip Fields on the Isle of Axholme and on the Ouse and Trent Riversides represent substantial blocks of a very rare type of farming landscape, by far the largest single area surviving in the country. Like the few other examples in England and Wales, the Axholme and Riverside areas are of national importance (see Appendix 2b). The South Axholme fields in particular score highly in evaluations of their historical, landscape amenity value, vulnerability and threatened destruction.

Existing conservation designations
None. The former railway line between Epworth and Belton, which runs through South Axholme, is a nature reserve run by the Lincolnshire Trust for Nature Conservation. Although this feature cuts through the AOSF and could be seen as intrusive and damaging to its historic character, it is well-established and provides a range of natural environments as well as additional access and views of the surrounding landscape.

Forces for change
The main negative processes are agricultural intensification and building development, detailed below.

Agricultural. Specific problems here are: amalgamation/consolidation of strips through intensification of arable farming; decline of market gardening and other small crop units; retirement of smallholders; land being purchased specifically in order to consolidate holdings. (Several purchases for strip amalgamation have taken place recently, and more are likely in the near future, with the retirement of older farmers).

Potential problems are also starting to arise from conversion to grassland. With the increase in demand for grazing for horses, and a corresponding lack of available paddocks or existing grassland, the open strip fields provide a way of obtaining small parcels of land and creating new grazing land conveniently close to the villages. Some areas (notably in Belton Town Field) have been enclosed in this way. This raises complex issues: whilst it can be claimed that conversion to fenced grassland destroys the character of the arable open strip field, the paddocks can still preserve the strip form, and it can be argued that this is preferable to loss of strips within a consolidated arable field.

Additional problems are the conversion of meres to arable, disputes about the status of meres as rights of way, and problems concerning footpaths through the fields.

On a more general level, the impact of modern farming, whether negative or positive, is dependant both on the approach of individual farmers and of UK and European farming policies. Policies for more sensitive and sustainable agriculture would have a positive restraining effect on the erosion of landscape character for AOSF and other farmland-based Zones in the area.

Development. Intrusive modern residential development; inappropriate land-uses such as horse-pasturing within open strip fields, requiring intrusive hedges and fences.

Positive movements. Increasing awareness of amenity and environmental issues in the area, and increasing awareness of importance of AOSF amongst bodies with an interest or management involvement in the area.

AOSF: Recommendations for landscape conservation management

The Ancient Open Strip Fields of the Isle of Axholme and the Riverside Levels merit a high priority for conservation management at a local, regional and national level. (See Appendix 2b for evaluations of the Axholme and Riverside AOSF and details of comparable survivals of open strip fields in England and Wales.)

In general terms, conservation schemes for AOSF will centre on encouraging strip cultivation and retention of an open aspect, rather than hedge and tree planting. Potential management options that need to be explored include Countryside Stewardship schemes and Conservation Area designation.

The accurate identification and assessment of AOSF areas is a prerequisite for successful conservation management. The varying amount of consolidation and amalgamation of strips in former open strip fields, together with the lack of boundaries, and similarities in cultivation of adjacent holdings, mean that it is often difficult, on the basis of a rapid survey, to accurately distinguish AOSF, REL, EEL, or their modified variants. This is especially so on the Trent and Ouse Riversides, and along the course of the Old Don, where much landscape has been heavily modified this century and the HLC Zoning has had to largely rely on extrapolations from sample area studies. Further map research and fieldwork is needed to determine historic extent and present condition.

A specific problems arises from the practices of field consolidation and sub-division and of renting strips. These obscure the real extent of strip cultivation, and more particularly, the potential for strip cultivation, which can only be determined through research into current ownership, tenancy and farming practice. Further work on this is essential for confirming HLC designations and for identifying conservation management options and target areas.

Recommendations

- Undertake further research on historical and contemporary processes of AOSF areas, including past and present ownership, land-holdings, social organisation, land-use and farming practice, field and strip layout, current condition and management potential.

- Increase awareness of the AOSF at local, regional and national levels.

  It is suggested that a day-conference or seminar be organised to bring together those with a practical and/or academic interest in the surviving open strip field systems of Britain.

- In view of the increasing threats to the Axholme fields, and their accelerating loss, it is strongly recommended that Part 2 of the study, assessing forces for change and management options, be started as soon as possible.

Further details and specific recommendations relating to the open strip fields are given in Appendices 1 and 2: pp 109-110, 117-19, 121-2.

EARLY ENCLOSED LAND (EEL)

Definition, date, location, distinguishing attributes

EEL comprises enclosures of land in former open arable fields or pasture, made up of groups or "parcels" of fields covering anything from a few hectares to over a hundred. They represent piece-meal (as opposed to large-scale) enclosures, dating from the late medieval period onwards. They are defined not so much by their date as by their scale, texture and "vernacular" piece-meal process. As such, this Zone can include land recently enclosed in this way, such as open-field strips, or the sandy scrub of Coney Garth at Haxey, converted to arable in the late 1980s - early 1990s.

The fields are usually fairly small and, depending on location, generally irregular in shape and size. Boundaries are rarely perfectly straight, sometimes follow features such as tracks, watercourses and local landforms, and were originally hedged. The enclosures taken from the open arable fields are often long and narrow with sinuous boundaries derived from their component strips. A few have earthworks of ridge and furrow under grass, but in most it has been ploughed out and survives only as soilmarks, if at all. Other fields, also long and narrow, represent enclosures taken from the low-lying *ings* or meadows in the Riverside parishes, and these usually did have straight sides (**map 3.4**). Early Enclosed fields were mostly originally used for stock-keeping and mixed farming, but are now mostly converted to arable, often being amalgamated into larger units.

In its unaltered form, the close-knit landscape of EEL on the undulating red-soil slopes of the Isle of Axholme would generally be regarded as classic English "Midlands" countryside, whilst on the Levels, EEL is the equivalent of the classic East Midlands Marshland landscape seen in east Lincolnshire. However in those places, stock keeping has always been more important than it has in the early enclosed land of Axholme; here the commons provided ample pasture and the small fields were used for arable as well as for stock-keeping.

The fields tend to cluster irregularly in and around settlements, forming fringes around the built-up areas, where they are intermixed with AOSF and REL. In some places larger blocks of EEL spread out from the villages, or occur at a distance from them, where they sometimes contain hamlets and isolated farms.

Those parts of the Zone closest to settlements and their associated networks of roads and lanes, often have a relatively high level of activity. As in the AOSF and REL Zones, outlying areas are much quieter, accessed only by farm tracks.

Terminology

The term EEL could be misleading, as it is defined by process rather than date, and is not always "early". It tends to be earlier than the Parliamentary Enclosures of REL, but some is not. The key distinguishing characteristic is the process of formation, which is vernacular, piece-meal, usually (but not necessarily) small-scale, and accommodates pre-enclosure features such as roads, boundaries etc. This is in contrast to

the larger-scale schemes such as Vermuyden's, or the Parliamentary Enclosures, characterised by a more bureaucratic process usually overseen by outside professionals, guided by surveying and engineering considerations and, above all, by the technique of the drawing board and what Oliver Rackham has called "the fashion for straight lines" (Rackham 1986). Whilst EEL does not necessarily pre-date REL, the great majority is indeed earlier, and the term is useful shorthand for the type of enclosed landscape that stands in contrast to the "modern" landscape of REL.

Historical outline /main historical processes

18th and 19th century Enclosure and Tithe maps show these enclosures well (**see maps 3.4 - 3.7**). Some of them, clustering around settlements, may be medieval in origin. They would have served as back gardens or crofts, "home closes" or paddocks used for stock keeping (for instance for lambing, breeding and shearing), and would have been enclosed by fences, hedges or turf or sod walls (see pp.63-6). From their shape, it can be seen that some of these village closes were laid out on the open field strips. The 19th century maps also show other small units, made up of consolidated strips, scattered in the open strip fields. However, these do not seem to have been enclosed in the true sense. Like today's consolidated holdings, they appear to have simply formed part of the open arable field, with only "soft" boundaries (and they thus form part of AOSF). Some may have been hedged, but later, when stock-keeping gave way to continuous arable cultivation, the hedges were removed and the land "reverted" to AOSF.

Larger consolidated parcels of strips lying on the margins of the open strip fields, or making up larger blocks of enclosed land, would have been hedged. Arthur Young, the great enthusiast of enclosure who visited Axholme in the 1790s, saw many closes of enclosed open strip field land of five or six acres, and noted "their beautiful quick hedges, which are very fine, and must have been well preserved (i.e. protected) while young" (Young 1813, 101). The larger parcels of enclosures colonised whole sections of the open strip fields. At Belton, for instance, a discrete block was enclosed prior to 1795 in the centre of Hoggard Hill Field, nearest the village, leaving the remainder of the open strip field spread beyond it in a great arc. Some of these larger areas of enclosure were initiated by large landowners: at Belgraves, north-east of Epworth by the Crown and the Johnsons of Temple Belwood; at Melwood by Lord Warrington; at Woodhouse and Mosswood, north of Belton, by the Duke of Kingston, lord of the manor of Crowle. Some areas, including Melwood and Thornholmes near Owston, were enclosed by monastic houses or their post-Dissolution owners. Significantly, at Haxey, no single landowner seems to have had the power to enclose large areas in this way, and EEL there makes up smaller blocks around the villages and on the fringe of the open strip fields. The 1596 map shows some of these areas already enclosed, as at East Lound, where hedged closes still survive (**see map 3.2**).

Some of these early closes south of East Lound still retain earthworks of ridge and furrow. Aerial photos taken in 1984 show more examples in pasture fields north of the hamlet, together with ploughed-out soilmarks of ridge and furrow in open-field EEL thoughout the Isle. At that time, though, much of the surviving pasture north of East Lound was being broken up for arable and the fields amalgamated. Whether any still survives here or elsewhere on the Isle is not yet known.

Other early enclosures were "intakes" made on the outer edge of the open strip fields, taking in areas of former common meadows and pasture. Their form varies widely. Some were irregular, like the encroachments onto the commons on the west side of Epworth and Haxey, or south of Eastoft, where meandering field boundaries followed river courses, sand-hills and peat mires (**map 3.9**). Much more regular were the rectangular strip-enclosures in the riverside parishes, taken from the long bands of Ings (meadows) between the arable open strip fields and the commons, well illustrated at Swinefleet and West Butterwick, where one is called Haver ("oats") Intake (**map 3.4**). Regular blocks of enclosures were also taken from the lowland commons east of Epworth and south of Haxey. There, a rectangular parcel below Westwoodside is shown in 1596 as Maw Closes, presumably named after its owner/encloser; its later name, Burnham Intacks, confirms its origin as an intake carved out of the Common. Early OS maps suggest that these fields taken from the lowland meadows and commons still carried hedgerows late last century, but most have now gone. This, combined with field amalgamation, means that visually the areas are virtually indistinguishable from REL. (See section on Hedges, p.63-6).

There are also areas of early enclosures on "islands" of higher ground within the former commons, and now surrounded by REL. These remain to be investigated but two particularly striking examples can be noted. One is at Grove House, High Levels (Thorne parish) where a 17th-18th century farmhouse stands in an area of ridge and furrow still used for pasture. The other is the irregular strings of enclosures along the former Rivers Idle and Don which colonised the raised riverbanks along the border between Hatfield and Epworth and Belton parishes. Some of these, not much larger than gardens, are recorded as intakes made in the mid 18th century, apparently illegally. Some still survive as farmsteads and paddocks, others appear to have been merged into REL.

It is often possible to distinguish whether areas were enclosed from arable or common pasture. However, this is not really feasible for areas that lay in the border zone between these two land-uses, because in practice the interface between arable and pasture was a shifting one, with arable contracting and expanding according to population pressure, climate etc. Thus these "border" enclosures lay on land that may have had mixed use over time.

With regard to the use of the earlier post-medieval enclosures, Thirsk (1953) quotes an early 17th century report describing how farmers on the Isle of Axholme had developed a novel system for mixing arable cultivation, fallowing and grazing in their small closes at the same time. This distinctive mixed system, a kind of village open-field farming system in miniature, was apparently not met with elsewhere. How long it survived is not yet known. The closes referred to may include those on the 1596 map (which is unfortunately fragmentary), but their history and identification requires further research.

In general terms the early enclosures are the product of an individualistic approach to farming, and represent an important stage in the transition from a communal, and originally self-sufficient, medieval farming system to the "privatised" export system represented by Parliamentary Enclosure lands (REL). A comparable process can also be seen in domestic architecture, where local vernacular styles and materials are gradually replaced by "polite" architectural designs and imported mass-produced materials.

Early Enclosed Land has often been subject to modification this century. Those closes around settlements have often been colonised for housing. Others have been altered through field amalgamation and hedgerow removal. If these changes are significant enough to have altered or erased the former character, the land might be better identified as or **Early Enclosed Land Modified in the late 20th century**, or as **Recently Enclosed Land.** Further research into present landscape condition is needed to determine whether a separate "Modified" designation would be justified.

Moorland Allotments

A distinctive kind of early enclosed landscape, created on the moors by the process of peat extraction and conversion to farmland, forms a special category, termed Moorland Allotments in this study, which may on further investigation be designated as a separate Zone or sub-Zone. This land-use is characterised by very long, narrow fields, created from the Middle Ages onwards around Thorne, Crowle and Hatfield Moors. Originally used for pastoral farming, most of the land has now been converted to arable. For present purposes it has been designated a sub-Zone of RM&T, though this may change with more detailed investigation (see RM&T text, p.71-4).

EEL: main components and their coherence, condition and survival.

Distinguishing characteristics: small fields of irregular shape; location in and around settlements or in parcels beyond settlements; close association with early roads and tracks. Boundaries often sinuous, originally hedged and often also ditched. Some ridge and furrow.

The Zone contains buried archaeological sites revealed as surface scatters in the ploughsoil, the remains of shrunken or deserted villages, and medieval sites surviving as earthworks (Axholme Priory at Low Melwood, Owston Castle Hill, Ousefleet Hallgarth). The preservation of the earthwork sites has been due their former use as pasture, which in most cases is continuing.

The Zone also contains, or is in close association to, country houses and parkland, some of them on the sites of former monasteries or deserted villages (see Design/Ornamental (Parkland) Zone, p.78-9).

Some of the hedge-lines in this Zone are very old ones that served as boundaries to the ancient open strip fields, commons or meres. Documentary research has enabled many of these major land-block boundaries to be mapped in South Axholme. Such "major" hedges and hedge-lines merit a high priority for conservation, and further work to identify and survey these features on the ground should be a prime consideration. (See Hedges, p.63-6).

Coherence.
The loss of hedges and the widespread conversion to continuous arable production has damaged the coherence of this Zone in many places. However around villages, especially in the west of the study area and on the Isle, the relationship between settlements, farms, fields, roads and lanes can still be readily appreciated. Examples of coherent areas of EEL on the Isle are north of Belton village, south of East Lound, west of Epworth and around Low Melwood; further research would enable more to be identified.

On the Riversides / Trent and Ouse Levels EEL is sparse and fragmented. In places, intensive arable farming has reduced EEL to relict fragments around the villages. However, it is hard to estimate how much has been lost here, and the damage may be more apparent than real. The amount of "properly" enclosed land may have been fairly small: much of the Old Inclosure land recorded here on early maps may in fact have been consolidated strip field (see AOSF above). Further work is needed to define the areas more clearly.

Condition
Some areas survive well, but generally speaking the condition is deteriorating. There has been considerable damage this century to field patterns, principally through conversion to arable, accompanied by field amalgamation and boundary hedge or ditch removal. Historic buildings have been removed or suffered inappropriate conversion / alteration. Inappropriate new developments (both single and multiple residential developments) have colonised the Zone, both in and around villages and, more intrusively, on village outskirts and open countryside.

The M180 motorway and its approach roads has cut a swathe through one of the best-preserved areas of EEL in the study area, north of Belton, an area associated with the former monasteries and landed estates of Temple Belwood and Hirst Priory (see Design/Ornamental Zone).

Although damaged and modified by modern farming and development, the basic EEL enclosure patterns survive in many places. Further fieldwork and aerial photographic research is needed to evaluate survival and condition and the potential for conservation management.

Past interaction with other Zones
Thee early enclosures that lie in and around settlements served as "home closes", and many still do so. The Zone has served as an important part of the general farming system here since at least Tudor times, if not earlier.

The relationship of EEL with settlements and other Zones is sometimes very clear. It is clearest around the Moors, and on the "island" settlements like Thorne and Wroot, and on the Isle of Axholme itself, where the relationship of this Zone to AOSF on the one side, and to lowland REL and RM&T on the other, is highlighted by differences in topography.

Evidence for time-depth
In places good: the "maturity" of character is evident from the key components: trees, hedges, sinuous boundaries, lanes etc., and from historic earthwork sites and historic buildings in settlements or farmsteads. Elsewhere, modern farming and development have obscured these features, and consequently the visibility of time-depth.

Visibility / contribution to present landscape character
Visibility and accessibility is usually good, as EEL is often close to settlements, roads and tracks. It makes a strong contribution to landscape character through its hedgerows, lanes etc., and its overall texture softens what would otherwise often be a rather stark and exposed landscape.

Values and perceptions of the Zone
EEL, with its winding lanes, grassed verges, mature hedges and trees, is a type of landscape often held in affection. More than any other landscape Zone in the study area (apart perhaps from RM&T), it is immediately

recognisable as "old". In the past this has not been enough to counter the advance of destructive developments. However, the growing awareness of the conservation importance of EEL, and the fact that its loss is very noticeable, (involving the removal of boundary trees and hedgerows) suggest that conservation measures would have increasing support.

Extent of research and documentation
What little research has been done has focused on the prominent medieval archaeological sites at Owston, Melwood and Epworth. Thirsk's documentary study of the early 17th century gives some useful leads for agricultural history, but it has very little topographical detail. Little or no fieldwork or map-based analysis has been done prior to the present study.

Potential for research
Considerable, for ecology, history and archaeology of Zone. Excellent opportunities for topographically-based studies of the process of enclosure and of historical and present-day land-use, drawing on documentary sources, APs, and fieldwork, and involving ecological surveys (e.g. hedges/trees/road-verges/grasslands), as well as field archaeology and architectural history.

Potential for amenity and education
Easily appreciated from public roads and paths. The South Axholme Railway Nature Reserve runs through part of the Zone at Belton, Epworth and Haxey. Good educational potential for archaeology, history, agricultural history and ecology.

Rarity and importance of zone and components
EEL here is generally of local and area importance. EEL is not rare in a regional context, and there are more intact areas within the Humberhead Levels (primarily in the Fishlake - Sykehouse area). However, some EEL dates back to Tudor times and probably earlier. Some surviving closes may have been used for the apparently unique mixed farming system described in the early 17th century, and on the basis of this association they might be regarded as of special regional or national significance for agricultural history. Identifying these closes requires further research.

Existing conservation designations
Some archaeological sites in this Zone are protected as Scheduled Ancient Monuments, and these also contain undisturbed grassland, mature trees and hedges, but they only cover very small areas. The Zone contains some listed buildings, mainly farmhouses. No nature reserves (apart from the South Axholme Railway line). No registered historic parks or gardens. Some trees and hedges may be included in village Conservation Areas, but the vast majority of the area lies beyond designated or protected areas, and are very vulnerable to hedge removal, road improvements and building development.

Forces for change within the zone
Two main negative processes: agricultural intensification and building development.

<u>Agricultural.</u>
Continuing pressure on this Zone, as on other farmland Zones in the study area, from intensive arable farming causing damage on a piece-meal basis. The cumulative effect can be very serious.

There is probably more scope for conventional farmland conservation schemes (involving field boundaries etc.) in this Zone than on others in the study area. The areas might be relatively small but the effect, locally and cumulatively, could be very significant.

Development.
The EEL and AOSF Zones take the brunt of new housing and road development and the disruptions caused by the rapid growth of communities. Pressure is greatest in the Selected Settlements of the Isle of Axholme, where population appears to have been growing significantly.

Positive movements.
Because this Zone is regarded with affection and its positive qualities are easily understood and appreciated, it might tend more than other Zones to attract support for countryside conservation schemes.

Recommendations for landscape conservation management

The main need is to protect and enhance the EEL landscape elements that are being depleted or destroyed through intensive arable farming and building development. The main priorities can be summarised as:

- maintain key characteristics of the landscape: its small fields, sense of enclosure, hedges, ditches, surviving ridge and furrow etc.

- management of existing hedgerows and trees, together with new planting.

- management of drains, dikes, watercourses, and of dikeside vegetation.

- control of new housing development to minimise intrusions onto EEL; encourage the use of sympathetic materials and design for new buildings.

Every encouragement should be taken to encourage farmers to retain hedges, ditches, verges, paths and tracks. It is important at the same time to balance this with a clear emphasises on the significance of AOSF, and the importance of a hedgeless landscape in the open strip fields. Otherwise, encouragements for an enclosed hedged landscape could detract from the conservation management of the hedgeless, unenclosed AOSF, and at worst could unwittingly encourage its enclosure. Further fieldwork and map-based research, building on the present study, would enable the selection of target areas for field boundary work. (See sections on Hedges in the REL Zone text, p.63-6, and Recommendations in Appendix 1, p.115-6, for further comments on "major" boundaries and hedges in the EEL Zone).

RECENTLY ENCLOSED LAND (REL) ZONE

Definition, date, location, distinguishing attributes

Land enclosed, mostly in large blocks, to plans prepared by surveyors. Classic "drawing board" enclosure landscape with a regular layout, dominated by straight lines and right angles, and all the more uniform here from being flat. It epitomises what Rackham describes as Planned (as opposed to Ancient) Countryside (Rackham 1986, 4-5).

"Modern" in character compared with "vernacular" AOSF and EEL (**see map 3.6**). Its general appearance is now of an open, largely hedgeless, arable landscape, divided into regular rectangular fields bounded by ditches, with frequent larger drains and dikes and occasional isolated farms.

In the study area it largely occurs in low-lying areas drained and enclosed from the 17th century onwards. It includes warpland and former raised mire which has been brought into cultivation.

Fields are predominantly rectilinear, with straight boundaries usually now consisting of ditches or dikes, but which were mostly originally also hedged. The land is now dominated by large fields; uniform, sprayed and weed-free, worked by machine.

Roads and tracks are also mostly straight and angular, with wide verges, and integrated into the rectilinear field system. The older-established roads are usually more sinuous. Some roads are flanked by hedges and trees planted at enclosure or later.

Artificial watercourses are a prominent and ubiquitous feature of the lowland REL, ranging from field ditches to the large-scale embanked dikes and "new rivers" cutting across the countryside to the Trent and Ouse. Many dikes and rivers contain reeds; larger watercourses (especially in the south and west) are flanked by banks carrying pasture, bushes and trees.

Settlements consist of large numbers of isolated "Enclosure" farmsteads; and riverside villages of medieval origin, often surrounded by areas of EEL and AOSF. Buildings throughout are largely a mixture of 18th - 19th century redbrick and pantile, and 20th century in a range of materials.

Parts of the Zone are crossed by major roads, railways, canals and electricity power lines. Away from these the settlements and farmland are usually quiet, with little through traffic and very few pedestrians in the open countryside.

The strongest images are the sweeping views over long distances, punctuated by villages and isolated farms, often fringed with trees; on the skyline, dark bands of moorland trees, riverbanks, power stations and power lines, and the tall machinery of Thorne mine, Goole docks, and Trentside wharfs.

Terminology

The term REL can be somewhat misleading, as parts of this HLC Zone, notably the 17th century enclosures, are not "recent", and may indeed pre-date some EEL. However, the term is a useful one for what is, in effect, the most recent phase/process of large-scale landscape planning in the area, and one which has a distinctively "modern" character compared with AOSF and EEL.

Historical outline

Recently Enclosed Land in the study area is predominantly the result of two major phases of enclosure: (1) in the 17th century, associated with Vermuyden's drainage scheme of Hatfield Chase in the 1620s; (2) in the mid 18th - mid 19th century, primarily associated with Parliamentary Enclosure.

The distinction between the two phases is not always clear, as the second phase saw the further improvement and colonisation of areas enclosed in phase one. However, preliminary research shows that the areas covered by the two phases can be mapped separately, and this would certainly reward further work.

17th-century enclosure

The several thousand acres allotted to the backers or "Participants" of the 17th-century drainage, and enclosed by them, was former common land belonging to the adjacent villages (**map 3.3**). Its drainage, allotment and enclosure was fiercely contested for many years by the local communities, particularly those on the Isle of Axholme. The situation was similar to that in the Fens around The Wash, which was also subject at this time to major drainage schemes initiated by the Crown and major landowners. As in the Fens, the dispute in Axholme occasionally escalated to sabotage and armed conflict. In the Civil War the Islanders took the Parliamentary side to further their cause. The local communities' basic grievance was that their relatively prosperous mixed marshland economy was being changed without their consent or participation. In particular they objected to the appropriation of their commons and to the drainage schemes that upset their grazing regime. Ultimately, they did not win their dispute, though they won certain concessions and some commonland was returned to them. However, disputes over the question of compensation for lost common rights lasted for well over a century, and were still an issue at the time of the Parliamentary Enclosures of South Axholme in 1795 - 1803. (Dinnin 1997; Holmes 1980; Lyons 1988).

The Participants used their land for mixed farming and apparently leased some back to the villagers at arable land prices, another source of local grievance. Not all areas allotted to the Participants were still recorded as such in 1800. Some had been legally won back by the villagers and retained as common. Other areas may have been sold or abandoned as unusable. In some areas, because Vermuyden's drainage was inadequate (either through faulty design, poor maintenance or sabotage by locals), the land had to wait for further drainage schemes in the 18th -19th centuries before it could be fully colonised for farming. The land-use and history of the Participant's land has been little researched and would certainly repay further study.

18th and 19th century enclosure.

Every parish within the study area was affected by Parliamentary Enclosure. There were around 30 enclosures by Act of Parliament here between 1754 and 1848. The extent of the areas covered by the Enclosure Acts varied. For some parishes or townships within the study area, Parliamentary Enclosure dealt with large proportion of their land. In other cases it was partial,

often being carried out in stages: arable fields and pastures were enclosed first, leaving the more intractable wetter lands to be enclosed in the 19th century, sometimes with specific provision being made for compulsory warping. The actual progress of Enclosure in this region was much more complex than a glance at the map or landscape might suggest. It was dictated as much by land values, local social structure, administrative boundaries and fashion, as by a desire for agricultural improvement. Neighbouring areas were often enclosed differently and many years apart. For instance, at Reedness, Swinefleet and Whitgift, pastures were enclosed in the 1750s, and the Moors in 1827-32, but at neighbouring Ousefleet, enclosure in 1828-32 included all the "open fields, ings, meadows, stinted pastures, commons, moors and waste".

Parliamentary Enclosure in the Axholme area has significantly fewer published historic studies than areas east of the Trent. This is largely because the area has lain outside the orbit of the adult education historians (notably Rex Russell) who have been responsible for the majority of Enclosure studies in the region. Useful outline accounts of the Parliamentary Enclosure of Amcotts, Keadby, Derrythorpe, Crowle and Eastoft have been published by Russell (1982). Lyons (1988) has a good discussion, excerpts from historic accounts and a handlist of enclosure dates, both for private and Parliamentary enclosure in the area, included in his study of enclosure in north-west Lincolnshire. The parliamentary Enclosures for that part of the study area in Yorkshire are included in English's list, giving dates, titles and the whereabouts of surviving docmensts (English 1985).

For the present study, examination of Parliamentary Enclosure has focused on two main areas: (see p.17-19 for details).

1. The Isle of Axholme: South Axholme parishes of Epworth, Belton, Haxey and Owston Ferry, and the adjacent parish of Crowle, covering the whole of the Isle proper and its flanking lowlands. **See maps 3.6, 4.1.**

2) The Trent / Old Don Levels: parishes and townships of Gunthorpe, West Butterwick, Derrythorpe, Keadby and Amcotts on the Trent, and Luddington and Garthorpe on the Old Don, serving as representatives for the Riverside Levels. **See maps 3.4, 3.5.**

The enclosure of South Axholme is particularly interesting. The parishes of Epworth, Belton, Haxey and Owston were dealt with together between 1795 and 1803, but Parliamentary Enclosure here was restricted to the Commons, since the freeholders declined to enclose their open strip fields. (Hence the survival of these fields today.) They felt no need, or could not agree to, the enclosure of these areas, a decision criticised at the time and later by supporters of "agricultural improvement". (See Ancient Open Strip Fields, historical outline). One of these critics, Arthur Young, saw this as a "barbarous" failure to bring improvement, and compared it with the enclosures of the commons:

> "In the Isle of Axholme, there is an immense enclosure on the point of beginning; the act and survey having been passed, of no less than 12,000 acres of commons... I passed these commons in various quarters, and rode purposely to view some parts; they are in a wretched and unprofitable state..."

He notes with approval in a later (1803 or 1813) post-script that the enclosure, having taken place, has "answered to an extraordinary degree". But his commendation, coming so soon after the enclosure itself, may owe more to his general enthusiasm for enclosure than to any concrete evidence of improvement (Young 1813, 101). Nevertheless, there is no doubt that the agricultural productivity of this land was considerably increased by enclosure, warping, manuring and cultivation. Commendations and descriptions of farming in these enclosed areas appear in later 19th century accounts by local historians Stonehouse and Read, and agricultural commentators such as Clarke (1851) and the Royal Commission on Agriculture 1881, 1895).

Along with enclosure came advances in land drainage and warping. Drains and sluice construction was improved, and pumps were introduced, initially powered by wind, and from the 1820s by steam. Enclosure made the land available for warping schemes, and large parts of the low-lying peat moors, Levels and Carrs were warped in the late 18th and 19th centuries. In many places warping formed part of the Parliamentary Enclosure agreement, and the present study has found copious information on the extent and organisation of warping in 19th century Enclosure Awards and Drainage Agreements. Other research by the Humber Wetlands Project is looking at aspects like soil structure and depth of warp, as well as evidence for earlier, more varied land surfaces underlying the warp (see Warplands, p.63).

Whether it was done in stages or altogether, the ultimate effect here of this type of enclosure was the same: the whole newly-enclosed landscape, apart from existing settlements, "old inclosures", remnant commonland and some well-established water-courses and roads, was completely redesigned. Vermuyden's surveyors, and the Parliamentary Enclosure Commissioners after them, were responsible for the layout and allotment of roads, drains, properties etc., and for the main "allotment" boundaries between properties. Within the allotments, the remaining divisions into farms and fields was left to the proprietors. The new fields came into being shortly after the Enclosure Award was made, although in the lowlands the need for drainage and warping slowed down colonisation. Indeed, some areas on the moors and "wastes" remained beyond the reach of agriculture (see below). Fields ranged from a few acres to over 50, partly depending on the nature of the land and the scale of the farm, with large farms on the Levels having the largest fields. Usually the straight line and right angle were adopted, for fashion, convenience and cheapness. The new farmsteads followed afterwards, sometimes many years after the initial enclosure. Those in the former marshland areas were often built on better-drained sandhill sites.

The enclosure landscape here is perhaps as "pure" an expression of the form as exists anywhere in Britain. Because large parts of the area were flat and free from existing settlements, they offered unusually free scope for enclosure landscape design. Moreover, enclosure here often took in adjoining parishes, townships and moors in single schemes (as in South Axholme), so that the enclosure surveyors had scope to plan on a large scale. Where this was combined with warping, the landscape was not only redesigned, the land-surface itself was newly-created.

The heyday of Parliamentary Enclosure in the Georgian period was a time of increasing population growth and urbanisation. Besides improvements in

farming technology and land drainage, the period also saw important developments in commerce and industry, building design and materials, transport and communications, described elsewhere in the report. All of the historic countryside Zones reflect the impact of these developments, but REL more so than the other Zones, since it is largely a product of this phase.

The newly-enclosed land was initially used for mixed farming, though with improvements by warping and draining, increasingly intensive arable farming became possible from the later 19th century onwards. The mechanisation and intensification of arable farming has led to the amalgamation of holdings, the re-organisation of farmsteads and the abandonment, demolition or residential conversion of farm buildings, and to the removal of field boundaries, including the loss of nearly all hedges from large parts of this Zone. The rate of change from mixed or pastoral farming to arable needs further research, since it has a direct bearing on archaeological, ecological and landscape issues. Sources for tracing this change (e.g. 1930s and 1960s land-use surveys, aerial photos, MAFF data) have been identified in this study. It has only been possible to sample them briefly in the time available, and they would repay further study.

In area terms, Recent Enclosures ultimately encompassed the majority of the landscape here. But there were some important exceptions: areas of AOSF and EEL remained unenclosed, hence their survival as distinct landscape types today. **(See map 3.6)**. And large areas of former commons still remained unenclosed or beyond the reach of warping or agriculture - the peat moors and turbaries that make up the RM&T Zone. There are also smaller enclosed remnants of unimproved common still surviving, like the area by Tyndall Bank, south of Haxey (part of which is an SSSI), and others between Crowle Moors and Medge Hall. More await investigation in these areas.

Distinction between REL, EEL and AOSF

Process and design are fundamental criteria for defining this Zone and distinguishing it from other Zones. Where hedges have been removed from REL and EEL the two Zones can appear similar, and modified REL is often even harder to distinguish visually from the sweeping, hedgeless expanses of AOSF, especially where open strip field strips have been consolidated, or the crops are similar. The distinctions only become clearer when historical process and design are taken into account.

"Old Enclosures"

In most parishes land had already been enclosed privately by the time of Parliamentary Enclosure, and quite independently of the Participants' schemes. These were what are generally known as private or piece-meal enclosures, arranged privately by mutual agreement between owners, or under coercion from a dominant landowner. The Parliamentary Enclosure Awards refer to these as "Old Inclosures". In the study area they were particularly extensive in the riverside areas where Parliamentary Enclosure came late **(map 3.5)**. In many cases, these old enclosures, from their "vernacular" layout, are classifiable as EEL **(map 3.6)**. Others, later or more extensive, followed the "straight-line" surveyors' approach, and are thus characterised as REL. Examples of these "modern-style" enclosures are seen at Keadby and Derrythorpe which, though technically "old" in terms of

the Enclosure Acts, were in fact then quite recent (Russell 1986, 79-81, 97-101). How far these observations can be extrapolated is not yet certain. Although enclosed land can be designated from its superficial appearance as EEL or REL, it cannot be reliably dated and identified without historical research. The transition from vernacular styles to drawing board surveying - the equivalent of the change from vernacular building to "polite" architecture - is an important one and well worth further study.

Warplands

The warplands are something of a challenge to the task of historic landscape categorisation. Firstly, they extend the process of landscape formation into the modern period, not only in terms of surface features such as field boundaries, farmsteads etc, but also in terms of topography, since the landform itself is not just recently enclosed, it is in a sense recently created. Secondly, these uniform "modern" land-surfaces overlie earlier, more varied, land surfaces. Thus large areas of peat bog, vividly described in earlier accounts, have been hidden from view. The warp acts as an opaque "blanket" protecting these early land-surfaces, and their associated palaeological or archaeological remains, from erosion and human interference. This aspect is particularly important for waterlogged wetland sites. The underlying archaeology in such areas, despite being buried and largely invisible on the surface, can be so significant that it nevertheless constitutes an important resource, scoring highly in terms of potential (if not actual) cultural association.

However, the protection of the warp is seriously diminished by modern agriculture and drainage. Work by HWP has shown that drainage, by lowering the water table and drying the land, has lowered the land surface and led to plough disturbance of the underlying ancient land surfaces. As a result, prehistoric and Roman material is now being brought up for the first time in some parts of the Levels.

HEDGES

Hedges, or the lack of them, are an important factor in the perception of the REL Zone, and a fundamental issue for conservation management for this and other countryside Zones in the study area.

Pre-Enclosure hedges

Hedges were used to contain stock. Early maps indicate that the pre-enclosure landscape of this Zone, consisting of Commons and AOSF, was largely hedgeless, apart from major boundary hedges separating areas of common pasture, arable fields, and early enclosures. These hedges helped control stock when they were put out to pasture. Especially important were the hedges along parish or township boundaries which in at least some cases appear to have extended across the commons. Exceptions were places where watercourses served as boundaries (as between the differently-named sections of Epworth Common [Thirsk 1953, 23]), or where intercommoning on the larger moors meant that such boundaries were unneccessary. Other early hedges surrounded monastic holdings, county-house parkland and the blocks of 17th-century Participants Lands. It is likely that many of these "major" boundary hedges had been established for many years, possibly

centuries, by the time of Enclosure. These hedges are often shown on the Enclosure and pre-Enclosure plans, or can be inferred from them. Those in South Axholme have been replotted onto period maps as part of this study, and some surviving sections have been noted in the field: they await systematic study. (See **maps 3.6, 4.1**).

Other materials: dead hedges, fences, turf and sod walls

The 14th century Mowbay deed refers to the use of turf to make walls for buildings and to "enclose messuages or mansions", and of dried "flags" (reeds) "to cover the ridges of houses and walls" (i.e. to thatch them). Tenants could take "underwood" to enclose the lord's wood (Read 1858, 19) These types of boundary works are known from later documents. Lyons quotes accounts of 19th century or earlier sod walls which were used as a boundary between the open fields and commons at Scotter on the east side of the Trent opposite Owston. An 1811 account of new plantation enclosures in the Ancholme valley describes their sod walls as 5ft (1.5m) high and 3.5ft (1.07m) wide at the base. Built of sods or turf dug nearby, they were effective in controlling cattle and in protecting new hedges from rabbits and cattle, but the walls needed maintenance, "a sod wall, unless attended to, never forms a sufficient fence agains anything, tho' it will serve as a landmark indefinitely." (quoted in Lyons 1988, 51, 126-30). Earthen walls are also known from built-up areas, e.g. in pre-enclosure late 18th century Barton on Humber, where thatched "clay" walls 3ft (1m) wide at the base and 6-8ft (1.8-2.4m) high surrounded properties.

Fences and "hedges" have also been made since the Middle Ages of wood and brushwood to enclose fields and woods. Local 19th century accounts mention "dead hedges" of dead material, usually thorns or furze, sometimes willows (Peacock's 1889 Glossary, quoted in Lyons 1988, 118). Such materials could be used to make either rough "dead hedges" or more secure "dead fences", such as wattle hurdles, useful for temporary barriers (Rackham 1986, 187-8). How far these types of "fencing" were used in the Axholme area is not yet known, but the free availability of turf/sods, thorn, willow and furze suggests they could have been fairly common. In the later enclosure period, fences were used to protect young hedges. Stone walling in this area was out of the question: even the mudstone on the Isle was not considered sufficiently available or suitable for field walls.

Enclosure hedges

The 18th and 19th century Parliamentary Enclosure Commissioners were responsible for ensuring that the boundaries between different holdings were made and maintained to a sufficiently high standard. The Enclosure Award plans and documents indicate that all, or virtually all, of these new allotment boundaries here were originally hedged. Hedges were required here in addition to any boundary drains or dikes (referred to in the Awards as "fence ditches"): they were not an alternative. The Acts generally stipulated quickthorn (hawthorn), which had to be protected in its early years by fences: there would usually have been a live hedge with a ditch on one side and a protective fence on the other. The warped lands may have been treated differently, since hedges there would have been impractical until warping had ceased. The large numbers of small landowners in some parishes, like those on the Isle of Axholme, meant that there were many small enclosure allotments that made single fields. But there were also large allotments which required subdivision. The "internal" farm layout

within these allotments were the responsibility of the owners, who invariably followed the form of the main enclosure, using straight lines, right angles and hedged and/or ditched boundaries. The original extent of "internal" hedging is not yet known for certain (see below). However, it is already clear that, contrary to general assumptions that the drained landscape of the lowland Levels and Carrs was always largely hedgeless, it was, at least for a time, a well-hedged enclosure landscape. (See **map** 3.6). Further research is required to establish the extent of this Enclosure hedging and its subsequent fate. Preliminary evidence from the late 19th century provides some useful pointers, and suggests there may by then have been significant variations in the form of boundaries. The hedgerow trees shown on the 1880s-90s OS "County Series" maps are a possible indicator of the presence of hedges, (though not their absence: a treeless hedge would simply be repesented by a single line). The maps also distinguish between a hedge or ditch (single-line), and wider dikes (double lines). Sampling of the maps for the areas around Crowle, West Buttewick and Haxey shows that field boundary trees were then most dense in EEL areas of "Old Inclosures", with a lighter scatter in REL where the Enclosure Award hedges would have been younger. (See **map** 3.9). Both the "allotment" boundaries and their "internal" fields carried trees, mostly deciduous, though there were rows of conifers in the sandy areas west of Haxey. Some places, however, had no boundary trees at all, and the nature and extent of their hedging is as yet uncertain. They may have relied on "wet fences" - i.e. dikes - although these offered no shelter for stock which could stray into the watercourse, nor did they protect against wind erosion, a serious problem in the sandy carrs. The possibly hedgeless areas indicated on the maps include some of the Participants' lands, which were not subject to compulsory Enclosure-Act hedging; on the other hand parts of the Participants' lands clearly had hedgerow trees.

This boundary research work needs following up in more detail. Generally speaking, though, it is clear that hedgerows were formerly much more widespread, and that in some areas they have been lost on a large scale, especially on the lowland REL. These losses can be generally attributed to the intensification of farming, and the combined effects of field amalgamation, mechanised arable cultivation, mechanical drain maintenance and stubble burning (and also perhaps drier ground conditions and fluctuating water tables). It has been widely assumed that the hedgerow removals accompanied the intensification of farming in the recent post-war period, but study of aerial photos for Crowle area suggests that most hedges and trees had already gone from REL by the late 1940s. Hedgerows that survived then in REL were mostly on major boundaries (e.g. parish boundaries, old river courses), and on islands of pasture around farmsteads; otherwise hedges and trees were concentrated on the EEL. In other words, a pattern broadly similar to today's was already evident 50 years ago, if not earlier. Whilst in other parts of the country, hedgerow trees were increasing in the 1870-1950 period (Rackham 1986, 222-5), it seems that here they were decreasing, probably due to arable intensification. In the 1850s, during the period of Victorian High Farming, hedgerow trees were being criticised. Landowners in north-west Lincolnshire were removing trees and hedges to improve productivity, especially on "strong" land, preferring instead to grow trees in plantations, if at all (Lyons 1988, 51, 111-2). Steam-powered farm machinery, which became increasingly available from the 1850s onwards (Wright 1982, 145-9), would have enabled hedges and trees to have been grubbed up on a large scale, and very quickly. Further work is needed to discover whether this was indeed what happened in the Axholme area.

Work so far, although limited to sample studies, has raised important questions and shows that assumptions about hedgerows (or the lack of them) in the lowland areas need to be revised. It is still to early to properly assess their status and contribution to the historic landscape character of lowland REL - to say whether hedges were a fundamental HLC Component or only a short-lived feature. This clearly has implications for any historic (as distinct from ecological) justification for hedge and tree-planting in those areas. The issue of hedging and enclosure needs to be balanced with the quality of openness and lack of enclosure that is (or has become) a fundamental characteristic of much of the landscape of the study area. There is a need for a sensitive approach to hedge and tree planting if this aspect is to be maintained. Possible solutions would be for hedgerow and tree-planting to be targeted in and around villages and isolated settlements (particularly for screening large-scale agro-industrial farms), and for clear limits to be set for roadside planting (see conservation management recommendations, below).

A first priority is for further fieldwork and research on hedged boundaries (both "major" land-block boundaries and "internal" field enclosures) to establish their original extent and subsequent history, as a prelude to developing strategies for their conservation management.

REL: Settlement and building types.
Buildings are usually a mix of late 18th and 19th century farmhouses with contemporary farmbuildings, modern agricultural sheds, silos etc., and occasionally a modern farmhouse or bungalow. The original farmsteads, though modelled on a standard "foldyard" layout, vary widely in size and details of design, with no two alike, reflecting the individual tastes of the large numbers of independent freeholders here and the absence of landed estates which might have imposed their own "house style". The farmsteads are sometimes large and impressive "model" farms, with substantial barns, stable/granaries, cartsheds and horse-mills surrounding one or two rectangular foldyards for over-wintering cattle. They show the richness of the newly enclosed land here, and its "industrial" exploitation from the mid 19th century onwards. Their design and accommodation is based on mixed farming which, with just a few exceptions, has now gone from the area.

Main components and their coherence, condition and survival.
Regularly-planned layout with straight boundaries, roads and tracks; rectilinear fields with ditched boundaries, originally hedged. Hedges and trees more prevalent in western areas, very sparse in Trent and Ouse Levels.

Frequent drains and embanked dikes, many with reeds, the larger ones carrying pasture, bushes and trees; occasional dikeside /roadside willows.

Open aspect to much of the landscape, especially on the Levels, with wide unbroken views, broad horizons.

Alluvial soils (including warp), with increasing proportions of blown sand and peat in the south and west of the area.

Much important buried prehistoric and Roman archaeology, including extensive areas of earlier landsurface beneath warp. "Bog oaks" - trunks of trees preserved in underlying landsurfaces - rise to the ground surface and are often dumped on field edges, especially around the larger Moors.

Buildings and settlements are often visually prominent due to flat landscape. Most common are isolated 18th and 19th century enclosure farmsteads, with double-fronted 2-storey farmhouses and farmbuildings laid out around foldyards, mixed with modern buildings, and often with hedges and trees around the farmstead or garden. Modern farmbuildings are often large, of pre-fabricated construction. Occasional pumping stations, drain sluices etc.

Coherence
Good. Despite the losses of hedges, trees and buildings, this type of landscape is immediately recognisable and imposing in its extent and regularity. In some areas (notably the Riverside Levels), the flatness and the lack of hedges and dikeside vegetation mean that the subtleties of field shape and boundaries are largely hidden, and the distinctions between REL, EEL and AOSF can be lost. A return of hedges and dikeside vegetation would probably be the most effective way of articulating and enhancing the different HLC Zones here. However, this needs to be balanced with the need to maintain the essential openness of the landscape, which is a key characteristic of this Zone (and of the Local Landscape Character Areas where REL is most prevalent), rendering too much tree and hedge planting inappropriate (see Hedges, above).

Survival
Field boundaries have been reduced in size or erased by field amalgamation, bringing widespread removal of hedges, trees and dikeside vegetation. Ditches and dikes are frequently mechanically scoured, bringing loss of reeds and other species.

Intensification of farming is damaging the archaeology through deeper ploughing and through land drainage drying out waterlogged levels. (On the other hand, plough damage is rendering the underlying remains more visible).

Two (perhaps three) deserted medieval village sites, and two or more moated sites, are in this Zone and suffering plough damage.

Past interaction with other Zones
Uniquely in South Axholme and some Riverside parishes, REL specifically represents former commons (see account of Parliamentary Enclosure above). Thus in these areas, although the landscape is radically different now, there is still a clear distinction between the former commons / REL and other historic Zones (AOSF, EEL, RM&T). In other areas REL has incorporated both former open strip fields and commons, and in these places the most noticeable relationship is that between EEL and REL.

Evidence for time-depth
Little evidence for time-depth is generally visible or readily apparent within the Zone, especially in the Riverside Levels. In the south and west some fragments of former commons survive in the Zone, or as RM&T. Archaeology (even medieval) is below surface, and only manifests as disturbed finds in the ploughsoil or as cropmarks. Time-depth is most apparent when REL is seen in the context of the other Zones, and since the views here are long, other Zones can always be seen from REL.

Visibility / contribution to present landscape character
Highly visible. Imposing in its scale and linear layout, uniformity and openness. REL makes up large blocks within the study area and the cumulative impact of this large-scale planned landscape is an important characteristic of the Local Landscape Character Area. Its linearity is echoed in the "modern" straight lines of communication - canals, roads, railways, power lines (see sections on Transport and Industry).

Values and perceptions of the Zone.
Regarded as representing typical "modern" intensive arable farming. In positive terms, seen as highly efficient, productive and imposing in scale. In negative terms, seen as agribusiness, on too large a scale, lacking in texture, and hostile to history and wildlife.

Extent of research and documentation
Previous research and published accounts have tended to focus on the history of the post-medieval drainage and on the ecology and palaeo-ecology of Thorne and Hatfield Moors. Intensive archaeological research undertaken 1996-7 by HWP in the Humberhead Levels concentrates very largely on sample areas in this Zone, focusing on wetland sites, pre-medieval periods and warping.
Apart from this, the medieval, pre- and post-Enclosure history and land-use of REL remains largely unresearched.

Potential for research
Very good. HWP work demonstrates the high potential for archaeology and palaeo-environmental research. This study has demonstrated the high potential of documentary sources for later periods. Documentary material on the Enclosure and warping processes is especially good, and almost entirely unresearched for much of the area. There is much potential for the study of enclosure planning; such work would make a contribution nationally, as well as regionally, complementing previous studies of the Yorkshire Wolds and parts of Lincolnshire.

Potential for amenity and education
REL is easily accessible by road, but there are noticeably few footpaths in the lowland Levels and Carrs. Unlike the other countryside Zones here, there is no tradition of visiting the area and very few specific amenity facilities for visitors (e.g. the parking area and footpath near Tunnel Pits, Epworth, and Blacktoft Sands RSPB reserve, which properly speaking lies outside this Zone). There is much potential for increasing public access, especially alongside rivers and dikes.

Educational potential focuses on themes of "modernisation and improvement", the process of enclosure, landscape and building design, agricultural history, social and environmental issues.

Rarity and importance of zone and components
REL / Parliamentary Enclosure landscape is common throughout central and eastern England, and in general terms REL here is not of special significance. However, certain elements here - 17th century drainage and enclosure, warping, large 18th and 19th century model farmsteads - give it a regional, if not national, significance.

Existing conservation designations
None, apart from SSSIs on nearby riversides or remnant areas of peat moor.

Forces for change within the zone
The main negative processes are agricultural intensification and farmbuilding redundancy.

Continuing pressure on this Zone from intensive arable farming causes damage on a piece-meal basis. The cumulative effect can be very serious. The influence of Government and European farming policies is especially noticeable in this Zone. Policies for more sensitive and environmentally-friendly agriculture would have a positive restraining effect on the erosion of landscape character for REL, and of other farmland-based Zones in the area.

Isolated farmhouses and farmbuildings suffer from disuse, followed by demolition or unsympathetic conversion. Their disuse is partly a function of building age and changing farming practice, partly due to amalgamation of holdings and the reluctance of farmers to sell or rent property.

Recommendations for landscape conservation management

In general terms, scope should be provided to enhance landscape elements that are being depleted or destroyed through intensive arable farming. These can be summarised as:

- maintain key characteristics of the landscape: its open aspect, linearity, and the pattern of isolated farmsteads.

- management of existing hedgerows and trees; new planting close to settlements and farmsteads, and careful planting in the open countryside.

- improve visual and ecological status of drains, dikes, watercourses, and of dikeside vegetation.

- undertake water level management at selected sites (including the environs of moors, turbaries and remnant commons) for conservation of wetland ecology and of buried waterlogged paleo-environmental and archaeological material.

- undertake a buildings census of historic farmbuildings, to assess the problems of redundancy, conversion etc.

- encourage continued use / appropriate re-use of farmstead settlements and historic farmstead buildings; encourage the use of sympathetic materials and design for new buildings.

- encourage access to the wider landscape, especially along rivers, dikes.

Present farming practice means that opportunities may be limited for boundary conservation or restoration schemes for hedges, dikesides and field margins. Such work could have a high impact and the cumulative effect would be significant. However, as mentioned in the preceding section on Hedges, care needs to be taken to make sure that the open aspect of the landscape is not compromised by inappropriate dikeside and roadside planting. Further fieldwork and map-based research, building on this study, would clarify local situations and enable target areas to be selected.

RAISED MIRE AND TURBARY (RM&T) ZONE and MOORLAND ALLOTMENT SUB ZONE

Definition, date, location, distinguishing attributes.

This Zone comprises areas of peatland surviving either as open moor or woodlands, or subject to peat or sand extraction, or occupied by turbary or moorland settlements with farms, smallholdings and garden plots. Where the peat is combined with sand (as at Hatfield Moor, Haxey and Epworth Turbary, and the remnant areas of former moorland commons south and west of Haxey), it sometimes gives rise to sandy heath. For the most part, areas which are not being worked for peat or sand or being farmed carry regenerating woodland, mostly birch and oak. The land is extensively artificially drained.

The areas range from under 20ha. at Haxey and around 50ha. at Epworth, to over 1200ha. at Thorne & Crowle Moors, and 1400 ha. at Hatfield Moors. All these areas have high ecological interest, especially Thorne Moors, which is nationally and internationally important for its flora and fauna. Large areas of Thorne, Crowle and Hatfield Moors, and parts of the Epworth and Haxey Turbaries, and of the remnant commons south and west of Haxey are SSSIs and nature reserves (see Existing Conservation Designations, below).

Historical outline

The development of the raised mires and their palaeo-ecological interest is described in WHHL. The peat started to develop in the Bronze Age and continued to form until the post-medieval period. Deposits were extensive throughout the lowlands, with the greatest areas centred on Hatfield Moor and Inclesmoor (the medieval name for Thorne and Crowle Moors and the area to the north), which in the Middle Ages was shared by several parishes. Peat extraction and agricultural colonisation started in earnest then and has continued to the present day.

In medieval and post-medieval times, the peat moorlands were used by the surrounding communities for rough grazing and as a source of peat or *turf* (hence the term *turbary*). Turf was used as a building material as well as fuel. Wood was also dug from the peat. Like the other wetlands, the peatlands were also a source of fish and wildfowl. The right to exploit the Axholme commons, granted in 1305 by Lord Mowbray to the Isle of Axholme communities, was highly prized by the commoners, and was the basis of their dispute with the Crown and Vermuyden when the latter appropriated and enclosed large areas of the villagers' commonland (Read 1858, 19).

From the Middle Ages onwards, peat exploitation on the moors has been accompanied by agricultural colonisation (see Moorland Allotments, below). By this century, the main relict areas of peat moor were centred on those that still survive at Thorne, Crowle and Hatfield Moors. Peat exploitation was relatively small-scale until the middle of the century. Since then, commercial extraction has accelerated, particularly with increased mechanisation in the 1970s, which also introduced incongruous industrial processing plants. At the same time, drainage of the areas has increased, causing the peat to dry. A large part of Thorne Moor was bought by English Nature in 1995 with a view to long-term conservation. Throughout the Moors, the land bears the regular linear scars of peat cuttings: the areas still being cut for peat are stark and desolate, whilst some of the older cuttings now carry regenerated woodland. Woodland now forms sizeable blocks on all the Moors, together with narrow fringes along the moorland edge.

HAXEY, EPWORTH AND BELTON TURBARIES

These areas originated as parish turbaries allocated to the Axholme communities in compensation for common rights lost when their extensive commons were enclosed in 1803. The areas, all on the west side of the Isle, were amongst the poorest agricultural land in the parishes. They amounted to 100 acres for each parish, in single plots for Haxey and Owston and two plots each for Belton and Epworth. According to the South Axholme Enclosure Award, the Turbaries were to be used for obtaining "land, soil, earth, peats, turves, sand, whins or sods" - the soil or sand presumably for improving peaty farmland. The amounts that could be removed each day were limited, and income from any fines levied on those who exceeded these limits went to the Overseers of the Poor.

From around the mid 19th century, one-acre plots on some of the turbary land were let cheaply to the poor of the parish, enabling them to settle in small, often self-built, cottages. The areas used for these smallholdings were parts of Haxey Turbary (including that part known as Haxey Carr), and the smaller, separate, sections of Epworth and Belton Stockholes Turbaries. The remaining Turbary areas remained open land. At Belton Low Closes it became pasture (see below). Owston Turbary, situated north of Haxey Turbary, too far from Owston village for traditional turbary use, was let for farmland. The larger parts of Haxey and Epworth Turbaries were left to be used as classic turbary. At both places the undulating ground left by peat and sand digging has been colonised by scrub and woodland. Parts of these two areas at Haxey and Epworth contain SSSIs and nature reserves.

The turbary smallholdings were used for market gardening, potatoes, and a little livestock. Only a handful still survive as smallholdings, and even fewer retain their buildings intact. Haxey Turbary, and the adjoining area of Haxey Carr, is said to have been seriously depopulated after the Second World War, largely (according to locals) due to Public Health and Building Standards regulations. As a result, plots became overgrown or were amalgamated into farmland. More recently, unsympathetic rebuilding has begun to make inroads at Haxey Carr (in one case involving demolition of a listed cottage without consent). Belton Stockholes Turbary has been similarly affected by having cottages condemned, but there the result has been plot amalgamation and rebuilding. Most of the houses at Epworth Turbary have also been comprehensively rebuilt. Nevertheless, at each of these places, the basic pattern of small turbary plots survives, whilst many of the original small cottages have simply been expanded or incorporated into larger "modern" houses. There are also some unimproved vernacular cottages, including one listed example each at Haxey, Belton and Epworth, though their survival is very delicately balanced. One, at Haxey, is timber-framed, a diminutive and unique version of the traditional two-roomed Lincolnshire vernacular mud-and-stud cottage. The others are brick and tile. These cottages are extremely rare and important survivals of a type of lowly dwelling once common throughout the region. They present a particularly difficult conservation challenge, since they are so modest that few people would be prepared to live in them as they are, yet even the smallest insensitive alteration would ruin their historic character.

The Turbaries are administered by sub-committees of their respective parish councils. At Belton this is the Private Roads Committee (formerly the Private Roads and Drains Committee), who also oversee Belton's surviving open strip fields.

Zoning the Moors and Turbaries

The least altered of the traditional turbary areas are Haxey Turbary/Carr and the northern, unsettled section of Epworth Turbary. Both are now much overgrown, though clearance work has recently been carried out in the nature reserves at both places. Their character is like that of the larger moors in miniature. Stockholes Turbary and Epworth South Turbary, though both largely colonised by settlement that has seen much modern rebuilding, still have a very distinctive history and character. They are more similar to the settlements on the margins of the larger moors - the Moorland Allotments described below - than to any other land-use in the area, and both fit better in this Zone than with any other. Low Closes, the larger of Belton's two parish turbaries, has been under grass for several decades at least. It was presumably also originally exploited for peat or sand, and this may be the origin of earthwork depressions there. For present purposes, it has been characterised as RM&T/ Moorland Allotments, as has Owston Turbary, leased for farmland for many years and divided into small hedged fields.

Although the raised mire moors and turbaries are dispersed and vary widely in size, they share a distinctive geology, vegetation and land use, and constitute a Historic Landscape Character Zone. The alternatives, categorising the Moors and Turbaries as separate Zones or incorporating the Turbaries into other Zones, do not at present seem justified from the perspectives of historic landscape characterisation or conservation management.

The character of the area enclosed and settled at Ribbon Row, Crowle Moors, is similar to that of some Turbaries. The issue of Zoning this and other "Moorland Allotments" is discussed in the following section.

ENCLOSURE AND RECLAMATION OF THE MOORS: THE MOORLAND ALLOTMENTS SUB-ZONE.

The northern part of the study area, stretching from Snaith to Ousefleet, although within the Hatfield Chase Royal Forest purlieus, was not under Forest Law, giving it a measure of freedom in terms of ownership and land-use. Rights to exploit these parts of Inclesmoor were granted by surrounding manors to other lords or monasteries in Yorkshire and Lincolnshire, who cut the peat and exported it via the Ouse, either for their use, or to supply local markets and industries, such as brick and tile making at Hull. Land was granted in strips from around 40 to over 800 metres wide, serviced by cart tracks and navigable dikes. The land worked for peat was then converted to pasture where grazing was more controlled than on the intercommoned "waste" beyond. This process created a series of long "intakes" into the Moors, shown on the Inclesmoor map (**map 3.1**) and still recognisable in field patterns here, most clearly in Goole Fields and Swinefleet parishes (Beresford 1985; 1987). The enclosed former moorland, spread through Goole, Swinefleet, Rawcliffe, Snaith and Cowick parishes, and improved in places by warping, was originally used for stock and mixed farming. The area is now almost entirely under intensive arable cultivation and, as SLUS maps show, has been since at least the mid 1960s.

Similar patterns of long, narrow intakes are seen around other sides of Hatfield, Thorne and Crowle Moors, but here their development came later, in post-medieval times. For much of the southern area, within Hatfield

Chase proper, the restraints of Forest Law seem to have effectively prevented the type of moorland development seen in the north until the 17th century. Even then, because Vermuyden's drainage scheme left the "turf moors" of Thorne and Hatfield unimproved, colonisation was limited to the margins. It was probably then that the pattern of narrow strip plots was begun on the south and west sides of Thorne Moors. Inhabitants with common rights laid out narrow plots into the moors, cut the turf for sale and farmed the land exposed under the peat (Dinnin, 25).

Further colonisation of the Moors had to wait for Enclosure in the early 19th century. All 1388 acres of Hatfield Moors was divided and allotted at Enclosure in 1811-25, and settlers moved in, cutting the peat and reclaiming the land. Small areas were similarly allotted at Thorne (1811-25) and Crowle Moors (1813-22), but here the remainder stayed as "waste", i.e. common. Parts of these enclosure allotments on Hatfield and Crowle Moors were rendered cultivable by "dry" or "cart" warping. More widespread was warping with floodwaters from the Trent and Ouse, used extensively on the north and east side of Thorne and Crowle Moors, and around Wroot on the south-east side of Hatfield Moor. (See Geology p.23-4 and Warplands p.63).

At Thorne the series of long, narrow allotments extending to the moor is known as The Cables. Settlement here is more intensive than on other moorland colonies, with plots up to 3km. long, most of them carrying roadside houses or farmsteads. The earliest buildings here appear to date from the mid 19th century. Some of the farmhouses and farmbuildings here are disused, and there has been extensive replacement in the post-war period. During this century the northern part of the Cables has been colonised in turn by Moorends mining village and associated land uses: sports ground, post-war industrial estate. The original Cables settlement pattern is best preserved in the large southern section. As with the other Moorland Allotments, the layout and land use shows very clearly on the 1960s SLUS maps. Today the area is mostly arable, but with surviving pockets of old pasture. The moorland character becomes more apparent closer to the wooded moor edge. More research is needed here on present land-use, buildings and hedge survival.

On the Crowle side there was a similar encroachment of long, narrow plots allotted at Enclosure, known as Ribbon Row. Enclosure and reclamation here has been piece-meal and made much less impact than at Thorne or Goole Fields. Apart from garden plots or small fields behind the houses, and some areas of peat extraction, most of Ribbon Row carries naturally regenerating woodland. Although the settlement here was private, rather than a parish one, its general character is very similar to the parish Turbaries in South Axholme at Epworth and Haxey, described above. Settlement here formerly consisted of one or two farmhouses and a handful of diminutive smallholders' cottages on the roadside, dwarfed by the peat moor behind. During the past ten years, though, all of the early Ribbon Row houses, apart from one farmhouse and two derelict cottages, have been replaced by inappropriate large modern houses. Nevertheless, despite the modern buildings, the character here is still essentially that of RM&T/ Moorland Allotments. Although it is different in detail to Haxey Turbary, it shares the same character of an area where the predominant element is moorland rather than enclosed farmland.

The pattern of elongated peat moorland intakes or allotments represents a distinctive process of land-use which is unique in the Humberhead Levels,

and perhaps further afield. It has some similarities with the pattern of fenland reclamation around the Wash and Lincolnshire Marshes, but more research is needed to put these peatland enclosures into a national context. For the purposes of the present Historic Landscape Character assessment, these Moorland Allotments are characterised as a separate sub-Zone. This category can also include the areas of Turbary settlement which, along with the "strip" allotments around the larger moors, form the two main constituent HLC Types of the sub-Zone.

The varied character of the Moorland Allotments reflects the different processes of moorland colonisation and the impact of 20th century farming and development. Thus at Crowle Ribbon Row and Haxey Turbary reclamation and colonisation has not gone very far and the areas share many characteristics of the basic unmodified Raised Mire and Turbary Zone. At Thorne Cables and Epworth and Stockholes Turbaries enclosure and has gone further, and they share characteristics with EEL. In the Goole Fields - Swinefleet area, where the colonisation processes is most advanced and modern arable farming has made the greatest impact, the land has characteristics of REL. It would be possible to Zone these areas as either RM&T, EEL or REL, but this would have overlooked their distinctive historic process and character, and it is felt that their special shared characteristics and management potential justifies a separate category as Moorland Allotments.

For mapping purposes, the Moorland Allotments and "colonised" turbaries are shown as a hatched Sub-Zone of RM&T. The areas range from several square kilometres to a few hectares: mapping the smaller areas as parts of the RM&T/MA Zone, rather than merging them with their surrounding Zone, is justified by their landscape importance. More detailed mapping could be undertaken to show both the essential character of the areas and their subsequent modifications, mentioned in the previous paragraph. By using hatching and background tone or colour, their secondary, present-day characteristics can be shown as either RM&T, EEL or REL.

Further fieldwork and research is needed to clarify the history and present condition of this type of land-use, and to determine whether it justifies designation as a distinct Zone. A separate category for the Moorland Allotments, encompassing the different phases, processes and present conditions, has distinct advantages. It gives recognition to a distinctive process of land-use which has a long history here and is unique in the region, possibly the country. And it assists conservation management here by focusing attention on the specific problems and potential of these sensitive areas around nature reserves (including a National Nature Reserve). At present the Moorland Allotments fall mostly outside the SSSIs and the nature reserves, and they are not suited to the conventional approach of planning development control for settlements or rural areas. Like the Turbaries, they require a special approach.

RM&T: Main components and their coherence, condition and survival.
Peat moors with relict drowned woodland, open heathland and regenerated woodland; exposed peat and peat cuttings, both historic and recent; sandy carrs with heathland and regenerated woodland, old sand pits.

Includes Turbaries and moor margins with a distinctive pattern of Moorland Allotments: i.e. farms and smallholdings characterised by regular plots in blocks and strips, some of the latter up to 3 km long, with small cottages and farmsteads - a mix of older buildings, rebuildings and new development.

Coherence
Good, despite the affects of peat extraction and modern development. The semi-managed heathland and woodland vegetation dominates much of the Zone, particularly those parts visible or accessible to the public, whilst the special character of the Turbary dwellings and plots lends a cohesion to the settlements. However, both of these historic landscape characteristics continue to be under serious threat.

Condition and survival
Very variable: some areas seriously physically damaged by peat or sand extraction or drainage, or with their character compromised by inappropriate development; other areas survive relatively well, but precariously.

Past interaction with other Zones
The functions and relationships of this Zone to settlements and other Zones are still clear. The role of RM&T as "waste" common pasture land and a source of peat, wood etc. is still clear from its present appearance, relict features and continued exploitation. The relationship of these marginal peatlands to the villages, and of the colonised Turbaries to their parent villages is still clear. The relationship of the Zone to the Moorland Allotments, EEL and REL, and their respective processes of agricultural colonisation, is clear.

Evidence for time-depth
Probably the Zone with the deepest, and at the same time simplest, appearance of time-depth. The archaeological and palaeo-ecological aspects are not immediately apparent, but the Zone is immediately recognisable as an ancient relict landscape, especially in the context of the modern extraction sites and of the intensively-farmed "modern" REL around it. The Turbary settlements and marginal Moorland Allotment enclosures represent the long process of colonisation since the Middle Ages, although, like AOSF strip cultivation, this is not necessarily apparent to the uninitiated. However, the unmodernised Turbary cottages are immediately recognisable as an old and "primitive" form. Indeed, two or three of them are more redolent of post-medieval rural cottagers culture than almost anything else in the whole Yorkshire-Humberside region.

Visibility / contribution to present landscape character
RM&T makes a major contribution to landscape character. Haxey and Epworth Turbaries are clearly visible from the fields, paths and villages on the nearby Axholme hills. The larger Moors of Hatfield, Thorne and Crowle are reached by few roads, and are mostly seen from a distance, where they form an extensive wooded fringe across the horizon. In this otherwise largely arable landscape these woodlands have a strong impact. Closer to, the seemingly endless expanses of the larger Moors is very impressive.

Values and perceptions of the Zone.
Public pressure, locally, regionally and nationally, has made an important contribution to moves to conserve the large Moors. The areas are increasingly recognised and appreciated as valuable natural habitats, though isolation of the larger Moors means that they suffer from being "out of sight and out of mind".

The Turbary settlements also suffer from lack of local awareness. Locally, the areas seem to be rather taken for granted. Although Epworth and Haxey Turbaries and Crowle Moor are recognised for their ecological importance,

their historical interest is overlooked, and Stockholes Turbary, little-known even on the Isle, is not recognised at all as a historic site. The architectural aspects similarly have little recognition, particularly at Stockholes, Crowle and Epworth, whilst at Haxey appreciation of this aspect rests on one picturesque listed cottage while other buildings here suffer neglect or unsympathetic rebuilding.

Extent of research and documentation
This Zone has received more attention from researchers than any others in the study area, but it is unevenly distributed. Work has focused on the ecology, palaeo-ecology and history of Thorne and Hatfield Moors (e.g. as in WHHL); the history of the smaller Turbaries has not been researched.

Potential for research
The potential for ecological and historical work is very high for all areas. One particularly urgent need is for emergency recording of Turbary settlements, through photographs, measured survey of buildings etc., before further losses take place.

Potential for amenity and education
High. A balance has to be struck between access and conservation. Accessibility to both the Moors and Turbaries can be a problem, with no footpaths at all on Thorne, Crowle and Hatfield Moors, and only narrow lanes to Haxey Turbary and Crowle Ribbon Row. On the other hand, this can be a positive help in maintaining the relative quiet of the Nature Reserves. Until recently, poor access had also tended to deter redevelopment. The two-edged effect of better accessibility is seen at Epworth Turbaries: of the three Lincs Trust reserves, this one is the most visited and has been the focus of most conservation work; at the same time, many of the Turbary buildings here are altered or rebuilt.

Rarity and importance of zone and components
Very high in local, regional and national terms, and for Thorne / Crowle Moors, in international terms.

Existing conservation designations

Ecological. Significant portions are SSSIs: 1170ha at Thorne Moors, 121ha at Crowle Waste, 1400ha at Hatfield Moors, 33ha at Epworth Turbary and 14ha.at Haxey Turbary. At Crowle, Epworth and Haxey the areas are managed by the Lincolnshire Trust for Nature Conservation, whilst 1170ha of Thorne Moors are a National Nature Reserve, owned by English Nature. Despite these designations and associated conservation management, large areas are still subject to peat extraction on Thorne, Hatfield and Crowle Moors, and the Moor and Turbary areas as a whole are vulnerable to over-draining.

Some sections of raised mire/sandy heath alongside the Haxey Turbary SSSI and reserve, known as Haxey Carr but forming part of the original parish Turbary designated in 1803, are especially vulnerable and should be considered for inclusion in the SSSI.

Archaeological. Ecological conservation of wetlands is generally beneficial for conservation of their archaeology. There are at present no sites protected specifically for their archaeological interest, but HWP are making recommendations for site preservation, including designations such as Areas of Special Wetland Archaeological Interest (WHHL, 463).

Architectural/ Historical. Epworth, Haxey and Stockholes each have one listed example of a Turbary smallholders' cottage. (Haxey originally had two, but one was demolished and rebuilt in an unsympathetic style, without listed building consent, shortly after listing.) The cottages were listed in 1987 as "rare survivors and representative examples of a unique type of settlement", and the English Heritage internal assessment of the Axholme area List draws special attention to them. However, their present condition and future prospects are precarious. At present one is disused, and two are occupied but are ripe for redevelopment when the present owners leave. They present a particularly difficult conservation challenge, since they are so modest that few would be prepared to live in them as they are; they are ripe for enlargement and "improvement", but even the smallest insensitive alteration would ruin their historic character. All need very sensitive handling by the local planning authority in order to steer a course between the two main threats: on the one hand, disuse and, on the other, of overdevelopment through excessive alteration and addition. Besides the listed examples are others at Belton Stockholes, Crowle, Haxey and Epworth which merit preservation by listing or other means.

Forces for change within the zone

Negative: considerable threats to ecology and archaeology from desiccation of waterlogged deposits due to over-drainage of peatland themselves and of the surrounding farmland. On the larger Moors, continued depredations through peat extraction.
Increasing problems throughout from disuse of older buildings, insensitive rebuilding and new development for commuter homes, modernised farms etc.

Positive: on the larger Moors, management by English Nature to re-water sites and to maintain and improve wetland habitat. On Reserves at Crowle Waste, Haxey and Epworth Turbaries, continued management from L&SHTNC.

Recommendations for landscape conservation management

- Planning and development. Improve Planning Development Control for all Turbaries and Moor fringes, to restrict insensitive development, and to encourage sympathetic rehabilitation of redundant buildings.

- Buildings. Highlight the need for specific Historic Buildings Conservation strategies for Turbary cottages, to maintain the historic settlement pattern and the "primitive" character of its buidings.

- Ecological. Investigate water level management for the Turbaries and other remnant moorland areas (as has been done for the larger Moors), especially at Haxey.

- Investigate the possibility of extending the SSSI at Haxey to take in additional areas, notably the adjoining grassland and sandy heaths.

- Research and education / amenity. Research the history of the Turbaries to inform and develop conservation management and local awareness of the history and importance of the areas. Emergency recording of surviving unaltered Turbary smallholdings and buildings.

- Where appropriate, facilitate further limited public access to the Moors and Turbaries.

NON-AGRICULTURAL HISTORIC LANDSCAPE CHARACTER ZONES

DESIGNED LANDSCAPE ZONES

Terminology

Designed Landscape is a "Zone family" that encompasses landscapes specifically created to look and function for some specific purpose other than agriculture. They can be subdivided into Types: Recreational (sports grounds, golf courses etc.); Ornamental (landscaped parklands) and Functional (airfields, military sites, cemeteries etc.). In fact there is much overlap between these categories: the parklands described below, for instance, have recreational and agricultural uses; similarly, functional areas like cemeteries usually have strong elements of ornamental design.

These qualifications to the term "design" are important, since, in historic landscape terms, virtually all the surface landscape in the study area is "designed", apart perhaps from the main rivers and the peat moors. Indeed, it can be argued that even these - the most "natural" of features in the area - have been delineated with banks and drains and thus "designed-in" to the landscape. So too with buildings: all have been designed, whether by vernacular builders or architects. To avoid confusion, the term Design therefore needs a second defining term: Ornamental, Recreational or Functional.

The study area has relatively small areas of Designed Landscape, but some of these are significant enough to justify their treatment as a Zone. The Zone map (**map 5**) differentiates two categories: Design / Ornamental (parklands), and Design / Functional (airfields). The municipal parks, sports grounds and cemeteries in the area are small and have only local significance: they are too small to be mapped as part of this Zone.

Design / Ornamental Zone: Parklands

In terms of historic landscape character analysis, the most significant areas of Designed Landscape in the study area are ornamental parklands. Although these have recreational and agricultural functions, their ornamental element is their defining characteristic, and Ornamental is felt to be the most appropriate term for them.

The most significant Ornamental Parklands here are grouped on the north side of the Isle and comprise two country-house parks near Belton, and a recent recreational watersports "park" created from the Crowle claypits.

There is now only one country house park maintained as such, at Hirst Priory, between Belton and Crowle. Another one nearby, Temple Belwood, was broken up and largely converted to arable in the middle of this century, but has left clear traces. A number of smaller country houses and large farmhouses have sizeable gardens rather than parks, and many have associated "parkland" features such as avenues, paddocks and tree belts, extending into the surrounding farmland.

For all these areas, the key historic landscape components are the "naturalistic" landscaped grounds or relict features such as grassland, mature trees, woodlands, etc. Their impact in this intensively arable area is often substantial.

Main Parkland sites

Hirst Priory, the site of a small monastic cell, has the remains of a medieval moat and a house of c.1700, much enlarged last century, now a hotel and clubhouse. The attractive well-wooded grounds, landscaped in the "naturalistic" style, contain the village cricket ground and a golf course.

Temple Belwood, nearby, was the largest country house estate in the study area. Like Hirst, it succeeded a religious house (here a Templar's Preceptory), situated on marginal land beyond the village's main arable fields. The farmstead which contained parts of the medieval Templar's building was demolished in the 1960s or early 70s (without listed building consent). A large fishpond still survives nearby. The Georgian country house had been demolished some years earlier, along with the gate lodges. In the late 1970s the M180 cut through the estate. However, the walled kitchen garden survives, along with elements of the landscaped parkland, in the shape of hedged fields and paddocks, lanes and woods. There is also a brick-built obelisk monument which, though small, is a locally significant landscape feature.

Other small country houses or large farmhouses which make a significant landscape impact with their ornamental gardens and associated planting include: Sandtoft Hall, Tetley Hall near Crowle, Waterton Hall near Garthorpe, Eastoft Hall, Haldenby Park near Luddington, Whitgift Hall, Swinefleet Hall, Bull Hassocks Farm near Wroot, and Ousefleet Grange (where the house is gone but some parkland survives).

Landscape conservation management

The two prime concerns for surviving ornamental parkland, whether intact or relict, are the management of the historic fabric and the parkland ecology.

The surviving historic fabric includes buildings such as houses, stables and monuments, and garden features such as earthworks and patterns of planting like avenues, clumps and boundary screens. The parkland also preserves earlier buried features and earthworks such as medieval ridge and furrow, fishponds, and the moated site at Hirst. Ecological interest focuses on woodlands, ponds, undisturbed grassland, trees and hedgerows.

All aspects are worthy of management attention, especially as the survivals here, though small-scale, make a strong contribution the local landscape character.

There are details on the main houses from the Listed Buildings Resurvey of 1986-7, but apart from this there is no information on the parkland areas. There is a need for survey of parkland ecology, buildings and garden features to inform management strategy.

Recommendation for landscape management

- Review the information available on the landscape history and ecology of the country house parks and associated features, and where it is lacking undertake surveys to inform conservation management strategy

TRANSPORT AND COMMUNICATION ZONE

Historic landscape components

Lines of communication - navigable rivers, canals, major roads, railways make a major contribution to the landscape character of the study area, in terms of their visual impact, ecology, historic association and relationship to other landscape features such as settlement, farmland and industry.

There are two main categories:

1) Main routes passing through the area - canals, main railways, A18 trunk road and motorways - originally with little direct relationship to its settlements, but which have often subsequently fostered development.

2) Local routes, such as minor roads and the former Axholme Joint Railway, developed specifically as links between existing settlements and industries.

Historic outline.

Waterways

Early communications here focused on the main rivers - the Trent and Ouse, and the former rivers Old Don, Torne and Idle, all of which have fostered settlement on their banks from the prehistoric period onwards. Today only the Trent and Ouse are navigable, but in previous centuries most of the rivers were used for transport. Traffic on the Idle and Old Don, for instance, made an important contribution to the livelihood of the medieval towns and villages on their banks. The earliest artificial waterways here, cut in medieval or even Roman times, were made to avoid navigation problems on the lower meandering reaches of these rivers. They included the north arm of the Don to the Aire at Turnbrigg, the medieval Mere Dike from the Old Don north of Crowle to the Trent, and Bickersdike from the Idle to the Trent south of Haxey. The larger waterways were used by boats carrying passengers, and goods which included flax, hemp, corn, peat and coal. Before Vermuyden's drainage the smaller creeks and dikes throughout the area carried smaller craft, and in winter the waterways spread their reach even further. Other minor waterways, often called Boating Dikes, were cut to enable peat to be shipped from Thorne and Crowle Moors to the Ouse, Don and Trent, and thence to distant markets. The last was used in the 1830s, when the high water levels needed for boating conflicted with drainage needs. In the late 18th and early 19th centuries canals were cut to the Trent at Keadby and West Stockwith, and to the Ouse at Goole. (Dunston 1910; Thirsk 1953; Dinnin 1997, 25-7).

Roads.

The early, pre-modern, road system within the study area was largely of local rather than regional or national significance, but there were two through routes worth notice. The first is the former Roman road / Great North Road passing just outside the south-west side of the study area. It was separated from the main settlements here by moors and carrs, and probably thus had limited impact. The second is the medieval Moorgate

highway from Pontefract to the Old Don, carried across the Marshland from Swinefleet on the Kings Causeway, which with its straight course resembles modern roads rather than the typical medieval ones. The highway probably served as the northern boundary to Inclesmoor, and, together with its roadside boundary crosses, is shown prominently on the early 15th century Inclesmoor map, where it heads for the twin villages of Fockerby and Garthorpe, linked by a stone bridge (Beresford 1986). A ferry here is mentioned in the late 12th century (Richardson 1981, 89-90). From there the routeway may have continued by river or road to the Trent, with a ferry across to Burton Stather, an important medieval marketing centre in medieval times. The present main road follows the Kings Causeway from Swinefleet to Ousefleet Grange, near the site of a stone cross. A branch from there to Adlingfleet survives as a green lane, Cow Lane: the original main route to Fockerby, shown on Jeffrey's 1771 map, was probably discontinued at enclosure.

The Yorkshire Marshland - Trent valley area benefitted from the strong involvement of medieval religious houses keen to maintain reasonable drainage, transport and communications. After the Dissolution this infrastructure deteriorated. Post-medieval road development was held back by the isolation of the area, the lack of bridges over the main rivers, and the absence of dominant lamndowners or bodies that might initiate improvements. There seem to have been no Georgian Turnpike roads in the area, and an indication of the quality of the Axholme road network at that time is given by the report that roads were upgraded in 1810-12 by laying flagged paths and narrow causeways for horses. Some wider waggon roads were laid with brick. In 1839 Stonehouse reported that "Macadam's system of road making has at length, found its way into the Isle, and some very good and durable roads have now been made". The nearest road bridge over the Trent was at Gainsborough, opened in 1790. The river ferries were all small, and largely restricted to local traffic. The situation only changed as late as 1916, with the opening of a combined road and rail bridge at Keadby, which when built was the largest of its kind in the world. Keadby Bridge significantly improved road access between north Lincolnshire and England north of the Trent, just in time for the real growth in motor traffic. The road it carried, the A18 road linking Grimsby and Scunthorpe with Doncaster, was superseded in the late 1970s by the M180 motorway which links with the north-south M18 route. The motorways have had a very noticeable effect in opening the area to outside influence and land-use pressures from the urban-industrial areas to east, west and north.

Railways.

The main East Coast line reached Doncaster in the 1840s. In 1859 a line was opened from Doncaster via Crowle to Keadby Wharf and in 1866 it was extended across the Trent to link with the newly developing iron town of Scunthorpe and the expanding port of Grimsby. Other through routes were opened in the 1867 between Gainsborough and Doncaster, passing south of Haxey, with a later link from there to Bawtry (now abandoned). Between 1900 and 1905, light railways operated by a small independent company, the Axholme Joint Railway, linked the Axholme and Marshland villages with the main lines at Goole and Doncaster. In 1909 a branch was built to Hatfield Moors to transport peat. By then the rail system in the area had reached its greatest extent: every village and nearly every farm was within three miles (5km) of a railway station. Railway traffic helped the farming community, and the amount of coal traffic handled even in rural areas was quite large. Today, the main lines are still in use, but the Axholme light

railway closed in stages until it ceased altogether in the 1960s. Much of its network is still traceable, especially in the Isle where the main route is a nature reserve. Another former line which makes a significant impact on the landscape is the former Bawtry line that runs across the carrland south of Haxey. (Wright 1982; Wright 1993).

Contribution to landscape character

The lines of communication have a clear relationship to the Zones they pass through, and to the settlements and industries they serve. They also have clear ecological interest. The dikes, cuttings and embankments that flank the railways, canals and major roads support habitats that have been largely banished from much of the surrounding arable land. These, together with the watercourses themselves, represent significant wildlife corridors through the farmland. The former railways in Axholme and the M180 are especially notable for their tree cover, and the canals and rivers for their reeds and bankside pasture.

They also have an important visual impact in terms of landscape character, especially in the flatter areas, where their long straight routes can be seen from long distances.

Research and documentation

Canals, major dikes, railways and motorways make a significant contribution to landscape character, and their flanking wayleaves provide important habitats for wildlife. Information on these areas is very patchy; ecological data is available for the nature reserves on the River Idle and the old Axholme Railway Line, but other areas have not been surveyed. Data on their history could also be gathered from various sources as part of a habitat survey.

Recommendations for landscape conservation management

- With a view to extending conservation management, and building on the examples of the existing railway and riverside nature reserves, review the information currently available on habitats alongside dikes, rivers and routeways, and where it is lacking undertake surveys.

- Improve public access along rivers, dikes etc.

INDUSTRY AND COMMERCE ZONE

Historic landscape components

The significance of industry and commerce for Historic Landscape Character lies not so much in individual industrial or commercial processes, but in the kind of impact they have on the landscape.

The Axholme area has always been predominantly agricultural, and properly speaking, the main industry here is farming, which has been dealt with in the "farmland" HLC Zones. The following section reviews the other significant industries and their impact on historic landscape character.

Historically, the main industries here, apart from agriculture, have been based on the extraction of peat, clay and coal, and on processing agricultural produce. In the late 18th - 19th centuries, enclosure made new land avilable for developments such as quarrying, brickworks, mills etc. This century has seen the introduction of electricity generation and, more recently, a modest spread of light industry. Prior to the present century, manufacturing and commercial development was limited to fairly small-scale, semi-domestic trades, again based largely on farming. These can have a significant cumulative effect on landscape character, as seen in the historic market towns of Epworth and Crowle and the former river port of Owston. Today, commercial activities such as retailing and agricultural engineering, still mostly on a small scale, are still concentrated in Epworth and Crowle and, to a lesser extent, in Haxey.

More significant, in landscape terms, are the larger-scale developments which have taken place this century, often outside the historic centres of towns and villages. These have a greater impact both individually and cumulatively, from their concentration in industrial estates and along lines of communication - rivers, canals, railways and motorways.

The Zoning of the extractive industries requires a subjective interpretation of their effect on landscape character. In the case of sand, gravel and peat extraction, where the workings are spread over wide areas and form part of the landscape character, the areas have been included as RM&T. In other cases the character has been fundamentally changed, as in the landscaped claypits at Ealand. Associated processing plants, although prominent, usually occupy small areas by comparison, and can only be shown by symbols on small-scale maps.

INDIVIDUAL INDUSTRIES

Peat. The history of peat extraction here is summarised above in the sections on Geology and RM&T. It began in earnest in the Middle Ages, but it was not until the introduction of milling machines in the 1970s that extraction reached a really intensive scale, with such profoundly damaging effects over wide areas.

Sand and gravel. The scars of 19th century domestic sand extraction are still visible in the Axholme Turbaries (see RM&T). Sand and gravel extraction on a larger scale was started this century in the western part of the study area, around Wroot, Blaxton and Hatfield Moors, where it continues. Extensive former workings at Blaxton Common, west of Wroot, now carry regenerated woodland or have been reclaimed for farmland.

Clay. Local clays have been used for pottery production just beyond the study area - at Rossington in Roman times, and at Cowick in the Middle Ages. Within the area, clay has been used for brick and tile since medieval times (and probably in Roman times too). As in other parts of the Humberside area, the lack of good building stone encouraged the early use of brick and tile for major buildings, as at Low Melwood Priory. Most medieval buildings, though, were timber-framed with thatched or tiled roofs. With their widespread adoption as the main building materials from the later 17th -18th century onwards, brick and tile make a major contribution to landscape character of the region. Brickyards formerly operated at Ealand (Crowle) beside the Keadby Canal, with smaller ones elsewhere alongside the same canal, beside the Trent, and at Belton and Burnham, north of Haxey (Robinson 1993). Brick production continues at Belton, now run by Ibstock Brick, supplied with clay from a quarry at Melwood, near Owston Ferry, and with a depot at Sandtoft Airfield (see Trade and Commerce, below). Its main impact on the local scene is through lorry transport. The other brickworks have gone and their sites re-used for agriculture, apart from the water-filled claypits at Ealand, some of them landscaped for recreation.

Gypsum. Gypsum was quarried on the isle to make high quality plaster for building (see p.94). In the 1840s-50s processing was underway at Belton and Haxey (Read 1858, 289), but the industry did not survive into the present century.

Coal. Because the coalseams are deep, development of the coalfield to the west of the study area came only this century. Thorne mine, sunk in 1925, was the most recent of the mines in this region (WHHL 13-14). Moves to begin a mine within the study area west of Haxey only got as far as building the Park Drain Hotel. Mining has had a significant impact on the landscape on the west side of the study area, not only from the pithead buildings and accompanying housing development for the workforce, but also from the large waste tips, now landscaped. The pithead towers themselves are visible for miles across the flat landscape.

Power generation. Coal also supports a series of power stations beyond the study area to the south along the Trent, and to the north and west at Drax and Thorpe Marsh, all of which are visible across the flat landscape. Coal also used to supply a large Trentside power station built at Keadby in the 1950s, which in the early 1990s was replaced by a gas-fired plant. This too is a prominent feature of the landscape, as are the large numbers of pylons and power lines threading across the farmland.

Farming-related industry. Formerly, the area contained various small-scale industries processing agricultural produce. From the Middle Ages until the early 19th century the Axholme area was a centre for hemp and flax (or *line*) production, one of the most important in England. To the average farming family of late medieval and post-medieval times it was a profitable by-employment; to the poor it was one of the principal ways of earning a living. Little is known of the industry, but it centred on domestic production with home weaving, and many probate from the 16th to the 18th centuries record its presence in local homes. In the later period there were factories and warehouses, some of which may survive. In 1780 there were four factories producing sacking at Epworth; later the industry is said to have moved to Crowle. Last century the trade declined due to competition from Baltic imports and new textiles, but in 1856 there were

still significant numbers of linen, sacking and canvas manufacturers, and rope and twine makers in the Isle at Epworth, Haxey, Owston, Crowle andd West Butterwick, some in the Marshland villages to the north, and many flax merchants at Crowle and Epworth, some of them farmers (Thirsk 1953, 21-2; HAU 1989, 10-11; White's Directory, 618-41).

Arthur Young describes the cultivation of hemp and flax as he saw it in the 1790s, as well as the initial procesing methods employed in the field to obtain the fibres for weaving (Young 1813, 185-90). An essential process is *retting* the plants: submerging the plants in water to rot down the stems and enable the tougher fibres to be separated. Retting can only take place in still water, and leaves noxious products, so it was carefully controled, through manorial customs, by-laws and Enclosure Acts. The retting was mostly carried out in pits created for the purpose in specific areas on the commons. Judging by surviving examples and cropmark evidence, retting pits were typically rectangular, about 5 by 15 metres, and often linked by drainage channels. Some are shown on early maps, like that of West Butterwick (**map 3.4**), which shows a group of line (flax) pits just inside the common near the village and a group of hemp pits on the west side of the common. Other retting grounds can be identified by place-names or from cropmarks on aerial photographs. One such is East Lound Rates, south of the village, named on the map of 1596 (**map 3.2**) and in the 1803 Enclosure Award, and now showing as cropmarks (Loughlin & Miller 1978, 148, 155, 157). Further sites bearing the place-name Rates (the local term for retting was *rating*), are known from Owston, Epworth and Haxey, and no doubt more remain to be discoverd in other parishes. Most retting grounds seem now to have been filled and levelled, some by warping, but possible pits survive at Epworth Turbary and in roadside woods south of Beltoft, identified for the first time in the course of this study. A large group, comparablle to the Axholme ones, survives on Scotter common, on the east side of the Trent valley (Lyons 1980, 45-50).

Other farming-related industries include flour milling, malting, seed-crushing and agricultural engineering. Windmill towers are still prominent features on the Isle and the Riversides; Owston Ferry retains a small agricultural engineers' factory, and a former maltings and a warehouse/ oil-seed mill beside the Trent, both of which are listed buildings which contribute much to the riverside scene.

TRADE AND COMMERCE

The buildings associated with the earlier, smaller-scale trade and commerce are found in the historic market towns of Epworth and Crowle and in the former river port of Owston, where they make a significant contribution to historic character. As mentioned above, the larger-scale developments which have taken place from the mid 19th century onwards have a greater impact both individually, and also cumulatively, from their concentration along lines of communication - rivers, canals, railways and new motorways. The most prominent concentrations in the study area are Keadby, Ealand and Sandtoft.

Keadby. Originally a small Trentside township in Althorpe parish, Keadby developed in the late 19th and early 20th century as a trans-shipment port at the point where canal, road and railways meet the river. It was matched by development on the opposite Trent bank at Gunness. Further development

accompanied the 1950s power station. Although still a small village, Keadby's redbrick and slate housing, power station, riverside wharf and canal-head, drain sluices and pumping station, and the great road and rail bridge, combine to give it a distinctive industrial-commercial character quite unlike other villages in the study area.

The mixture seen at Keadby, of intensive arable agriculture, commerce and industry, is found at other points on the Trent, at wharves and industrial sites at Flixborough, opposite Amcotts, and Burton Stather, opposite Garthorpe. Unlike Keadby, these sites are not residential. Although they lie just beyond the east margin of the study area, these sites are highly visible across the flat landscape of the riverside Levels, a situation echoed on the northern margin of the area by Goole docks and town, and on the western margin by the industrial settlements of Thorne and Moorends.

Ealand. Of medieval origins, Ealand hamlet was developed in the 19th century with redbrick terraced housing, detached "managers'" houses and a hotel, to accompany the canal wharf, railway station and former brickworks. The latter have recently been superseded by a modern packing factory. The formerly busy road junction here between the A161 Epworth - Goole road and the A18 Doncaster to Scunthorpe road here has also become relatively quite since the M180 motorway opened. Crowle Wharf is no longer active: some original canal buildings were unfortunately demolished in 1996-7, but some railway buildings remain. These, along with other industrial housing - a large redbrick terrace, detached "managers' houses" and a hotel - now blend with other development here to give a more rural than industrial character.

Sandtoft. At Sandtoft Airfield, not far from Ealand, the process has been quite the opposite: a rural area has become industrialised. As with many other similar sites in Lincolnshire, development has taken advantage of the presence of what was originally intended to be a "short-term" wartime airfield. A small airstrip survives in use, and the site contains a transport museum specialising in buses. Elsewhere industrial units have been built beside the Belton - Sandtoft road, including an aggregate processing plant, an intensive poultry farm and a depot for the Belton brickworks. More significant in landscape terms is the development here in the early 1990s of a large hard-surfaced park for cars imported through Goole, recently joined by a massive yard for scrap cars. This contrasts starkly with the adjacent agricultural land-use, and there has been controversy over its visual intrusiveness, including at night, when it is strongly lit. The Sandtoft Airfield development also presents considerable transport problems. In historic landscape terms it is generally incongruous and has more in common with the South Yorkshire industrial areas to the west than with the Axholme area.

Research and documentation

Little or no research has previously been carried out on early trades and industries here. The potential for historic landscape research is very good, especially for the early peat and clay extractive industries and for the farming-related trades. Of these, the hemp and flax industry is the most important and least-known, but with much evidence to be investigated on historic maps, documents and on the ground.

Research should be encouraged on historic trades or industries, particularly on those which make the most significant contribution to the special character of the area.

SETTLEMENTS AND BUILDING TYPES

Introduction

This section provides an assessment of the built environment, addressing questions of settlement form and pattern and of building design, specified as an initial objective of the Axholme Area Historic Landscape Character study (1.(i), p.3). It provides a context and background for the comments on settlements and buildings in the Zone and Local Landscape Area texts.

Settlement is intimately linked to land-use, and patterns of particular settlement- or building-types (or combinations of types), are major components and indicators of HLC Zones. However, the basic categories of settlement types - towns, villages, hamlets, isolated farmsteads, - do not fit neatly or exclusively into separate Zones. This is partly due to the character of the study area, and partly a result of the scale and detail of this present landscape analysis, which recognises subtle differences in land-use character. Considering settlements and buildings only in the context of the individual Zone descriptions tends to fragment the subject. Settlements also need to be considered together, as land-use forms, so that historic processes, patterns and characteristics can be more easily recognised. This is an essential step towards understanding historic evolution and identifying common planning and conservation management issues.

A broader, area-wide approach to settlements and buildings not only helps to highlight significant components within Zones, but also relationships across Zones. It thus helps to distinguish the wider patterns that characterise the larger Landscape Character Areas which encompass several Zones.

The following review, has separate sections on settlements and building types, arranged as follows:

1. Settlements:

- introduction: settlement types.
- towns, villages and isolated settlements.
- settlement morphology and the relationship of settlement type to Landscape Character Zones and Areas.

2. Built Environment:

- building materials, building types.

3. Settlements and Buildings:

- conservation management.

Industry and Commerce Zone: landscape management issues

In historic landscape character terms the main issues are:

1) The direct impact of industrial and commercial development on the ecology and archaeology of the development site or its near vicinity.

2) Secondary impacts in terms on its visual effect on the character of the area, and on the impact of associated features such as transport, residential development etc.

Direct effects are covered to some extent by existing legislation and planning practice, although there are many problems for those sites of ecological interest and historic buildings which do not have statutory protection. The secondary aspects also come within the orbit of local planning authorities.

Recommendations for landscape management

- Findings from this limited survey suggests that stronger weighting needs to be given in the planning process to landscape character considerations when considering industrial/commercial development, certainly on the Isle of Axholme and on the open Levels.

- There is a need to limit large-scale intrusive developments by, for instance: directing new construction away from sensitive areas, use of sympathetic design and materials, and through screening visually intrusive buildings etc.

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SETTLEMENTS

Settlement types: analysis and research

The three basic settlement types used in the time-depth matrix analysis are: urban/town, village/hamlet, single isolated.

Whilst these categories might be sufficient for matrix analysis, a more detailed approach is required for full historic landscape characterisation and for conservation management. Settlements need comparable treatment to Historic Landscape Character Zones, with analysis and definition based on aspects like plan-form, function, historical process, visual appearance, management potential etc. As a step towards this, the basic categories of settlement are characterised into further types in a section on settlement morphology.

This analysis also helps to highlight local differences, and to identify HLC Zones and Local Landscape Character Areas, an objective very much in line with the recommendations of a recent English Heritage study of rural settlement patterns. This located the study area within the settlement "sub-province" of the Trent Valley, northern section, and emphasised a need for this sub-province to be subdivided into local regions through the identification of local "sub-regional settlement patterns" (Roberts and Wrathmell 1995, 56-7). The settlement patterns, HLC Zones and Local Landscape Character Areas identified in the present study go some way towards identifying the settlement sub-regions that Roberts and Wrathmell have in mind.

Background to the general settlement character

Settlement here is characterised by a generally high proportion of nucleated settlements, reflecting the former dominance of the townfield system. Most, but by no means all, of the dispersed, isolated "settlements" in the lowlands originated at enclosure, when the townfield system was replaced by self-contained farms. In the post-medieval period here, as in the southern Fens, there was a marked absence of landed estates. None of the parishes in the mid 19th century could be classed as "closed" ones, dominated by a single landowner. They were "open", with many landowners, most of them small freeholders and labourers (Bennett 1993, 94-5). This accounts for their distinctive character, with a variety of small and middling 18th and 19th century houses and farms, each different from its neighbour. Most agricultural labourers lived in the villages: there were very few estate or farm cottages. The irregular village plans on the Isle might reflect a similar kind of autonomy in the earlier post-medieval and medieval periods. Planning and nucleation in medieval English villages is probably largely a result of widespread intervention by the land-owning aristocracy (Everson et al 1991, 16; Roberts & Wrathmell 1995, 69). Perhaps the isolation of this area, and the high proportion of freemen among its population, enabled them to resist or to later modify this kind of "top-down" planning. The fact that Crowle, Owston and central Epworth, the three most obviously planned medieval settlements here, are also most closely associated with medieval aristocratic or monastic intervention, lends some support to this idea.

1. Urban/Towns (and the question of Historic Towns)

Truly urban areas lie outside the study area at Doncaster, Goole and Thorne. Within the study area the town/village distinction presents some problems, since a number of places have some claim to be historic towns.

The identification of historic towns has an important bearing on conservation management of buried archaeology and of visible features that contribute to historic character, such as buildings, street and property patterns. It provides guidance for development control and initiatives such as regeneration schemes like that currently underway in Crowle and Ealand. A new initiative by English Heritage, designed to assess archaeological potential and management strategies for former historic towns, will be looking at historic and former historic towns in the Humberside region in the next two or three years.

The distinctions between rural, urban and former urban status have important implications for conservation management for topographical features, buildings, below-ground archaeology, the design of new development and so on. It is thus important that any landscape character description, evaluation or management strategy recognises both historic and former historic towns. In terms of historic landscape characterisation, both conceptions are significant, but they need to be separated out. On the one hand are the places which most people would recognise as historic towns - living towns with a visible history in the form of buildings, marketplaces, close-knit street patterns, etc. On the other hand are places that have been a town in the past, but which may not be a town now. These "former historic towns" are now often represented by a non-urban setting, like a village or farmland, which may contain buried or surface features from its urban past.

The criteria for identifying and classifying historic and former historic towns are process and function, rather than size or legal status: possession of a market charter alone is not enough, since urban ambitions often failed to succeed. In the study area, Epworth, Crowle, Garthorpe, Adlingfleet and Swinefleet were all granted medieval market charters, but only the first two appear to have achieved urban status. In fact Crowle's earliest charter, obtained by the Abbot of Selby in 1305, was a transfer of the market from Garthorpe, where it had clearly failed to reach expectations, probably because of navigation problems on the Old Don.

The historic towns of Epworth and Crowle are the focal points of the Isle of Axholme area. They both possess urban features like marketplaces, grid street-plans, and public buildings etc. Their core street- and plot-layouts date back to medieval times, with separate phases discernible, especially at Crowle, which appears to have been a market town "planted" or developed by the Abbot of Selby. Many of the historic buildings of both Epworth and Crowle (and of the villages too) relate to the late Georgian and Victorian periods, the period when many market towns flourished on the fruits of Enclosure and improvements in transport and communication. Epworth has a number of shops, a newspaper office etc., and can still be regarded as a town, comparable to other small historic towns in Lincolnshire. Crowle has declined dramatically during the last 10-20 years as a shopping centre. In present-day functional terms it is a village; though in terms of historical process and form, and in terms of its potential, it can be regarded as a (former) historic town.

However, the designation of Epworth and Crowle as towns, and references to their urban features, needs qualifying: both places occupy the borderline between small town and large village. Their rural characteristics are also very prominent. Indeed, it could be argued that these are more important to the essential character of both places. Both have a low density of buildings outside the centre. Epworth in particular has a straggling layout, with a main street over a mile long containing many farmhouses and cottages. Working farms are still a significant feature of both places.

2. Villages / Hamlets (and the question of Townships)

Villages need to be included with hamlets in a single grouping, since in landscape history terms both can involve similar processes. Once again, the criteria are function and process and the affect on landscape character, rather than factors like size alone, parish status or the presence of a church. Indicators such as these need to be treated with caution. The presence of a parish church gives an indication of ecclesiastical function and status, but not necessarily of settlement size, economic importance, or landscape character. For example, on the Ouse bank, Whitgift parish encompassed Swinefleet, Reedness and Ousefleet until the 19th century, and before the 13th century all four villages were included in the parish of Adlingfleet, which today is the smallest village of them all. Similarly, the sizeable Trentside village of West Butterwick was formerly part of Owston parish and only gained its independence, and a parish church, in 1842. Civil parishes are also unreliable indicators. For centuries, Old Don villages were divided by administrative boundaries. Haldenby parish, centred on a deserted Don-side village, survived until the mid 1980s, when it merged with Luddington. At the same time, neighbouring Adlingfleet, Ousefleet and Whitgift were combined into a new civil parish of Twin Rivers. By themselves, none of these parish units bears a close relationship to historic landscape character.

Townships

More useful for Historic Landscape Characterisation purposes is the old category of "township", since this indicates a form of agricultural and organisational autonomy which, through the "townfield" system, has had a direct bearing on land-use and historic landscape character. The origins of townships are uncertain, but by the 12th century, and probably long before, they had become the economic basis of settlement in this region. Each township was associated with a clearly defined block of land, and the arrangement of adjoining townships is that they seem to produce a neat subdivision giving the associated settlements a representative share of available resources. In most cases, the townships contained a single, common or open-field system, farmed by their inhabitants as a single agricultural unit. These units were primarily economic in purpose, not necessarily teneurial or administrative units. Once in being, townships, like parishes, tended to resist further change, and they survived largely intact, despite changes to the settlements in them, until the 19th century. (Everson et al 1991, 9-10). Parish and township were synonymous in many places, but many parishes in the study area were made up of more than one township.

The Ouse and Old Don villages, along with West Butterwick, Derrythorpe and Gunthorpe on the Trentside, and Low Burnham, Westwoodside and East Lound in Haxey parish, were among the townships that had their own field systems,

and were thus comparable to the larger villages in functional landscape terms, if not physical size and economic weight. At Belton, the small settlements of Beltoft and Woodhouse were townships, but others that cluster around Belton Churchtown do not appear to have had their own field systems, and are thus best regarded as hamlets or sub-nuclei of Belton village. Some of the small townships on the Isle and riversides even had their own sub-nuclei or "satellite" hamlets which shared the main field system. The existence of separate townships and hamlets within ancient parishes is known from elsewhere in north Lincolnshire, though it seems to have been more widespread and reached greater complexity in the Axholme - Marshland region.

These features of Axholme settlement, noted for the first time in this study, illustrate again how distinctive the area is and how much potential there is for further work. These subjects of settlement pattern and status, agricultural systems and social organisation are important ones for historic landscape analysis, and would certainly repay further research.

3. Single isolated settlements

Single settlements in the study area are predominantly farmsteads established following enclosure in the 18th and 19th centuries. A few occupy places that were colonised in the Middle Ages by religious houses or moated sites, or in the 17th century by the farms of the Participants on their newly-drained land. The latter includes Vermuyden's own farm at Crowtrees, south east of Thorne. However, no isolated sites within the study area have buildings from these periods surviving above ground, apart from fragmentary remains at Low Melwood Priory. Buildings are predominantly 18th and 19th century, with modern alterations and additions.

In terms of scale, there are a few smallholders' cottages (notably around Pademoor, south east of Eastoft), and some large "model" farms on the Riverside Levels, but the great majority of isolated single settlements are medium-sized farmsteads with the house and farmbuildings grouped originally around a foldyard, now often with 20th century replacements and additions.

SETTLEMENT MORPHOLOGY AND CHARACTERISATION:
the relationship of settlement type to HLC Zones and Areas

Introduction

Within the three basic categories of urban/town, village/hamlet, and single isolated units, settlements in the study area can be usefully characterised into further types as a step towards identifying Zones and Local Landscape Character Areas, and for developing appropriate management strategies.

A basic distinction is between overall patterns of nucleated or dispersed settlement. Within the study area the two types can be recognised in the predominantly nucleated villages and hamlets on the Isle of Axholme and the Riversides, and the dispersed pattern of enclosure farmsteads on the Levels and Carrs.

More useful for historic landscape characterisation, and for planning and management purposes, is the identification of different village or settlement plan types, in this case the basic forms: nucleated, dispersed,

poly- or multi-focal and linear. Plan analysis can proceed to more detailed levels, identifying street grids, rows, marketplaces, greens etc. (Roberts 1982; Everson et al 1991). This brief preliminary analysis demonstrstes the usefulness of this approach. Four examples are given below of where analysis shows differences in settlement type that help to identify HLC Zones and Landscape Character Areas. These distinctive type/areas are: the Isle of Axholme, Riversides, Levels, and Turbaries / Moorland Allotments.

The Isle of Axholme

The Isle settlement plans can be briefly characterised as:
Crowle - historic town; nucleated, polyfocal; complex loose street grid, marketplace.
Epworth - historic town; nucleated, polyfocal; marketplace, linear roadside development.
Haxey, Belton - dispersed/polyfocal; loose linear roadside development, also with dispersed hamlets.
Owston Ferry - polyfocal; marketplace; linear roadside (Owston) and linear riverside development (former West Ferry).
Burnham, Beltoft - nucleated hamlets.
Woodhouse, Sandtoft - dispersed hamlets.

Without going into the details of each type, it is clear that dominant characteristics of the Isle settlements (especially the Isle proper, excluding Crowle) are polyfocal, dispersed and linear; common to most is a low density and straggling or dispersed layout. As the Tudor chronicler Leland says of Haxey "The houses be more sparkled [scattered] than in Epworth" (quoted by Dinnin, 19).

Riversides

The main rivers Trent, Ouse and the "extinct" Old River Don, all carry strings of settlements characterised by their linear ribbon development along the bankside. Their basic plan element, the simplest of all village plan forms, is the "single row" with properties on one side of the road along the riverbank. Good examples are Derrythorpe and Whitgift. Eastoft, on the Old Don, is essentially a pair of such villages facing each other across the former river. Single-row settlements here usually developed into a two-row type, with properties squeezed onto the riverside strip on the other side of the road, as at Althorpe, West Butterwick, Ousefleet etc. Some were extended with further properties along back lanes (Garthorpe, Swinefleet), or along new roads, either along medieval planned extensions (Owston Ferry) or 19th-century main roads (Althorpe). Despite later growth, all the settlements still retain a strongly linear form. They occupy the raised banks and alluvial levees flanking the rivers, with the houses on the highest, bankside strip. Their former open arable fields (AOSF) occupied the remainder of the levee, with the meadows, pasture and moors (now EEL / REL) on the lowest land furthest from the settlement. How the settlements might relate to artificial riverbanks made in early medieval times is not known, and is a subject that needs research.

The settlements themselves vary considerably in size, from small hamlets like Gunthorpe and Kelfield to larger straggling villages like Reedness and Swinefleet. The Old Don settlements of Eastoft, Luddington, Adlingfleet,

and the twinned villages of Fockerby and Garthorpe, are distinctive in a number of ways, not least for having lost their river. They seem to have developed originally as single or paired "single-row" settlements on opposite sides of the river, each partner in a different county and diocese. In practice there was probably close contact across the river. After the diversion of this branch of the Don in the 1620s, the settlements on each bank grew closer together, though still separated by ownership, agricultural organisation and administrative boundaries. Despite the vagaries of changing administrative boundaries, the two halves of Eastoft and the partners Fockerby and Garthorpe can, in landscape history terms, be regarded having functioned as single units for several centuries.

West Butterwick and Owston Ferry were also paired with villages on the opposite bank of the Trent, but contact across the river was limited in the past, and is now virtually non-existent.

Besides sharing a similar layout, the riverside villages contain some of the earliest surviving buildings in the area - fairly substantial 17th century houses built by wealthy farmers, merchants or lords of the manor. Although few in number, these historic "components", like the plan-form, indicate a shared cultural history.

The Levels

The Levels are characterised by single isolated settlements, predominantly farmsteads. Some sites were first occupied in the Middle Ages or earlier, some in the 17th century, but most in the 18th and 19th centuries, following Parliamentary Enclosure. Analysis of settlements shows a close relationship to areas of Early and Recent Enclosure. This is clearest on the Isle of Axholme, where isolated farmsteads were generally unable to colonise the unenclosed open strip fields. Clearest of all is the close correspondence between late single isolated farmsteads and the Levels, where the high proportion of such settlements is a distinguishing characteristic of the Recently Enclosed Land Zone and the Trent and Ouse Levels and Humberhead Heaths and Carrs Local Landscape Character Areas.

Moorland Allotments / Turbary settlements.

Both types are a characteristic land-use of moorland in the area. Both share a regular dispersed layout of separate farmsteads and houses on adjoining plots within a well-defined enclosed "envelope". Again, closer analysis reveals differences between the Turbary smallholdings and the Moorland strip-allotments on the margins of the larger Moors, reflecting their different social context and land-use processes.

BUILT ENVIRONMENT

Building materials and periods

Until the later 17th century most buildings here were timber-framed. Lath and plaster, turf or mud was used for the walling, and thatch or turf for roofs, with local clay tiles or imported stone slates for the better houses. Only high status buildings, like churches and the houses of the aristocracy, could use high quality imported stone. The local mudstone was

occasionally used for in churches and medieval manor houses, but it was only capable of the simplest rubble walling, and required finer imported ashlar for dressings. Brick was used in the Middle Ages, again for wealthier buildings. Evidence from archaeological excavation is limited to two sites: Low Melwood Priory, which had medieval brick walls, and the Mowbray Manor house alongside Epworth church, which had clay tiled floors and mudstone wall foundations. The early 15th century Inclesmoor map shows a range of timber-framed medieval houses in the Crowle - Marshland area, the best with tiled roofs and exposed framing, the poorest with what appears to be turf walls and turf or thatch roofs. Four or five late medieval or early post-medieval timber-framed buildings are known to survive in the study area, all with the timbers encased in later brickwork. From around the mid 17th century local brick came to be used more widely, first for chimneys, then for walling material. The area has a handful of important small manor or yeoman farmhouses of the late 17th - early 18th century, some with distinctive moulded brickwork, and one of at Kelfield with Dutch-type gables. Other houses with similar features, now demolished or altered, are known, especially from the Riverside villages.

In the 18th and 19th centuries, brick and tile replaced timber and thatch for new building, and by the late 19th century most villages had been largely rebuilt in these new materials. At the same time, Enclosure farmsteads were being built among the newly-enclosed fields. Even the small, self-built 19th century Turbary houses were mostly of brick and tile: only the very poorest buildings there still used timber-framing. The sole surviving timber-framed turbary cottage is a mid-19th century one at Haxey Carr. Gypsum dug from the Mercian Mudstone on the Isle of Axholme was also used for building, supplying the raw material for fine plaster used for interior plasterwork and for thick plaster flooring of upper storeys, a common feature of 19th century and earlier buildings in the area. Until around the early 19th century most building materials were locally produced, but from then on imported brick, tile, Welsh slate and Yorkshire sandstone became increasingly available.

Superficially, especially to visitors used more varied materials, the redbrick buildings of the area might seem rather uniform. But closer acquaintance reveals considerable variety. The widespread use of local handmade brick and tile gives a mottled texture to groups of buildings and to individual buildings alike. Further variety is provided by the predominance here of individual buildings rather than group developments like terraces or estate cottages.

Building Types

Buildings in the study area represent a wide range of types, from the smallest of cottages like those in the Turbaries, to large model farmsteads and small country houses. There are also a few important examples of small 18th and 19th century industrial buildings like maltings, warehouses and pumping stations, as well as the wide range of agricultural buildings from the 18th and 19th centuries. On the whole, there seem to be more small farms within villages on the Isle than elsewhere in Lincolnshire. This was partly because of the retention of the unenclosed open strip fields, which were unavailable for new farmsteads and at the same time sustained village smallholders in a way that enclosure did not.

A feature of settlements here is also their mixture of building types.

Epworth and Crowle, for instance, combine "urban" elements like market halls and shops along with rural elements like farmsteads. There are also places like the Turbaries and Recently Enclosed Land, where similarity of building type is a key characteristic. Even here, though, buildings are often emphatically individualistic in their details. A general characteristic of the study area is the predominance of individual buildings rather than group developments like terraces or estate cottages. The main reason for this, and also for a strong conservatism in local building styles, was presence here of large numbers of poor or "middling" freeholders building individually to their own taste. At the same time there was a corresponding absence of large landowners - either gentry or industrialists - who might have imposed more uniform estate styles.

Further details of the various building types are included in the relevant Zone texts.

SETTLEMENTS AND BUILDINGS: RESEARCH AND DOCUMENTATION

Settlements

Prior to this study there has been no significant research on medieval and later settlement history or morphology. This finding agrees with the recent English Heritage study of rural settlement patterns, which singles out this area as one that particularly needs further research. Aspects highlighted as especially important for further work here are: deserted settlements in the Humber wetlands, the elements of early, pre-enclosure dispersed settlement, and the identification of local "sub-regional" settlement patterns (Roberts and Wrathmell 1995, 56-7). The work done during the course of the present study, identifying settlement patterns and types (including deserted villages and pre-enclosure settlements), shows that there is indeed much potential, and need, for further research on these lines.

The present study demonstrates the importance of townships for Historic Landscape Character Assessment. These longstanding territorial and economic, through their settlement pattern and field systems, profoundly influenced local land-use and landscape character. The study has also demonstrated that Enclosure and Tithe Maps are good sources for identifying and mapping these "townfield" systems, and that further work in this field would be very productive.

Recommendations for settlement survey and research

- Undertake further research on settlement pattern and morphology, and on the related townfield systems, building on the work of the present study.

Buildings

As with settlements, the buildings of the area still await systematic study. Building types in the study area which can be singled out as particularly deserving research are: vernacular buildings, Turbary cottages, timber-framed buildings, early brick houses, early industrial buildings, riverside warehouses and enclosure farmsteads, particularly original farmbuildings. All groups are under threat, and the area offers unique and nationally important examples of each. Of all the types, the

Turbary cottages are the most unique, the most threatened, and the most urgently in need of recording. Farmsteads here are largely taken for granted, but the range of types and sizes of found in this area is probably greater than anywhere else in Eastern England - a reflection of the unusually wide socio-economic range of landowners and occupiers. Farmsteads too are under constant threat of alteration and demolition. Whilst study of buildings might lie beyond the scope of landscape conservation management, there may be opportunities to promote research and recording.

Recommendations for buildings survey and research

- Encourage survey and recording of historic buildings, particularly those types special or unique to the area. High priority should go to Turbary cottages, early industrial buildings and enclosure farmsteads.

SETTLEMENTS AND BUILDINGS: LANDSCAPE CONSERVATION MANAGEMENT

Introduction
There is a great deal of overlap between conservation management for settlements and buildings, and to save repetition these are dealt with together.

The particular problems facing historic buildings and settlements in the area can be summarised as:

1. New development: unsympathetic location, scale and design.

2. Building disuse and demolition.

3. Unsympathetic rebuilding and alteration.

4. A poor past record of building conservation management in some areas.

1. New development

Towns and villages.
A main issue for towns and villages is the location, scale and density of new housing development. Historically, the settlement plans of towns and villages on the Isle of Axholme and the Riverside parishes are predominantly low-density polyfocal, linear or dispersed. Misconceptions of historic settlement process and function mean that these spacious layouts are often seen as offering plenty of scope for infill and ribbon development. But, as at Belton, Epworth and Haxey, this can result in the coalescing of individual historic units, the swamping of historic village foci, or sprawl onto agricultural land. Infill can also take the form of dense substantial housing developments, as at Haxey at Belton, which can seriously disturb the balance between the different foci or components of the village. In environmental and amenity terms, the impact is even more serious when new development is on the outskirts, as on the Isle of Axholme and the Trentside (where it also adversely impacts on AOSF or EEL).

In short, additional rural accommodation would be difficult to integrate successfully into the villages, especially the smaller ones; even the larger ones on the Isle have already been overstretched. Essential new accommodation needs to be provided through limited infill and small-scale expansion of larger settlements, with major development directed away from the study area.
Local Plans, Village Design Statements and development boundaries have important roles in achieving these ends.

Recommendations for landscape conservation management

- Direct new housing towards controlled expansion of larger settlements, with major developments directed to urban areas outside the study area.

- Encourage limited smaller-scale infill rather than larger developments. In the dispersed villages, new infill schemes can be directed to selected areas which either form a main focus now, or which represent a historic focus that needs rejuvenation.

- Produce Village Design Statements as a means of achieving improved consultation and sensitive planning control.

- Encourage use of sympathetic materials and design to ensure that new buildings contribute to local identity.

- Designate new village Conservation Areas (Owston Ferry, Eastoft and Adlingfleet are prime candidates); investigate possibilty of Conservation Areas in Turbaries.

Isolated buildings

Buildings such as farmsteads and windmill towers face problems of disuse, desertion, inappropriate conversion or new development nearby which adversely affects their character or setting. Disuse is often followed by demolition and then by modern rebuilding or desertion of the site, which consequently affects the historic settlement pattern. New development of agricultural buildings often takes the form of large steel-framed buildings which are visually prominent, especially in the flat lowlands.

Some isolated buildings are protected by listing. Examples occur in all parishes; most are Georgian farmhouses and groups or single examples of farmbuildings. The 1980s Listed Buildings Resurvey here specifically sought to list representative examples of different types of farmstead, from the smallest (at Belton Southview Farm and the Turbary cottages) to the largest (at Sandtoft and New Breaks Farm, Whitgift). Since listing in 1987 some of these farmhouses and farmbuildings have remained disused and derelict, or have since become so, and others have been demolished both with and without consent.

Recommendations for landscape conservation management

- Although there is limited scope for control of new agricultural building development, more use could be made of existing powers to protect the

setting of listed buildings and of ensuring that owners meet their statutory responsibility to maintain their listed buildings in reasonable repair.

- Tree screens may help with intrusive developments like agro-industrial units, whilst for new housing, traditional local materials and designs can be encouraged.

2. Disuse

This is a particular problem for farmhouses and redundant farm buildings, and often leads to demolition or inappropriate conversion schemes. As mentioned above, it affects the isolated farmsteads in the REL, but the problem also occurs in the Turbaries and villages: a number of important listed former farmhouses suffering long-term disuse and neglect are found in prominent locations in Crowle, Low Burnham, Westwoodside and Haxey village centres. At Crowle commercial decline has also created particular problems with disused shops, including some listed examples with good period shopfronts.

Unfortunately, this area was not one of those surveyed in the late 1980s as part of the English Heritage "Buildings at Risk" Programme, and the precise state of the historic building stock is uncertain. However, it is known that many of those buildings found disused in 1986-7 are still empty and are now reaching a critical condition.

Recommendations for landscape conservation management

- A survey of historic buildings at risk in the area is a urgent priority for future conservation strategy.

- Encourage continued use of buildings, if necessary by change of use and conversion.

- Enforce the statutory responsibilies of owners of listed buildings to keep them in reasonable repair.

3. Alterations and conversions

Further problems are unsympathetic alterations and the insensitive conversion of farm or mill buildings to residential use. Since the 1960s and 70s, many older properties in the study area have been significantly altered. Perhaps the most damaging alterations, in terms of historic character, have been the rendering of brickwork and insertion of inappropriate modern windows (two "improvements" often required by former local authorities here as a condition of grant aid). Their adverse impact at Crowle is especially noticeable. Issues such as these can be tackled through conservation policies, grant schemes for sympathetic renovation, and programmes of public education. The need for pro-active building conservation policies in this area is especially great because the conservation record of the former Boothferry Council, in which most of the study area lies, was particularly poor. Boothferry District was noted for the high number of demolitions of listed buildings in its area, especially illegal ones, and for the high number of cases where the alterations the

authority permitted to listed buildings were so unsympathetic as to require the buildings to be removed from the lists. The legacy of this poor conservation policy clearly needs remedying. Unfortunately, at the time of writing, North Lincolnshire Council, now responsible for much of this area, has no full-time Buildings Conservation staff.

Recommendations

- Encourage use of traditional local materials and designs; and sympathetic uses or re-uses for non-residential buildings that will not compromise their historic character.

- Undertake publicity and education programmes for building conservation.

- Designate new village Conservation Areas (Owston Ferry, Eastoft and Adlingfleet are prime candidates); investigate possibilty of Conservation Areas in Turbaries.

HISTORIC LANDSCAPE CHARACTER AREAS & LOCAL LANDSCAPE CHARACTER AREAS

Introduction

The following section is a contribution towards the identification of Historic Landscape Character Areas (HLCAs) and Local Landscape Character Areas (LLCAs; sometimes referred to as Landscape Character sub-Areas) in the Humberhead Levels.

The characterisation into HLC Types, Zones and Settlement Zones, described in this report, forms the basis for an identification of larger Historic Landscape Character Areas. These areas represent broad characterisations of the landscape, embracing related Zones and having a defined historic and visual identity and cultural associations. As a trial, the study area was divided into HLCAs, and this was then compared with a previously suggested division into LLCAs within the Humberhead Levels Countryside Character Area, derived from a top-down analysis based largely on geology and present visual character (CC/MM 1996a). The Areas identified by the two approaches agreed fairly closely. Discussions with local historical experts, representing a top-down view of Historic Landscape Characterisation, have also broadly supported these HLCA / LLCA designations.

Three main areas with distinctive Historic / Local Landscape Character can be distinguished within the study area:

THE ISLE OF AXHOLME
THE TRENT AND OUSE LEVELS
THE HUMBERHEAD HEATHS, CARRS AND MOORS

A fourth possible LLCA is **THORNE AND HATFIELD MOORS.**
The areas are shown on **map 6.1** and described below; their main characteristics have also been depicted on time-depth matrices (Appendix 4).

Local Landscape Character Area criteria and the relationship of LLCAs to HLC Zones and Areas of Special Historic Landscape Interest

The principal criteria used here for identifying Local Landscape Character Areas are a combination of historical process and function and present visual character.

The weighting of these criteria has an important influence on the definition of the areas and their boundaries. This is most clear in the allocation of land that was, or is, shared by adjoining Character Areas. An example is the former commons and moors, now largely REL and RM&T. Historically, this land was shared (and in a sense still is) between surrounding villages in three adjacent Local Landscape Character Areas -the Isle of Axholme, the Riverside Levels and the Carrs. If historical process and function are the main criteria for Historic Landscape Character Areas, then the Isle of Axholme Area would include a large proportion of the flanking Levels and Carrs since they were historically part of the Isle's economic and social system, and still are today.

Map 6.2 shows a proposed South Axholme Area of Special Historic Landscape Interest, defined in discussion with North Lincolnshire Council. In this case, in order to facilitate landscape conservation management policies via the forthcoming Local Plan, a cohesive landscape area needed to be defined, incorporating the prime survivals of Ancient Open Strip Fields and

Turbaries on the Isle and Trentside, along with related enclosed lands and settlements. This represents the core area in terms of Historic Landscape Interest at local, regional and national levels (see p.139 for levels).

Defining HLCAs on the basis of historical process and function can, however, mean the subdivision of coherent HLC Zones. In the case of the South Axholme Area mentioned above, the boundary cuts through extensive areas of Recently Enclosed Land and, by following the Trent, subdivides its valley. In this case, these subdivisions were justified because the specific aim here was to define the core area of Special Historic Landscape Interest for local conservation management.

In defining Local Landscape Character Areas a broader view can be taken, giving greater weight to present visual character, which means that Area boundaries more closely follow the Zones. Thus, in the example given above, the boundary between the Isle of Axholme and the Riverside Levels would then follow the edge of the Isle, excluding the Recently Enclosed Land on the adjacent Levels that might "belong" to it historically or functionally, but which belongs visually to the lowland areas. The approach is a broad, holistic one, integrating the historic with the ecological and the scenic, and acknowledging the importance of the less obvious or "invisible" buried elements, alongside the prominent and extant features.

This is the approach followed here for LLCAs. The Isle of Axholme LLCA is thus centred on the isle, characterised by its undulating relief and associated components such as Ancient Open Strip Fields, Early Enclosed Land, Turbaries and dispersed settlements. Most of the surrounding lowlands, characterised by their large areas of Recently Enclosed Land and Raised Mires, are allocated to the Levels, Carrs and Moors LLCAs, the two Areas being differentiated by geology, land-use, settlement patterns and cultural relationships. Both the Levels and Carrs/Moors LLCAs extend well beyond the study area, a factor discussed below.

Thorne and Hatfield Moors - a potential LLCA.

There is a case for defining the Thorne - Hatfield Moors area as a separate LLCA. The area is dominated by the two extensive raised mire moors, together with some adjacent areas of Moorland Allotments, EEL and REL. Although, like the Isle of Axholme, the area is relatively small, it is highly distinctive in a local, regional and national context. LLCA status would recognise this distinctiveness, both in terms of its landscape characteristics and its conservation management. At present it is included within the Humberhead Heaths, Carrs and Moors LLCA, and the removal of the Moors from that Area would necessitate amending the name and some of the characteristics of the latter (see the LLCA descriptions and matrices).

Relationship of LLCAs to adjoining Character Areas

The LLCAs also need to follow the same criteria as that used for adjoining Character Areas. In the case of the present study area two of the three LLCA extend beyond the study area boundary. The Rivers Ouse and Trent, forming the northern and eastern limits of the study area, are flanked by broadly similar landscape on either side, which together makes up the Levels LLCA. Similarly, the Heaths, Carrs and Moors LLCA extends to the south and west, most of it in fact lying outside the study area.

The following pages summarise the characteristics of the three LLCAs.

(ISLE OF) AXHOLME LOCAL LANDSCAPE CHARACTER AREA

The area centred on the higher ground of the Isle of Axholme, with a fringe of lowlands. Characterised by low undulating Mercia Mudstone hills with red marl soils, sloping down to sandy and peaty lowlands.

Farmland largely arable, with extensive areas of hedgeless, strip-cultivated Ancient Open Strip Fields and hedged Early Enclosed Land with dense networks of lanes and paths. Recently Enclosed Land and Raised Mire & Turbary, much of the latter wooded, on the former lowland commons.

Buildings of local redbrick with pantile or slate roofs.
Historic towns, villages and dispersed hamlets, mostly medieval in origin, the larger settlements with straggling polyfocal, linear and dispersed layouts, irregular streetplans.
Small self-contained planned 19th century Turbary settlements at Belton, Epworth and Haxey, with smallholdings, cottages and modern rebuilt houses.
Farmsteads, many still in use and some very small, in villages and hamlets, with barns, stables, dovecotes etc. In the open countryside, occasional isolated farms, prominent hilltop windmill towers and modern watertowers.

Extensive stray archaeological finds of prehistoric and Roman material in ploughsoil; medieval sites include earthworks of a Norman castle and a Carthusian monastery.

Clear relationships between topography, settlements and land-uses, and between the different historic landscape Zones of AOSF, EEL and REL.

Visually, the area presents a combination of close, intricate countryside, straggling irregular settlements, and spacious open strip fields with distant views over hedged farmland and wooded Turbaries to the surrounding Levels.

Close inter-relationships; strong sense of local identity.

Historically, the surrounding rivers and marshlands meant that the area was relatively isolated from the neighbouring region and from the cultural mainstream. Its insularity is reflected in distinctive patterns of land-use, social character (with large numbers of freeholders), the survival of open field strip-farming, local folk customs and architectural styles. The relatively late arrival here of rail and road connections meant that modern development in general was late in coming, and has had a strong and rapid impact.

Relatively high pressure of development, both residential (with increasing commuter homes in and around villages) and light industrial (focused on former industrial sites and Sandtoft Airfield).

Particular management problems include:
- Intensive arable cultivation; strip amalgamation in AOSF; field amalgamation, hedge removal in EEL and REL.
- Over-drainage of Turbaries.
- Over-development of settlements; inappropriate and unsympathetic development and alterations to historic buildings.
- Disuse and demolition of historic buildings, especially Turbary cottages and farmhouses and farmbuildings in villages.

TRENT AND OUSE LEVELS (RIVERSIDE LEVELS) LOCAL LANDSCAPE CHARACTER AREA

The area extending across floodplains of Trent, Ouse and Old River Don. Low lying, virtually flat, below 5m OD: some below sea level. Extends from the sloping riverbanks / levees, down onto silt lowlands, much of the latter created by floodwarping over sand and peat moorland.

Structures used for land drainage: embanked rivers, frequent dikes and drains, some lined with reeds and bushes; water towers, pumping stations.

Farmland almost wholly arable. Areas of AOSF on riverside levees, much consolidated but with some cultivation strips surviving (on Trentside at West Butterwick - Owston Ferry, and on the Ouse at Swinefleet). Fragmentary relict EEL around villages. Most land REL, created by Parliamentary Enclosure between 1750 and 1850, with isolated farmsteads; fields large, with ditched boundaries, now mostly hedgeless.

Buildings of local redbrick with pantile or slate roofs. Distinctive linear riverside villages and hamlets, with farmsteads. Outside villages, a pattern of dispersed 18th and 19th century farms and occasional later houses. On riversides, isolated pumping stations, sluices and occasional farmsteads; late 19th - mid 20th century commercial wharf-side development on the Trent at Keadby (and in places on the east bank).

Early landsurfaces are obscured by warp over wide areas, but with drying and shrinkage of underlying peat, ploughing is now disturbing buried deposits and bringing up increasing amounts of prehistoric and Roman archaeological material, especially along present and former riversides;

Clear relationships between topography and settlement, and between the different HLC Zones.

Visually, the landscape has a prominent linear aspect - from its general flatness and broad horizons, and from the linear patterns of REL, dikes, canals, roads, railways and power lines. Sweeping views across long distances, punctuated by villages and isolated farms, often fringed with trees, and by large modern structures, like power stations with their power lines and vapour plumes, and wharfside warehouses, cranes and ships.

Close inter-relationships and sense of local identity among the groups of villages on the Old Don and Ouse, and along the Trentside.

Historically, the generally low economic importance of the area meant that it was relatively isolated, despite being served by major river routeways. The late spread of rail and road connections here meant that modern development was late in arriving, and has often had a rapid impact.

Generally low level of development.

Particular management problems include:
- Intensive arable cultivation; strip amalgamation in AOSF; field amalgamation, hedge removal in EEL and REL.
- Disuse and demolition of isolated farmsteads.
- Inappropriate new development outside villages; unsympathetic development and alterations to historic buildings.
- Damage to buried archaeology by increased draining and ploughing.

HUMBERHEAD HEATHS, CARRS AND MOORS LOCAL LANDSCAPE CHARACTER AREA

The areas to the west and south west of Isle of Axholme and Riverside Levels Areas, stretching from Thorne and Hatfield Moors to Doncaster and the Nottinghamshire Carrs. Low lying, generally flat, below 5m OD; in the east with low gravel hills in the sandy and peaty plain, and with gravel terraces, clay and limestone in the west.

Land drainage structures: canalised rivers, dikes and drains, some with large banks carrying pasture, bushes and trees.

EEL around settlements, with hedged fields, some under grass; mature hedgerow trees. Majority of farmland is REL, with large fields with ditched boundaries, some with hawthorn hedges: generally more grassland and hedges than on the Levels.

Large areas of RM&T, most extensively in the peat and sand moorland at Thorne, Crowle and Hatfield Moors and Blaxton Common - all areas of former commons. Some areas still exploited for peat and sand, other areas of former extraction either now with regenerated woodland or reclaimed for arable farmland. Other small isolated pockets of unimproved relict commons with woodland in the Wroot - Haxey - Blaxton area.

Settlements range from market/mining town of Thorne and mining village at Moorends, to rural farming villages and hamlets with nucleated, linear and dispersed plans. Distinctive pattern of long strip Moorland Allotments around the Moors, with roadside houses and farmsteads (most prominent around Thorne Moors). Buildings redbrick with pantile and slate roofs; 20th century buildings in a wider variety of materials and styles.

Level of development very variable: villages in south and east generally with low density of building, incorporating farmsteads, and with a low level of modern development; villages in west with modern residential building linked to industrial/urban development around Doncaster, and with a generally higher level of development.

Few visible archaeological sites, but surface finds and cropmarks indicate extensive buried sites, some of them well-preserved waterlogged ones.

Historically, the western part of the area had closer contact with mainstream English culture than other parts of the Humberhead Levels, due to the Great North Road and other north - south routeways.

Visually an area of great contrasts, from deeply rural to industrial. Moorland heaths and woodlands; farming villages flanked by hedged paddocks; wide expanses of flat arable farmland with sparse hedgerows and long unbroken views, juxtaposed with stark areas of industrial peat and gravel extraction, coal mining and modern factory units, redbrick housing developments and suburban sprawl.

Particular management problems include:
- Peat extraction on sites of ecological and historical interest.
- Over-draining of moors and farmland having adverse affect on archaeology and ecology.
- Over-intensive cultivation; field amalgamation, loss of hedges and trees.
- Overdevelopment of villages, insensitive rural developments.

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APPENDIX 1 RECOMMENDATIONS

This section collates and summarises the recommendations included throughout the main body of the report text. It is divided into sections:

1.0 recommendations for liaison.

2.0 recommendations for research and documentation.

3.0 recommendations relating to specific subject areas: hedges (3.1), settlements and buildings (3.2), wetland research (3.3), ecology (3.4)

4.0 - 11.0 recommendations for research and conservation management related to specific HLC Zones (summarising recommendations included in the Zone text sections) (4.0 - 11.0).

1.0 RECOMMENDATIONS FOR LIAISON

1.1 AREA-WIDE LIAISON WITH OTHER BODIES

The study area presents a range of pressing conservation issues - environmental, archaeological, architectural, public amenity - which have attracted the attention of a number of regional and national bodies, as well the local authority. It has a strong sense of community and local identity, particularly in the Isle of Axholme where there are a number of thriving historical and amenity societies. The potential for local support is good. Also important is the interest of North Lincolnshire Council which, after inheriting the area from another authority, is preparing a new Unitary Plan and proposals for village design and town regeneration schemes, all of which recognise the need for historic landscape character input.

Recommendation

- Extend liaison with other bodies with an interest in the area, particularly North Lincolnshire Council, East Yorkshire Council, English Nature, Local Wildlife Trusts and English Heritage.

1.2 LIAISON WITH OTHER BODIES INVOLVED WITH THE CONSERVATION MANAGEMENT OF OPEN STRIP FIELDS ELSEWHERE IN ENGLAND AND WALES

The few surviving areas of open-field strip-cultivation in England and Wales share similar problems. Some areas have had long-term conservation management, others are starting to develop management strategies. Those involved with the management of the various field systems are working in isolation, and there is much to be gained by pooling experience and expertise, not only for Axholme, but for the subject as a whole.

Recommendation

- It is suggested that a day-conference or seminar be organised to bring together those with a practical and/or academic interest in the surviving open strip field systems of Britain.

2.0 RESEARCH AND DOCUMENTATION

General priorities

Further work is needed, building on the present study, and drawing on sources identified as particularly productive and efficient for HLC assessment: documentary and published sources, APs, fieldwork, to:

1) refine and check HLC Zone designations; check current landscape condition.

2) extend work with further sampling, to check extrapolations and achieve a more even and reliable spread of HLC analysis.

3) prepare period and phase/process maps to guide conservation management; transcribe existing data.

4) prepare subject maps for land-use features such as parish and township boundaries, and for "priority HLC Components" such as hedges, strip fields, buildings at risk, to aid local conservation management strategies.

These four objectives are detailed below in paras 2.1 - 2.4.

2.1 CHECKING HLC ZONE DESIGNATIONS

- **refining and checking HLC Zone designations; checking current landscape condition.**

(a) DOCUMENTARY AND PUBLISHED SOURCES

Both primary documents and secondary published sources make an essential contribution to Historic Landscape Character Assessment. In the time available only a small proportion of both could be examined, and further research is needed, targeted on specific areas and topics.

Recommendation

- Undertake further research on documentary and published material, focusing on areas identified as priorities for further work: AOSF, Turbaries, Moorland Allotments, Early Enclosed Land.

(b) SECOND LAND UTILISATION SURVEY

The Second Land Utilisation Survey (SLUS) is an important resource for landscape history and historic landscape characterisation exercises. Its value is its ability to show subtleties of land-use unrepresented by other means, such as APs, OS maps or MAFF data. Sample study of one of the large-scale Field Survey maps shows that these will be especially useful for tracing recent land-use and management of the Ancient Open Strip Fields and pastureland.

Recommendation

- Obtain copies of SLUS 1:10,000 Field Survey maps for the study area, with priority given to the areas of AOSF on the Riversides and Isle of Axholme, and to the Moorland Allotments on the margins of RM&T.

(c) AERIAL PHOTOGRAPHIC RESEARCH

APs are a valuable resource for identifying changes to the landscape, and determining its present condition. Study of APs for sample areas shows that the AP coverage is generally good, and that AP analysis, combined with mapwork and field visits, is a particularly efficient method for landscape survey. It is especially useful for obtaining details of the open-field strips, enclosure hedges and other vulnerable Historic Landscape Components.

Only a small proportion of the available AP resource was used for the present study. With more time for searches and obtaining APs, fuller coverage could be obtained. A high priority should be study of the most recent APs from the 1980s and 1990s. Further APs could also be taken for the present study.
Another possibility that might be explored more fully is satellite photography and mapping.

Recommendations

- Further study of APs for the study area (or specfic Zones or Areas such as the AOSF, Riverside Levels etc.), in order to:

  1) test and clarify the Zone designations (especially in the context of checking Zone extrapolations).

  2) determine the recent history and present condition of vulnerable landscape components, notably strip-fields and hedges.

(d) FIELDWORK

The present study demonstrated the importance of fieldwork, especially when informed by historic landscape study. Field visits to sample areas proved vital for checking information on the ground, and they also provided a great deal of additional information on landscape character (e.g. the discovery of surviving areas of remnant commons in the Heaths and Carrs Area, and of hemp and flax retting pits on the Isle of Axholme). The present study offered only limited time for fieldwork, and further work should be a priority.

Recommendation

- Undertake further systematic field visits to selected areas, to test historic landscape character assessments, and to provide information on the present condition and management of the landscape

2.2 EXTENDING HLC ANALYSIS

· Extend work with further sampling, to check extrapolations and achieve a more even and reliable spread of HLC analysis.

Because of time constraints, the sample areas in the Isle of Axholme and the Riversides were used as a basis for extrapolation to other areas for which documentation was lacking, or where there has not been time to examine it. Priority should be given to extending research and fieldwork into the areas not yet studied, both to refine and check these extrapolations and to provide wider area coverage of detailed maps for conservation management. Sources will be similar to those for 2.1 a-d.

Recommendations

· Refine and check the present HLC Zone extrapolations by further examination of additional sample areas in the Riverside Levels and the Heaths and Carrs areas.

2.3 PERIOD AND PHASE/PROCESS MAPS

· Prepare period and phase maps; transcribe existing data.

Four mapping techniques for synthesizing and representing historic landscape information were defined and explored in the course of this study. All make an important contribution to landscape analysis, both by providing a historic record, and by serving as tools for analysis and definition of HLC Components and Zones.

Period and phase maps, prepared from a variety of historic sources, are an especially valuable and efficient method of identifying Historic Landscape Character Types and Zones. In the limited time available, this kind of detailed mapwork had to be confined to sample areas - the Isle of Axholme and some Riverside parishes. The period and phase maps for these areas are only in draft form. High priority should be given to transcribing information already obtained and preparing final working versions of these maps, and to extending map research into areas not yet studied (see 2.2). This is a prerequisite for practial management action.

Recommendation

· Prepare 1:25000 base-line period and phase maps for the Isle of Axholme and Trentside (with priority given to pre- and post-Enclosure maps, and historic boundaries); extend mapping into remaining areas.

· Prepare period and phase/process maps for remaining parts of the study area. The most important areas, in management terms, are the Trent and Ouse Levels and the Peat Moor Allotments.

2.4 SUBJECT AND "PRIORITY HLC COMPONENTS" MAPS

- **Prepare subject maps for land-use features such as parish and township boundaries, and for "priority HLC Components" such as hedges, strip fields, buildings at risk, to aid local conservation management strategies as hedges, strip fields, buildings at risk.**

BOUNDARIES AND ADMINISTRATIVE AREAS

Historic land-use and landscape processes were intimately related to earlier boundaries and administrative areas. Boundaries thus make a useful contribution to Historic Landscape Character Type and Zone identifications. They also have an impact on present-day planning and conservation management, most noticeably in connection with planning development control and conservation action.

It has not been possible in the time available to examine or map the many boundary changes in the study area. It would be very useful to systematically map earlier boundaries as part of the historic mapping exercise (see 2.3 above). Particularly important, in terms of Historic Landscape Characterisation and future conservation management stategies for field patterns, hedges etc., are "major boundaries" - the present and former boundaries to parishes and townships, and between the earlier land-use types: open strip fields, early enclosures, commons and later enclosures (see 3.1.1 (a), below).

Recommendations

- Extend mapping of earlier boundaries throughout the study area (or target areas), as part of the historic mapping exercise. A first priority should be preparing a definitive base-map of 19th century parish and township boundaries.

3.0. RECOMMENDATIONS FOR SPECIFIC SUBJECT AREAS

3.1 HEDGES (refers to sub-section in main REL Zone text)

The presence or absence of field and roadside hedges and trees is an important feature of the landscape in all Zones, and a major factor in distinguishing the visual characters of the different Zones. The history of hedges and woodlands therefore has important implications for conservation and restoration strategies. This is especially so for EEL and REL Zones where hedges are a key component, and where hedgerow conservation and restoration is one of the most effective ways of enhancing or articulating Zone character.

3.1.1 RESEARCH AND DOCUMENTATION

The present study is the first work to have been done on the subject, and indicates that availability of sources, and the potential for research, is good. Good opportunities exist for topographically-based study of the history and ecology of hedges, drawing on sources such as early maps and Enclosure Awards, APs and fieldwork.

The present study has identified certain key issues:

(a) Ancient "major" land-block boundary hedges.
An important finding of this study was the location of early hedge-lines that served as boundaries to the commons, meres, ancient open strip fields and blocks of early enclosures. Even where the Zone itself might have few internal hedges (as in AOSF or RM&T), it may still have the remains of these "major boundary hedges" defining large blocks of land. Indeed, they often mark historic Zone boundaries. Some could be many centuries old. Documentary research has enabled many of these major hedged boundaries to be accurately mapped in South Axholme. Such hedges and hedge-lines should have a high priority for conservation, and further work to identify and survey these features on the ground would be very worthwhile.

(b) Hedges in EEL.
Different phases or periods of early enclosure have been identified in various places in the EEL Zone from maps dating from the 15th century onwards. This unusually good historical coverage enables more detailed work to be done, comparing enclosure patterns, mapping and locating the hedges and surveying any survivors.

(c) Hedges in REL.
Work done so far for this study has raised questions about the subsequent fate of hedges planted following enclosure by Parliamentary Act (i.e covering most of the REL here). It seems that the hedges over much of the Riverside Levels for instance, may have been removed by the 1940s, perhaps even several decades earlier. The status of hedgerows as historic landscape components in these areas is still uncertain. This clearly has implications for the historic (if not the ecological) case for hedge planting in these areas, and further research is needed here to inform conservation management.

(d) Hedges and AOSF.

AOSF is distinguished by its general lack of hedges (apart perhaps from major boundary ones of the type mentioned above). However, it is not always easy, without documentary map research, to identify AOSF modified by strip consolidation, and to distinguish it from the superficially similar REL. The distinction has fundamental implications for conservation management schemes for strip cultivation and hedge and tree planting, since if an area of consolidated AOSF is still essentially open-field in appearance (if not farming practice), it should preferably remain hedgeless.

Recommendations for survey and research

- Area-wide: Undertake further research and fieldwork to establish the extent of hedged boundaries (both "major" land-block boundaries and "internal" field boundaries), their history, ecology and conservation management potential.

- In EEL areas: Undertake ecological surveys of surviving pasture and hedgerows, selected from representative samples for different ages and environments identified through map analysis and fieldwork.

3.1.2 HEDGES: RECOMMENDATIONS FOR LANDSCAPE CONSERVATION MANAGEMENT

Practical considerations

Present arable farming practice in REL (and some EEL) means that opportunities may be limited for conservation or restoration schemes for hedgerows, dikesides and field margins. Nevertheless, such work could have a high impact and the cumulative effect would be significant.

However, in some areas, notably the Levels, care needs to be taken to make sure that the open aspect of the landscape is not compromised by inappropriate dikeside and roadside hedging. A sensitive approach, informed by historical research, needs to be taken, balancing openness and enclosure; for instance by limiting roadside planting in the open countryside, and concentrating new planting on settlements, particularly for screening visually intrusive agro-industrial units or other developments.

In areas around AOSF, it is important to balance hedgerow restoration with a clear emphasises on the importance of a hedgeless landscape in the open strip fields. Otherwise, encouragements for an enclosed hedged landscape could detract from the conservation management of the hedgeless, unenclosed open strip field, and at worst could unwittingly encourage its enclosure.

Further fieldwork and map-based research into the past and present status of hegerows, building on the present study, would clarify local situations and provide useful guidelines and target areas for conservation management.

Recommendations for conservation management

- EEL: encourage maintenance and restoration of hedges, ditches, verges, paths and tracks.

- REL: management of existing hedgerows and trees; new planting close to settlements and farmsteads, and careful planting in the open countryside (see practical considerations, above).

3.2 SETTLEMENTS & STANDING BUILDINGS

3.2.1 RESEARCH AND DOCUMENTATION

(a) SETTLEMENTS

Prior to this study there has been no significant research on medieval and later settlement history or morphology. This finding agrees with a recent English Heritage study of rural settlement patterns, which singles out this area as one that particularly needs further research. Aspects highlighted as especially important for further work here are: deserted settlements in the Humber wetlands, the elements of early, pre-enclosure dispersed settlement, and the identification of local "sub-regional" settlement patterns (Roberts and Wrathmell 1995, 56-7). The work done for the present study, identifying settlement patterns and types (including deserted villages and pre-enclosure settlements), begun to address the subjects highlighted in the English Heritage reprt, and shows that there is indeed much potential, and need, for further research on these lines.

An aspect of pre-enclosure settlement that is especially important for Historic Landscape Character assessment is the existence of townships which had their own field systems and which thereby profoundly influenced local land-use and landscape character. This study has demonstrated that Enclosure and Tithe Maps are good sources for identifying and mapping these "townfield" systems, and again shows that further work in this field would be very productive.

Recommendation

- Undertake further research on settlement pattern and morphology, and on the related townships and townfield systems, building on the work of the present study.

(b) BUILDINGS

As with settlements, the buildings of the area still await systematic study. Building types in the study area which can be singled out as particularly deserving research are: vernacular buildings, Turbary cottages, timber-framed buildings, early brick houses, early industrial buildings, riverside warehouses and enclosure farmsteads, particularly original farmbuildings. All groups are under threat, and the area offers unique and nationally important examples of each. Of all the types, the Turbary cottages are the most unique, the most threatened, and the most urgently in need of recording. Farmsteads here are largely taken for granted, but the range of types and sizes of found in this area is probably greater than anywhere else in Eastern England - a reflection of the unusually wide economic range of landowners and occupiers. Farmsteads too are under constant threat of alteration and demolition. Whilst study of buildings might lie beyond the scope of landscape conservation management, there may be opportunities to promote research and recording.

Recommendation

- Encourage recording of historic buildings, particularly those types special or unique to the area, such as the Turbary cottages and enclosure farmsteads.

3.2.2 CONSERVATION MANAGEMENT FOR SETTLEMENTS AND BUILDINGS

There is a great deal of overlap between conservation management for settlements and buildings, and to save repetition these are dealt with together.

The particular problems facing historic buildings and settlements in the area can be summarised as:
1. Unsympathetic location, scale and design of new development.
2. Building disuse and demolition.
3. Unsympathetic rebuilding and alteration.
4. A poor past record of building conservation management in some areas.

1. NEW DEVELOPMENT

(a) Towns, villages, hamlets

Additional rural accommodation is difficult to successfully integrate into the villages, especially the smaller ones; even the larger ones on the Isle have already been overstretched. Essential new accommodation needs to be provided through limited infill and small-scale expansion of larger settlements, with major development directed away from the study area. Local Plans, Village Design Statements and development boundaries have important roles in achieving these ends.

Recommendations

- Direct new housing towards controlled expansion of larger settlements, with major developments directed to urban areas outside the study area.

- Encourage limited smaller-scale infill rather than larger developments. In the dispersed villages, new infill schemes should be directed to a selected areas that either form a main focus now, or which represent a focus that needs rejuvenation.

- Produce Village Design Statements as a means of achieving improved consultation and sensitive planning control.

- Encourage use of sympathetic materials and design to ensure that new buildings contribute to local identity.

- Designate new village Conservation Areas (Owston Ferry, Eastoft and Adlingfleet are prime candidates); investigate possibilty of Conservation Areas in Turbaries.

(b) Isolated buildings

Recommendations

- Although there is limited scope for control of new agricultural building development, more use could be made of existing powers to protect the setting of listed buildings.

- Tree screens may help with intrusive developments like agro-industrial units, whilst for new housing, traditional local materials and designs can be encouraged.

2. DISUSE

With regard to listed buildings, this area was not one of those surveyed in the late 1980s as part of the English Heritage "Buildings at Risk" Programme, and the present state of the historic building stock is uncertain. However, it is known that many of those buildings found disused at the time of listing in 1986-7 are still empty, and are now reaching a critical condition. This includes some prominent buildings, and unless action is taken soon, they will be giving rise to difficult and high-profile problems for the local authority.

It is important to note that the majority of historic buildings in the region, both in settlements and in the open countryside, are not protected by listing or Conservation Areas. Their continued survival is essential to the character of the area, and management strategies for these will depend to a great extent on conservation education.

Recommendations

- A survey of historic buildings at risk in the area is a urgent priority for future conservation strategy.
- Encourage continued use of buildings, if necessary by change of use and conversion.
- Enforce the statutory responsibilies of owners of listed buildings to keep them in reasonable repair.

3. ALTERATIONS AND CONVERSIONS

Recommendations

- Encourage use of traditional local materials and designs.
- Encourage sympathetic uses or re-uses for non-residential buildings that will not compromise their historic character.
- Undertake publicity and education programmes for building conservation, both in Conservation Areas and elsewhere.
- Designate new village Conservation Areas (Owston Ferry, Eastoft and Adlingfleet are prime candidates); investigate possibilty of Conservation Areas in Turbaries.

3.3 ECOLOGY

As the HLC Zone accounts show, there are many points of convergence and shared management objectives between the historical and ecological fields. In the present study, information on ecology has been incorporated in the Zone texts. The subject has not been dealt with separately, in the same way as archaeology, due to shortage of time and the fact that it is the subject of research and management studies elsewhere. Ideally, however, ecological aspects should be dealt with in more detail, and evaluated alongside the historical and archaeological, in order to more fully integrate these aspects of countryside management. This is especially important for the RM&T areas, the Moorland Allotments and Riversides, and for other intensive farmland areas where the natural environment has been hardest hit by modern farming. For all areas a "holistic" approach is needed, taking in all aspects of the historical and natural environments.

Recommendations

With a view to integrating ecological, archaeological and countryside management objectives,

- review the available information on the ecology of the study area as a whole and of the management of SSSIs and Nature Reserves within it.

- where data is lacking, undertake systematic ecological survey, with priority given to RM&T, Moorland Allotments, Parklands, Riversides, Enclosed Land.

3.4 WETLANDS RESEARCH

The history and development of the "wetlands" is intimately tied up with that of the adjacent "drylands". The present programme of wetland research, with its focus on wetland sites, has tended to overlook the history of associated dryland settlement and periods later than high medieval. There remains a need for wetlands research to study the relation-ship of the so-called "dryland" communities to the wetlands they exploited, whether these communities were nearby (as with the riverside and Axholme villages) or more distant (as with medieval monastic peat exploitation). Research also needs to be extended into later medieval and post-medieval times. Although wetland exploitation was then at a low level compared with earlier periods, it still made a significant contribution to the social and economic life of the local communities, distinguishing them from their exclusively dryland neighbours. Post-medieval sources such as Enclosure and Drainage Awards also provide evidence relevant to earlier periods on "wetland" activities such as warping, draining, hemp and flax processing.

Recommendations: Wetlands research

Encourage an extension of wetlands research:

- to study the relationship of wetlands to the dryland communities which exploited them, (particularly the communities on the riversides, the sand and gravel "islands" and the Isle of Axholme), and

- to extend this research to cover wetland exploitation (and the balance of wetland / dryland activity in the local economy) in the later medieval and post-medieval periods.

4.0 - 11.0 RECOMMENDATIONS FOR RESEARCH AND CONSERVATION MANAGEMENT RELATED TO SPECIFIC HLC ZONES

(The following sections summarise recommendations included in the relevant Zone text sections.)

4.0 ANCIENT OPEN STRIP FIELD ZONE

The following is a summary: further details and specific recommendations are given in Appendix 2(a).

4.1 RESEARCH AND DOCUMENTATION

This study represents the first significant attempt to research the subject. The potential for research is considerable, and much documentary material remains to be used, especially for the late 18th century onwards.

HLC ZONING DESIGNATIONS AND EVALUATION

The varying amount of consolidation and amalgamation of strips in former open strip fields mean that it is often difficult, on the basis of a rapid survey, to designate it as AOSF, REL, EEL, or their modified variants. Further work is needed to determine historic extent and present condition, and corresponding management strategies.

(a) Strip consolidation
Specific problems arise from the practices of field consolidation and sub-division, and of renting strips. These obscure the real extent of strip cultivation, and more particularly, the potential for strip cultivation, which can only be determined through research into current ownership, tenancy and farming practice. Further work on this is essential for confirming HLC designations and for identifying conservation management options and target areas.

(b) Trent and Ouse Levels / riversides
The details from the sample surveys along the Trent and Ouse, although admittedly incomplete, can be extrapolated to the remainder of the riverside areas. Examination of historic maps (including Enclosure maps and Second Land Utilisation Survey field maps), would more clearly define the history and extent of the Riverside AOSF, and further field observation and study of APs would help define their present condition.

A similar procedure can be used to clarify the HLC status of the former open strip fields of the Old Don villages, and whether these qualify as modified AOSF, EEL or REL.

Recommendation

- Undertake further research on historical and contemporary processes of AOSF areas, including past and present ownership, land-holdings, social organisation, land-use and farming practice, field and strip layout, current condition and management potential.

4.2 EDUCATION.

The Axholme strip-fields are little known, even within the region, and few people realise its regional and national significance. The Riverside open strip fields are even less known; indeed, the present study is probably the first occasion, outside the locality, that they have been recognised as a historic landscape feature. The potential for education is very good, both for schools and the public at large. The farming and social system that AOSF represents could be explained to the public through publications, information boards, guided walks etc.

Recommendations

- Increase awareness of the AOSF at a local, regional and national level; explore liaison with local educational bodies.

4.3 AMENITY

AOSF is working farmland. Footpaths there require maintenance and the cooperation of farmers. There is at present concern for the status and management of some of the meres and open-field paths on the Isle of Axholme. Both the strips and meres and the networks of tracks and paths are integral parts of the same ancient landscape, but as the dense networks of paths have developed over the centuries within and across the open strip fields, there are inevitably problems of access and duplication etc. There may be occasions when the needs of the paths, strips and meres are in conflict or, conversely, when path management provides opportunities to enhance the survival of strips or meres (for instance, by paths running between strips). It is important that the future management of rights of way takes account of the need to conserve the meres and the open-field strips.

Recommendation

- Adopt an integrated approach to the managment of rights of way and the conservation of meres and of strip cultivation in the strip fields.

4.4 AOSF: RECOMMENDATIONS FOR LANDSCAPE CONSERVATION MANAGEMENT

The Ancient Open Strip Fields of the Isle of Axholme and the Riverside Levels, identified in the present study, merit a high priority for conservation management at a local, regional and national level.

In general terms, conservation schemes for AOSF will centre on encouraging strip cultivation and retention of an open aspect, rather than hedge and tree planting. Potential management options that need to be explored include Countryside Stewardship schemes and Conservation Area designation.

- It is suggested that a day-conference or seminar be organised to bring together those with a practical and/or academic interest in the surviving open strip field systems of Britain. (See 1.1 above)

- In view of the increasing threats to the Axholme fields, and their accelerating loss, it is strongly recommended that Part 2 of the study be started as soon as possible.
  See Appendix 2 for recommendations for Part 2 of this study.

5.0 EARLY ENCLOSED LAND ZONE

5.1 RESEARCH AND DOCUMENTATION

Little or no fieldwork or map-based analysis on agricultural land-use has been done prior to the present study. There is considerable potential for research on the ecology, history and archaeology of EEL.

Excellent opportunities exist for topographically-based studies of the process of enclosure and of historical and present-day land-use, drawing on documentary sources, APs, and fieldwork, and involving ecological surveys (e.g. hedges/trees/road-verges/grasslands), as well as field archaeology and architectural history.

HLC ZONING DESIGNATIONS AND EVALUATION

Different phases or periods of Early Enclosure have been identified in various places from maps dating from the 15th century onwards. This unusually good historical coverage enables more detailed work to be done, comparing enclosure patterns, mapping and locating the hedges and surveying any survivors. Although damaged and modified by modern farming and development, the basic EEL enclosure patterns survive in many places. Some examples of coherent areas of EEL on the Isle are north of Belton village, south of East Lound, west of Epworth and around Low Melwood; further research would enable more to be identified.

In some places, especially the Riverside Levels, it appears that intensive arable farming has reduced EEL to relict fragments around the villages. However, without further study it is hard to estimate how much has been lost here, and the damage may be more apparent than real. The amount of "properly" enclosed land may have been fairly small: much of the Old Inclosure land recorded here at the time of Parliamentary Enclosure may in fact have been consolidated AOSF / open strip field.

Recommendations

- Undertake further fieldwork and aerial photographic research, especially of areas around settlements and former country house parks, to clarify the designation of EEL areas, to evaluate survival and condition, and to identify priority areas for conservation management.

- Undertake a review of historic buildings in EEL, focusing on farmhouses and farmbuilding stock, as demolitions and conversions are reducing their numbers.

- Undertake ecological surveys of surviving EEL pasture and hedgerows, selected from representative samples for different ages and environments identified through map analysis and fieldwork.

5.2 EEL: RECOMMENDATIONS FOR LANDSCAPE CONSERVATION MANAGEMENT

The main need is to protect and enhance the EEL landscape elements that are being depleted or destroyed through intensive arable farming and building development. The main priorities can be summarised as:

- maintain key characteristics of the EEL landscape: its small fields, sense of enclosure, hedges, ditches, surviving ridge and furrow etc.

- management of existing hedgerows and trees, and new planting .

- management of drains, dikes, watercourses, and of dikeside vegetation.

- control of new housing development to minimise intrusions onto EEL; encourage the use of sympathetic materials and design for new construction.

- encourage maintenance of paths, tracks, verges and field boundary hedges and ditches.
  Further fieldwork and map-based research, building on the present study, would enable the selection of target areas for field boundary work. (See sections on Hedges in the REL Zone text, and 3.1.1 above, for further comments on "major" boundaries and hedges.)

6.0 RECENTLY ENCLOSED LAND ZONE

6.1. RESEARCH AND DOCUMENTATION

Previous research and publication has tended to focus on the history of the post-medieval drainage of the Zone, and, with the recent work of the HWP, on the pre-medieval archaeology and palaeo-ecolology of the wetland areas. Apart from this, the medieval, pre- and post-Enclosure history and land-use of REL is largely unresearched.

The potential for research is very good. The HWP studies demonstrate the high potential for archaeological and palaeo-environmental research. This present study has demonstrated the high potential of documentary sources for later periods. Some aspects that can be singled out are:

HLC ZONING DESIGNATIONS AND EVALUATION

(a) Phases of enclosure

Preliminary research shows that the areas covered by the two main phases of enclosure (17th century and mid 18th - mid 19th century) can be identified with the aid of early maps. The early 17th century maps, although often cited and reproduced in published accounts, have never been closely correlated to the present landscape. The present study, using a sequence of historic maps, has been able to trace many details of the 17th century works down to the present day, and shows that this aspect would repay further study throughout the Hatfield Chase area.

For the later phase of enclosure, there is copious material on the Parliamentary Enclosure and associated warping activities which is as yet almost entirely unresearched for much of the area.

(b) Old Enclosures

In some areas (Isle of Axholme and some Trentside and Old Don parishes), documentary research has made it possible to distinguish areas of early and recent enclosures, and relate them to HLC Zones. These Zone / land-use patterns formed the basis of extrapolations to similar neighbouring areas. The Zone extrapolations need testing and clarifying through historical research, since without it, the areas can not be identified sufficiently reliably for conservation management. See 2.1 - 2.3 above.

(c) Intensification of arable farming

Increasing mechanisation and intensification of arable farming has led to the amalgamation of holdings, the re-organisation, abandonment, demolition or residential conversion of farm buildings, and the removal of field boundaries, including the loss of nearly all hedges from large parts of this Zone. The process of change from mixed or pastoral farming to arable needs further research, since it has a direct bearing on archaeological, ecological and landscape issues.

Sources for tracing land-use during this century identified in this study include 1930s and 1960s land-use surveys, aerial photos, MAFF data. In the time available it has only been possible to sample some of these briefly, and they would repay further study.

Research recommendations

- Undertake further research on land-use from early sources, to refine and check Zone extrapolations, and provide wider coverage of detailed maps for conservation management, including selection of target areas.

- Undertake research on 17th century and later enclosures, focusing on their original creation, their recent history and present condition, with a view to evaluating potential for landscape conservation management.

6.2 REL: RECOMMENDATIONS FOR LANDSCAPE CONSERVATION MANAGEMENT

In general terms, scope should be provided to enhance landscape elements that are being depleted or destroyed through intensive arable farming. These can be summarised as:

- maintain key characteristics of the landscape: its open aspect, linearity, and the pattern of isolated farmsteads.

- management of existing hedgerows and trees; new planting close to settlements and farmsteads, and careful planting in the open countryside (see below).

- improve visual and ecological status of drains, dikes, watercourses, and of dikeside vegetation.

- undertake a buildings census of historic farmbuildings, to assess the problems of redundancy, conversion etc.

- encourage continued use / appropriate re-use of farmstead settlements and historic farmstead buildings; encourage the use of sympathetic materials and design for new buildings.

- encourage access to the wider landscape, especially along rivers, dikes.

Present farming practice on REL means that opportunities may be limited for boundary conservation or restoration schemes for hedges, dikesides and field margins. Such work could have a high impact and the cumulative effect would be significant. However, as mentioned above (Hedges, 2.1), care needs to be taken to make sure that the open aspect of the landscape is not compromised by inappropriate dikeside and roadside hedging. Further fieldwork and map-based research, building on the present study, would clarify local situations and enable target areas to be selected.

7.0 RAISED MIRE & TURBARY ZONE

7.1 RESEARCH AND DOCUMENTATION

This Zone has received more attention from researchers than any others in the study area, but the work as been unevenly distributed. Past and present research is focused on the ecology, palaeo-ecology, archaeology and history of Thorne and Hatfield Moors. The potential for further ecological and historical work is very high for all areas, but since previous research has focused on the larger moors, new work needs to be directed to those areas which have received less attention: the Axholme Turbaries, Ribbon Row on Crowle Moor and relict areas of moorland surviving in the Enclosed Landscape. More information is needed on these areas to inform conservation management and education.

Such work could be carried out in conjunction with research on the Moorland Allotments.

These areas in particular would benefit from a more "holistic" approach, taking in all aspects of the historical and natural environments.

7.2 RM&T: RECOMMENDATIONS FOR RESEARCH & CONSERVATION MANAGEMENT

- General research. Review the available information on the ecology, historic land-use and management of the RM&T land within the study area, and where data is lacking undertake further research. Priority to be given to the Axholme Turbaries, to inform conservation management and education.

- Planning. Improve Planning Development Control for all Turbaries and Moor fringes, to restrict insensitive development, and to encourage sympathetic rehabilitation of redundant and disused buildings.

- Ecology. Investigate wetland /water-table management of Turbaries (as has been done for the larger Moors), especially at Haxey, and investigate the possibility of extending the SSSI there to take in additional areas, notably the grassland and sandy heath.

- Education. Develop local awareness of history and importance of the areas, through publications, information boards, guided walks etc.

8.0 MOORLAND ALLOTMENTS

8.1 RESEARCH AND DOCUMENTATION/ HLC ZONING DESIGNATIONS AND EVALUATION

The Enclosed Land created on the moors by the process of peat extraction and conversion to farmland forms a special category, identified here as Moorland Allotments. These are characterised by very long, narrow fields, created from the Middle Ages to the 19th century on the margins of Thorne, Crowle and Hatfield Moors. (see RM&T Zone text).

Preliminary survey work suggests that the Moorland Allotment land is predominantly arable, with a small amount of stock-keeping, but more research is needed here on present land-use, focusing on the survival of pasture, hedges, trees and historic buildings.

Moorland Allotments may, on further investigation, be designated as a separate Zone or sub-Zone. A separate category for Moorland Allotments, encompassing the different phases, processes and present conditions, would have distinct advantages:

1. It would give recognition to a distinctive process of land-use which has a long history here and is unique in the region, if not beyond.

2. It would assist conservation management here, by focusing attention on the specific problems of these sensitive areas which at present fall outside the SSSIs and Nature Reserve, and which are not suited to the conventional approach of planning development control for settlements or rural areas. Like the Turbaries, they require a special approach.

8.2 RECOMMENDATIONS FOR RESEARCH & CONSERVATION MANAGEMENT

- Undertake further research and fieldwork to clarify the Moorland Allotment type of land-use and the present condition of its Historic Landscape Components, in order to determine whether it justifies designation as a distinct HLC Zone or sub-Zone, and to identify appropriate conservation management approaches.

- Develop specific planning and conservation management strategies for these areas to conserve and enhance their distinctive character.

9.0 DESIGN / ORNAMENTAL LANDSCAPE ZONE (PARKLAND)

9.1 GENERAL PRIORITIES

The two prime concerns for management of surviving parkland, whether intact or relict, are:

1. The historic fabric, including buildings such as houses, stables and monuments, and garden features such as earthworks and patterns of planting like avenues, tree clumps and boundary screens.

2. Parkland ecology, where interest focuses on woodlands, undisturbed grassland, trees and hedgerows.

Both aspects are worthy of management attention, especially as the parkland survivals in the study area, though small-scale, make a strong contribution the local landscape character.

9.2 RESEARCH AND DOCUMENTATION

There are details on the main houses from the Listed Buildings Resurvey in 1986-7, and some historical details in published local histories, but apart from this there appear to be no systematic accounts or surveys, and little basic information, on the history, architecture or ecology of the parkland areas.

RECOMMENDATIONS FOR RESEARCH & CONSERVATION MANAGEMENT

- Review the information available on the landscape history and ecology of the country house parks and associated features, and where it is lacking undertake surveys to inform conservation management strategy.

10.0 TRANSPORT / WATERCOURSES ETC

10.1 RESEARCH AND DOCUMENTATION

Canals, major dikes, railways and motorways make a significant contribution to landscape character, and provide important habitats for wildlife. Information on these areas is very patchy; ecological data is available for the nature reserves on the River Idle and the old Axholme Railway Line, but other areas have not been surveyed. Data on historic land-use has not been collected, but could be gathered from various sources as part of a habitat survey.

RECOMMENDATIONS FOR RESEARCH & CONSERVATION MANAGEMENT

- With a view to extending conservation management, and building on the examples of the existing railway and riverside nature reserves, review the information currently available on habitats alongside dikes, rivers and routeways and where it is lacking undertake surveys.

- Improve public access along rivers, dikes ec.

11.0 INDUSTRY AND COMMERCE

11.1 RESEARCH AND DOCUMENTATION

Little or no research has previously been carried out on early trades and industries here. The potential for historic landscape research is very good, especially for the early peat and clay extractive industries and for the farming-related trades. Of these, the hemp and flax industry is the most important and least-known, but with much evidence to be investigated on historic maps, documents and on the ground.

Industry and Commerce: recommendations for research and documentation

- Research should be encouraged on historic trades or industries, particularly on those which make the most significant contribution to the special character of the area.

11.2 LANDSCAPE MANAGEMENT ISSUES

In historic landscape character terms the main issues are:

1) The direct impact of industrial and commercial development on the ecology and archaeology of the development site or its near vicinity.

2) Secondary impacts in terms on its visual effect on the character of the area, and on the impact of associated features such as transport, residential development etc.

Direct effects are covered to some extent by existing legislation and planning practice, although there are many problems for those sites of ecological interest and historic buildings which do not have statutory protection. The secondary aspects also come within the orbit of local planning authorities.

RECOMMENDATIONS FOR LANDSCAPE CONSERVATION MANAGEMENT

- Findings from this limited survey suggests that stronger weighting needs to be given in the planning process to landscape character considerations when considering industrial/commercial development, certainly on the Isle of Axholme and on the open Levels.

- There is a need to limit large-scale intrusive developments by, for instance: directing new construction away from sensitive areas, use of sympathetic design and materials, and through screening visually intrusive buildings etc.

APPENDIX 2 (a) **AXHOLME AREA OPEN STRIP FIELDS: RECOMMENDATIONS FOR FURTHER WORK**

The national importance of the open strip field systems here, and the high level of threat to their survival, justifies further work at the earliest opportunity. This should aim to evaluate the current condition of the fields, the forces for change and the management options, as a prelude to active conservation management.

The open strip fields present specific conservation management problems:

1. The areas are very extensive, covering around 13 or more sq.km. on the Isle of Axholme; with around 5 sq.km. on Trentside and perhaps the same along the Ouse (depending on the HLC assessment of the consolidated riverside open strip fields).

2. The exact extent of current strip cultivation, strip ownership, tenancy and farming regime is not known.

3. There are no boundary features, so the strips are very susceptible to alteration and erasure.

4. Ownership is very mixed, ranging from smallholders to large farming businesses.

5. Some local farmers / landowners are specifically pursuing the purchase of strips to amalgamate them into larger holdings.

6. Present farming policy and practice does not generally favour the use of strip cultivation.

7. There is at present little or no recognition of the importance of the strip fields, locally or nationally.

8. There are at present no conservation measures in operation for the fields.

9. Current countryside conservation measures may not be effective for conservation management of the strip fields.

SUBJECTS REQUIRING FURTHER WORK INCLUDE:

1. Mapping, surveying and evaluation:

   i) preparation of working copies of base-line period and Zone maps for the Isle and Riverside areas with AOSF, plotting and transcribing information from draft maps already made, and from original historic maps identified during this study.

   ii) Survey the current condition of the AOSF through APs and fieldwork.

   iii) Investigate ownership, tenancies and farming practices.

2. Analysis of forces for change, based on information derived from the evaluation of the current condition of the AOSF, and from contacts with local authorities, local farmers etc.

3. Priorities for conservation, locally and nationally:

i) Evaluation of the variability of survival and quality of the AOSF to enable selection of target areas for management.

ii) Evaluation of the Axholme and Riverside AOSF in the context of other survivals in England and Wales, to establish the national priority for conservation work here.

4. Identification of landscape management options. These would include:

i) Potential for countryside schemes, agricultural grants etc., which can be specifically targeted to encourage strip-farming.

(Existing Countryside Stewardship schemes, e.g. for grassland or field boundaries, are of limited use, since the strips here are arable, and have no "hard" boundaries: hedges would only be appropriate in key historic locations, e.g. on ancient outer boundaries to whole open strip fields, see "Hedges" in REL text)

ii) Potential for control of inappropriate development through Local Plans, Design Guides, Village Design Statements etc.

iii) Potential for improving amenity and education through work with local authorities, schools, local societies etc.

iv) Potential for direct involvement through land purchase (as in the case of other open strip field survivals in National Trust or Crown ownership).

v) Evaluation of management experience for the other open-field areas in England and Wales. **(See following section).**

(Information has been gathered on these other systems, and contact made with the National Trust and Local Authorities involved in their management. In part 2 these aspects should be followed up.
At present, the few people involved with the management of the open strip fields are working in isolation and, generally speaking, are unaware of others working in the field. Nor did any of those contacted know of the Axholme fields.)

It is suggested that a day-conference or seminar be organised to bring together those with a practical and/or academic interest in the surviving open strip field systems of Britain.

5. Identification and grading / assessment within the AOSF to distinguish areas most suitable for different management options, in terms of conservation, enhancement or creation/reconstruction strategies.

6. Recommendations for further action.

In view of the increasing threats to the Axholme fields, and their accelerating loss, it is strongly recommended that Part 2 of the study be started as soon as possible.

NOTE ON TERMINOLOGY OF OPEN STRIP FIELDS (from AOSF Zone Text, p.38)

Alternative terms for the areas of open-field strip cultivation on the Isle of Axholme and Trent and Ouse banks are: open fields, common fields and strip fields. **Open fields** is probably the most academically correct, but outside specialist circles the term runs a strong risk of being misundertood as fields that are simply "open" or spacious - as in "open countryside". **Common fields**, properly speaking, implies a common or collective farming practice (which apparently has not been the case here in Axholme for over a century, apart perhaps from supervision of the meres, tracks etc.). It might also be mistaken for "commons", but it does have a positive echo of "common heritage". To most people, neither of the terms **open** or **common fields** would present a distinctive image of the landscape in question, nor do they clearly differentiate it from the surrounding farmland, which although enclosed is often spaciously "open". **Strip fields** is the most graphic and least ambiguous term of the three, and presents an image that would be immediately understandable to most people. The term has been used for this type of landscape by the Royal Commission on Historic Monuments (e.g. on the Isle of Portland), although some writers use the term specifically for enclosed fields made from former open-field strips. This potential confusion with enclosed strip fields could be avoided by using the term **open strip fields.**

· It is suggested that for general use (and specifically for public use and for conservation management purposes) the terms **open strip fields, open-field strip farming / strip cultivation** be adopted for these historic landscape features.

· For the time being, the terms **open fields, open-field farming** and **open-field strip cultivation** may continue to be the best for academic or general historic discussions.

There is also the question of the use of the term **"Ancient"**. Open strip cultivation and the associated field pattern here have been continuously changing for many centuries. Indeed, as the Historical Outline shows, the open strip fields, by their very nature, have been more flexible and changeable in their ownership and landuse than any other type of farmland in the area. (In the past this flexibility was a major factor in their survival. Now, ironically, it means the strips can be easily amalgamated for larger scale intensive cultivation.) However, whilst the "content" of the fields has changed over the centuries, their basic form and pattern still survive in many places. They still retain the medieval field layout, much of which was probably established by the 11th - 12th century. The piecemeal ownership and cultivation here, and the customary administration of the meres and paths etc., also continues traditions stretching back to the early post-medieval and medieval periods. In these respects, the open strip fields are clearly "ancient" relative to other farmlands here. Whilst parts of the Early Enclosed Land may also be medieval in origin, and the Raised Mire and Turbary areas too may retain features of the medieval commons, in terms of Zones as a whole the open strip fields are the most consistently ancient of the farmlands.

The term **ancient** has therefore been adopted as the simplest way of, firstly, distinguishing the Zone in terms of its historic character, and secondly, of highlighting its historic importance.

APPENDIX 2 (b): OTHER STRIP-FIELD SYSTEMS SURVIVING IN ENGLAND AND WALES

Previous studies of open-field farming have been almost wholly concerned with historic examples; they have given little attention to modern survivals apart from Laxton and, to a lesser extent, Braunton. Surviving examples are not easy to locate, and there may be other, smaller ones besides those listed here.

Besides those in the Axholme area, survivals of ancient strip-cultivated open fields are known at:

Braunton Great Field, North Devon
Forrabury Common, near Boscastle, north Cornwall
Laxton, Nottinghamshire
Isle of Portland, Dorset
Rhossili Vile, The Gower, Glamorgan, South Wales
Soham, Cambridgeshire

The main features of each open strip field area is summarised below, followed by a general evaluation. The level of information varies: for some areas little has yet been found. Similarly, for those areas where there is active conservation management, details on current condition and operation are readily available from management plans etc., whilst for others, equivilant information (if it exists) has yet to be obtained. Sources are listed at the end of the section.

Braunton Great Field covers c.122ha. (c.300 acres), with 86 unenclosed strips in 1994, some of them large consolidated blocks. The Great Field here has baulks and marker stones between the strips, but here, as in Axholme, the land lends itself to large-scale mechanised arable cultivation, and the strips can be consolidated into sizeable areas. Many have. It also has multiple owners, like Axholme. A study was prepared for North Devon Council in 1994 with funding from the local authorities, Countryside Commission and English Heritage, to examine the issue of conservation management. Its recommendations include further public education, improved visitor amenities, and improved cooperation of landowners. Most recently, it has been suggested the Great Field might be designated a Conservation Area.

Forrabury Stitches, on Forrabury Common, covering 20ha. (50 acres), with 40 strips (known as "stitches"), divided by baulks and lynchets, some with dry stone revetment walls. The field is mostly owned by the National Trust, who can thus control management and ensure against strip amalgamation.

Rhossili Vile, spread over 390ha. (964 acres), with intermittent strips, perhaps less than 100 overall, representing the remnants of fields associated with Rhossili and neighbouring Middleton. It is the largest of the open strip field survivals outside Axholme. The National Trust own a significant proportion of the Vile west of Rhossili, including several separate strips which have been deliberately purchased in order to protect their own and neighbouring strips from consolidation.

Laxton covers 196ha. (483 acres), over three fields, with 164 strips in 1989. It is the most famous surviving example of open-field agriculture, with sections of three open strip fields and associated meres still farmed communally by a small group of local farmers. Some of the communal farming

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customs are preserved, including the annual marking out of the strips. However, the strips themselves are rarely visible as such, since the fields are often planted in the same crop, or just a few varieties. Thus the open strip fields here superficially resemble modern hedgeless arable fields. Laxton was bought by the Ministry of Agriculture in 1952, in response to public pressure, after it became clear that the sale of the land into private ownership would mean the demise of its historic farming system. Since 1981 it has been administered by the Crown Estate Commissioners. There is a heritage and study centre in the village and publications on the fields, financially supported by the local authority and the Countryside Commission.

Portland, covering under 60ha. (150 acres), has remnants of a two- or three-field system, with strips, many of them cultivated, in a series of parcels. In the 1960s, when the Isle of Portland was surveyed by the Royal Commission on Historic Monuments, there were five parcels, ranging from 10 to 65 acres, totalling 150 acres overall. At that time some of the strips were divided by baulks, with lynchets on the slopes. Marker stones were also in evidence though no longer used. Since then the strip system as a whole has probably diminished, but details have yet to be obtained. The Portland fields enjoy a range of protective and conservation designations. The two main sections are Scheduled Ancient Monuments - which will protect features like the baulks, lynchets and marker stones. The Isle is also an Area of Outstanding Natural Beauty and part of the Dorset Heritage Coast. Apart from the scheduling, monitored by English Heritage, there is apparently no specific conservation management here. Further enquiries are needed on the present extent and management of the Portland fields, particularly the issues of protecting strips from amalgamation and the conservation of non-scheduled areas.

At Soham, east of Cambridge, a small area of strip-field system was recorded in the early 1970s, surviving on a peninsula projecting into the fens called North Field. At that time there were a number of strips without baulks (similar to Laxton and Axholme), growing a mixture of crops. The present situation there, and size of any surviving areas, have yet to be ascertained.

Comparison and evaluation

Each of the field systems is different, but in general terms, the fields at Braunton, Forrabury, Portland and Rhossili have strips divided by baulks, banks or walls, and sometimes marker stones. In the Midlands and Eastern England strips were not necessarily bounded by baulks or banks. Laxton has marker stakes, and this may have been the method formerly used in the Axholme area. All of these strip-field survivals have been subject to strip amalgamation or consolidation.

Along with the physical remains of open-field systems, there are social and agricultural traditions or "customs" associated with land tenure and farming practice. The form and survival of these is as variable as that of the field systems themselves. Laxton is widely regarded as representing the most complete survival of communal or collective open-field farming customs. Axholme probably represents the next most complete survival, with at least four distinct parish / township systems still operating. It also, uniquely, has associated "folk" customs.

Comparisons can be made between the seven different open field survivals, in terms of their history, landscape character and management. However, because of their variety, comparisons are not straightforward: most of the surviving systems represent different aspects or versions of open-field farming, and with so few in number, each is important in its own right. Nevertheless, the Axholme fields need to be put into a national context. On the basis of the limited work done so far, it already seems clear that the ancient open strip fields in the study area, covering 15 or more square kilometres, represent by far the largest area in the country. The others mostly either represent survivals of a single field (Braunton, Forrabury, Soham), or survivals from different fields in a multiple field system, (some very small, as at Portland, or fairly substantial, as at Laxton and possibly Rhossili). Axholme goes one step further, and has extensive survivals of a number of neighbouring multiple field systems. It also has some survivals of open-field customs and associated folk traditions.

Further work is needed to collect more up-to-date information on the other field systems, in order to make fuller comparisons, not only on their form and evolution, but on their management and conservation. Since there are so few survivals, they can usefully be put into a European context too.

Conservation management issues

As mentioned above, conservation management information is not complete (or available) for every area. However, some general comments can be made. Four places have areas in "conservation stewardship" through ownership by the National Trust (Forrabury, Rhosili) or Crown Estate (Laxton), or through scheduling as an Ancient Monument (Portland). Some are also AONB and Heritage Coasts. Braunton is the subject of concerted conservation efforts. Seen in this context, the lack of conservation management for the Axholme fields is striking, especially in view of their size and quality.

Of all the open strip fields left in England and Wales, the Axholme area ones are the most extensive. Moreover, of all the survivals, the Axholme fields are also the most fluid in terms of ownership and land-use, and they are thus the most vulnerable to damage and loss. Since the area lies in the midst of highly productive arable land, it bears the full brunt of pressures to intensify farming. The problem is exacerbated by the fact that the older farmers are now retiring and their strips are eagerly being bought to amalgamate holdings. Unlike Laxton, which shares similar farming pressures, there is no history of conservation management here to counter these forces. The situation has now become critical, with large numbers of strips having disappeared during the last decade, and action is needed now if the systems are to survive as more than fragmented remnants.

Note on grading the Axholme strip fields

On the basis of the grading criteria widely used for archaeological sites, and increasingly being used for areas of historic landscape (described in Appendix 3), the Ancient Open Strip Fields of the Axholme area as a whole has a high score. Within this Ancient Open Strip Field Zone, some parts will score more highly than others. The Trent and Ouse Riverside fields, having been more extensively consolidated, would generally score lower than the Isle of Axholme fields, although some parts have good sequences of strips, and these fields as a whole have good visibility and coherence. More detailed evaluations are a high priority for future work.

SELECT BIBLIOGRAPHY FOR THE OPEN FIELD SYSTEMS MENTIONED ABOVE:

Axholme

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Jebb, L., (Mrs Wilkins), 1907, *The Smallholdings of England: a survey of various existing systems*, pp. 18-27.

Rider Haggard, H., 1906, *Rural England*, vol. 3, pp. 181-93.

Royal Commission on Agriculture (England), 1881, *Digest and Appendix*, Part 1, pp. 384-91.

Royal Commission on Agriculture (England), 1895, *Report on the Isle of Axholme* (by R Hunter Pringle), 28pp.

Slater, G., 18?? (no date), *The English Peasantry and the enclosure of the Common Fields*, pp. 52-60.

Young, A., 1813, *General View of the Agriculture of Lincolnshire,* London; reprinted 1970, Newton Abbot.

Braunton

Braunton Great Field Management Study, by Exeter Museums Archaeological Field unit, 1994, (North Devon District Council).
Part 1 is a history of the field by R. Stanes, with full references to previous studies.

Forrabury

Wood, P D, "Open Field Strips, Forrabury Common, near Boscastle", *Cornish Archaeology* no.2, 1963, pp. 29-33.

National Trust Archaeological and Biological Surveys, 1991.

A further description of the Forrabury system is described by M Brayshay and A Kelly in the *Journal of Environmental Management*, vol. 26 (1988).

Laxton

Beckett, J., 1989, *Laxton: England's last open field village,* (guidebook, Laxton).

Beckett, J., 1989, *A History of Laxton: England's last open field village.*

Chambers, J. D., 1964, *Laxton: the last English Open Field Village* (HMSO).

Portland

Royal Commission on Historic Monuments (England), 1970, *Dorset, vol 2, South East, part 2*, pp. 258-9, pl. 138-9.

Rhossili

Baker, A. and Butlin, R., 1973, *Studies of Field Systems of the British Isles*, pp. 506-509.

National Trust Archaeological Survey "The Vile Open Fields" (no date).

Soham

Taylor, C. 1973, *The Making of the English Landscape: The Cambridgeshire Landscape*, London, 1973, p.96, pl.6.

The *Agricultural History Review* contains a number of articles on open fields surviving into the 20th century, (notably examples in Wales, including Rhossili in 1956 and others in Gwent, 1958). It also has a number of references to agriculture on the Isle of Axholme, mostly derived from work by Joan Thirsk or the Royal Commission Reports (q.v.).

APPENDIX 3: METHODOLOGY OF HISTORIC LANDSCAPE CHARACTER ASSESSMENT

The Historic Landscape Character Assessment methodology and procedure is described on pages 8-9 and throughout Part 1 of the report, with examples of the Time-depth matrices in Appendix 4.

The methodology is based on the system developed in the Cornwall pilot study (CC 1994). Various modifications have been made in the present study to adapt the method to this particular landscape, to the data sources, and to the study objectives. At the same time, it was important not to create a method so tailored to the needs of the study that it simply "gave us what we were looking for", or had no application to other landscapes beyond the immediate area.

The investigations and modifications made for this study are of more than local relevance, and could apply to any regional study. The main modifications concerned time-depth matrices, historical parameters, data sources and mapping.

Modifications to the Methodology

The modifications to the Historic Landscape Character Assessment methods developed in the course of this study can be summarised as:

1. Use of primary historical documents, particularly maps, to provide "base-line" period data, and to guide Historic Landscape Character Type and Zone designations.

2. Creation of period maps and phase/process maps as a prelude to, and base-line reference for, Zone designation and mapping, and as a tool for conservation management.

3. New categories in the time-depth matrices, primarily in two areas:

   (i) on the theme / function axis, to distinguish the degree of land management on a graduation from unmanaged "natural" habitats to semi-natural and managed ones.

   (ii) on the chronological axis to give greater recognition to post-medieval phases.

   Scoring on the matrices with graded lines and key words was also found to be useful.

4. Detailed consideration of certain basic HLC Components - settlements, buildings, hedgerows, in an area-wide context, as a step towards:
   - identifying HLC Zones and Landscape Character Areas.
   - identifying common themes and inter-relationships.
   - developing general and local management strategies.

It is worth noting that some of these approaches have been independently developed in other Historic Landscape Characterisation studies elsewhere, notably in a Peak District project supported by English Heritage, where the research and preparation of period maps is a main concern.

The size of the study area in relation to Historic Landscape Character Assessment

The study makes a useful contribution to the debate about the appropriate size of area for Historic Landscape Character Assessment. The study area proved to be a useful scale for Historic Landscape Characterisation, both in terms of data availability, mapping and zoning, and management strategy. In Historic Landscape Character terms, the study area is large enough to encompass a series of HLC Zones and Local Landscape Character Areas.

However, there were problems with shortage of time to deal with data and fieldwork. One specific problem was shortage of time to liaise with other Local Authorities (notably East Yorks), or extend historical research beyond sample areas into counties other than Lincolnshire.

HISTORIC LANDSCAPE CHARACTER GRADING

Grading the importance of HLC Components, Types, Zones

A simple grading of importance can use general criteria for:

- historical significance,
- landscape amenity value,
- vulnerability and threatened destruction.

A more detailed grading can apply the criteria developed for evaluating Scheduled Ancient Monuments:

- Academic/scientific: rarity; survival and potential; period; documentation; scale; group value; diversity and integrity of evidence; non-historical conservation/scientific value.

- Amenity: access; scale; quality of setting; visual character; diversity and interest of intrinsic character.

- Management/future development: survival and potential; vulnerability; conservation value; access; key visual and physical characteristics; group value, economic viability; trajectory of change.

The Countryside Commission has suggested that these Ancient Monument criteria be applied to the evaluation of historic landscape character (CC 1996a, 8-9):

- diversity: illustrating the range of activities for which the landscape was or is used, or showing the survival of remains from several periods in a recognisable form;

- period: either the predominant period of an area or a sequence of periods through time;

- the rare: unusual combinations of features or processes may be of particular interest;

- the typical: in contrast, the extent to which components of a landscape are typical of a region or a period in time;
- potential: the value of features or groups of features for public understanding of the landscape, both in terms of visitors and of amenity value;
- documentation: of past perceptions as well as of archaeological interpretation: this includes the landscape's ability, if adequately conserved, to illustrate its own past;
- condition: particularly in relation to the visibility and coherence of landscape components and surviving landscape systems;
- survival: how historic components continue to contribute to the character of an area.

Each of these criteria can be graded high, medium or low.

Areas evaluated as important can be termed ***areas of particular historic landscape interest***, and this can be qualified according to the degree of importance: at a national level as ***areas of special historic landscape interest***, and at a local level as ***areas of local historic landscape interest***. Details and further discussion about grading areas of historic landscape appear in Fairclough *et al* 1996, 90, 94-8.

APPENDIX 4: TIME-DEPTH MATRIX ANALYSIS

Introduction: historic landscape process categories

The characterisation of landscape into Zones requires the landscape to be viewed from the perspective of the historic processes that have operated within it over time. These processes can be usefully categorised into generic groups or "process families". They can be divided in turn into sub-groups which relate to specific historic landscape character Types. These historic landscape categories and criteria are selected both to reflect and to generate the distinctiveness of HLC Zones, and they form the framework for landscape character assessment through description, mapping and matrix analysis.

The main families of historic landscape processes are:

Enclosure / colonisation
Exploitation / harvesting
Land management
Settlement
Design (non-agricultural)
Transport and communications
Industry and commerce

TIME-DEPTH MATRICES

To aid landscape characterisation, and to support the map and texts, matrices were produced for Zones and Areas, with principal chronological periods along one axis and themes and land use along the other (see **examples, p.148**). The time-depth matrix method used here is adapted from those used for Cornwall (CC 1994, 12-14) and Oxfordshire (Fairclough 1996, fig. 14.1), which were in turn based on Lambrick's original ideas as part of the Historic Landscapes Project carried out for English Heritage (Fairclough *et al* 1996, 82, refs.).

Separate levels or versions of the matrix can be used to represent the presence, visibility and cultural association of historic landscape processes and components. Matrix boxes can be "scored" with simple value judgements or weighting to represent degrees of significance. The matrix technique provides a useful short-hand means of assessing and comparing the overall variety and time-depth of different areas. It serves as a check-list, highlighting aspects and issues that are likely to require more detailed consideration and analysis. At the same time, it can demonstrate time-depth and the recurrence and variety of particular themes and functions, providing a graphic illustration of the historic trajectories which have produced distinctive Zones and Areas. Such analysis, by showing variations in components and processes, can demonstaret the differences between two Zones that at first glance seem to have the same visual character.

Detailed explanation of each category in the matrix is impracticable here, (much of this ground has already been covered in Part 2 of the report), but some explanation is needed of the two main innovations which distinguish these time-depth matrices from others used elsewhere.
These innovations are:

1. on the chronological axis to give greater recognition to post-medieval phases.

2. on the theme / function axis, to distinguish the degree of land management on a graduation from unmanaged "natural" habitats to semi-natural and managed ones.

1. Chronological divisions

Time-depth matrices used in other studies, such as those mentioned above, tend to be biased towards early archaeology, giving relatively little coverage to post-medieval periods compared with earlier times: proportionately greater space is allotted to the long prehistoric periods compared with the relatively brief historically recent phases. Whilst this might reflect the chronological range in terms of calendar years, it does not reflect the reality of landscape change. Processes in recent centuries, sometimes during the space of only a few years, have had effects as dramatic and pervasive as those spread over much longer earlier periods.

For the present study it was considered that, in order to do justice to the complexity and the rapidity of landscape changes in the study area during the last four centuries, the individual post-medieval period phases needed to be distinguished in their own right. A similar view was reached at a Countryside Commission seminar on Historic Landscape Character Assessment for Yorkshire and Humberside, attended by local experts in archaeology, history, geography and conservation management. The time-depth matrix thus has a series of divisions for the post-medieval period: 1540-1750, 1750-1850, 1850-1918, 1918-1950, 1950-1997, corresponding to the phase/periods described in Part 2, (**see pp.23-31 for details**).

2. Land management categories

The various land-use process families listed above are represented on the time-depth matrices on the vertical Theme/Function axis. The main innovation of this matrix relates to this axis, and concerns classification of land use in an attempt to distinguish the degree of land management on a graduation from unmanaged "natural" habitats to semi-natural and managed ones. Thus the categories dealing with exploitation - management - settlement etc. are arranged in order of increasingly intensive land use, with subsistence and agriculture followed by non-agricultural uses. More specifically, there are categories for Intensively and Non-intensively Managed Zones, representing the impact of agricultural land management.

These categories are taken from the matrices developed by Martin Moss for use in Yorkshire and Humberside. The definitions below are reproduced, with slight amendment, from his papers (CC/MM 1995a, 1995b).

ZONE FAMILY - Exploitation

Predominantly semi-natural landscapes affected but not dominated by the influence of human activity.

Sub-families - **Coastal** (Types - dunes, coastal cliff, inter-tidal)
Wetland (Types - lakes, marshes, rivers)
Inland (Types - montane, cliffs, steep valley sides)

ZONE FAMILY - **Management**

Landscapes dominated by human land management activity. Broadly divides into two sub-families: **Non-intensively managed** and **Intensively managed landscape zones**, described below.

1) Non-intensively Managed Landscape Zones

Non-intensively managed landscapes have been created by land management regimes that have two principal characteristics.

1. They are non-enclosive, i.e. the creation of the essential fabric of the landscape has not been associated directly with enclosure and agriculturalisation. Enclosure features may thus be present but are simply imposed on a pre-existing landscape, e.g. walls across upland moors, dikes or fences across lowland fen or heath.

2. The species composition of the landscape has evolved as a semi-natural response to the management regime, and not been consciously planted by man. E.g. regenerated woodland on peat moors and turbaries.

In other words, non-intensively managed landscapes were not produced directly as a result of enclosure or cultivation but were the product of long-term, often unplanned land management whose original purpose may not have been to create the original landscape.

Non-intensively managed landscapes may be divided into a number of generic groups:

- **Upland** (peat or heather moors).

- **Lowland** (lowland peat bog, fen or heath).

- **Semi-natural woodland** (ancient or naturally regenerated woodland).

2) Intensively Managed Landscape Zones

Intensively managed landscapes relate to specific land uses employed which may be regarded as belonging to two generic groups.

Species Modified: where land use activity has produced an ecosystem which has semi-naturally evolved in response to the human activity, i.e. the species have NOT been planted directly. E.g. meadows, unimproved grass and abandoned land.

Species determined: where the species composition has been largely consciously selected by man. E.g. arable and crop land, improved grass and plantations.

Pastoral, arable, woodland

It has also been found useful to have simple representations of pastoral and arable farming, since these are not always immediately apparent from the more analytical categories of Intensive / Non-intensive Management categories. For instance, grassland can range from non-intensive semi-natural to intensive species-determined. Woodland can cover a similarly wide range. In the present study area, woodland is largely regenerated semi-natural, represented in the NON-INTENSIVE WOODLAND category; for other areas with more mixed or intensive plantation woodland, it might be useful to add a separate WOODLAND category, either as a sub-section of SPECIES DETERMINED, or as an additional row below ARABLE.

MATRIX LEVELS

Separate matrix levels have been produced, covering:

- **PRESENCE** or EXISTENCE of historic components
- **VISIBLITY** or PROMINENCE " "
- **CULTURAL ASSOCIATIONS** or VALUE "
- **SIGNIFICANCE** or INTEREST " "

Significance

A time-depth matrix level depicting Historic Landscape Character **SIGNIFICANCE** or **INTEREST** is useful for summarising the results of the matrix analysis. It can also be used as a simplified short-hand evaluation, representing a combination of the three levels, more particularly VISIBILITY and CULTURAL ASSOCIATION, which it closely resembles (see examples on the following pages).

It is always useful to accompany the matrices for VISIBILITY, CULTURAL ASSOCIATION or SIGNIFICANCE with a Level 1 analysis of PRESENCE, which serves as a useful checklist, especially for "invisible" or unexplored landscape components that would not necessarily score on the other matrices.

MATRIX SCORING AND WEIGHTING

Various ways were explored for scoring matrix entries in order to represent different qualities or grade their weight of significance. Scoring with symbols or graded line thickness was found to be useful for presenting a graphic visual image, and key words written in matrix boxes were especially helpful for descriptive analysis.
To accommodate key words and notes at the drafting stage it was found useful to enlarge the matrix tables to A3 size with expanded boxes.

Weighting

As an aid towards synthesising the information into a characterisation statement, the different matrix levels for PRESENCE, VISIBILITY and CULTURAL ASSOCIATION can themselves be weighted as **low**, **medium** and **high**. This is a subjective exercise based on what are considered to be the key factors that characterise the landscape. For instance, the Ancient Open Strip Fields Zone and the Isle of Axholme Local Landscape Character Area have strong and distinctive cultural associations as well as strong presence and visibility of components. In the case of Recently Enclosed Land its visual elements are generally stronger than the cultural, and would be weighted correspondingly higher. In contrast, wetland areas might have buried archaeological and palaeo-environmental remains that are virtually invisible but have high cultural associations.

Factors such as these need to be weighed up when characterising HLC Zones and Areas. (See Local Landscape Character Areas, p.101-5.)

The **SIGNIFICANCE** matrix level is a useful way of summarising the results of these evaluations.

OTHER USES OF MATRICES

The matrix table technique can be adapted to represent other aspects of Historic Landscape Character Assessment. For instance, specific matrices were developed in this study for more detailed analysis of the date and incidence of building and settlement types, highlighting the patterns in different Zones and Areas. Other landscape components, such as field boundaries and woodlands, and factors such as different management practices, could be similarly depicted on matrices.

EXAMPLES OF TIME-DEPTH MATRICES ON THE FOLLOWING PAGES:

Presence
Significance

HISTORIC LANDSCAPE CHARACTER ZONES:

AOSF: presence, visibility, cultural association, significance
EEL: presence, visibility
REL: presence, visibility
RM&T: presence, cultural association
MA: presence, visibility

LOCAL LANDSCAPE CHARACTER AREAS:

Isle of Axholme: visibility, significance
Trent & Ouse Levels: visibility, significance
Humberhead Heaths: sigificance
Thorne / Hatfield Moors: sigificance

ZONE:.....

Matrix Layer 1: **PRESENCE** of Components

THEMES (ZONE FAMILY)	LAND-USE TYPES (GENERIC GROUP)		PRE-NEOLITHIC	NEOLITHIC - EBA	LBA - IRON AGE	ROMAN AD70-450	EARLY MED.-1066	MEDIEVAL -1540	POST-MED. -1750	1750-1850	1850-1918	1918-1950	1950-1997
ENVIRONMENT	CLEARANCE												
	RECLAMATION												
ENCLOSURE	HEDGES												
	DIKES / DRAINS												
	OTHER (e.g. fences)												
EXPLOITATION	COASTAL	semi-natural, affected but not dominated by human activity											
	WETLAND												
	INLAND												
MANAGEMENT	NON-INTENSIVE	LOWLAND (e.g. heath, fen)											
		WOODLAND (semi-natural)											
	INTENSIVE	SPECIES MODIFIED (e.g. meadow)											
		SPECIES DETERMINED (e.g. arable											
		Plantations)											
FARMING	PASTORAL												
	ARABLE												
LANDHOLDING	COMMON												
	TENURE (rented)												
	ESTATE (i.e. ownership)												
SETTLEMENT	URBAN												
	VILLAGE / HAMLET												
	SINGULAR / ISOLATED												
EXCHANGE	COMMERCE												
	TRANSPORT												
INDUSTRY	EXTRACTIVE												
	PROCESS / MANUFACTURING												

EVIDENCE:

- • - documentary
- × - circumstantial
- O - sub-surface archaeology
- ● - extant landscape feature

ZONE:.....

SIGNIFICANCE

THEMES (ZONE FAMILY)	LAND-USE TYPES (GENERIC GROUP)		PRE-NEOLITHIC	NEOLITHIC - EBA	LBA - IRON AGE	ROMAN AD70-450	EARLY MED.-1066	MEDIEVAL -1540	POST-MED. -1750	1750-1850	1850-1918	1918-1950	1950-1997
ENVIRONMENT	CLEARANCE												
	RECLAMATION												
ENCLOSURE	HEDGES												
	DIKES / DRAINS												
	OTHER (e.g. fences, walls)												
EXPLOITATION	COASTAL	semi-natural, affected but not dominated by human activity											
	WETLAND												
	INLAND												
MANAGEMENT	NON-INTENSIVE	LOWLAND (e.g. heath, fen)											
		WOODLAND (semi-natural)											
	INTENSIVE	SPECIES MODIFIED (e.g. meadow)											
		SPECIES DETERMINED (e.g. arable											
		Plantations)											
FARMING	PASTORAL												
	ARABLE												
LANDHOLDING	COMMON												
	TENURE (rented)												
	ESTATE (i.e. ownership)												
SETTLEMENT	URBAN												
	VILLAGE / HAMLET												
	SINGULAR / ISOLATED												
EXCHANGE	COMMERCE												
	TRANSPORT												
INDUSTRY	EXTRACTIVE												
	PROCESS / MANUFACTURING												

INTEREST: - - - secondary interest ——— key interest ■■■ overiding interest

ZONE: ANCIENT OPEN STRIP FIELDS [AOSF]

Matrix Layer 1: PRESENCE of Components

THEMES (ZONE FAMILY)	LAND-USE TYPES (GENERIC GROUP)		PRE-NEOLITHIC	NEOLITHIC - EBA	LBA - IRON AGE	ROMAN AD70-450	EARLY MED.-1066	MEDIEVAL -1540	POST-MED. -1750	1750-1850	1850-1918	1918-1950	1950-1997
ENVIRONMENT	CLEARANCE			O	O	O	●	●					
	RECLAMATION												
ENCLOSURE	HEDGES												●
	DIKES / DRAINS							●	●	●	●	●	●
	OTHER (e.g. fences)												●
EXPLOITATION	COASTAL	semi-natural, affected but not dominated by human activity											
	WETLAND												
	INLAND												
MANAGEMENT	NON-INTENSIVE	LOWLAND (e.g. heath, fen)											
		WOODLAND (semi-natural)											
	INTENSIVE	SPECIES MODIFIED [meres] (e.g. meadow)						●	●	●	●	●	●
		SPECIES DETERMINED (e.g. arable		×	×	×	×	●	●	●	●	●	●
		Plantations)											
FARMING	PASTORAL			×	×	×	×	•	•	•			
	ARABLE			×	×	×	×	●	●	●	●	●	●
LANDHOLDING	COMMON [meres]							●	●	●	●	●	●
	TENURE (rented)							•	●	●	●	●	●
	ESTATE (i.e. ownership)							•	●	●	●	●	●
SETTLEMENT	URBAN												
	VILLAGE / HAMLET						•	●	●	●	●	●	●
	SINGULAR / ISOLATED			×	×	O	×			●	●	●	●
EXCHANGE	COMMERCE												
	TRANSPORT												
INDUSTRY	EXTRACTIVE												
	PROCESS / MANUFACTURING												

EVIDENCE:
- • - documentary
- × - circumstantial
- O - sub-surface archaeology
- ● - extant landscape feature

ZONE: AOSF

Matrix Layer 2: **VISIBILITY**

THEMES (ZONE FAMILY)	LAND-USE TYPES (GENERIC GROUP)		PRE-NEOLITHIC	NEOLITHIC - EBA	LBA - IRON AGE	ROMAN AD70-450	EARLY MED.-1066	MEDIEVAL -1540	POST-MED. -1750	1750-1850	1850-1918	1918-1950	1950-1997
ENVIRONMENT	CLEARANCE			– –	– –	– –	▬	▬					
	RECLAMATION												
ENCLOSURE	HEDGES												▬
	DIKES / DRAINS							▬	▬	▬	▬	▬	▬
	OTHER (e.g. fences)												▬
EXPLOITATION	COASTAL	semi-natural, affected but not dominated by human activity											
	WETLAND												
	INLAND												
MANAGEMENT	NON-INTENSIVE	LOWLAND (e.g. heath, fen)											
		WOODLAND (semi-natural)											
	INTENSIVE	SPECIES MODIFIED (e.g. meadow)						▬	▬	▬	▬	▬	▬
		SPECIES DETERMINED (e.g. arable						▬	▬	▬	▬	▬	▬
		Plantations)											
FARMING	PASTORAL												
	ARABLE							▬	▬	▬	▬	▬	▬
LANDHOLDING	COMMON [meres]							▬	▬	▬	▬	▬	▬
	TENURE (rented)							▬	▬	▬	▬	▬	▬
	ESTATE (i.e. ownership)							▬	▬	▬	▬	▬	▬
SETTLEMENT	URBAN												
	VILLAGE / HAMLET							▬	▬	▬	▬	▬	▬
	SINGULAR / ISOLATED									▬	▬	▬	▬
EXCHANGE	COMMERCE												
	TRANSPORT												
INDUSTRY	EXTRACTIVE												
	PROCESS / MANUFACTURING												

VISIBILITY: – – - invisible ▬ - visible ▬ - highly visible

ZONE: AOSF

Matrix Layer 3: CULTURAL ASSOCIATION

THEMES (ZONE FAMILY)	LAND-USE TYPES (GENERIC GROUP)		PRE-NEOLITHIC	NEOLITHIC - EBA	LBA - IRON AGE	ROMAN AD70-450	EARLY MED.-1066	MEDIEVAL -1540	POST-MED. -1750	1750-1850	1850-1918	1918-1950	1950-1997
ENVIRONMENT	CLEARANCE												
	RECLAMATION												
ENCLOSURE	HEDGES												
	DIKES / DRAINS												
	OTHER (e.g. fences)												
EXPLOITATION	COASTAL	semi-natural, affected but not dominated by human activity											
	WETLAND												
	INLAND												
MANAGEMENT	NON-INTENSIVE	LOWLAND (e.g. heath, fen)											
		WOODLAND (semi-natural)											
	INTENSIVE	SPECIES MODIFIED (e.g. meadow)											
		SPECIES DETERMINED (e.g. arable						▬	▬	▬	▬	▬	▬
		Plantations)											
FARMING	PASTORAL							- -	- -	- -	- -	- -	- -
	ARABLE							▬	▬	▬	▬	▬	▬
LANDHOLDING	COMMON							▬	▬	▬	—	—	—
	TENURE (rented)							—	—	—	—	—	—
	ESTATE (i.e. ownership)							▬	▬	▬	▬	▬	▬
SETTLEMENT	URBAN												
	VILLAGE / HAMLET							▬	▬	▬	▬	▬	▬
	SINGULAR / ISOLATED												
EXCHANGE	COMMERCE												
	TRANSPORT												
INDUSTRY	EXTRACTIVE												
	PROCESS / MANUFACTURING												

ASSOCIATION: - - - little / none —— - some / medium ▬ - high

ZONE: A0SF

SIGNIFICANCE

THEMES (ZONE FAMILY)	LAND-USE TYPES (GENERIC GROUP)		PRE-NEOLITHIC	NEOLITHIC - EBA	LBA - IRON AGE	ROMAN AD70-450	EARLY MED.-1066	MEDIEVAL -1540	POST-MED. -1750	1750-1850	1850-1918	1918-1950	1950-1997
ENVIRONMENT	CLEARANCE												
	RECLAMATION												
ENCLOSURE	HEDGES												
	DIKES / DRAINS												
	OTHER (e.g. fences, walls)												
EXPLOITATION	COASTAL	semi-natural, affected but not dominated by human activity											
	WETLAND												
	INLAND												
MANAGEMENT	NON-INTENSIVE	LOWLAND (e.g. heath, fen)											
		WOODLAND (semi-natural)											
	INTENSIVE	SPECIES MODIFIED (e.g. meadow)						- -	- -	- -	- -	- -	- -
		SPECIES DETERMINED (e.g. arable						▬	▬	▬	▬	▬	▬
		Plantations)											
FARMING	PASTORAL							- -	- -	- -	- -	- -	- -
	ARABLE							▬	▬	▬	▬	▬	▬
LANDHOLDING	COMMON							▬	▬	▬	▬	▬	▬
	TENURE (rented)							▬	▬	▬	▬	▬	▬
	ESTATE (i.e. ownership)							▬	▬	▬	▬	▬	▬
SETTLEMENT	URBAN												
	VILLAGE / HAMLET							▬	▬	▬	▬	▬	▬
	SINGULAR / ISOLATED			- -	- -	- -	- -			- -			
EXCHANGE	COMMERCE												
	TRANSPORT												
INDUSTRY	EXTRACTIVE												
	PROCESS / MANUFACTURING												

INTEREST: - - - secondary interest ▬ - key interest ▬ - overiding interest

ZONE: EARLY ENCLOSED LAND

Matrix Layer 1: PRESENCE of Components [EEL]

THEMES (ZONE FAMILY)	LAND-USE TYPES (GENERIC GROUP)		PRE-NEOLITHIC	NEOLITHIC - EBA	LBA - IRON AGE	ROMAN AD70-450	EARLY MED.-1066	MEDIEVAL -1540	POST-MED. -1750	1750-1850	1850-1918	1918-1950	1950-1997
ENVIRONMENT	CLEARANCE				O	O	×	●	●				
	RECLAMATION							●	●	●	●		
ENCLOSURE	HEDGES							×	●	●	●	●	●
	DIKES / DRAINS								●	●	●	●	●
	OTHER (e.g. fences)											●	●
EXPLOITATION	COASTAL	semi-natural, affected but not dominated by human activity											
	WETLAND												
	INLAND												
MANAGEMENT	NON-INTENSIVE	LOWLAND (e.g. heath, fen)					×	•	•				
		WOODLAND (semi-natural)											
	INTENSIVE	SPECIES MODIFIED (e.g. meadow)						•	●	●	●	●	●
		SPECIES DETERMINED (e.g. arable						•	●	●	●	●	●
		Plantations)											
FARMING	PASTORAL							•	●	●	●	●	●
	ARABLE							×	•	●	●	●	●
LANDHOLDING	COMMON						×	×	•	•			
	TENURE (rented)								●	●	●	●	●
	ESTATE (i.e. ownership)								●	●	●	●	●
SETTLEMENT	URBAN												
	VILLAGE / HAMLET						•	●	●	●	●	●	●
	SINGULAR / ISOLATED							●	●	●	●	●	●
EXCHANGE	COMMERCE												
	TRANSPORT												
INDUSTRY	EXTRACTIVE									O	●	●	
	PROCESS / MANUFACTURING									O	●	●	

EVIDENCE:
• - documentary
× - circumstantial
O - sub-surface archaeology
● - extant landscape feature

ZONE: EEL

Matrix Layer 2: VISIBILITY

THEMES (ZONE FAMILY)	LAND-USE TYPES (GENERIC GROUP)		PRE-NEOLITHIC	NEOLITHIC - EBA	LBA - IRON AGE	ROMAN AD70-450	EARLY MED.-1066	MEDIEVAL -1540	POST-MED. -1750	1750-1850	1850-1918	1918-1950	1950-1997
ENVIRONMENT	CLEARANCE												
	RECLAMATION							———	———	———			
ENCLOSURE	HEDGES							?	■■■	■■■	———	———	———
	DIKES / DRAINS							?	■■■	■■■	———	———	———
	OTHER (e.g. fences)												———
EXPLOITATION	COASTAL	semi-natural, affected but not dominated by human activity											
	WETLAND												
	INLAND												
MANAGEMENT	NON-INTENSIVE	LOWLAND (e.g. heath, fen)											
		WOODLAND (semi-natural)											
	INTENSIVE	SPECIES MODIFIED (e.g. meadow)						?	■■■	■■■	———	———	———
		SPECIES DETERMINED (e.g. arable						?	———	———	———	———	■■■
		Plantations)											
FARMING	PASTORAL							?	■■■	■■■	———	———	———
	ARABLE							?	———	———	———	———	■■■
LANDHOLDING	COMMON												
	TENURE (rented)								———				
	ESTATE (i.e. ownership)								———				
SETTLEMENT	URBAN												
	VILLAGE / HAMLET							■■■	■■■	■■■	■■■	■■■	■■■
	SINGULAR / ISOLATED							———	———	———	———	———	———
EXCHANGE	COMMERCE												
	TRANSPORT												
INDUSTRY	EXTRACTIVE												
	PROCESS / MANUFACTURING												

VISIBILITY: — — - invisible ——— - visible ■■■ - highly visible

ZONE: RECENTLY ENCLOSED LAND [REL]

Matrix Layer 1: PRESENCE of Components

THEMES (ZONE FAMILY)	LAND-USE TYPES (GENERIC GROUP)		PRE-NEOLITHIC	NEOLITHIC - EBA	LBA - IRON AGE	ROMAN AD70-450	EARLY MED.-1066	MEDIEVAL -1540	POST-MED. -1750	1750-1850	1850-1918	1918-1950	1950-1997
ENVIRONMENT	CLEARANCE					O	O	●	●	●			
	RECLAMATION							×	●	●	●	●	
ENCLOSURE	HEDGES								●	●	●	●	●
	DIKES / DRAINS							●	●	●	●	●	●
	OTHER (e.g. fences)										●	●	●
EXPLOITATION	COASTAL	semi-natural, affected but not dominated by human activity											
	WETLAND		O	O	O	O	O	O•	O•				
	INLAND												
MANAGEMENT	NON-INTENSIVE	LOWLAND (e.g. heath, fen)		O	O	O	O	O•	O•	O•			
		WOODLAND (semi-natural)		O	O	O	O	O					
	INTENSIVE	SPECIES MODIFIED (e.g. meadow)					×	•	●	●	●	●	●
		SPECIES DETERMINED (e.g. arable					×	O	●	●	●	●	●
		Plantations)											
FARMING	PASTORAL			O	O	O	O	O	•	•	•	•	
	ARABLE			O	O	O	×	•	●	●	●	●	●
LANDHOLDING	COMMON						×	•	•	•			
	TENURE (rented)								●	●	●	●	●
	ESTATE (i.e. ownership)								●	●	●	●	●
SETTLEMENT	URBAN												
	VILLAGE / HAMLET					O	•	●	●	●	●	●	●
	SINGULAR / ISOLATED		O	O	O	O			●	●	●	●	●
EXCHANGE	COMMERCE												●
	TRANSPORT									●	●	●	●
INDUSTRY	EXTRACTIVE										●	●	
	PROCESS / MANUFACTURING										●	●	●

EVIDENCE:
- • - documentary
- × - circumstantial
- O - sub-surface archaeology
- ● - extant landscape feature

ZONE: REL

Matrix Layer 2: **VISIBILITY**

THEMES (ZONE FAMILY)	LAND-USE TYPES (GENERIC GROUP)		PRE-NEOLITHIC	NEOLITHIC - EBA	LBA - IRON AGE	ROMAN AD70-450	EARLY MED.-1066	MEDIEVAL -1540	POST-MED. -1750	1750-1850	1850-1918	1918-1950	1950-1997
ENVIRONMENT	CLEARANCE					– –	– –	▬	▬	▬			
	RECLAMATION							– –	▬	▬	▬	▬	▬
ENCLOSURE	HEDGES								▬	▬	▬		
	DIKES / DRAINS								▬	▬	▬	▬	▬
	OTHER (e.g. fences)											▬	▬
EXPLOITATION	COASTAL	semi-natural, affected but not dominated by human activity											
	WETLAND		– –	– –	– –	– –	– –	– –	– –				
	INLAND												
MANAGEMENT	NON-INTENSIVE	LOWLAND (e.g. heath, fen)	– –	– –	– –	– –	– –	– –	– –				
		WOODLAND (semi-natural)	– –	– –	– –	– –	– –	– –					
	INTENSIVE	SPECIES MODIFIED (e.g. meadow)				– –	– –	– –	▬	▬	▬	▬	▬
		SPECIES DETERMINED (e.g. arable					– –	▬	▬	▬	▬	▬	▬
		Plantations)											
FARMING	PASTORAL			– –	– –	– –	– –	– –	▬	▬	▬	▬	▬
	ARABLE					– –	– –	– –	▬	▬	▬	▬	▬
LANDHOLDING	COMMON						– –	– –	– –	– –			
	TENURE (rented)							– –	▬	▬	▬	▬	▬
	ESTATE (i.e. ownership)							– –	▬	▬	▬	▬	▬
SETTLEMENT	URBAN												
	VILLAGE / HAMLET							▬	▬	▬	▬	▬	▬
	SINGULAR / ISOLATED							▬	▬	▬	▬	▬	▬
EXCHANGE	COMMERCE												
	TRANSPORT										▬	▬	▬
INDUSTRY	EXTRACTIVE											▬	▬
	PROCESS / MANUFACTURING										▬	▬	▬

VISIBILITY: – – – invisible ▬ – visible ▬ – highly visible

ZONE: RAISED MIRE & TURBARY [RM&T]

Matrix Layer 1: PRESENCE of Components

THEMES (ZONE FAMILY)	LAND-USE TYPES (GENERIC GROUP)		PRE-NEOLITHIC	NEOLITHIC - EBA	LBA - IRON AGE	ROMAN AD70-450	EARLY MED.-1066	MEDIEVAL -1540	POST-MED. -1750	1750-1850	1850-1918	1918-1950	1950-1997
ENVIRONMENT	CLEARANCE										●	●	●
	RECLAMATION										●	●	●
ENCLOSURE	HEDGES												
	DIKES / DRAINS							•	●	●	●	●	●
	OTHER (e.g. fences)												
EXPLOITATION	COASTAL	semi-natural, affected but not dominated by human activity											
	WETLAND		○	○	○	○	○	○	○	○			
	INLAND												
MANAGEMENT	NON-INTENSIVE	LOWLAND (e.g. heath, fen)		○	○	○	○	○•	○•	●			
		WOODLAND (semi-natural)									●	●	●
	INTENSIVE	SPECIES MODIFIED (e.g. meadow)											
		SPECIES DETERMINED (e.g. arable											
		Plantations)											
FARMING	PASTORAL			?	○	○	○	○	•	•	•		
	ARABLE												
LANDHOLDING	COMMON					?	×	●	●	●	●	●	●
	TENURE (rented)							•	•	•	•	●	●
	ESTATE (i.e. ownership)										●	●	●
SETTLEMENT	URBAN												
	VILLAGE / HAMLET												
	SINGULAR / ISOLATED			×	×	×							
EXCHANGE	COMMERCE							•	•	•	●	●	●
	TRANSPORT							•	•	•		●	●
INDUSTRY	EXTRACTIVE						×	•	•	•	●	●	●
	PROCESS / MANUFACTURING												●

EVIDENCE:

- • - documentary
- × - circumstantial
- ○ - sub-surface archaeology
- ● - extant landscape feature

ZONE: RM&T

Matrix Layer 3: CULTURAL ASSOCIATION

THEMES (ZONE FAMILY)	LAND-USE TYPES (GENERIC GROUP)		PRE-NEOLITHIC	NEOLITHIC - EBA	LBA - IRON AGE	ROMAN AD70-450	EARLY MED.-1066	MEDIEVAL -1540	POST-MED. -1750	1750-1850	1850-1918	1918-1950	1950-1997
ENVIRONMENT	CLEARANCE											▬	▬
	RECLAMATION												
ENCLOSURE	HEDGES												
	DIKES / DRAINS									▬	▬	▬	▬
	OTHER (e.g. fences)												
EXPLOITATION	COASTAL	semi-natural, affected but not dominated by human activity											
	WETLAND		▬	▬	▬	▬	▬	▬	▬				
	INLAND												
MANAGEMENT	NON-INTENSIVE	LOWLAND (e.g. heath, fen)		▬	▬	▬	▬	▬	▬	▬			
		WOODLAND (semi-natural)										▬	▬
	INTENSIVE	SPECIES MODIFIED (e.g. meadow)											
		SPECIES DETERMINED (e.g. arable											
		Plantations)											
FARMING	PASTORAL				- -	- -	- -	▬	▬	▬	- -		
	ARABLE												
LANDHOLDING	COMMON							▬	▬	▬			
	TENURE (rented)												
	ESTATE (i.e. ownership)												
SETTLEMENT	URBAN												
	VILLAGE / HAMLET												
	SINGULAR / ISOLATED												
EXCHANGE	COMMERCE												
	TRANSPORT												
INDUSTRY	EXTRACTIVE							▬	▬	▬	▬	▬	▬
	PROCESS / MANUFACTURING												▬

ASSOCIATION: - - - little / none ▬ - some / medium ▬ - high

ZONE: MOORLAND ALLOTMENTS

Matrix Layer 1: PRESENCE of Components

THEMES (ZONE FAMILY)	LAND-USE TYPES (GENERIC GROUP)		PRE-NEOLITHIC	NEOLITHIC - EBA	LBA - IRON AGE	ROMAN AD70-450	EARLY MED.-1066	MEDIEVAL -1540	POST-MED. -1750	1750-1850	1850-1918	1918-1950	1950-1997
ENVIRONMENT	CLEARANCE							●	●	●	●		
	RECLAMATION							●	●	●	●		
ENCLOSURE	HEDGES							•	×	●	●	●	●
	DIKES / DRAINS							●	●	●	●	●	●
	OTHER (e.g. fences)											●	●
EXPLOITATION	COASTAL	semi-natural, affected but not dominated by human activity											
	WETLAND		×	×	O	O	O	O•	•				
	INLAND												
MANAGEMENT	NON-INTENSIVE	LOWLAND (e.g. heath, fen)			O	O	O	O•	•	•	•		
		WOODLAND (semi-natural)						×	×	×	●	●	●
	INTENSIVE	SPECIES MODIFIED (e.g. meadow)						•	•	●	●	●	●
		SPECIES DETERMINED (e.g. arable						•	•	●	●	●	●
		Plantations)											
FARMING	PASTORAL			?	×	×	×	•	•	●	●	●	●
	ARABLE							•	•	●	●	●	●
LANDHOLDING	COMMON							•	•	•			
	TENURE (rented)							•	●	●	●	●	●
	ESTATE (i.e. ownership)							•	●	●	●	●	●
SETTLEMENT	URBAN												
	VILLAGE / HAMLET									●	●	●	●
	SINGULAR / ISOLATED			?	?	?				●	●	●	●
EXCHANGE	COMMERCE							•	•	•			
	TRANSPORT							•					
INDUSTRY	EXTRACTIVE							•	•	●	●	●	●
	PROCESS / MANUFACTURING												

EVIDENCE:
- • - documentary
- × - circumstantial
- O - sub-surface archaeology
- ● - extant landscape feature

ZONE: MOORLAND ALLOTMENTS

Matrix Layer 2: VISIBILITY

THEMES (ZONE FAMILY)	LAND-USE TYPES (GENERIC GROUP)		PRE-NEOLITHIC	NEOLITHIC - EBA	LBA - IRON AGE	ROMAN AD70-450	EARLY MED.-1066	MEDIEVAL -1540	POST-MED. -1750	1750-1850	1850-1918	1918-1950	1950-1997
ENVIRONMENT	CLEARANCE							▬	▬	▬	▬		
	RECLAMATION							▬	▬	▬	▬		
ENCLOSURE	HEDGES									▬	▬	▬	▬
	DIKES / DRAINS							▬	▬		▬	▬	▬
	OTHER (e.g. fences)											▬	▬
EXPLOITATION	COASTAL	semi-natural, affected but not dominated by human activity											
	WETLAND												
	INLAND												
MANAGEMENT	NON-INTENSIVE	LOWLAND (e.g. heath, fen)											
		WOODLAND (semi-natural)									▬	▬	▬
	INTENSIVE	SPECIES MODIFIED (e.g. meadow)								▬	▬	▬	▬
		SPECIES DETERMINED (e.g. arable								▬	▬	▬	▬
		Plantations)											
FARMING	PASTORAL									▬	▬	▬	▬
	ARABLE									▬	▬	▬	▬
LANDHOLDING	COMMON												
	TENURE (rented)								▬	▬	▬	▬	▬
	ESTATE (i.e. ownership)								▬	▬	▬	▬	▬
SETTLEMENT	URBAN												
	VILLAGE / HAMLET									▬	▬	▬	▬
	SINGULAR / ISOLATED									▬	▬	▬	▬
EXCHANGE	COMMERCE												
	TRANSPORT												
INDUSTRY	EXTRACTIVE									▬	▬	▬	▬
	PROCESS / MANUFACTURING												

VISIBILITY: - - - invisible ▬ - visible ▬ - highly visible

ISLE OF AXHOLME LLCA

Matrix Layer 2: VISIBILITY

THEMES (ZONE FAMILY)	LAND-USE TYPES (GENERIC GROUP)		PRE-NEOLITHIC	NEOLITHIC - EBA	LBA - IRON AGE	ROMAN AD70-450	EARLY MED.-1066	MEDIEVAL -1540	POST-MED. -1750	1750-1850	1850-1918	1918-1950	1950-1997
ENVIRONMENT	CLEARANCE				– –	– –	———	———	———				
	RECLAMATION												
ENCLOSURE	HEDGES							———	■■■	■■■			
	DIKES / DRAINS							———	■■■	■■■	———	———	———
	OTHER (e.g. fences)											———	———
EXPLOITATION	COASTAL	semi-natural, affected but not dominated by human activity											
	WETLAND		– –	– –	– –	– –	– –	– –	———	———			
	INLAND												
MANAGEMENT	NON-INTENSIVE	LOWLAND (e.g. heath, fen)						———	———	———	———	———	
		WOODLAND (semi-natural)									———	———	———
	INTENSIVE	SPECIES MODIFIED (e.g. meadow)						———	———	———			
		SPECIES DETERMINED (e.g. arable						■■■	■■■	■■■	■■■	■■■	■■■
		Plantations)											
FARMING	PASTORAL							———	———	———	———		
	ARABLE							■■■	■■■	■■■	■■■	■■■	■■■
LANDHOLDING	COMMON							———	———	———	———	———	———
	TENURE (rented)							———	———	———	———	———	———
	ESTATE (i.e. ownership)							———	———	———	———	———	———
SETTLEMENT	URBAN							———	———	———	———	———	———
	VILLAGE / HAMLET							■■■	■■■	■■■	■■■	■■■	■■■
	SINGULAR / ISOLATED							———	———	■■■	■■■	■■■	■■■
EXCHANGE	COMMERCE									■■■	■■■	———	———
	TRANSPORT							———	———	———	■■■	■■■	■■■
INDUSTRY	EXTRACTIVE											———	———
	PROCESS / MANUFACTURING									———	———	———	———

VISIBILITY: – – - invisible ——— - visible ■■■ - highly visible

ISLE OF AXHOLME LLCA

SIGNIFICANCE

THEMES (ZONE FAMILY)	LAND-USE TYPES (GENERIC GROUP)		PRE-NEOLITHIC	NEOLITHIC - EBA	LBA - IRON AGE	ROMAN AD70-450	EARLY MED.-1066	MEDIEVAL -1540	POST-MED. -1750	1750-1850	1850-1918	1918-1950	1950-1997
ENVIRONMENT	CLEARANCE												
	RECLAMATION												
ENCLOSURE	HEDGES												
	DIKES / DRAINS												
	OTHER (e.g. fences, walls)												
EXPLOITATION	COASTAL	semi-natural, affected but not dominated by human activity											
	WETLAND		-	- -	- -	- -	- -						
	INLAND												
MANAGEMENT	NON-INTENSIVE	LOWLAND (e.g. heath, fen)						- -					
		WOODLAND (semi-natural)									-	- -	- -
	INTENSIVE	SPECIES MODIFIED (e.g. meadow)											
		SPECIES DETERMINED (e.g. arable											
		Plantations)											
FARMING	PASTORAL												
	ARABLE												
LANDHOLDING	COMMON												
	TENURE (rented)							- -	- -	- -	- -	- -	- -
	ESTATE (i.e. ownership)							- -	- -	- -	- -	- -	- -
SETTLEMENT	URBAN												
	VILLAGE / HAMLET												
	SINGULAR / ISOLATED			-	- -	- -	-	- -	- -	- -	- -	- -	- -
EXCHANGE	COMMERCE							- -	- -				
	TRANSPORT												
INDUSTRY	EXTRACTIVE												
	PROCESS / MANUFACTURING								- -	- -	- -		

INTEREST: - - - secondary interest ——— key interest ■■■ overiding interest

TRENT & OUSE LEVELS LLCA

Matrix Layer 2: VISIBILITY

THEMES (ZONE FAMILY)	LAND-USE TYPES (GENERIC GROUP)		PRE-NEOLITHIC	NEOLITHIC - EBA	LBA - IRON AGE	ROMAN AD70-450	EARLY MED.-1066	MEDIEVAL -1540	POST-MED. -1750	1750-1850	1850-1918	1918-1950	1950-1997
ENVIRONMENT	CLEARANCE												
	RECLAMATION							▬	■	■	■		
ENCLOSURE	HEDGES								▬	▬	▬		
	DIKES / DRAINS							▬	■	■	■		
	OTHER (e.g. fences)											▬	▬
EXPLOITATION	COASTAL	semi-natural, affected but not dominated by human activity											
	WETLAND		-	- -	- -	- -	- -	-					
	INLAND												
MANAGEMENT	NON-INTENSIVE	LOWLAND (e.g. heath, fen)	-	- -	- -	- -	- -	- -	- -	- -			
		WOODLAND (semi-natural)											
	INTENSIVE	SPECIES MODIFIED (e.g. meadow)				- -	- -	- -	▬	▬			
		SPECIES DETERMINED (e.g. arable						■	■	■	■	■	■
		Plantations)											
FARMING	PASTORAL			- -	- -	- -	- -	- -	▬	▬			
	ARABLE							■	■	■	■	■	■
LANDHOLDING	COMMON						-	- -	- -	-			
	TENURE (rented)									▬	▬	▬	▬
	ESTATE (i.e. ownership)									▬	▬	▬	▬
SETTLEMENT	URBAN												
	VILLAGE / HAMLET							■	■	■	■	■	■
	SINGULAR / ISOLATED								▬	■	■	■	■
EXCHANGE	COMMERCE									▬	▬	▬	■
	TRANSPORT									▬	▬	▬	■
INDUSTRY	EXTRACTIVE												
	PROCESS / MANUFACTURING										▬	▬	▬

VISIBILITY: — — - invisible ▬ - visible ■ - highly visible

TRENT & OUSE LEVELS LLCA

SIGNIFICANCE

THEMES (ZONE FAMILY)	LAND-USE TYPES (GENERIC GROUP)		PRE-NEOLITHIC	NEOLITHIC - EBA	LBA - IRON AGE	ROMAN AD70-450	EARLY MED.-1066	MEDIEVAL -1540	POST-MED. -1750	1750-1850	1850-1918	1918-1950	1950-1997
ENVIRONMENT	CLEARANCE												
	RECLAMATION								▬	▬	▬		
ENCLOSURE	HEDGES								▬	▬			
	DIKES / DRAINS							▬	▬	▬	▬	▬	▬
	OTHER (e.g. fences, walls)												
EXPLOITATION	COASTAL	semi-natural, affected but not dominated by human activity	▬	▬	▬	▬	▬	▬	▬				
	WETLAND												
	INLAND												
MANAGEMENT	NON-INTENSIVE	LOWLAND (e.g. heath, fen)	▬	▬	▬	▬	▬	▬	▬	▬			
		WOODLAND (semi-natural)											
	INTENSIVE	SPECIES MODIFIED (e.g. meadow)							▬	▬			
		SPECIES DETERMINED (e.g. arable						▬	▬	▬	▬	▬	▬
		Plantations)											
FARMING	PASTORAL							▬	▬	▬	▬		
	ARABLE							▬	▬	▬	▬	▬	▬
LANDHOLDING	COMMON							- -	- -	- -			
	TENURE (rented)							- -	- -	▬	▬	▬	▬
	ESTATE (i.e. ownership)							- -	- -	▬	▬	▬	▬
SETTLEMENT	URBAN												
	VILLAGE / HAMLET						▬	▬	▬	▬	▬	▬	▬
	SINGULAR / ISOLATED			▬	▬	▬	▬	▬	▬	▬	▬	▬	▬
EXCHANGE	COMMERCE							- -	- -	▬	▬	▬	▬
	TRANSPORT							- -	- -	▬	▬	▬	▬
INDUSTRY	EXTRACTIVE												
	PROCESS / MANUFACTURING									- -			

INTEREST: - - - secondary interest ▬ - key interest ■ - overiding interest

HUMBERHEAD HEATHS LLCA

SIGNIFICANCE

THEMES (ZONE FAMILY)	LAND-USE TYPES (GENERIC GROUP)		PRE-NEOLITHIC	NEOLITHIC - EBA	LBA - IRON AGE	ROMAN AD70-450	EARLY MED.-1066	MEDIEVAL -1540	POST-MED. -1750	1750-1850	1850-1918	1918-1950	1950-1997
ENVIRONMENT	CLEARANCE							▬	▬	▬			
	RECLAMATION							▬	▬	▬	▬		
ENCLOSURE	HEDGES							▬	▬	▬	▬	▬	▬
	DIKES / DRAINS							▬	▬	▬	▬	▬	▬
	OTHER (e.g. fences, walls)												
EXPLOITATION	COASTAL	semi-natural, affected but not dominated by human activity											
	WETLAND		▬	▬	▬	▬	▬	▬	▬				
	INLAND												
MANAGEMENT	NON-INTENSIVE	LOWLAND (e.g. heath, fen)	▬	▬	▬	▬	▬	▬	▬	▬			
		WOODLAND (semi-natural)										- -	- -
	INTENSIVE	SPECIES MODIFIED (e.g. meadow)							- -	- -	- -	- -	- -
		SPECIES DETERMINED (e.g. arable						▬	▬	▬	▬	▬	▬
		Plantations)											
FARMING	PASTORAL							- -	▬	▬	▬	- -	- -
	ARABLE							▬	▬	▬	▬	▬	▬
LANDHOLDING	COMMON							▬	▬	▬			
	TENURE (rented)							- -	▬	▬	▬	▬	▬
	ESTATE (i.e. ownership)							- -	▬	▬	▬	▬	▬
SETTLEMENT	URBAN												
	VILLAGE / HAMLET						▬	▬	▬	▬	▬	▬	▬
	SINGULAR / ISOLATED			▬	▬	▬	▬	▬	▬	▬	▬	▬	▬
EXCHANGE	COMMERCE												
	TRANSPORT												
INDUSTRY	EXTRACTIVE								- -	- -	▬	▬	▬
	PROCESS / MANUFACTURING										- -	- -	▬

INTEREST: - - - secondary interest ▬ - key interest ▬ - overiding interest

THORNE / HATFIELD MOORS:
- a possible LLCA

SIGNIFICANCE

THEMES (ZONE FAMILY)	LAND-USE TYPES (GENERIC GROUP)		PRE-NEOLITHIC	NEOLITHIC - EBA	LBA - IRON AGE	ROMAN AD70-450	EARLY MED.-1066	MEDIEVAL -1540	POST-MED. -1750	1750-1850	1850-1918	1918-1950	1950-1997
ENVIRONMENT	CLEARANCE							▬	▬	▬	▬		
	RECLAMATION							═	═	═	- -	- -	
ENCLOSURE	HEDGES							═	═	═			
	DIKES / DRAINS							▬	▬	▬	▬	▬	▬
	OTHER (e.g. fences, walls)												
EXPLOITATION	COASTAL	semi-natural, affected but not dominated by human activity											
	WETLAND		▬	▬	▬	▬	▬	▬	═	═	- -		
	INLAND												
MANAGEMENT	NON-INTENSIVE	LOWLAND (e.g. heath, fen)		▬	▬	▬	▬	▬	▬	▬	- -		
		WOODLAND (semi-natural)										═	═
	INTENSIVE	SPECIES MODIFIED (e.g. meadow)						- -	- -	- -	- -	- -	- -
		SPECIES DETERMINED (e.g. arable						- -	- -	- -	- -	- -	- -
		Plantations)											- -
FARMING	PASTORAL							═	═	═	- -	- -	
	ARABLE							- -	- -	- -	- -	- -	- -
LANDHOLDING	COMMON							▬	▬	▬			
	TENURE (rented)												
	ESTATE (i.e. ownership)												
SETTLEMENT	URBAN												
	VILLAGE / HAMLET												
	SINGULAR / ISOLATED			═	═	═	═	▬	▬	▬	▬	═	═
EXCHANGE	COMMERCE												
	TRANSPORT							- -	- -	- -	- -	- -	- -
INDUSTRY	EXTRACTIVE							═	═	═	═	═	▬
	PROCESS / MANUFACTURING												═

INTEREST: - - - secondary interest ═══ - key interest ▬▬ - overiding interest

ISLE OF AXHOLME HISTORIC LANDSCAPE CHARACTER STUDY: DATA SOURCES

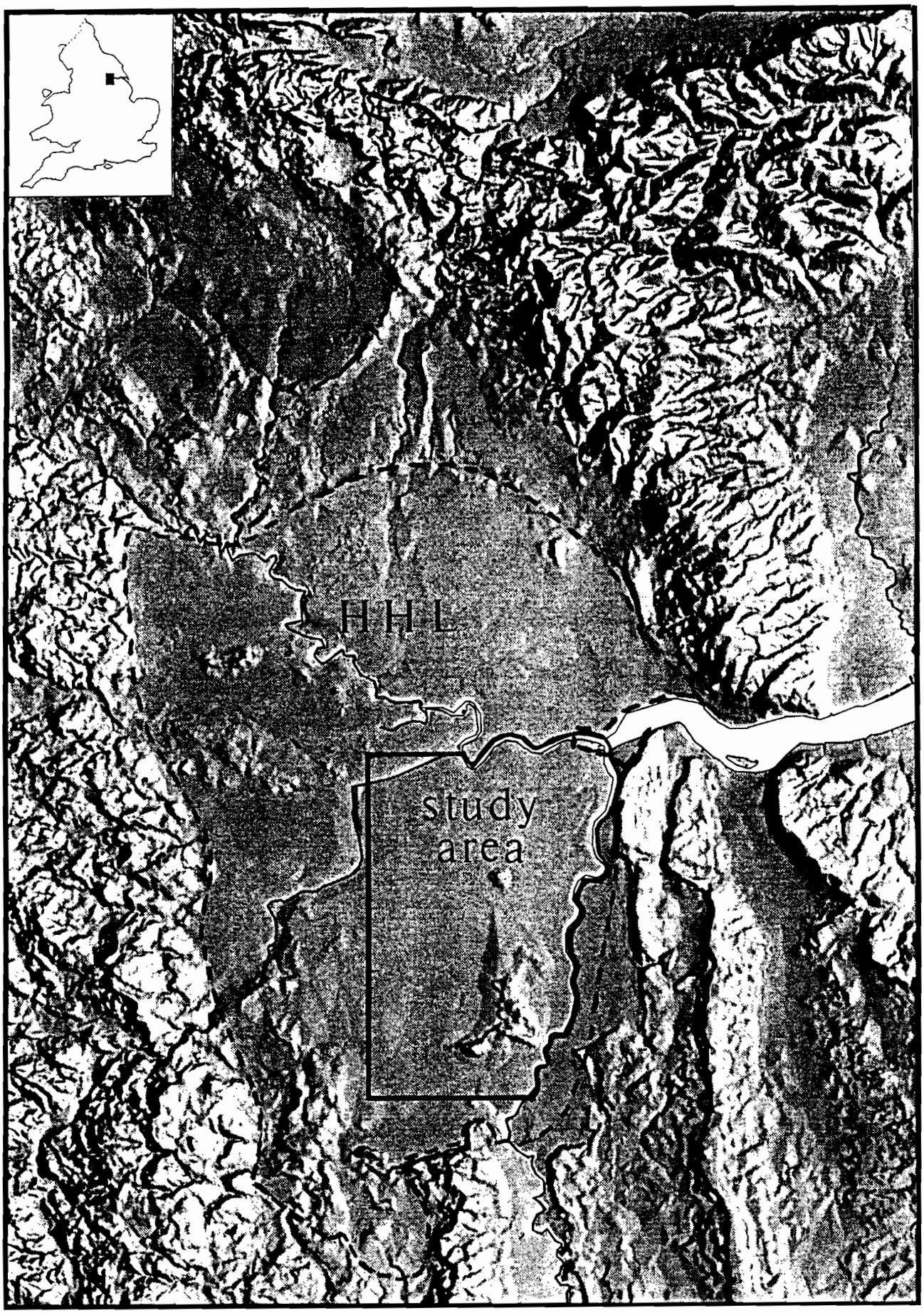
Table 1: Fieldwork and primary sources

SOURCE		USE in phase 1: ✓✓ - used for whole study area ✓ - selective use – - not used
Fieldwork		
	Field observation	✓
	Local consultations	✓
Primary documentary sources		
Maps and plans	Enclosure plans	✓
	Estate plans	✓
	Tithe award plans	✓
	Other early maps	✓
	OS 1st Edition (1824)	✓✓
	OS County Series 1:10560 (1880s-90s)	✓
	Later / current OS maps, various scales	✓
	First Land-use Survey (1930s)	✓
	Second Land Utilisation Survey (1960s)	✓
Other historical documents	Enclosure Awards	✓
	manorial, estate records etc.	–
	Historic photographs	✓
Aerial photography	Vertical aerial survey	✓
	Oblique aerial photos	–
	Landsat vertical	✓

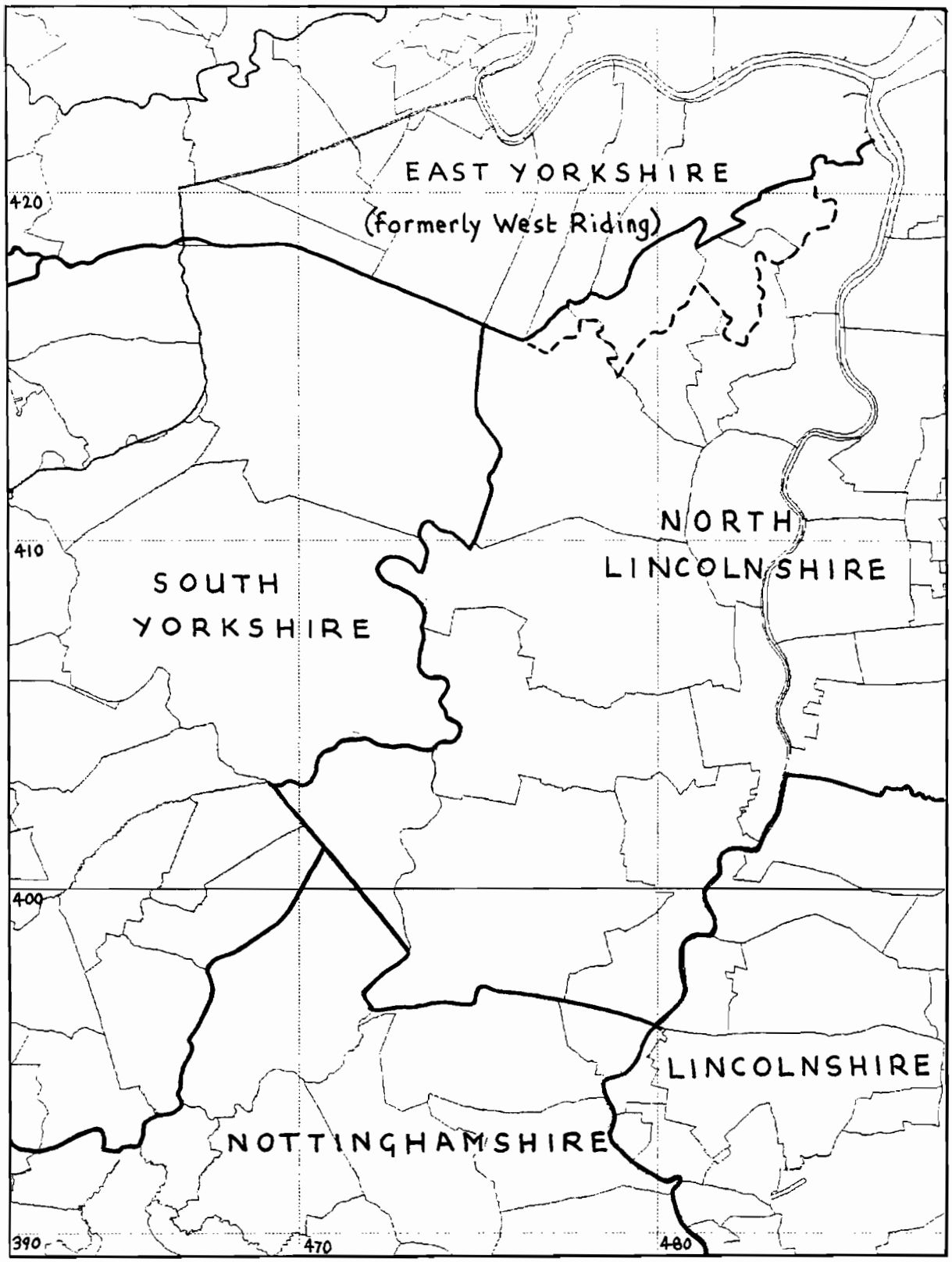
See next page for table of secondary data sources.

Table 2: Secondary sources

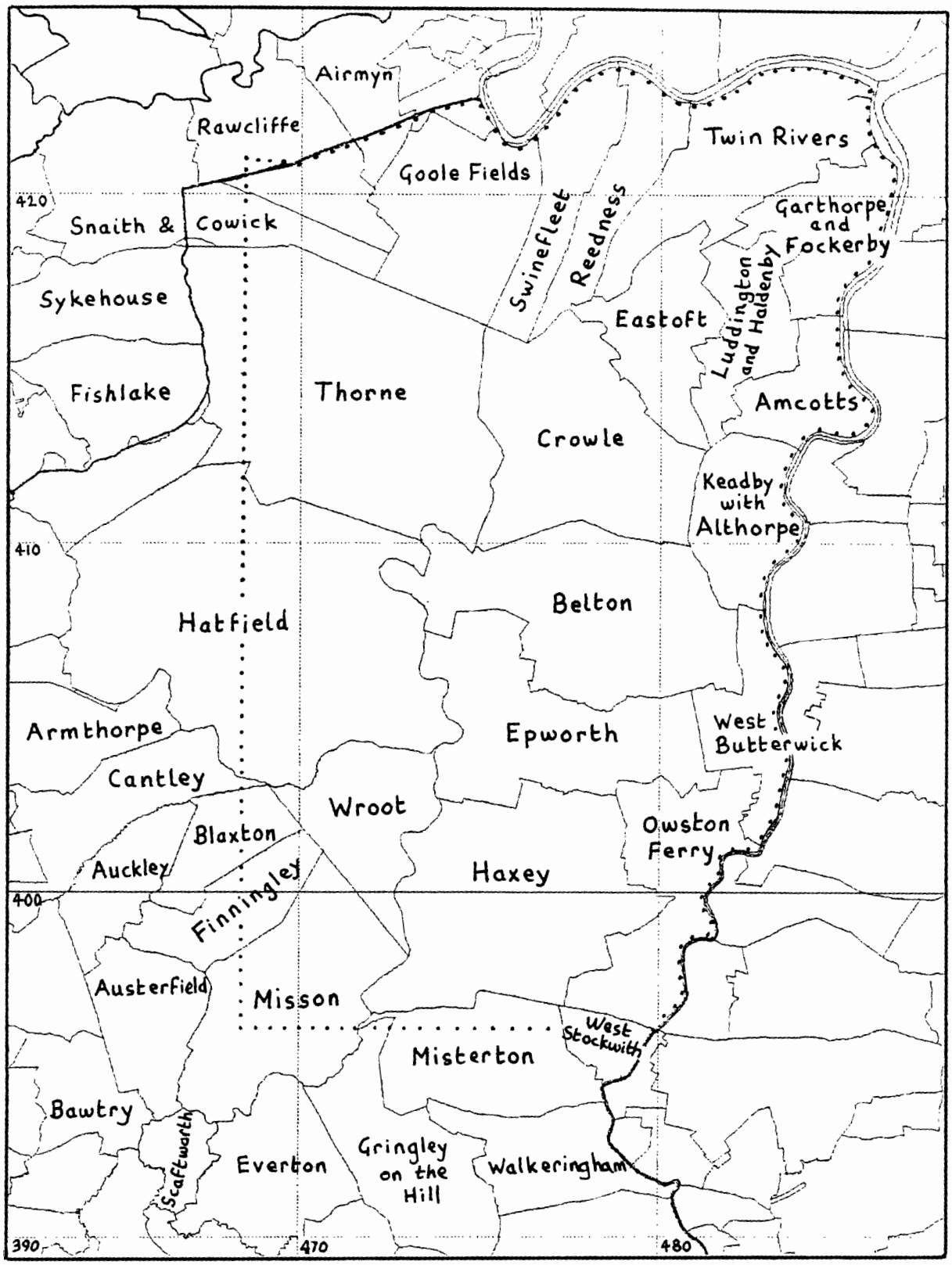
SOURCE		USE in phase 1: √√ - used for whole study area √ - selective use – - not used
Secondary sources		
	Published historical accounts	√
Archaeological and historical lists and designations	Sites and Monuments Records	√√
	Listed Buildings	√
	Register of Parks and Gardens	– *(no entries for area)*
	Conservation Areas	√
Geological survey and designations	Geological maps and memoirs	√√
Ecological lists and designations	SSSIs	√
	Nature reserves	√√
	County habitat surveys	– *(not available)*
	English Nature Natural Areas	√√
Landscape lists and designations	Countryside Commission Landscape Character Areas	√
	County/local landscape designations	√√
	AONBs / Heritage Coast	– *(no entries for area)*
Other lists and designations	Register of commons / village greens	–
	Public Rights of Way	√
	MAFF agricultural land classification	√
	Water management areas	–



Regional relief map, showing the study area within the Humberhead Levels Countryside Character Area (HHL: dashed boundary).

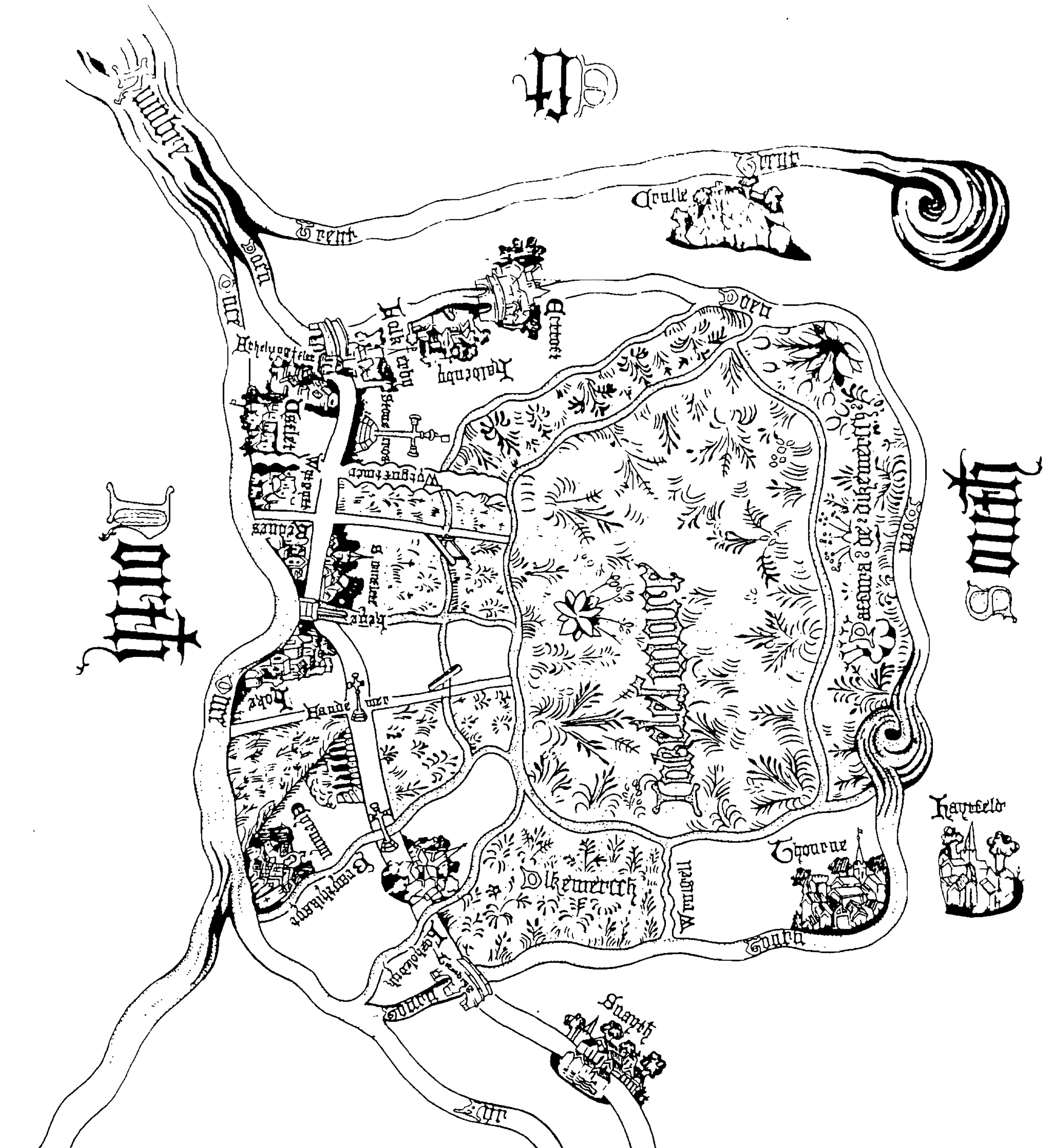


2.1 County and parish boundaries.
(Dashed line shows the northern section of the former Lincolnshire - Yorkshire boundary along the course of the Old River Don).



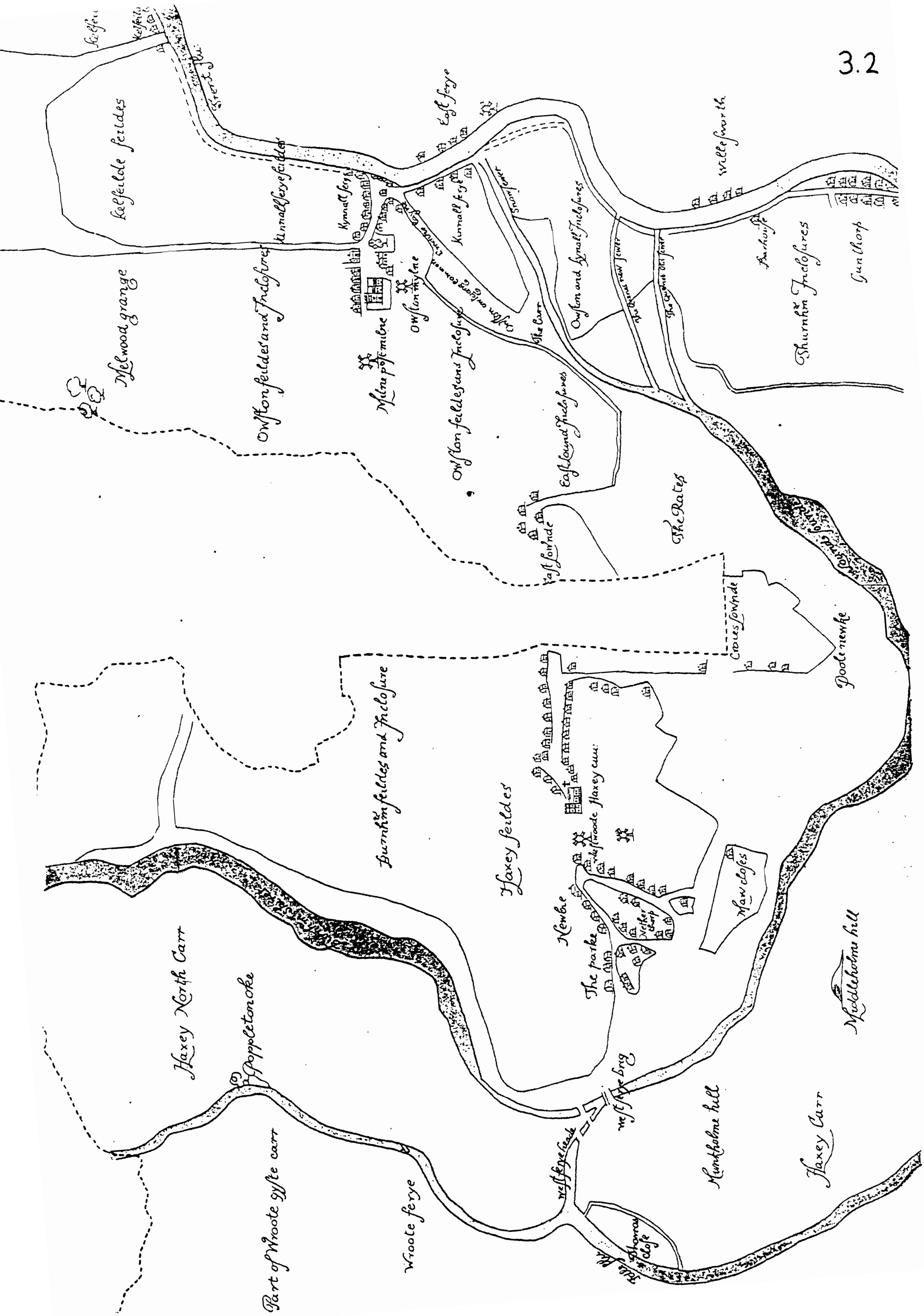
2.2 Present parishes.
(Dotted line shows boundary of Study Area).

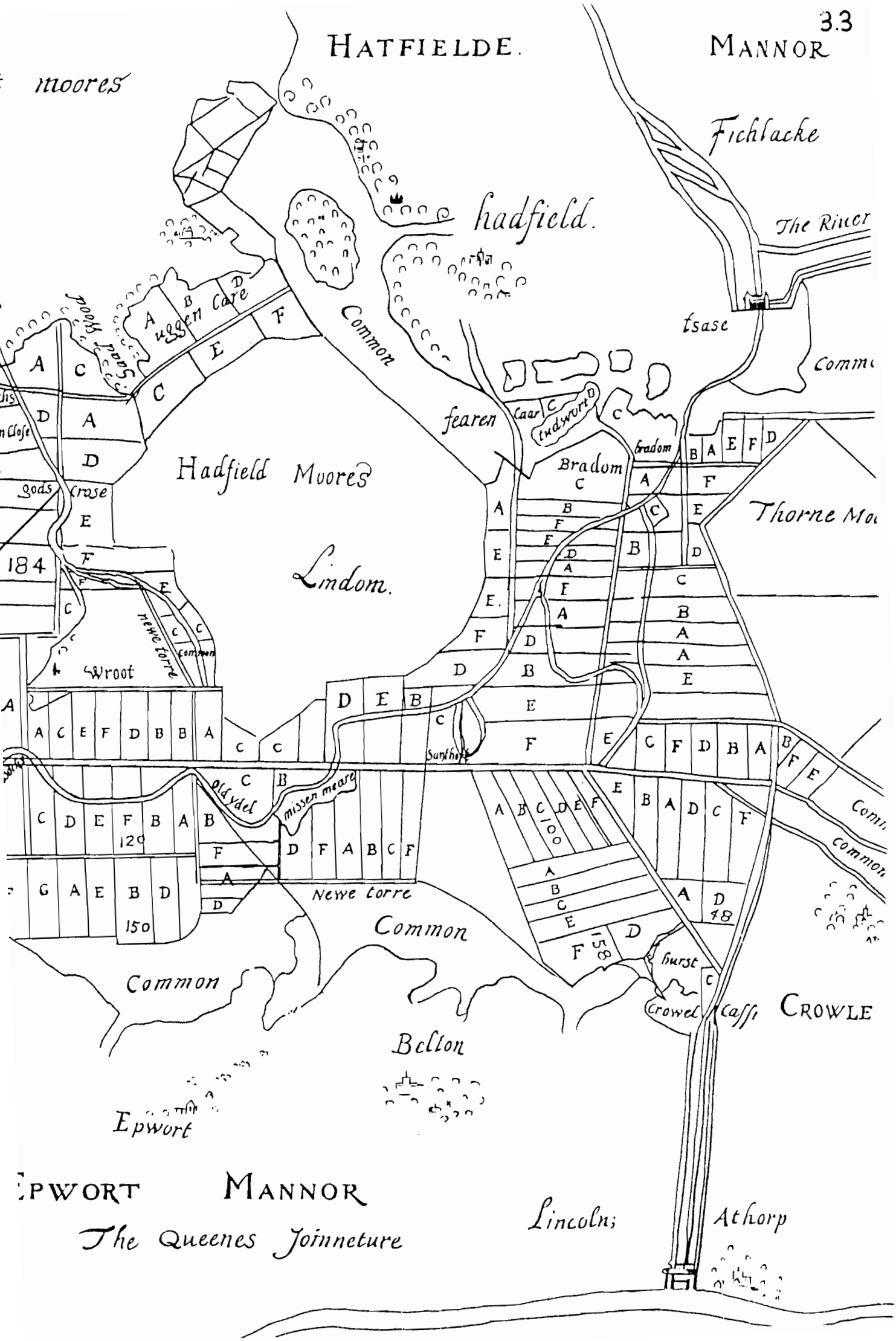
3.1

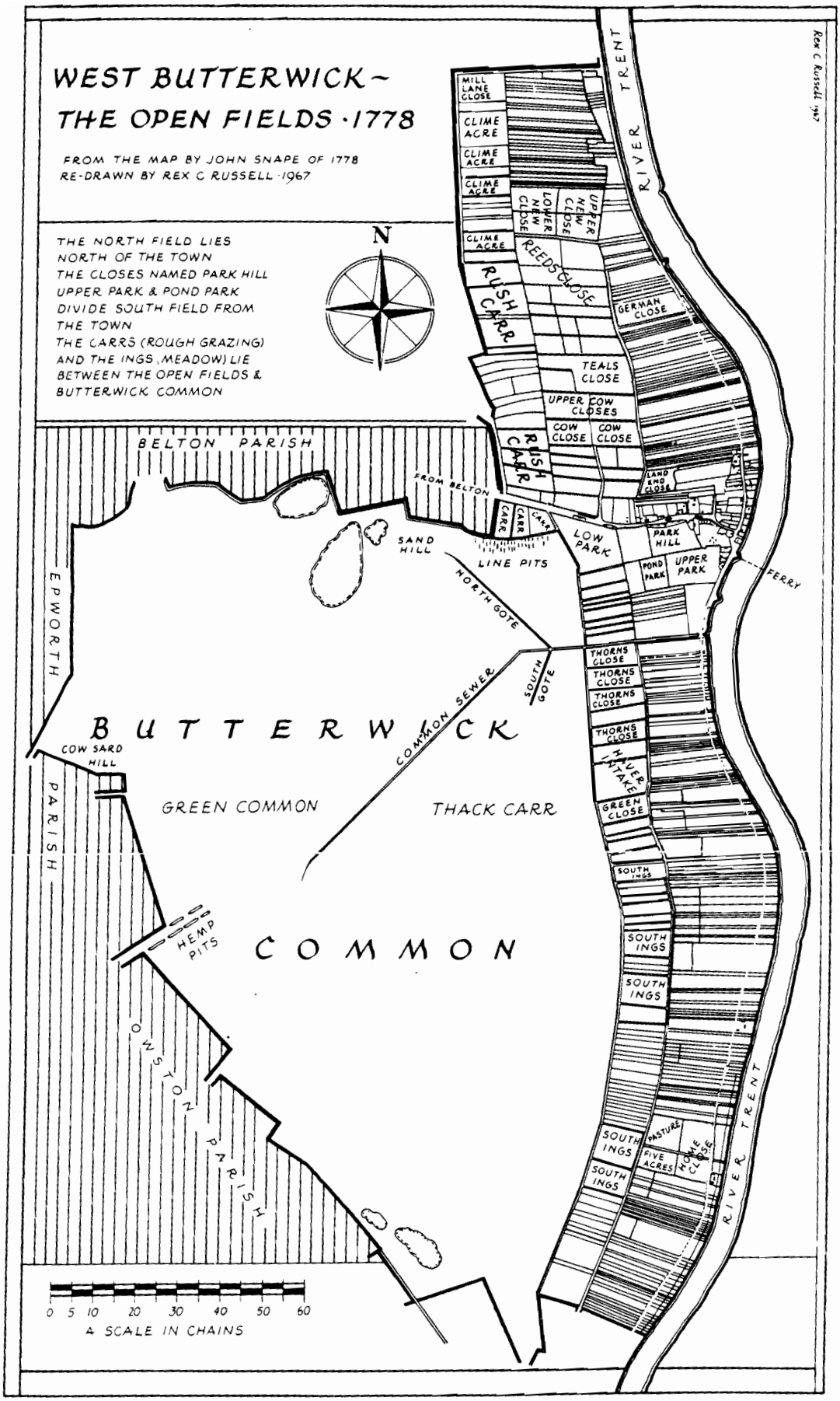


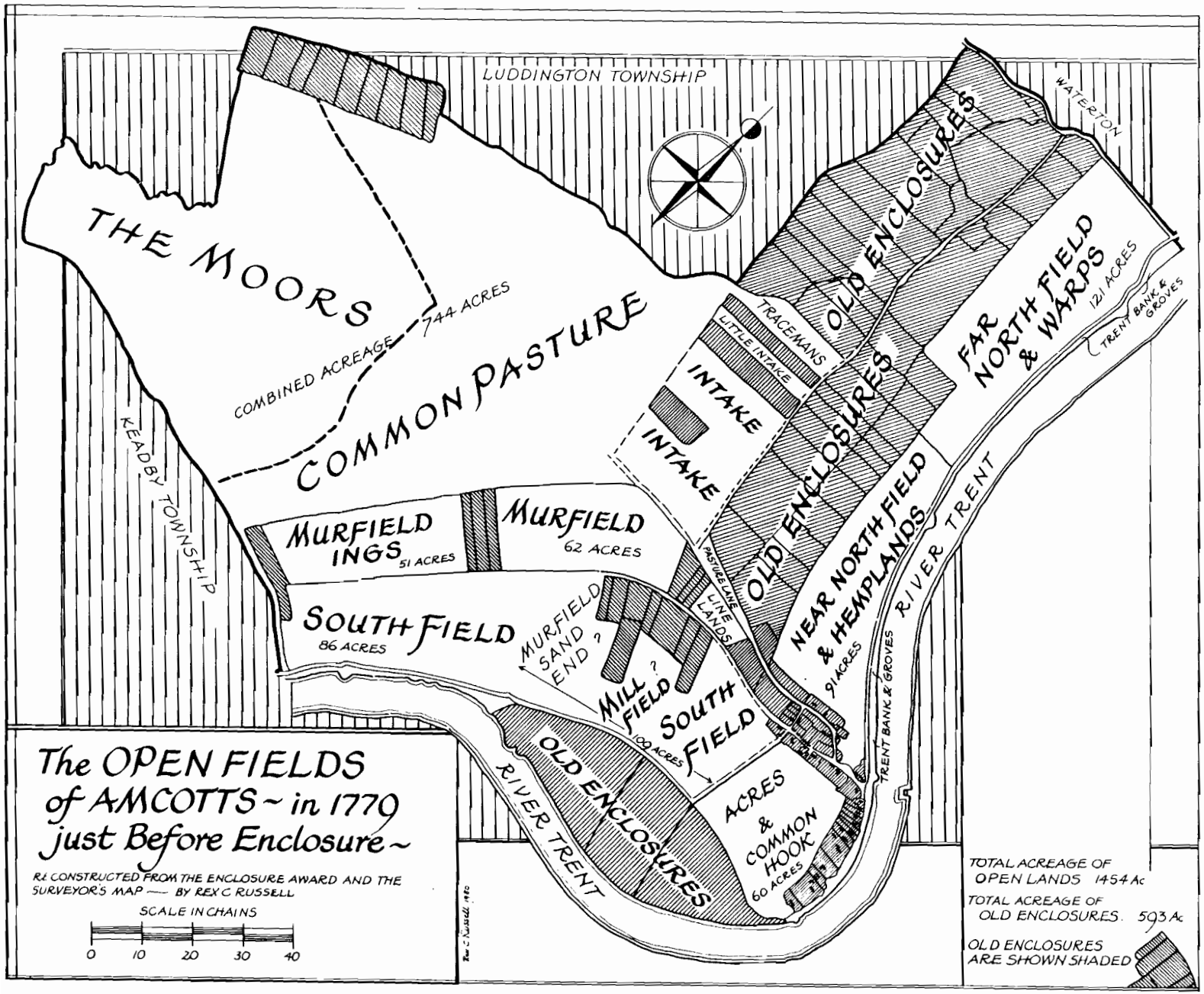
North
South
Trent
Crule
Thorne
Hatfeld
Dikewerch
Snayth
Aire

3.2


Kelfeilde feildes
Trent flu:
East ferye
Kynnall ferye feildes
Kynnall ferye
Kinnall ferye
Snow sewer
Owston and Kynall Inclosures
Willesworth
Thurnham Inclosures
Gunthorp
The Queenes new sewer
The Queenes old sewer
The Carr
Owston common
Owston mylne
Owston feildes and Inclosures
Owston feildes and Inclosure
Melwood grange
Eastlound Inclosures
East lownde
The Rates
Croies lownde
Poole newke
Burnham feildes and Inclosure
Haxey feildes
Westwoode
Haxey
Newbie
The parke
Nether thorp
Maw closes
Middleholme hill
Munkholme hill
Haxey Carr
west ferye brig
west ferye heade
Thomas close
Haxey North Carr
Poppletonoke
Part of Wroote gyste carr
Wroote ferye


HATFIELDE. MANNOR
moores
Fichlacke
hadfield.
The River
Common
Hadfield Moores
Lindom.
Bradom
Thorne Mo
Wroot
Newe torre
Common
Sunkhirst
Oldydel
missen meare
Newe torre
Common
Common
Burst
Crowel
CROWLE
Bolton
Epwort
EPWORT MANNOR
The Queenes Joinneture
Lincoln;
Athorp


WEST BUTTERWICK ~
THE OPEN FIELDS · 1778
FROM THE MAP BY JOHN SNAPE OF 1778
RE-DRAWN BY REX C RUSSELL · 1967
THE NORTH FIELD LIES
NORTH OF THE TOWN
THE CLOSES NAMED PARK HILL
UPPER PARK & POND PARK
DIVIDE SOUTH FIELD FROM
THE TOWN
THE CARRS (ROUGH GRAZING)
AND THE INGS (MEADOW) LIE
BETWEEN THE OPEN FIELDS &
BUTTERWICK COMMON
N
Rex C Russell 1967
RIVER TRENT
MILL LANE CLOSE
CLIME ACRE
CLIME ACRE
CLIME ACRE
CLIME ACRE
LOWER NEW CLOSE
UPPER NEW CLOSE
REEDS CLOSE
RUSH CARR
GERMAN CLOSE
TEALS CLOSE
UPPER COW CLOSES
COW CLOSE
COW CLOSE
RUSH CARR
LAND AND CLOSE
BELTON PARISH
FROM BELTON
CARR
CARR
LANE
SAND HILL
LINE PITS
LOW PARK
PARK HILL
POND PARK
UPPER PARK
FERRY
EPWORTH
NORTH GOTE
SOUTH GOTE
COMMON SEWER
THORNS CLOSE
THORNS CLOSE
THORNS CLOSE
THORNS CLOSE
RIVER INTAKE
BUTTERWICK
COW SARD HILL
GREEN COMMON
THACK CARR
GREEN CLOSE
SOUTH INGS
SOUTH INGS
SOUTH INGS
PARISH
HEMP PITS
COMMON
OWSTON PARISH
SOUTH INGS
PASTURE
FIVE ACRES
HOME CLOSE
SOUTH INGS
RIVER TRENT
0 5 10 20 30 40 50 60
A SCALE IN CHAINS

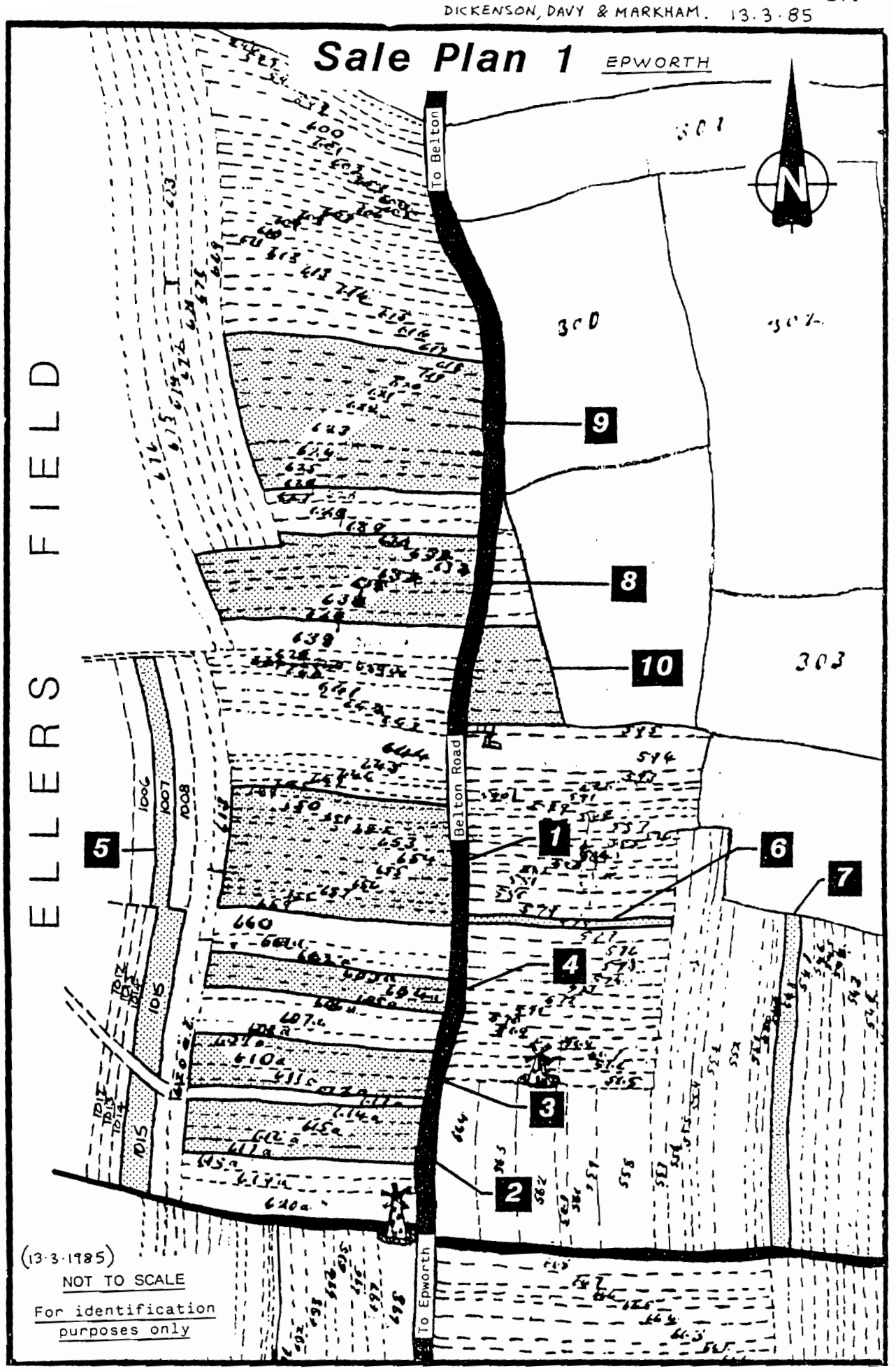

LUDDINGTON TOWNSHIP
WATERTON
THE MOORS
744 ACRES
COMBINED ACREAGE
COMMON PASTURE
KEADBY TOWNSHIP
OLD ENCLOSURES
TRACEMANS
LITTLE INTAKE
INTAKE
INTAKE
FAR NORTH FIELD & WARPS
121 ACRES
TRENT BANK & GROVES
OLD ENCLOSURES
MURFIELD INGS
51 ACRES
MURFIELD
62 ACRES
PASTURE LANE
LINE LANDS
NEAR NORTH FIELD & HEMPLANDS
91 ACRES
RIVER TRENT
SOUTH FIELD
86 ACRES
MURFIELD SAND END ?
MILL FIELD ?
100 ACRES
SOUTH FIELD
TRENT BANK & GROVES
RIVER TRENT
OLD ENCLOSURES
ACRES & COMMON HOOK
60 ACRES
The OPEN FIELDS of AMCOTTS ~ in 1779 just Before Enclosure ~
RE CONSTRUCTED FROM THE ENCLOSURE AWARD AND THE SURVEYOR'S MAP — BY REX C RUSSELL
SCALE IN CHAINS
0 10 20 30 40
TOTAL ACREAGE OF OPEN LANDS 1454 Ac
TOTAL ACREAGE OF OLD ENCLOSURES 593 Ac
OLD ENCLOSURES ARE SHOWN SHADED

3.6

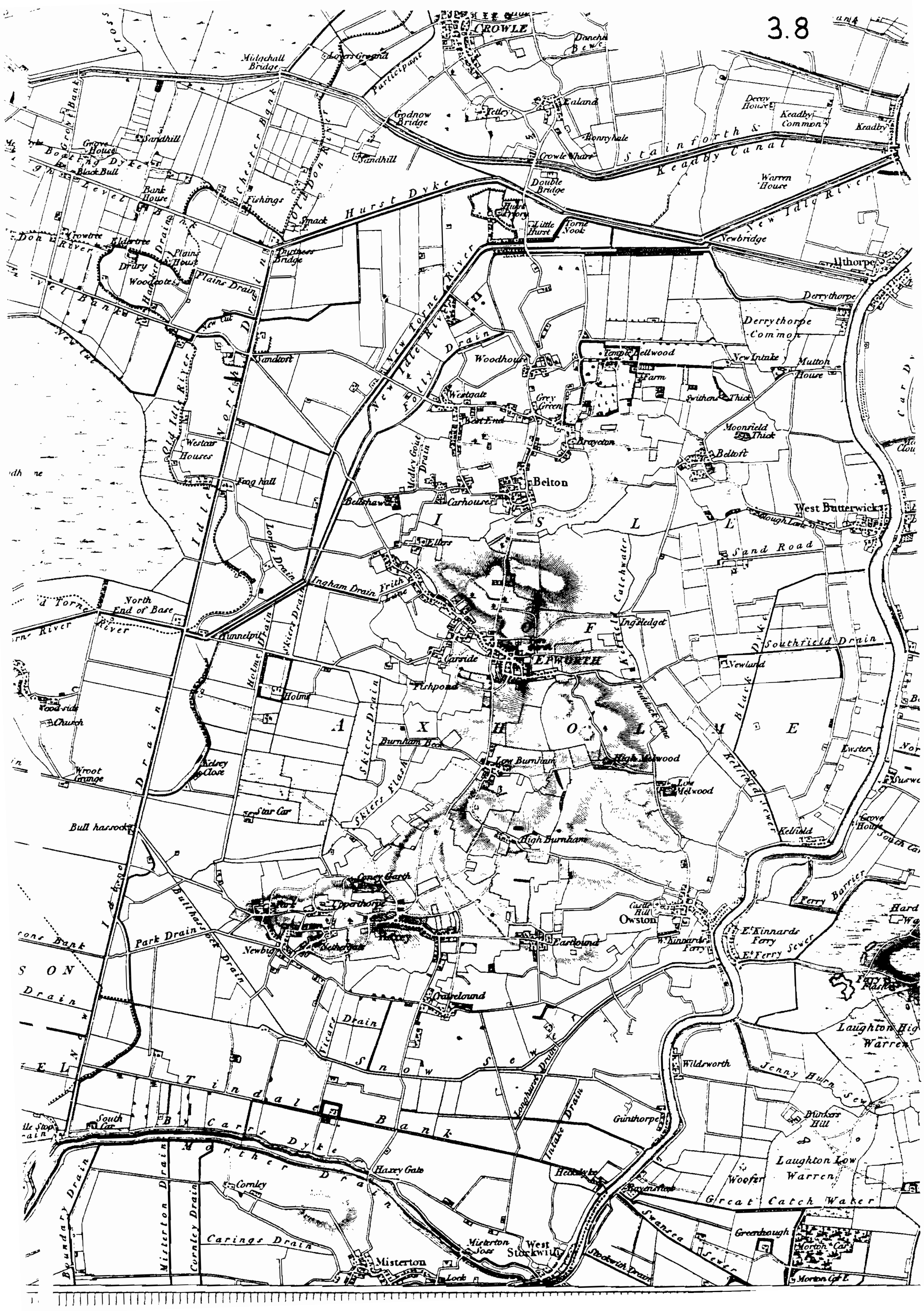
The Participants Lands
John Pettinger
Thos Lambert for W
and Jane Kelsey
Park
Upperthorpe
Newbig
Nethergate
Mary Denby
Park Drain
South Drain

DICKENSON, DAVY & MARKHAM. 13.3.85

Sale Plan 1 EPWORTH

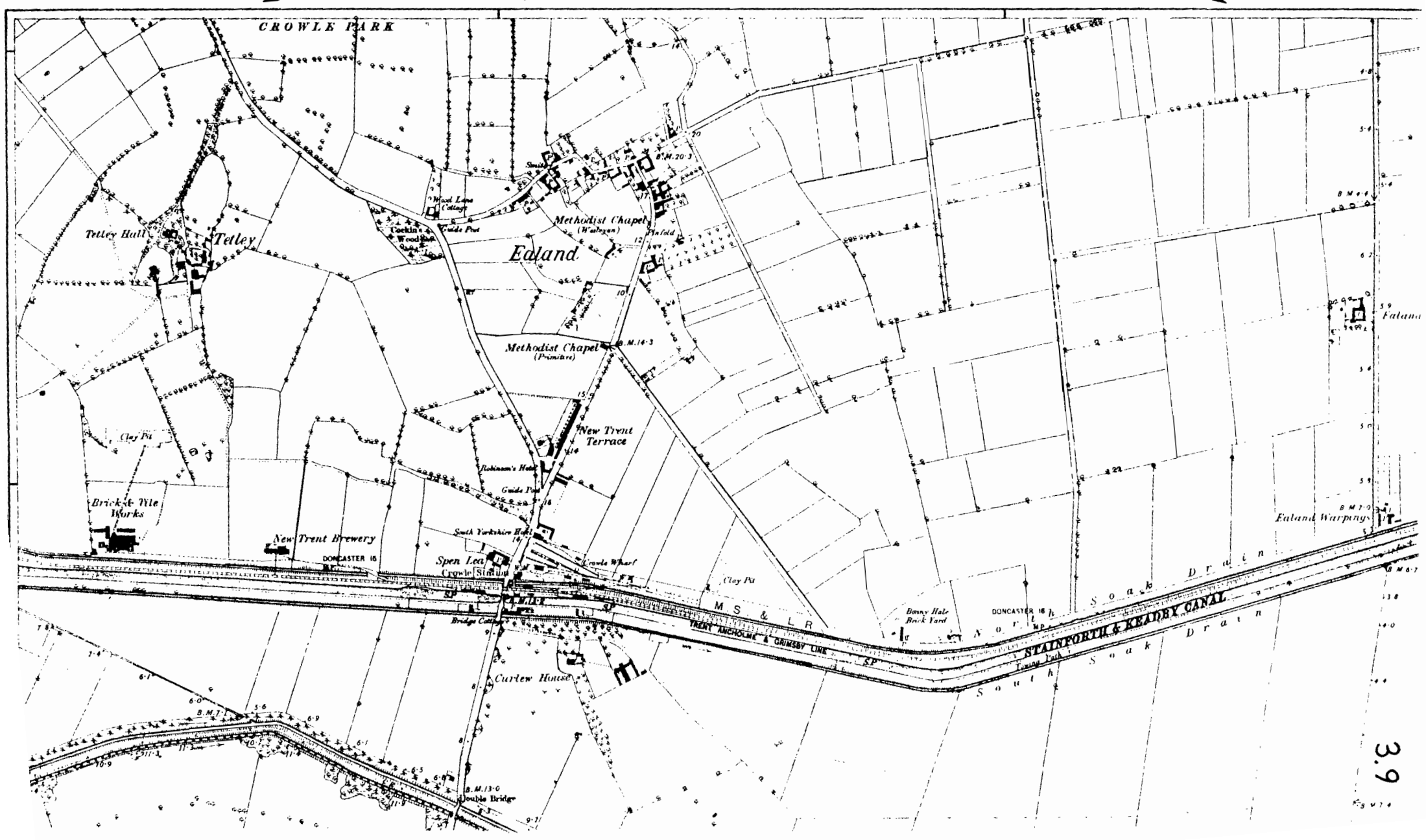


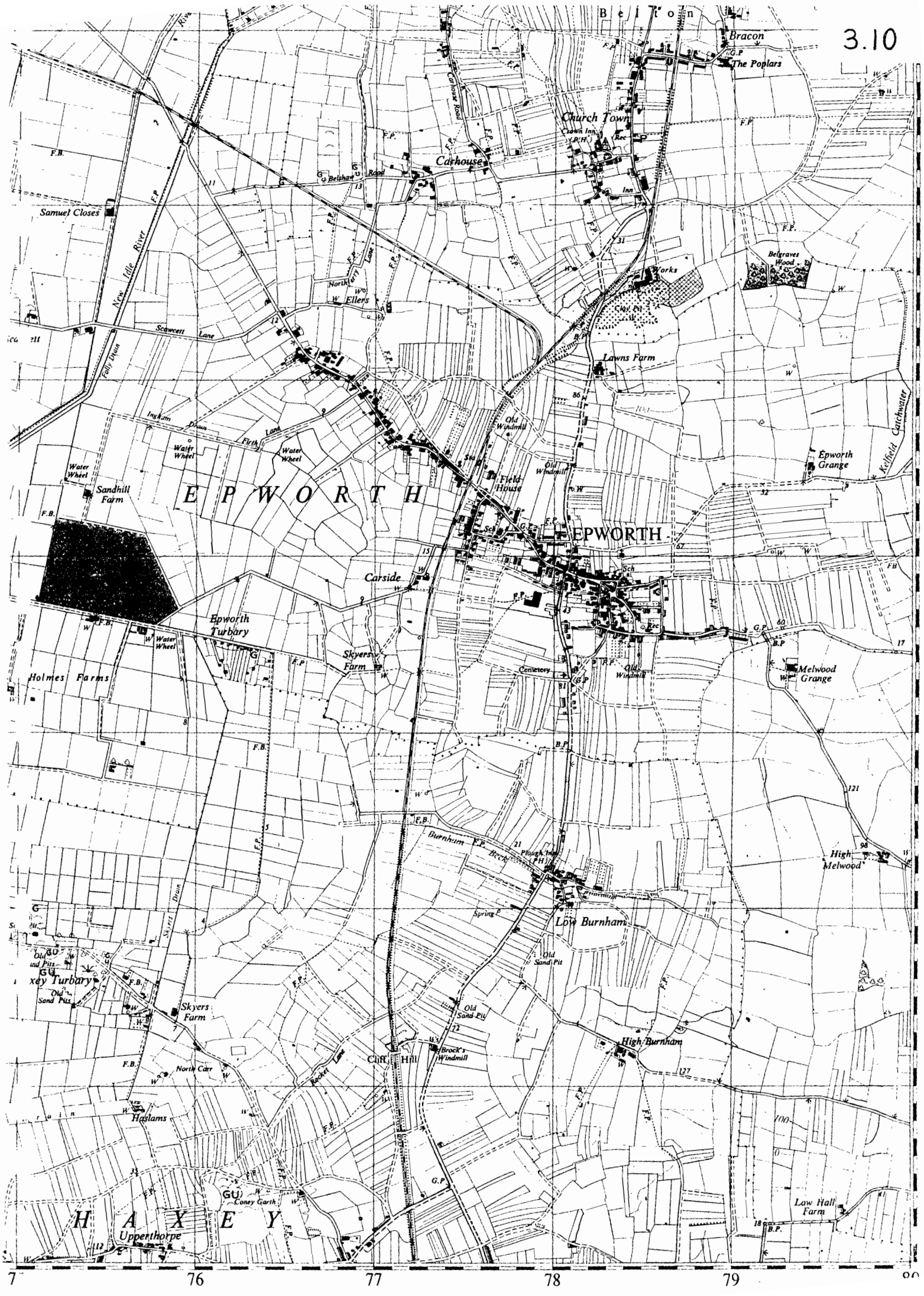
3.8

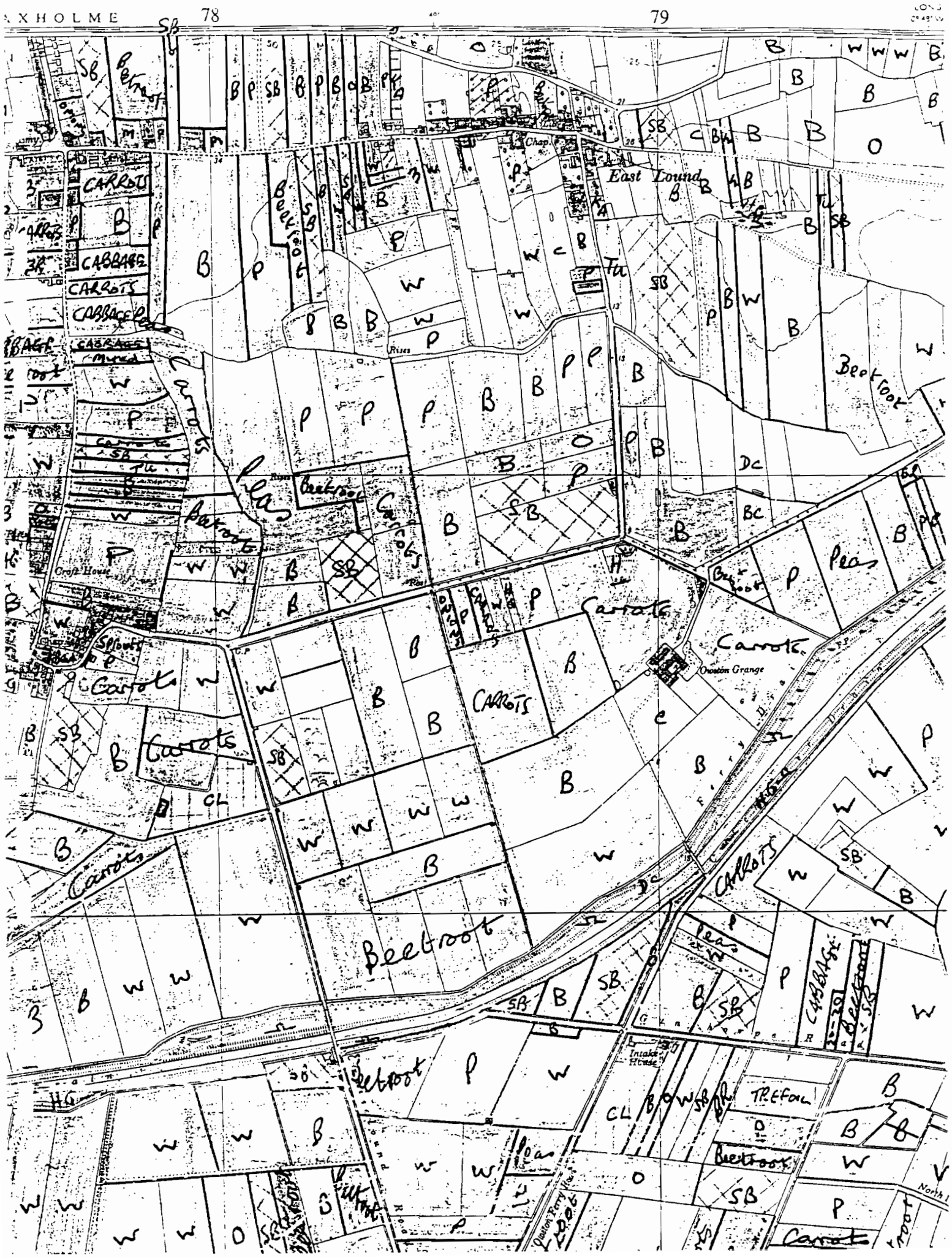

CROWLE
Midgehall Bridge
Lovers Ground
Participant
Godnow Bridge
Tetley
Ealand
Danchil Bewc
Bonnyhale
Crowle Wharf
Decoy House
Keadby Common
Keadby
Stainforth & Keadby Canal
Warren House
New Idle River
Newbridge
Althorpe
Derrythorpe
Derrythorpe Common
Cross
Grove Bank
Sandhill
Grove House
Boating Dyke
Black Bull
Level Bank
Bank House
Chester Bank
Fishings
Old Don River
Smack
Hurst Dyke
Double Bridge
Hurst Priory
Little Hurst
Torne Nook
Don River
Crowtree
Eldertree
Drury
Woodcotes
Plains House
Plains Drain
Hatfield Drain
Dutchess Bridge
New Cut
Sandtoft
North Idle Drain
New Torne River
Folly Drain
Woodhouse
Temple Bellwood
Farm
New Intake
Mutton House
Swithens Thick
Westgate
West End
Grey Green
Brayton
Moonfield Thick
Beltoft
Old Idle River
Westcar Houses
Fang hall
Medley Goue Drain
Belshaw
Carhouses
Belton
West Butterwick
Clough Lane
I S L E
Sand Road
Ellers
Lords Drain
Ingham Drain
Frith Lane
Catchwater
Ing Hedget
Torne River
North End of Base
Hunnelpit
Holme Drain
Skiers Drain
Carrside
EPWORTH
F
Kelfield
Southfield Drain
Newland
Fishpond
Holme
Wood-side
Church
A X H O L M E
Burnham Beck
Skiers Flash
Paddock Lane
Black Dyke
Low Burnham
High Melwood
Low Melwood
Kelfield Sewer
Ewster
Kelfield
Grove House
South Car
Wroot Grange
Kelsey Close
Star Car
Bull hassock
High Burnham
Coney Garth
Park
Epperthorpe
Haxey
Nethergate
Newbig
Bullhassock Drain
Park Drain
Castle Hill
Owston
W. Kinnards Ferry
E. Kinnards Ferry
E. Ferry Sewer
Ferry Barrier
Eastlound
Craiselound
Vicars Drain
Snow Sewer
Longhurst Drain
Laughton High Warren
Wildsworth
Jenny Hurn Sewer
Tindale Bank
South Car
By Carrs Dyke
Morther Drain
Intake Drain
Gunthorpe
Heckdyke
Bunkers Hill
Laughton Low Warren
Woofer
Ravensfleet
Great Catch Water
Haxey Gate
Cornley
Boundary Drain
Misterton Drain
Cornley Drain
Caringe Drain
Misterton
Lock
Misterton Soss
West Stockwith
Stockwith Drain
Swansea Sewer
Greenhough
Morton Car
Morton Car E.

Early Enclosed Land (EEL)

Recently Enclosed Land (REL)
(following Enclosure Award 1813-22)




3.10
Belton
Bracon
G.P
The Poplars
Church Town
Clown Inn
P.H
Rec
Carhouse
Belshaw Road
Samuel Closes
New Idle River
Scawcett Lane
Falls Drain
Ingham Drain
Firth Lane
North Carr Lane
Ellers
Belgraves Wood
Works
Clay Pit
Lawns Farm
Old Windmill
Water Wheel
Sandhill Farm
EPWORTH
Field House
Epworth Grange
Kelfield Catchwater
Carside
Epworth Turbary
Skyers Farm
Holmes Farms
Cemetery
Melwood Grange
Burnham Beck
Plough Inn
(PH)
High Melwood
Low Burnham
Old Sand Pit
Brock's Windmill
High Burnham
Haslams
North Carr
Becket Lane
Cliff Hill
Coney Garth
HAXEY
Upperthorpe
Low Hall Farm
7
76
77
78
79
80


XHOLME
78
79
East Lound
Beetroot
Carrots
Cabbage
Peas
Croft House
Owston Grange
Intake House
Trefoil
Potatoes
Sprouts
Onions
Swedes
Turnips
Parsnips
Leeks
Kale
Maize
Rhubarb
Asparagus
Mustard
Spinach
Lettuce
Celery
Cauliflowers
Broccoli
Brussels Sprouts
Herbs
Flowers
Bulbs
Orchard
Soft Fruit
Bush Fruit
Nursery
Glass
Frames
Polythene
Rotation Grass
Permanent Grass
Rough Grazing
Woodland
Scrub
Fallow
Set Aside
Bare Land
Buildings
Glasshouses
Polythene Tunnels
Ferry
Chap
Rises
Falls
Dc
Bc
HG
CL
SB
B
W
P
O
Tu

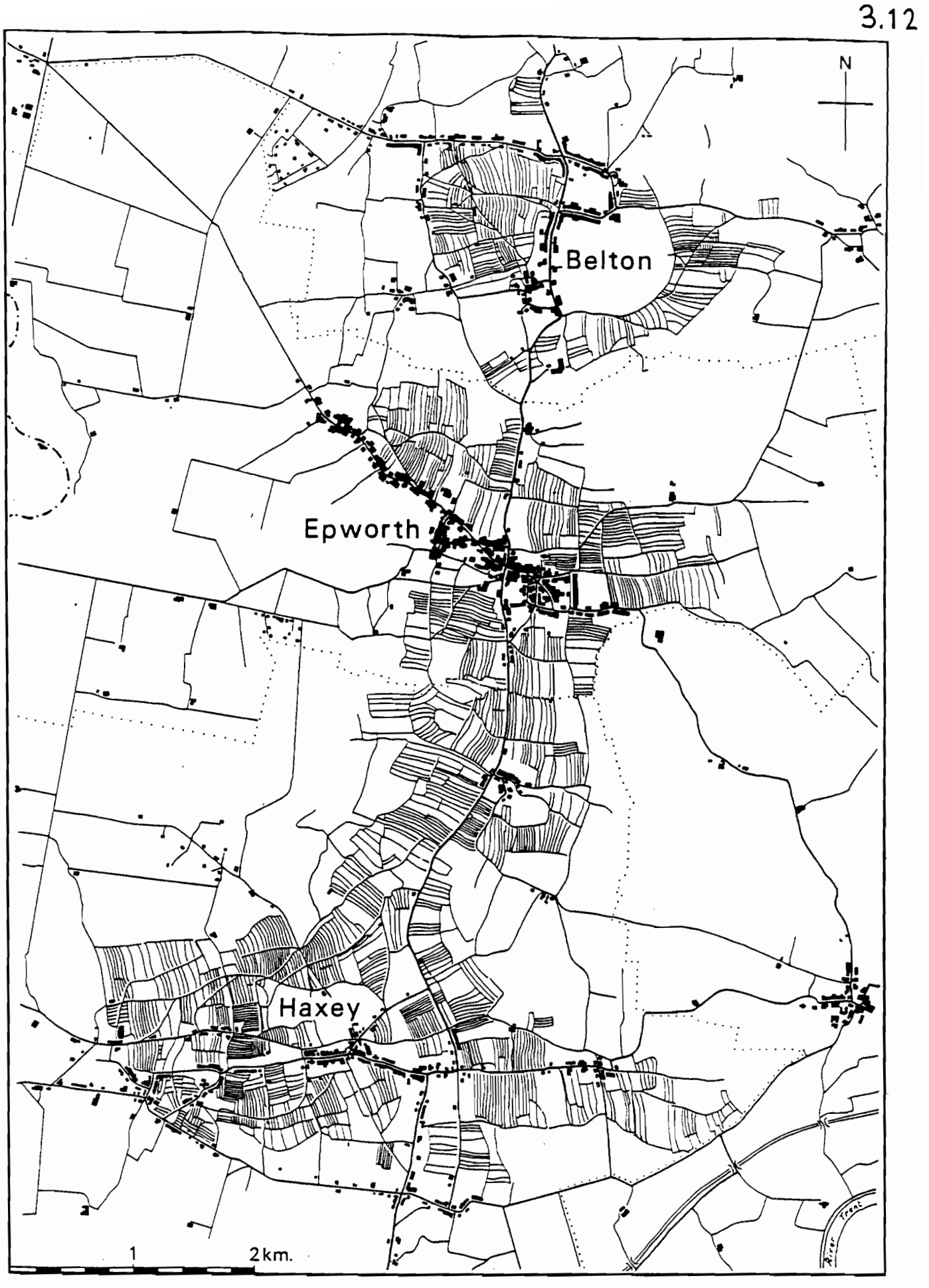
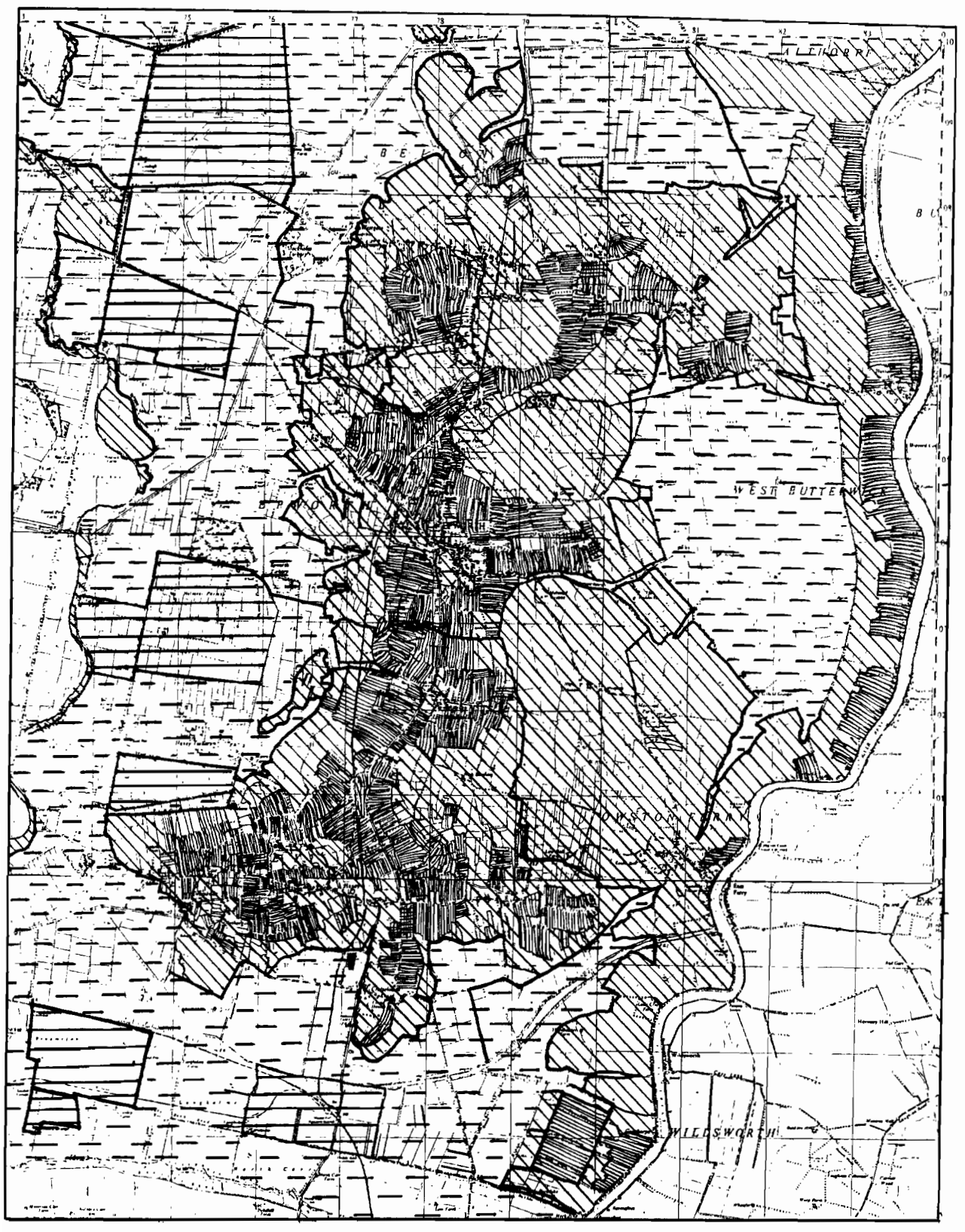
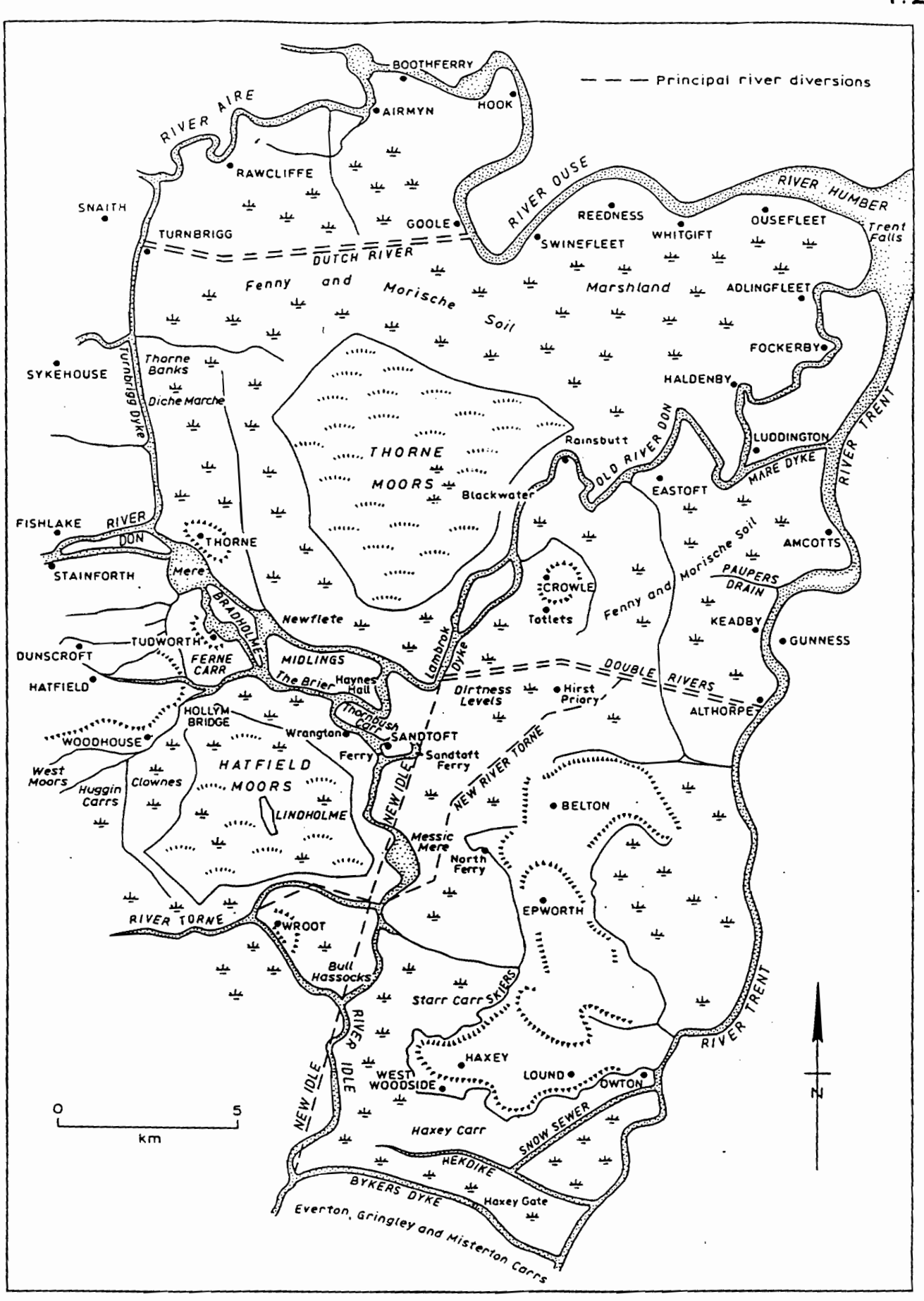


Figure 3. *Open-field strip-cultivation in the Isle of Axholme. Roads, tracks, dikes and buildings are shown in black, strip boundaries are in red. Based upon the Ordnance Survey maps with the permission of the Controller of Her Majesty's Stationery Office, Crown Copyright reserved. Land use data based upon the Second Land Utilisation Survey of Britain, sheet SE 60/SE 70, Hatfield Moors, surveyed 1961-6; Hunting Survey aerial photographs 1971-2 and field observation 1976.*

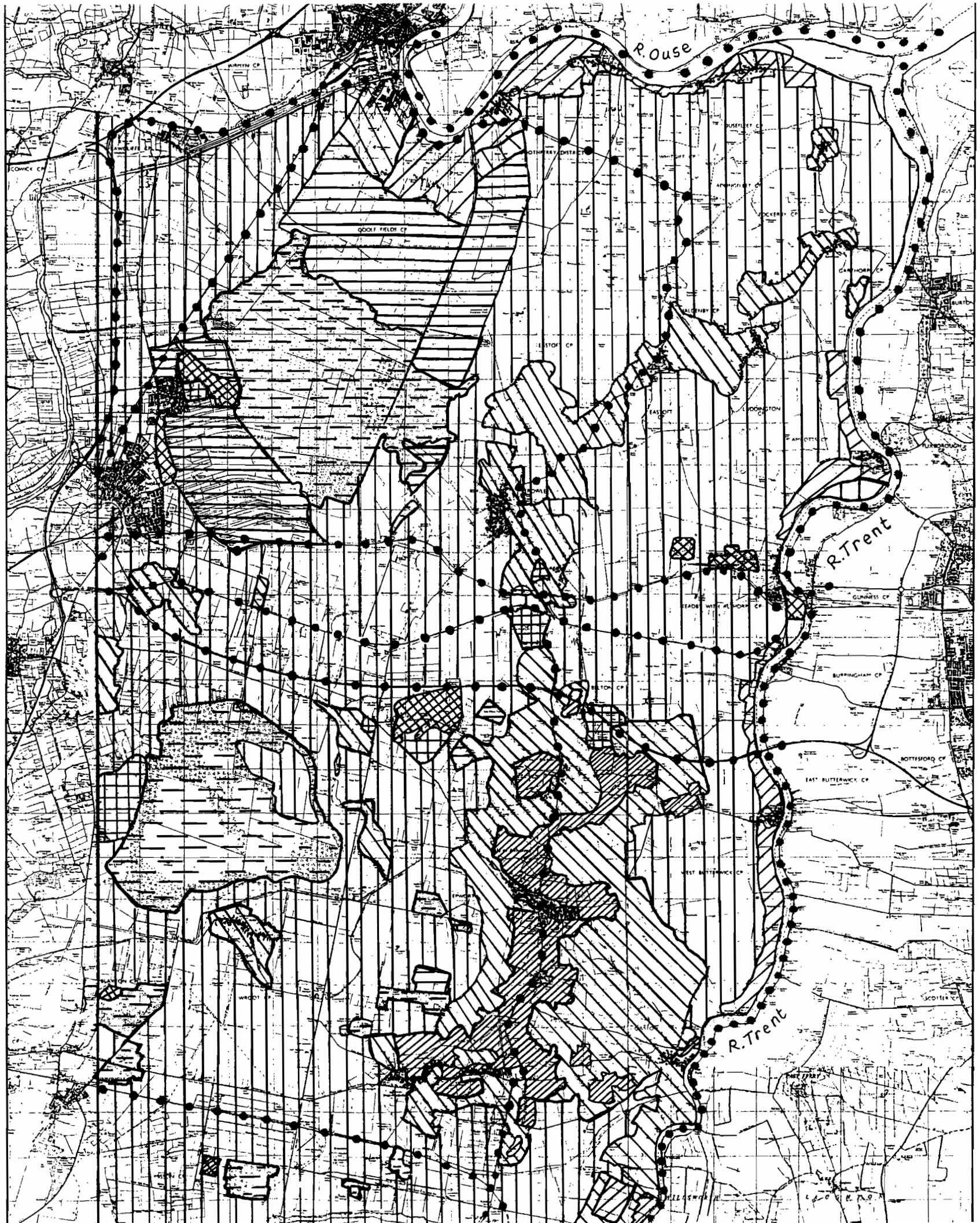


SOUTH AXHOLME LAND-USE BEFORE ENCLOSURE, 1803

- Open strip fields
- Early Enclosures
- Commons
- Major hedged boundaries
- Participants' Lands



Principal drainage alterations in the Humberhead Levels, after Stonehouse (1839) and Dunston (1909).



AXHOLME AREA: HISTORIC LANDSCAPE CHARACTER ZONES

Ancient Open Strip Fields Zone (**AOSF**):

- Isle of Axholme

- Trent and Ouse Riversides

Early Enclosed Land Zone (**EEL**)

Recently Enclosed Land Zone (**REL**)

Raised Mire & Turbary Zone (**RM&T**)

Moorland Allotments Zone (**MA**)

Designed Landscape:

- Design / Ornamental Zone (Parklands)

- Design / Functional Zone (Airfields)

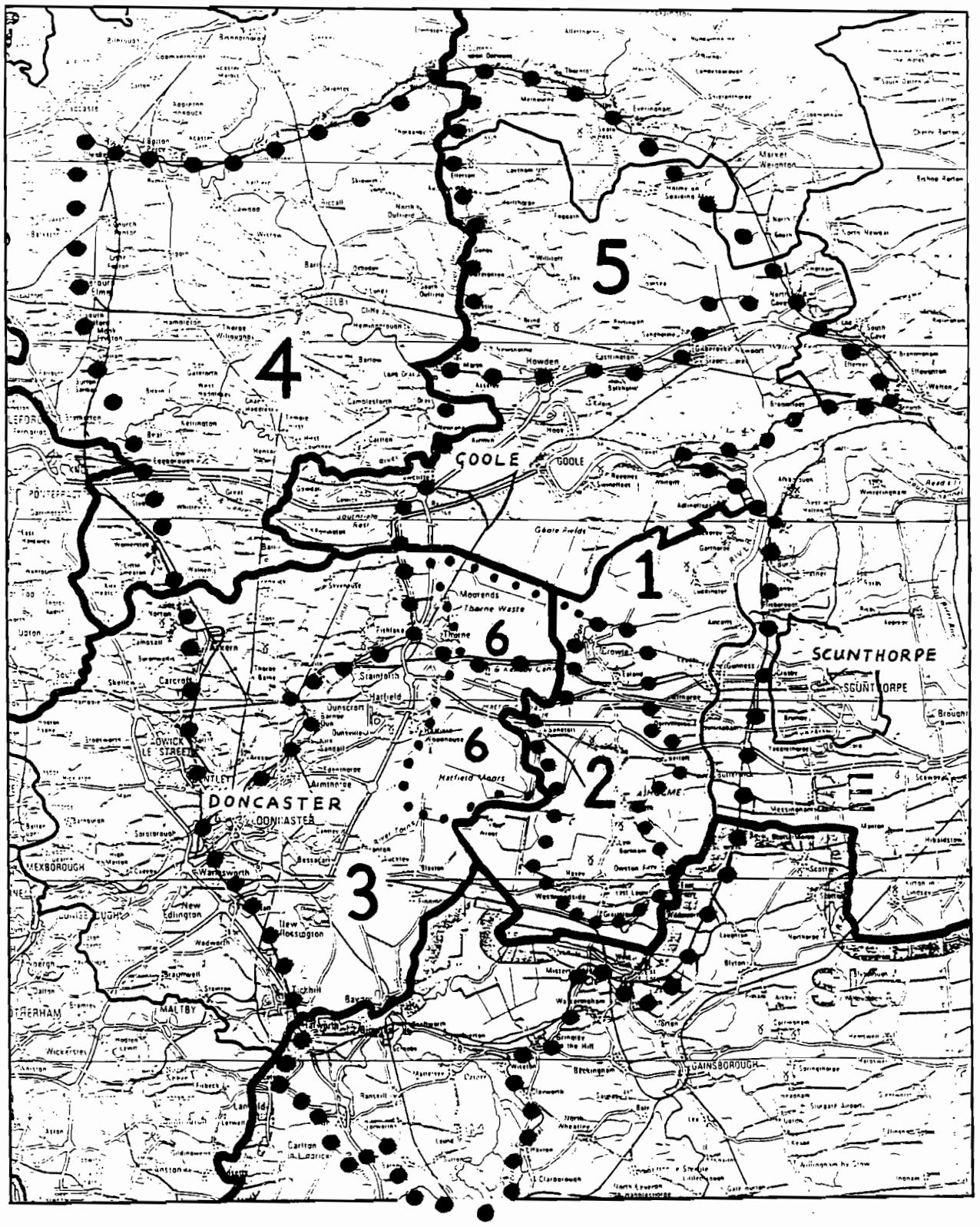
Industry and Commerce Zone

Transport and Communications Zone:
(major routeways shown)

Towns and villages: main built-up areas

0 5 10 km

6.1

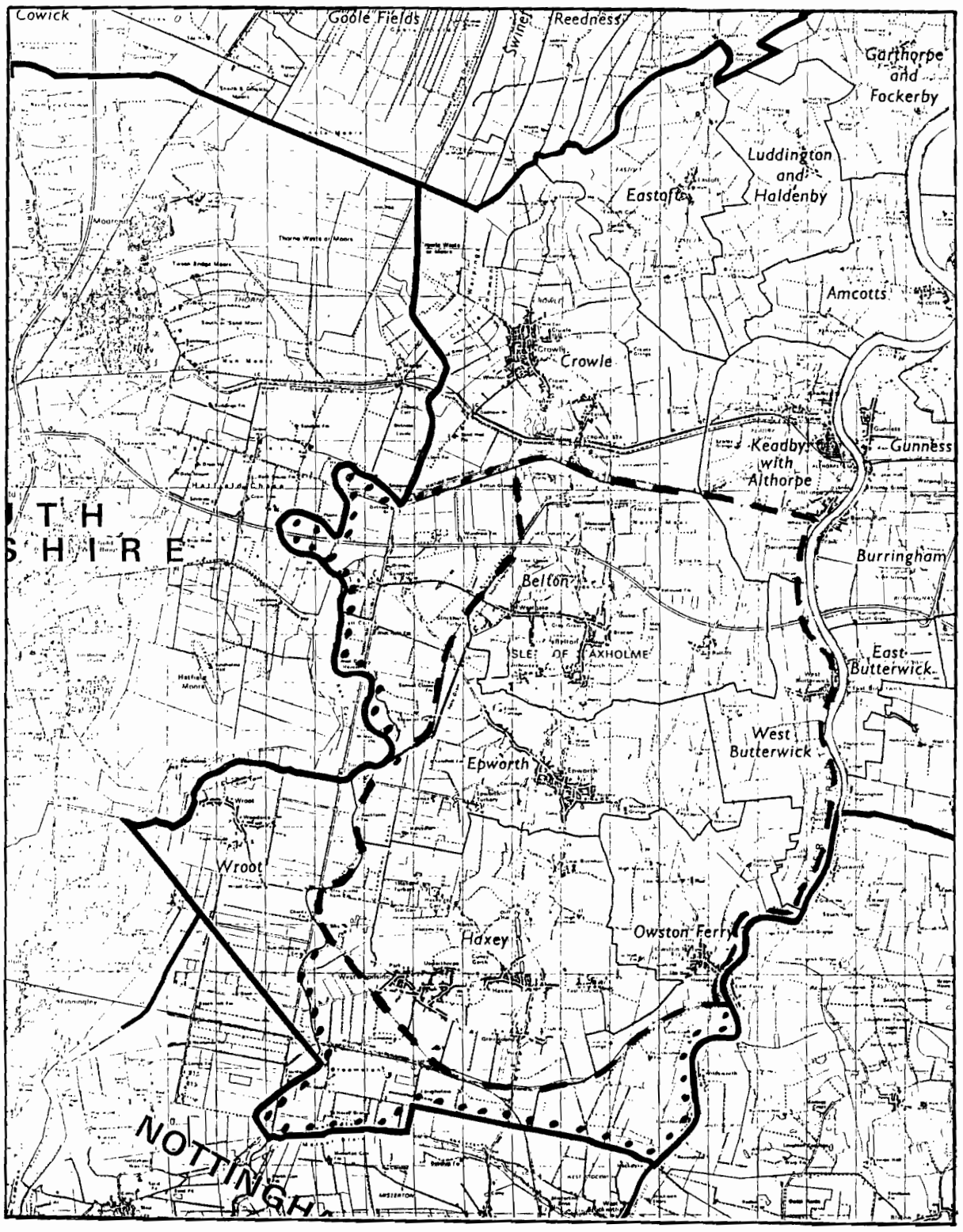


HUMBERHEAD LEVELS COUNTRYSIDE CHARACTER AREA:
LOCAL LANDSCAPE CHARACTER AREAS

1. Trent and Ouse Levels (Riverside Levels)
2. Isle of Axholme
3. Humberhead Heaths, Carrs and Moors
4. Selby Claylands
5. Foulness Claylands

(6. possible Thorne and Hatfield Moors Area) • • •

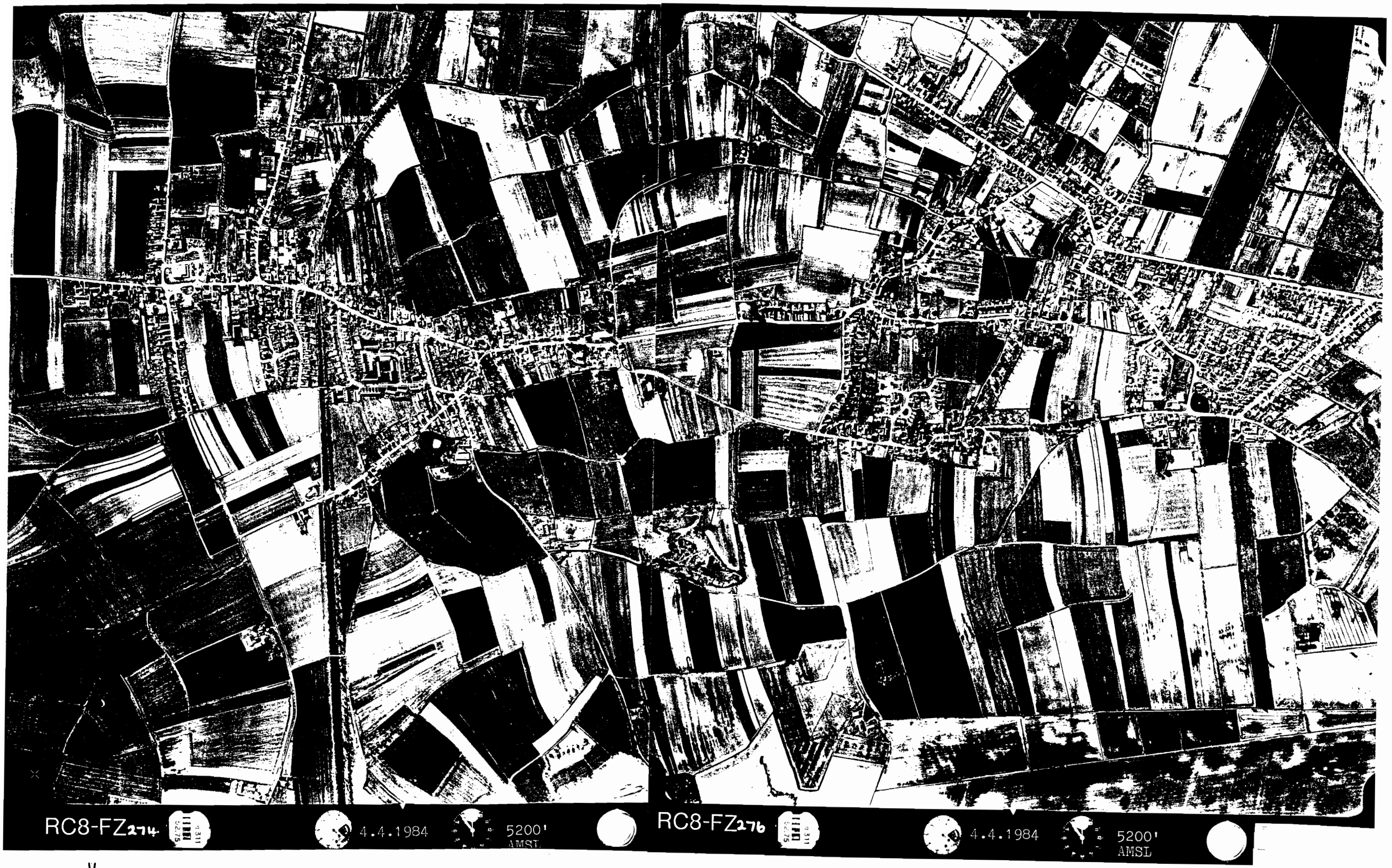
boundaries: • • • - LLCA ——— - local authority



THE SOUTH AXHOLME AREA
OF SPECIAL HISTORIC LANDSCAPE INTEREST

MINIMUM CORE AREA

CORE AREA WITH ADDITIONAL SECTIONS
(FOLLOWING PARISH BOUNDARIES)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