METHODOLOGY REPORT OF THE ARCGIS DIGITISATION OF THE LOWER KENNET VALLEY FIELDWALKING SURVEY

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Methodology report of the ARCGIS digitisation of the Lower Kennet Valley Fieldwalking Survey, 1976 to 1989

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Executive Summary

This report details the results of a project that entailed digitising the paper archive data from the Lower Kennet Fieldwalking Survey and incorporating it into a Geographical Information System (GIS). The survey was undertaken in 1976–7, 1982–7 and 1988–9 and the results published in a monograph in 1996. The primary aim of the project was to digitise and incorporate the data into GIS, in order to show the survey areas and artefact densities in a much more readily accessible, detailed and transparent, spatial format. The project was funded by the Aggregates Levy Sustainability Fund (ALSF), administered by English Heritage, as part of the assessment of archaeological resources in the aggregate areas of West Berkshire (Project No. 5898).

The digitised fieldwalking survey data was examined in relation to archaeological cropmarks plotted as part of the ongoing National Mapping Programme (NMP), in order to establish whether the combined data provided enhanced understanding of areas of archaeological potential. Comparison of artefact concentrations with NMP mapping could potentially be a productive method of non-intrusive survey. The digitised data will be incorporated into the West Berkshire Historic Environment Record (HER). It will provide a useful tool for future development control in aggregates areas.

The project as set out in the guidelines was a success and enables some assessment to be made of the value of converting legacy fieldwalking surveys from their present format, be that paper or some form of early computer record, into a digital format, principally GIS based. The project provides a test model for the conversion of large pre-GIS fieldwalking surveys into widely useable GIS format and as a result it has highlighted a number of potential issues that could place some limitations on how much can be digitised.

The first and perhaps the most important limitation is whether the fieldwalking had been tied to the national grid or not, and if it was how accurately was it located. Of the three surveys digitised in this report, two were located accurately within the national grid but the third was less so making it difficult to be certain of the exact location of the fields being digitised. Intimately tied to this is the recording of locations of artefacts; poor locating of field reduces the reliability of locations of finds. If the position of an artefact is only located approximately, then it is difficult, if not impossible to locate the artefact accurately within the digitised field. For example, there is no scale given with the figures showing location of artefact on the recording sheets from the earliest survey of the three digitised within this report, thus it is only possible to give an approximate location on the GIS of the artefact recorded. On the other hand it was identified that the accurate digitisation of the fields walked was as equally important. Inaccurate digitisation may result in errors in display of distributions.

It was also identified that as much data as possible should be recorded at all stages. For example, although flint artefacts of particular interest found during any of the three surveys digitised by this report have been given accession, or small find, numbers, they have not been given OS grid co-ordinates. Furthermore, they have not been dated. Although they have been dated for the monograph, the data recording the dating has not been included with the fieldwalking records. Thus refining the dating of the data base would require further work. It would be more efficient for any other digitisations of legacy projects that an initial stage be considered whereby a new recording sheet is created which sets out all relevant data fields. GIS allows for the later manipulation and adaptation of records but it would better if such a later stage is not necessitated. The report does include recommendations on how data from fieldwalking might be incorporated into GIS in the future.

Regardless of the above, the resulting project shows clearly what areas have been surveyed and how they relate to potential aggregate extraction areas, and will enhance the ability to predict the location of possible archaeological assets and guide mitigation planning. Furthermore, it will enable a view of the whole survey areas in their entirety, which will help direct research agendas and ultimately enhance our ability to understand past human landscapes.

1 Introduction

1.1 Project background

1.1.1 This report summarises the work undertaken digitising the results of three archaeological fieldwalking surveys undertaken in the Lower Kennet Valley in West Berkshire in 1976–7, 1982–7 and 1988–9 (Fig 1). Museum of London Archaeology (MOLA) carried out the digitisation between July and September 2010 as part of the *Assessment of archaeological resources in the aggregate areas of West Berkshire*, funded by the Aggregates Levy Sustainability Fund (ALSF) administered by the English Heritage (EH) Historic Environment Enabling Programme (Project No. 5898). The present report forms an appendix to the study, although also forms a stand alone report that can be disseminated separately. The work has been carried out in accordance with current English Heritage guidelines including MoRPHE (2006) guidance on the management of research projects, and the Strategic Framework for Historic Environment Activities and Programmes in English Heritage (SHAPE 2008) guidance.

1.1.2 Fieldwalking is a non-intrusive archaeological survey method that entails the systematic collection of artefacts from the surface of a ploughed field in order to identify concentrations and thus areas of archaeological potential. The Lower Kennet Valley survey remains the most extensive fieldwalking survey in England. It was undertaken over a period 13 years from 1976 to 1989 in three survey periods. The then Department of the Environment commissioned the survey (in addition to other investigations) primarily to assess the state of archaeology in West Berkshire and to monitor the threat to those resources imposed by aggregate extraction. The surveys were undertaken by the Berkshire Archaeological Society and Wessex Archaeology. As they fall within areas of aggregates geologies, including the area of highest aggregate potential between Kintbury and Reading and the key south-eastern part of the District where much future aggregate extraction is proposed (Replacement Local Plan for Berkshire, 2001, Joint Strategies Planning Unit), they fall within the broader resource assessment mentioned above. The results of the fieldwalking surveys (and other investigations, which are not discussed in this report) were published in 1996 in a monograph entitled *Archaeological Survey of the Lower Kennet Valley, Berkshire* (Lobb and Rose 1996). At present, the data within the project archives is still in its original, paper format, which while being complete and deposited with the appropriate local archive, is not in a readily accessible (ie digital) form, the main purpose of the present digitisation project.

1.2 Aims and objectives

1.2.1 The primary aim of the digitisation the Lower Kennet Valley fieldwalking data is to convert the relatively inaccessible paper archive into a publicly accessible digital spatial resource. The results of the survey have been disseminated in the 1996 monograph and some of the data incorporated into the West Berkshire Historic Environment Record (HER) in the form of point data generally where concentrations of particular artefacts, e.g. flint flakes, were recovered. In some locations reference to small concentrations of artefacts is made. The boundaries of the survey areas, i.e. the various fields walked, are not mapped digitally.

1.2.2 The aim of the present project is to digitise the paper archive data and incorporate it into a Geographical Information System (GIS) showing the survey areas and artefact densities in a much more readily accessible, detailed and transparent, spatial format. The data will be incorporated into the West Berkshire HER.

1.2.3 The spatial GIS data will assist in the future analysis of artefact densities, allowing areas of archaeological interest to be identified and characterised. This will provide a useful tool for future development control, including areas of proposed aggregate

extraction, along with the formulation of suitable mitigation strategies and regional research frameworks. It will allow areas of archaeological interest to be identified within the context of past (and future) archaeological investigation.

1.2.4 The method by which the aim will be achieved will be in two parts. The first element is the plotting of all the fields in the survey from the paper maps in the archive. The second part comprises the creation of a GIS database linked to the transect plots of the fields, populated with the artefact data recovered, as noted in the paper records. The mapped data will allow comparisons between various other types of survey work, for example the recording and digitisation of archaeological cropmarks identified from aerial photographs as part of the ongoing National Mapping Program (NMP), undertaken by English Heritage. Section 3.3 of this report compares the digitised fieldwalking survey data with those parts of the study area that have already been subject to NMP work. It is also hoped that this data, as a publicly available digital source, will be useful as an aid to researching and understanding the development of the human landscape of West Berkshire.

1.2.5 The current digitisation project aims to provide a starting point for the development of a standard methodology for the digitisation of pre-GIS fieldwalking surveys. The report sets out the methodology developed to convert the paper archive and details the limitations of the data and provides recommendations for future digitisation projects.

1.3 Study area

1.3.1 The area covered by this project comprises three transects across the Kennet River valley, all located on aggregate geologies, a total survey area of *c* 22km^2. The rectangular study area extends from National Grid Reference (NGR) 443000 162000 (south-west corner) to 469000 172000 (north-east corner). The majority of the study area lies between Newbury and Reading with a small element lying between Newbury and Kintbury.

1.3.2 The Survey area includes two tributaries of the Kennet, the River Lambourn and the River Enborne. The Kennet valley encompasses a narrow belt of Pleistocene gravel deposits *c* 9–16km wide, between the Berkshire Downs and the Hampshire Downs. Chalk outcrops in the north-west of the area and dips to the south-east beneath the later marine deposits of the Eocene Beds.

1.3.3 The Pleistocene deposits include a series of gravel terraces, mostly of flint derived from chalk, with the 'plateau' gravels at the top and the floodplain gravels at the base of the sequence. Some of the terraces are capped by silty deposits of loess (a sediment formed by the accumulation of wind-blown silt and lesser and variable amounts of sand and clay (Ricthofen 1882)). The lowest terraces are typically sealed by alluvial flood deposits (loams and marls), but loams, silts, marls and peat are found through the valley according local conditions. In general the alluvium of the Kennet Valley is clayey and the Enborne is loamy (Lobb 1996: 7).

1.4 Acknowledgements

1.4.1 The author of this report would like to acknowledge the input of the following who have provided their time and advice either individually or as part of a focus group; Duncan Coe (Archaeological Officer, West Berkshire Council), Sarah Orr, (HER Officer, West Berkshire Council) Peter Rauxloh (GIS and Oracle specialist, MOLA), Roger M. Thomas (Characterisation Team, EH), Jonathan Last (Head of Research Policy (Prehistory) EH), Andrew Lowerre (Spatial Analysis, EH), Sue Richards (née Lobb, Kennet Valley Survey Project Director) and Ben Chan (Sheffield University).

2 The Lower Kennet Valley Survey

2.1 Introduction

2.1.1 A general background to the Lower Kennet Valley Survey can be found in the 1996 monograph (Lobb & Rose). This presents summary of the results of the three survey periods of fieldwalking (Fig 1), along with a number of archaeological field evaluations undertaken by Wessex Archaeology in the Kennet Valley between 1985 and 1989. It provides a synthesis of the evidence for all periods of human occupation with the study area and highlights a recurring theme of the pattern of settlement and the character of land use, related to the valley's topographical geological diversity. The overall findings are not repeated here. The following section provides a summary of the background of the three fieldwalking surveys and discusses the methodologies used.

Background

2.1.2 Recognising the threat to the archaeological resource of the Kennet Valley presented by the increasing level of extraction during the 1960s and 1970s, the then Department of the Environment commissioned and funded a number of surveys to review the state of archaeology in Berkshire at that time (Richards, 1978). One of the projects commissioned during this period was the 1976–7 fieldwalking survey. The succeeding two fieldwalking survey periods, also commissioned and funded by the Department of the Environment, used the results of the 1976–7 survey period as their base. The fieldwalking survey was undertaken over a period 13 years in three survey periods, dating to 1976–7, 1982–7 and 1988–89. Over that time its primary aims and objectives altered as will be outlined below (more detailed aims can be found in the publication).

Approaches

2.1.3 The Lower Kennet Survey was begun at a time when it was recognised that despite over one hundred years of archaeological research, broader regional patterns of settlement and land use were still little understood. The changes within the intellectual paradigms of academic archaeology in the 1960s and 1970s brought with them an increase in the understanding and use of sampling in British archaeology (Cherry JF, Gamble C, and Shennan S, 1978). As a result, survey, or prospection, for example fieldwalking, was recognised as one form of non-intrusive archaeological investigation could provide new data within this area of research. Survey work undertaken during the late 1970s and early 1980s, e.g. Shennan in Hampshire in 1985 (Shennan 1985), identified that there were fundamental biases existing in archaeological datasets across Britain, for example towards particular landscape and geological zones (eg. towards chalk uplands or gravel terraces). This was certainly true of the Lower Kennet Valley where the river and plateau gravels had been the focus of several studies partly due to the archaeological threat from gravel extraction in West Berkshire from the 1970s.

The Lower Kennet Valley Survey Archive

2.1.4 Newbury Archive Service holds the Lower Kennet Valley Survey archive (accession no. NEBYM: 1993.64). The Survey archive comprises all the records and finds from all three fieldwalking surveys, although each is grouped separately. The three other surveys mentioned in 1.1.2 above are also included with the archive. The 1982–7 and 1988–9 fieldwalking survey period archives are formed of two components; the finds archive, which is made up of all the artefacts recovered, and the paper archive, which is made up of the record sheets and drafts of the report. The paper archive is comprised of 15 thin box files divided by the survey. The 1982–7 and 1988–9 survey

periods are further subdivided into field data, which identifies those fields walked and related data (who carried out the fieldwalking, the location of the lines walked, along with weather conditions and topography), and the finds records, which notes what was found along each transect walked. The 1976–7 survey period recorded each field walked on one sheet, with the finds data on the front and a drawing of the field and directions of lines walked on the back.

2.1.5 In general, the archive is complete, and the sheets from all three survey periods are relatively clear and easy to understand. A draft of the published report is included which sets out the methodologies for each survey period. However, one important point was not set out for the 1982–7 and 1988–9 survey periods, i.e. the direction a field was walked. The importance of this point is set out in 3.2.13. The majority of the data recorded on the finds sheets were used in this project and the reasons for non-inclusion are set out in 3.2.15

2.1.6 The 1996 publication undertook a detailed synthesis of all the data recovered, particularly from the 1982–7 and 1988–9 survey periods. The 1976–7 survey period was dealt with in a separate chapter due to its different methodology. The monograph includes period based finds distribution maps at a very small scale. The maps generally show the location of areas of higher artefact densities which are displayed simply as points on a map. Areas of lower densities were not identified.

2.2 The 1976–7 survey period

2.2.1 The initial aim of the 1976–7 fieldwalking survey period was to assess the archaeological potential of parts of the Lower Kennet Valley. This was later modified to encompass the plateau gravels, and thus the survey became a study of the archaeological potential of an area of mixed (aggregate) geology. The survey encompassed 238 fields with a maximum total area of 226km^2 (Fig 2) and covered the whole of the Kennet Valley from Sulhamstead, *c* 3.5km to the south-west of Reading to Speen, *c* 1.7km to the west of the Newbury; and *c* 7km north-south.

2.2.2 It is clear from the methodology set out in the publication and also identified from the recording sheets that it was organised prior to many of the discussions of statistical consistency concerning fieldwalking projects (this should not be considered as an indictment of the project but seen simply as a limitation on interpretation of the results). The fields walked within the survey area were widely scattered due to the present of large areas of woodland and grassland (ie unsuitable for fieldwalking survey). Furthermore, the fields were often walked prior to being ploughed and thus only finds resting on the surface were collected. This has resulted in many fields returning no finds and thus appearing to be devoid of all finds.

2.2.3 The work, bound by a strict timetable, was undertaken by one person, P Rose, employed by the Berkshire Archaeological Unit (later subsumed into Wessex Archaeology), although under a commission by from the then Department of Environment. Although this limited the number of fields that could be examined, it maintained a level of consistency.

2.2.4 The main problem with the methodology is that the exact location of the fields walked was not marked up. A simple, approximate sketch of the field as seen by P Rose at the time was drawn on the back of the finds-recording sheet. Fields were generally walked in lines across the short axis of each field at intervals of between 45 and 55 metres. Although this undoubtedly aided the speed of survey, it has meant that it is only comparable to the later survey periods (carried out with greater resolution, at 25m intervals) at a very basic level. The location of finds is similarly approximate. The locations of finds are marked by a cross where there picked within the illustrative representation of the field being walked. No National Grid co-ordinates are given for the finds making it difficult to locate the finds accurately.

2.2.5 Rose recorded worked flints and pottery but did not record burnt flint or ceramic building material (CBM). However, the work does give approximate indications of

areas of greater activity and although it was not known at the time whether there would be further survey work within the valley, these results have been used for planning further survey during the later survey periods.

2.3 The 1982–7 survey period

2.3.1 The aims of the 1982–7 survey period, carried out by professional archaeologists from Wessex Archaeology, were more specific. Broadly they were to assess the changes and development of settlement patterns and land use as well as economy and environment of the Lower Kennet Valley. The survey encompassed 95 fields with a maximum total area of 75km^2 (Fig 3). These fell within two transects, one 8km wide and 7km long, between the 520000 and 600000 easting lines of the National Grid, and the other 5.25km wide and 3.25km long, between the 650000 and the 700000 eastings. They were at right angles to the main axis of the River Kennet and contained a representative sample of the geologies and topographies that comprised the Middle Kennet Valley. The survey area also contained large tracts of gravel with existing and proposed extraction quarries.

2.3.2 The methodology for this survey period was influenced by the developments within fieldwalking methods that had taken place of the early 1980s. Although the area targeted for survey was not divided into uniform transects, the fields walked were divided up evenly into 100m^2 (one hectare) areas, each with a 25m^2 survey grid (resulting in 16 collection units per hectare). The grid transects were tied to national grid co-ordinates and all fields were walked to the same pattern, allowing for a high level of consistency and comparison of all fields across the total area. A standardised recording sheet was used and a range of variables, for example lighting, soil type and weather, were recorded. The collector's name was also noted. The work was carried out by experienced professionals, and the differences in collection caused by recognition of various finds types were minimised. During this survey period only ploughed areas which had been allowed to weather, which increases the likelihood of finds recovery, were walked. However, this meant that not all of a field was walked. Furthermore, there were greater field access restrictions.

2.3.3 A more intensive survey was carried out in two areas at Pingewood in Burghfield, over fields under immediate threat from redevelopment. The fields lay at the edge of an extensive archaeological cropmark complex, which had already been largely removed by gravel extraction but with little archaeological observation and recording. For this survey a 10m grid was utilised and the surface of each 10m square was examined.

2.3.4 Included with the finds sheets from each field was a series of rough maps representing the distribution of worked and burnt flint and CBM and pottery. The various types of worked flint were noted by a representative letter, eg T for tool, pottery was shown by a different coloured dot for each period. The survey period produced a similar range of finds identified in the 1976–7 survey period and in several cases similar levels of concentrations were noted.

2.4 The 1988–9 survey period

2.4.1 A further survey period was carried out by Wessex Archaeology from 1988 to 1989. The same group of professional archaeologists carried out the survey, under the same project supervisor. This survey period targeted selected areas which were likely to come under threat from aggregates extraction and/or development in the near future. The revision of the Minerals Local Plan in the mid 1990s meant that this survey period also included areas suitable for housing development and areas to the west of Newbury that might come under pressure from the construction of the Newbury By-Pass. The survey encompassed 46 fields with a maximum total area of 40km^2 (Fig 4). A transect 8km wide and 5km long, between the 430000 and 51000

easting lines of the National Grid was chosen. It was at right angles to the main axis of the River Kennet and focused on Newbury while still containing a representative sample of the geologies and topographies.

2.4.2 The methodology for this survey period mirrored that of the 1982–7 survey period but no intensive surveys were undertaken. Furthermore, similar types of distribution maps included with the 1982–7 finds record sheets were included with the finds sheets from this survey period.

2.4.3 Although generally productive, the 1988–9 survey period produced a number of different results in the various finds categories indicating changing habitation patterns within the different periods identified within the project. These differences will be set in Section 4.

3 The Lower Kennet Valley survey digitisation project

3.1 Purpose

3.1.1 Over the 1980s and 1990s the use of fieldwalking as a non-intrusive survey method in both contractual and non-contractual archaeology in rural areas increased. However, its use continues to raise a number of questions over the application and dissemination of the potentially vast amount of material being recovered. The Lower Kennet Valley Survey is, as mentioned in Section 1.1.2, a good example of this problem. Although extensively written up, the data from the project is currently a little used resource. Furthermore, the reader is limited by the imagery presented in the monograph and can not alter it to interrogate different aspects of the data.

3.1.2 The pace of development of computer systems over the 1990s provided new ways for archaeologists to display and manipulate large quantities of data, but ultimately outputs still resulted in 'static' publications. However, it was not until the application of GIS within archaeology that a platform was found that was sophisticated enough to be able to accept, manipulate and display data from large survey projects as a whole.

3.1.3 Although its use is becoming relatively common in modern archaeological projects, the conversion of pre-GIS projects, which includes the large fieldwalking surveys like the Lower Kennet Valley survey, from paper into digital archives has not been undertaken. A result of this is that vast quantities of important data remain under-utilised. The aim of the present project is to convert the raw data of the Lower Kennet Valley to a digital (GIS) format and thus is very much a 'test-run' and the following methodology, with some modifications, can provide a pro-forma for any such conversions of early survey projects.

3.2 Methodology

3.2.1 The digitisation of the survey comprised three main tasks. Firstly, the locating and digitising of the fields walked; secondly locating and digitising the survey grid/transect lines, and thirdly, populating those fields with the finds data recovered from each respective field and within each transect. Appendix 1 details the process of GIS digitisation step by step but this is outlined in the following sections. ArcGIS version 9.3 was used for the project. The main output/deliverables other than the current report is a series of GIS shape files. These will be incorporated within the West Berkshire HER. The approach to digitisation was successful and the data largely mirrors the distribution plots within the 1996 monograph.

Step 1: Location and digitisation of each field survey area

3.2.2 The digitisation of the 1976–7 survey period was fairly problematic. Only half of the field survey areas have been located and digitised by the present project with a high level of confidence.

3.2.3 The field survey areas were all sketched fairly roughly on the back of the record sheet with a single set of national grid co-ordinates for the centre of the survey field. Identifying the field for this project took a little detective work. First, using a copy of the 1976 Ordnance Survey map, already loaded into the GIS project as part of the aggregates assessment, and the current Ordnance Survey Mastermap on the GIS, the national grid co-ordinates were located. Second, the outline of the field was compared with that of drawing on the back of the finds sheet. Once the shape of the field was identified and confirmed, then it was digitised. As stated above about half matched very closely, the other half match less closely.

3.2.4 For a small number of fields the co-ordinates were not accurate. One field, Speen 5, is a best guess as what is drawn can not be directly matched to the Ordnance Survey mapping, and two fields, Sulhamstead 1 and 4, could not be located at all.

3.2.5 For the 1982–7 and 1988–9 survey periods, plotting the fields was in most cases a relatively simple process. All fields surveyed were accurately annotated on the 1:1250 Ordnance Survey map of 1976 and as the vast majority of these boundaries survive today it was possible to use current Ordnance Survey digital Mastermap. However, a small number of fields from these survey periods are located in areas that had been developed subsequent to their walking, for example the residential development around Henwick Lane near Thatcham. On these it was possible to use the 1976 Ordnance Survey map on the GIS to identify these fields.

3.2.6 Once the fields were located, the outline of each field was digitised as a GIS polygon feature class ('layer') called FIELDWALKING_AREAS. The feature class was populated with various data and linked to a database (Appendix 1). Table 1 below sets out the data attached to each fieldwalking survey area polygon.

Table 1: Data attached to each fieldwalking survey area polygon

Number	Field	Explanation
1	SURVEY_ID	This is an abbreviation of title of the fieldwalking survey, in this case KVS
2	SURVEY_YEA	The year the field was walked
3	PARISH	The parish in which the field lies. This was part of the initial data recorded
4	NAME	The name of the field as recorded on the field data sheet. The names are local and relate to either to a particular farm or a location of local note.
5	FIELD_NO	The number allocated to the field during the fieldwalking survey
6	UNIQUE_ID	A concatenation, or merging, of the above 5 fields
7	OBJECTID	Automatic identification number (computer generated)
8	SHAPE_Leng	Length of polygon (computer generated)
9	SHAPE_Area	Area of polygon (computer generated)

3.2.7 A later final step was the creation of an outline of the area actually walked as opposed to the total field was carried out after data was entered. As noted in sections 2.3 and 2.4 during the 1982–7 and 1988–9 survey periods not all of a field was walked. However, this was not clearly distinguished on the original survey sheets and while a small minority had a simple map outlining the area walked the majority did not. Nevertheless the publication provided a series of figures showing the outlines of the actual area walked within a field. The images were scanned and used within GIS to produce another GIS polygon feature class ('layer') called 'Actual_walked'.

3.2.8 It was outside the scope of the current project to include a number of factors concerning the reliability of the survey data specific to each field surveyed (eg lighting, weather, condition of field at time of walking), although this could be added in the future.

3.2.9 The digitisation of the transect areas (Fig 1), the actual fields, and the area walked, enables the total area of each transect, field and area walked to be determined and compared. These figures provide some idea of percentage of the Lower Kennet Valley walked and some guidance as to the ability to extrapolate this data to the rest of the Kennet Valley area (Table 2). It also provides some idea of compatibility with other river valleys of similar geology.

Table 2: Area of fields actually walked and total percentage of Transect

Transect	Area of Transect (km2)	Area of fields	Actual Walked	% walked of fields	% walked of Transect
1976	226.0	15	15	100	6.6
1982	75.3	9.9	8.1	81.9	10.8
1988	40.0	3	2.6	86.7	6.5

Step 2: Location and digitisation of the survey grid/transects

3.2.10 Once the survey areas had been digitised, the next step was establishing the fieldwalking survey transects/grids and incorporating these within the survey area polygons, followed by the population of the artefact data within each survey grid.

3.2.11 A feature class was created for the survey grids (called 'VG_Master', VG standing for vector-grid, the method by which the data is located within the GIS system) (Fig 5). The complete methodology for the conversion of the data into a database can be found in Appendix 1, thus it will suffice here to say that an appropriate grid could be replicated in GIS and used as the basis for data entry and representation.

3.2.12 The 1976–7 survey period used a grid of transects 45–55m apart. The location of the transect is approximate. Furthermore, the position of artefacts were recorded in relation to their approximate position along each transect. Unfortunately the NGR co-ordinates were not noted in the original study, and only an approximate location, which could be identified with that shown on the finds record sheet, was entered into the GIS database.

3.2.13 The 1982–7 and 1988–9 survey periods both used field record sheets setting out which units per hectare were walked (see Appendix 2), whilst the finds records detailed what was found per unit (Appendix 3). However, the link between the two sets of data - the exact location of the line of each transect, and the artefacts recovered from each transect, was not made clear. The current project therefore entailed examining and comparing a number of different hectare units in different fields, in order to plot accurately the survey grid and the line of each transect.

Step 3: Digitisation of finds data within the survey grid

3.2.14 The artefactual data has been linked to the survey area grids and do not in themselves have any national grid co-ordinates (ie within the GIS they are 'pinned' to the outlines of the fields).

3.2.15 For each survey grid square (for the 1976–7 survey period this could only be approximate as only rough details were given but for the 1982–7 and 1988–9 survey periods this matched each unit) the following approach was adopted for recording the artefact data:

- For ceramic building material (CBM) and burnt flint, the two most commonly recovered artefact types from the fieldwalking surveys, both weight and number of sherds/pieces were included in each grid square. Given the actual quantities recovered, count is not always indicative of activity, which is often better reflected by a comparison of both attributes. The majority of CBM recovered was post-medieval in date. A database field was added to the GIS noting where the CBM was of earlier date, along with a GIS field noting the presence of Tile type A (the significance of which is discussed in the period discussion, below). Initially, the working distribution maps created by the authors of the 1996 monograph were used to populate the grid squares for these artefact types. These working maps showed both the average of both CBM and burnt flint per metre in ranked form, for example 0.001 to 0.08 kgs per metre of burnt flint would

be represented by one stroke. However, it was quickly realised that the figures were field-specific and thus one stroke in one field might not equal one stroke in an adjacent field, for example in Park Farm (KVS-1984-THATCHAM-PARK_FARM_A-9 and B-9) one stroke represents an average of 0.001 to 0.056 kgs per square metre whereas at Ramsbury Hillfort (KVS-1984-THATCHAM-RAMSBURY_HILL_FORT-10) it represents an average of 0.001 to 0.0601 kgs per sq metre. The difference becomes clearer at the high quantities, again at Park Farm five strokes represents as average of 0.383 to 0.464 kgs per sq metre but at Ramsbury Hillfort it represents an average of 0.391 to 0.501 kgs per sq metre. Therefore, it was decided to return to the original survey sheets and enter the data as it had been recorded on the sheets.

- The presence of flint cores ('c'), flakes ('f'), retouched flakes ('r') and tools ('t') was recorded within each grid. The number or weight of the finds was not noted due to the limitations of the survey data - there was some variation in the way finds were recorded in the original surveys (with the number or weight not always noted). The GIS data base is able to make numerous copies of layers based on different definitions, i.e. flake, retouched flake or tool. It was considered that the ability to display as separate, overlying layers the concentrations of the various worked flint types within a grid square would be sufficient for the purposes of development control and resource assessment.
- For pottery, only sherd count was recorded. Given the small quantities of pottery recovered across the whole project, it was no considered important to include weight. For such small quantities weight plays a minor role when considering evidence for activity. The presence of pottery rather than its weight is more important. If the quantities had been large then weight becomes important as it may then be possible to identify how much of vessel has survived leading to questions of deposition, trade, density of activity etc.
- No wood or bone was recovered from the surveys. Furthermore, metal and other material were recovered in such small quantities to have been considered insignificant and contributed little in the 1996 publication. These materials have not been included in this project.

3.2.16 Appendix 4 sets out the how the data entry fields as would be seen on the screen. It sets out the various categories giving their 'names' and the type of information to be entered into each category.

3.2.17 In accordance with Section 3.5.5 of the Project Design 'fields' displaying the average of burnt flint and CBM per square metre over the whole of the Lower Kennet Valley and over the individual field were added to the GIS. Given the relatively low quantities of other types of artefacts recovered during the survey it was considered that the raw count of flint and pottery was more likely to show significance rather than their average numbers across the survey area.

3.2.18 Finally once the data have been entered a sub-set of the main data set was created by cropping away all the grid squares which were not walked. This was not done for the 1976–7 survey period as the whole field was considered to have been walked. The cropping process allows for more accurate statistical analysis to be carried out (eg artefact density per km^2), as the resulting data set does not include blank areas.

3.3 Digitisation Project and National Mapping Programme

3.3.1 The English Heritage National Mapping Programme (NMP) is an ongoing survey throughout England which entails the identification, rectification and digital plotting of archaeological features visible as cropmarks, parchmarks and earthworks on vertical and oblique (specialist) aerial photographs. The features are transcribed by

Ordnance Survey 1:10,000 scale quartersheets.

3.3.2 At the present, much of the area covered by the Lower Kennet Valley Survey has not been subject to the NMP: only four quartersheets (SU46NW, SU46SW, SU46NE and SU67SE) out of a possible 14 have been transcribed.

3.3.3 As part of the current project, the newly-digitised fieldwalking survey data was viewed in GIS in relation to the transcribed NMP areas in order to establish whether the combined data would provide enhanced understanding of areas of archaeological potential. In view of the length of time which has elapsed since the original fieldwalking surveys, there is an opportunity to confirm the significance of concentrations of artefacts identified during the inputting of the raw fieldwalking data against significant features identified through the NMP. Comparison of the artefact concentration (and particularly those identified as 'sites') with NMP mapping could potentially prove to be very productive method of non-intrusive survey.

3.3.4 In 1975, Mr T. Gates reviewed all the aerial photographs covering the Kennet valley as part of an earlier survey. Three areas were identified as possibly impinging upon the Kennet Valley Survey and the relevant figures were scanned and georeferenced within this project. Unfortunately the fieldwalking survey areas lie just outside the areas examined by Gates.

4 An overview of the digitised data and a comparison with the 1996 monograph plots

4.1 Introduction

4.1.1 This section briefly details the results of the manipulation of the data undertaken as part of the digitisation project, and how it compares with the distribution maps and conclusions of the 1996 monograph.

4.1.2 The aim of this project has been to transfer the data held in the paper archive to a digital archive but not undertake any new detailed analysis of the material or test different models of assessment. Therefore, in general, the digitised data does not present an entirely new picture from the distribution maps in the 1996 monograph (it should be noted that these maps also include data from other sources, e.g. archaeological excavations and evaluations, which in direct comparison to the digitisation project appears to present a more detailed picture. Furthermore the monograph does ultimately cover a larger area). Locations of artefact clusters generally match those presented in the monograph, although as GIS enables the whole picture to be viewed at once, a previously unidentified concentration of burnt flint was identified.

4.2 Earlier Prehistoric

4.2.1 The prehistoric landscape of the Lower Kennet Valley Survey has been extensively studied. The general picture is one of great importance from the Mesolithic through to the early Bronze Age. The river and valley seems to have been a major 'highway' for the movement of people to and from the coastal areas to the uplands of the south. Geoarchaeological data combined with intrusive and non-intrusive archaeological investigations, both professional and amateur, have built up a relatively detailed image of human occupation and landscape development during this period.

4.2.2 As noted above, the digitisation results closely matched those in the monograph. However, this project did identify an area not previously noted within the monograph. Fig 6 presents Figure 14 from the 1996 monograph, which shows the distribution of Neolithic to early Bronze Age artefacts throughout the survey area. It shows two flint concentrations to the south-east and west of the village of Kiff Green, which coincide with burnt flint concentrations identified within this digitisation project (Fig 7). However, the digitisation project also shows further concentration surrounding Kiff Green which is not highlighted in the monograph.

4.2.3 The likely reason for such a disparity is that GIS enables the user to view much larger areas in one picture. So while the information was there, it is possible that the publishers did not note the significance because it was simply lost amongst the rest of the data.

4.2.4 It should be noted that while the figure within the monograph contains a wider range of material, because it is at larger scale, it only shows the approximate location of areas of finds concentrations. The digitised variant of the survey allows the viewer to see the exact location of these concentrations and, furthermore, the viewer can choose what they are seeing to be able to explore different relationships between artefacts classes. This is a consideration that affects all periods discussed in the monograph and in this report and is not specific to the Prehistoric.

4.3 Later Bronze Age and Iron Age

4.3.1 The digitised distribution of artefacts of later Bronze Age and Iron Age date differs little from the 1996 monograph distribution maps.

4.3.2 Survey evidence for this period does demonstrate a difference in location of human

activity between the early prehistoric and the later prehistoric. Only a very small quantity of pottery from these periods was recovered during either the 1982–7 or the 1988–9 survey periods (11 sherds in total during the 1982–87 survey period and no sherds during the 1988–9 survey period) suggesting limited activity. Yet this is clearly not the case as evidence from intrusive archaeological interventions and landscape studies, have show that for the Bronze Age, at least, there was a relatively high level of occupation and other activity. Features typical to the later Bronze Age have been recorded in a number of locations. Furthermore, there are a number of Iron Age hillforts in the Lower Kennet area, three identified during the 1800s and at least three, e.g. Harts Hill, Dunston Park and Rag Hill, through intrusive archaeological interventions subsequent to the fieldwalking survey. This highlights the lack of 'visibility' of potential sites from fieldwalking surveys of some periods and types of activity (see above).

4.4 Roman

4.4.1 The concentrations of Roman finds from the digitisation project match those as set out in the 1996 monograph.

4.4.2 The total Roman pottery assemblage recovered from all three survey periods was 861 sherds, and like the preceding two periods this represents a comparatively small assemblage for the size of the area surveyed. This material is spread unequally across the three survey periods; for the 1976–7 survey period the assemblage comprised 669 sherds, for the 1982–7 survey period 189 sherds and for the 1988–9 survey period only three sherds.

4.4.3 Bearing in mind questions concerning methodology of the 1976–7 survey period (see Section 2.2), the locations of pottery concentrations indicated two main areas of activity. One lay on the south of the Kennet, to the west of the Woolhampton to Shalford road (KVS-1977-BRIMPTON-BR20-182 and the western end of KVS-1977-BRIMPTON-BR21-183: see Appendix 9.5 for field codes), and the other to the east of the road (KVS-1977-ALDERMASTON-A12-228 (A12) and KVS-1977-ALDERMASTON-A14-230 (A14)). A third, lesser concentration, can be identified in the Kiff Green area (KVS-1977-WOOLHAMPTON-WL4-250). The rest of the pottery appears to be scattered generally across the study area, possibly the result of later agricultural activity, such as manuring.

4.4.4 The 1982–7 survey period pottery concentrations correspond quite closely with the same two locations identified in the 1976–7 survey period: to west of the Woolhampton to Shalford Road (KVS-1984-BRIMPTON-MILLFIELD-32) and the other was in the Kiff Green area (KVS-1986-WOOLHAMPTON-KIFF_GREEN-50). These assemblages are much smaller than those from the 1976–7 survey period. Their combined occurrence confirms the potential for Roman activity at these locations.

4.4.5 The Roman pottery concentrations do not coincide with the Roman tile found during these two survey periods. While tile was found within the same fields it was more scattered and tended not to be found in the same grid squares. The presence of tile can indicate a nearby settlement (eg farmstead/villa) and this suggestion is strengthened by the presence of pottery, albeit not necessarily with the tile but within the same field.

4.5 Medieval

4.5.1 No distinction was made in the finds records between early medieval (Saxon) and later medieval pottery, and therefore this was also the case of the data digitised for the current project. Such a distinction was however made in the 1996 monograph after the finds had been more thoroughly assessed.

4.5.2 Bearing in mind the more encompassing nature of the monograph (see 4.1.2 digitised distribution of artefacts of Medieval (early and later) date differs little from

the 1996 monograph distribution maps.

4.5.3 The finds assemblage attributed to the combined medieval periods, digitised in GIS, is approximately one third larger than that of the Roman period. The majority of material was recovered during the 1976–7 survey period, with 809 sherds, as opposed to either 189 sherds in the second survey period and 88 sherds in the third. While in general the data indicates that much of this material has entered the archaeological record as a result of agricultural activity, several concentrations correlate with known locations of medieval settlement. Both the 1976–7 and 1982–7 survey periods have concentrations close to the Colthrop manor house (Fig 8) and Crookham manor house.

4.5.4 The 1976–7 survey period recorded a concentration in Fields A12 and A14, where a concentration of Roman pottery was also found, whereas the 1982–7 survey period did not find a similar concentration as it did for the Roman period. The 1988 survey period identified a concentration in the Enborne Gate Farm area spread relatively evenly across the one field here (KVS-1988-ENBORNE-ENBORNE_GATE_2-286) (Fig 9).

4.6 Post-medieval (before AD1750)

4.6.1 In general the distribution of post-medieval within the digitisation project differs little to that of the 1996 monograph.

4.6.2 The pottery assemblage dating to the post-medieval period was largest (5407 sherds) and most widespread, although unlike earlier chronological periods, the 1976–7 survey period represents only 1% of the total assemblage by sherd count (54 sherds), possibly reflecting the collection methodology (ie less interest in collection post-medieval artefacts). The majority of the pottery recovered from the 1976–7 survey period was found in the same fields in which Roman and medieval concentrations were identified, for example at Woolhampton to Shalford Road (ie Fields A12 and A14).

4.6.3 During the later survey periods, the pottery distribution parallels closely to that of post-medieval CBM. The average weight per square metre for tile is relatively low, suggesting that the general scatter is probably the result of agricultural manuring. Notable concentrations of tile generally do not match notable concentrations of pottery.

4.6.4 Three fields surveyed, two (EN2 and EN4) during the 1976 to 77 period and one (ENBORNE_GATE_10A) from the 1988 to 89 period, overlie part of the civil war battlefield site of the first battle of Newbury. However, the artefacts recovered do not necessarily reflect this fact. It is likely that artefacts related to that event were either more deeply buried or scavenged from the battlefield directly after the battle. A comparison of this data with the Portable Antiquities Scheme data base for this site would show the differences in recovery.

4.7 Modern (after AD1750)

4.7.1 The distribution of the digitised survey data does not differ much from the 1996 monograph distribution maps and conclusions.

4.7.2 Modern pottery represents a comparatively large element of the total assemblage, representing 16% by sherd count. The pottery was limited to the 1982–7 and 1988–9 survey periods, which suggests that it may not have been considered at all in the original 1976–7 survey. The spread of the material approximates that of the post-medieval pottery but it is more common in fields walked close to areas of 'modern' habitation. It is likely that this material does not represent evidence of habitation sites absent in the cartographic record but manuring or waste.

4.7.3 Some of the field survey areas overlie 19th-century gravel quarries, the location of which was digitised in GIS as part of the main *archaeological resource assessment*

project. A comparison of old quarry locations and the artefact distributions show that no artefacts were recovered from the quarry sites, as one would expect (the archaeological resource, where present, having been entirely removed with the extracted aggregate). The only exception is at Holdaways Farm (field 22 of the 1982–7 survey period), where a small number of flint flakes were recovered from the site of an old quarry, possibly indicating a spread of material through subsequent agricultural activity (Fig 10).

5 A comparison of the digitised fieldwalking survey data and the National Mapping Programme

5.1.1 Only a limited number of archaeological features, visible as cropmarks/parchmarks on air photographs and mapped digitally as part of the NMP, fall within survey areas of the Lower Kennet Valley fieldwalking survey. These comprise the Pingewood/Burghfield area from the 1982–7 survey period, and the Enborne and Donnington Castle areas from the 1988–9 survey period.

5.1.2 Within the Pingewood/Burghfield area the NMP (Ordnance Survey 1:10,000 scale quartersheet SU67SE) identified features within Field Farm 3 (Fig 11). Several probable ring ditches (the ploughed out remains of round barrows), linear features and a rectangular ditched enclosure were identified. A comparison with the digitised fieldwalking survey data indicates no particular concentration of artefacts in the area of these archaeological features. Flint flakes, along with several cores and a small number of retouched flakes were recovered across the whole field and were spread consistently across the whole fieldwalking survey area. Burnt flint was recovered in the north west of the field, whilst the features identified from aerial photography lie in the south-east of the field.

5.1.3 Dated artefacts from the Bronze Age, Iron Age and the Roman and medieval periods are so scarce that they provide little information concerning past human activity in this field. Post-medieval tile is evenly scattered, although it is not present in the area of the ring ditches. This may be the result of successive landholders avoiding using that section of the field, possibly because of the difficult of ploughing the earthworks. Post-medieval pottery, like earlier periods, is so thinly scattered across the field as not to suggest any pattern apart from manuring.

5.1.4 Within Enborne parish, the NMP (Ordnance Survey 1:10,000 scale quartersheet SU46NE and NW) recorded a series cropmarks comprised mainly of linear features (possibly ditches that form part of an undated field system) within three fieldwalking survey areas (Enborne Gate 6, 9 and 10: see Fig 12), along with ridge and furrow (medieval) plough marks (Enborne Gate 10). The prehistoric material recovered generally 'avoids' the archaeological features, with no apparent relationship between the artefactual evidence and NMP.

5.1.5 Within Donnington parish, the NMP (Ordnance Survey 1:10,000 scale quartersheet SU46NE) recorded four linear and undated cropmarks, probably field boundaries, within three fieldwalking survey areas (Donnington Castle 2, 5 and 6: see Fig 13). However, there was even less correlation in these fields between the NMP results and the distributions of material recovered by fieldwalking.

5.1.6 There is certainly a significant potential benefit in the future for the ability, through GIS, for fieldwalking survey data (along with the results of other archaeological surveys) to be compared with the location and form of archaeological features visible as cropmarks and parchmarks (eg as plotted by the NMP). Unfortunately, it was not possible to demonstrate this as part of the present study for a number of reasons. The first and most important is that only a small section of the lower Kennet Valley has been subject to the NMP. The Lower Kennet Valley Survey and the NMP only overlap at the edges and consequently there is little scope for comparing the relationship between both surveys. In such a small sample substantial differences between the two dataset would be expected.

5.1.7 Furthermore, the Lower Kennet Valley Survey primarily concentrates on the valley floor in areas of aggregate extraction. These lie towards the base of the valley floor, and generally underlie varying depths of alluvium. It is likely that early landscape features, e.g. those cut into the gravels, lie hidden beneath layers of alluvium and consequently are not visible from aerial survey. The alluvium itself is not conducive to differential crop growth based on varying moisture conditions derived from

subsurface archaeological features (the basis of cropmark formation). Thus it is possible that any mismatch between the artefact densities and NMP data identified by this project may be caused by features simply not showing on aerial photographs.

5.1.8 It is also very likely that the artefact densities identified during fieldwalking actually represent sites and their related activities. Cropmarks and earthworks of prehistoric date, unless they are close to occupation sites, generally do not contain many artefacts. Certainly, over time modern ploughing will have eroded features visible as cropmarks, but unless there is a gradient in the field, it is unlikely to move finds far within the field (between one to five metres)

5.1.9 Finally, the two survey techniques show different things about the same landscape. Fieldwalking identifies areas of artefact use and loss through some related activity, e.g. occupation or manufacture, and loss through manure. The NMP on the other hand shows features for example cropmarks and earthworks. Regardless of this, NMP and fieldwalking data are complementary and while they show different aspects of past landscapes, used together increase our ability to interpret significance and thus develop appropriate mitigation strategies.

6 Conclusion

6.1 Introduction

6.1.1 The current project, carried out as part of a broader ALSF aggregate resource assessment of the West Berkshire, is the first attempt to digitise a large scale pre-GIS survey project. The project successfully converted a valuable archaeological survey resource from a static paper archive into a readily accessible spatial dataset in which the information can be manipulated and interrogated, alongside other GIS datasets. The project also highlights the importance of maintaining a consistent methodology across co-ordinated fieldwalking surveys which may be run over a period of time.

6.1.2 The digitisation produced only one area of possibly new significance compared to the distribution maps of the 1996 monograph. This new area is an extension of two other concentrations and together they provide further information on the archaeological potential of one particular area within the Kennet Valley.

6.1.3 The project has highlighted two main conclusions:

- the great benefit the digitisation of these pre-GIS projects can bring to HERs by the enhancement of their databases, and
- the uncertainty regarding the reading or expression of significance of artefact data recovered (ie in terms of numbers of artefacts, and where relevant, artefact weight).

6.2 Methodology

6.2.1 Once the pattern of walking had been established, it was relatively quick and easy to digitise the field and populate it with the records of the artefacts recovered. However, it became clear quite quickly that the different methodologies used by the two different teams undertaking the fieldwalking surveys of 1976-7 and 1982-9 meant that the data returned was not completely compatible. While the fields could be digitised in the same way, because a different pattern of walking was used, the data could be entered in the same way. The result being that two separate data bases had to be created. On the other hand it does allow us to highlight the problem of a site 'switching on' and 'off' during different periods of fieldwalking.

6.3 HER Enhancement

6.3.1 The digitisation of the Lower Kennet Valley Survey will return to the HER a completely new layer of spatial data, which will augment and enhance any previous attempt to include the finds of the Lower Kennet Valley Survey within the HER database. The field survey area extents are not incorporated, along with the full information on artefact location and density. It will allow the fieldwalking data to be viewed directly alongside other archaeological data (eg the results of metal-detector and geophysical surveys, air survey and field evaluation and excavation), along with non-archaeological data (eg geology, historic mapping, two and three dimensional digital terrain modelling). This data will allow the HER use to see quite clearly what areas have been surveyed and how they relate to sites of possible aggregate extraction (Fig 14). This will help enhance the ability of the planning archaeologists to predict the location of possible archaeological resources. It will also help to guide considerations during mitigation planning and will ultimately enhance our ability to understand past human landscapes. Furthermore, it will enable HERs to 'view' whole survey areas as one, which will help direct regional and local research agendas.

6.4 Significance

6.4.1 The digitisation project, being the first of its kind, raised a number of questions concerning the best way to manipulate and present the spatial data within the GIS project, in order to produce meaningful distribution plots of the artefacts recovered from the fieldwalking surveys. Surprisingly, there appears to be little published literature covering the significance of the density and weight (if relevant) of artefacts recovered from fieldwalking in Southern England.

6.4.2 Questions of this nature are best demonstrated by figures 7 and Fig 10 through Fig 13. The figures in this report and purely illustrative and should not be considered as final representations. The bandings used to display the weight of burnt flint per square metre are default levels determined by the ARCGIS program but at least give some idea of the difficulties of displaying significance. Such questions could be addressed through the use specific programs within the GIS framework designed to undertake spatial analysis within research projects focused around these points.

6.4.3 The question of what is significant and how it can be illustrated (in a GIS environment) needs to be addressed. The ability to determine significance is affected by two main limitations, artefactual and statistical.

Artefact Limitations

6.4.4 The main purpose of fieldwalking is to identify areas of past human activity based entirely on the recovery of artefacts brought to the surface of a field during ploughing. For this reason, the survey method is limited by the nature of the material, along with land use over the last 150 years. More robust artefacts ie prehistoric worked flint and durable pottery and CBM which are more suitable for this prospection method, will be more 'visible' than less durable artefacts (eg friable prehistoric and early medieval pottery). Certain artefacts groups are affected by the acidity or alkalinity the soil.

6.4.5 Thus the significance of a certain number/ weight of finds would differ according to the type of find and/or its date (ie a small quantity of friable material such as Neolithic or early medieval pottery would potentially be significant, whereas numerous post-medieval pot sherds and tile might simply represent agricultural manuring - 'background noise').

6.4.6 For some periods, the artefactual evidence is likely to be the only evidence of activity at all. Given the often ephemeral nature of Palaeolithic and Mesolithic activity, evidence of these periods may be restricted entirely to finds of worked flint in the ploughsoil layer.

6.4.7 Intensity of activity also has an impact upon significance. For example, although the Thames Valley was heavily exploited during the early prehistoric period the level of activity varied along its length. Thus what would be considered 'insignificant' in the Upper Thames Valley would be of great significance in the Lower Thames Valley. Significance can also be affected by the location of the area under investigation within any particular region. Around Stonehenge, the density of worked flints recovered is high and drops dramatically the greater the distance from the monument.

Statistical Limitations

6.4.8 Fieldwalking data within GIS can be usefully manipulated and analysed and statistical analysis at a local level can be carried out, for example assessing artefact densities across a survey area, and even incorporating variables such as the quality and quantity of artefact recovery, lighting, weather, survey method etc, which can affect the reliability of the results.

6.4.9 Statistical analysis of data from fieldwalking, for the purposes of providing a predictive tool for determining activity in gaps within the survey areas (ie across a

broad area, where the fields walked are not contiguous), can be difficult. Extrapolating patterns revealed from the densities of artefacts recovered, across non-surveyed areas (eg 'contouring'), may be misleading. In Fig 13 for example, DONNINGTON_CASTLE_5 and DONNINGTON_CASTLE_6 show a continuity of concentrations of flint artefacts, but the area between these and DONNINGTON_CASTLE_4A lying *c* 75m to the west of them was not surveyed and as such it is difficult to understand the relationship between these three fields.

6.4.10 At a larger scale, Fig 7 shows that there are pockets of activity in and around Kiff Green village and suggests that the gaps in data between these fields represent areas of no activity. This may not however be the case.

GIS project and Focus Group

6.4.11 Once the data had been digitised in GIS, the results were displayed to an informal focus group of interested specialists in order to discuss the best approach to determining the significance of artefact density and weight, primarily in order to establish the best means of presenting the spatial data in GIS. The group comprised Rupert Featherby (MOLA project officer and author of this report Sarah Orr, (HER Officer, West Berkshire Council) Peter Rauxloh (GIS and Oracle specialist, MOLA), Roger M. Thomas (Characterisation Team, EH), Jonathan Last (Head of Research Policy (Prehistory) EH), Andrew Lowerre (Spatial Analysis, EH), Sue Richards (née Lobb, Kennet Valley Survey Project Director) and Ben Chan (Sheffield University). The focus group met in July 2010.

6.4.12 Although the question was discussed in depth, there was no specific answer or general consensus was arrived at. It was noted that local factors were an important consideration when establishing significance. Also that while a high number of finds relative to area (ie higher density) may indicate the presence of more intensive activity below the surface, a low number of finds does not necessarily indicate the opposite. It also raises as many questions as to why that area may not have been used for human activity.

6.4.13 The group advised felt that it would be almost impossible to establish a single numerical threshold of significance nationally. However, while densities do vary between areas/regions, it should be possible to identify concentrations/densities which are 'normal' for a region and those that stand out, allowing inter-regional differences to be highlighted. Underlying national trends could be identified over the regional, sub-regional and local variations in artefact densities. Thus it would be possible to weight artefact assemblages nationally and then deal with local circumstances, or significant indicator artefact classes. It would be possible then to remove the effect of artefacts derived from manuring, which makes underlying focuses of activity i.e. reducing the visibility of artefacts, but also to bring out poorly represented periods and/or activities e.g. Early Saxon, industrial processes (slag) where one might want to increase the weight of a class of artefact to make it more visible. Consistent statistical analysis would be crucial to this aim and thus it was agreed that a methodology and data system that allows for the uniform entry of data would be vital to progressing such work.

6.4.14 Finally the group indicated that this project is the first attempt to digitise a pre-GIS large scale survey and thus while serving as a test run for such future work, increases the ability of archaeologists to compare and contrast all archaeological data for a region.

7 Recommendations

7.1.1 A number of recommendations follow on from the study, concerning both the present and future use of fieldwalking in archaeology and the digitising of data from previous fieldwalking projects.

7.1.2 Fieldwalking is an important field prospection technique, including areas of aggregate geology, and could form a vital initial component of a multi-staged prospection and evaluation process. The advent of relatively cheap but accurate hand-held GIS recording systems allows the speedy recording and entering of artefact data recovered from fieldwalking, which could be downloaded at the end of each day into a large database. It would be possible then to record the exact location of small finds along with the locations of each transect, allowing for more accurate data and the opportunity of direct interrogation and manipulation of the results. Other information relevant to the survey should be included from the outset, for example personnel, survey conditions, date etc. It would be sensible to ensure that all future fieldwalking exercises, whether undertaken as part of a professional evaluation or amateur project, adopt this digital method of recording finds at the outset. Although data concerning weather, lighting, and ability of those that walked the fields and recovered the artefacts were not included in the digitisation of the Lower Kennet Valley Survey, primarily due to time constraints, it can be incorporated at a later date through the addition of extra fields. However, for future projects it would be better to include this data early so that comparisons between amateur projects, which may have large numbers of people with little finds experience, and profession projects can be made with some level of confidence.

7.1.3 It should also be noted that the large fieldwalking projects, like the Kennet Valley Survey, were seen as an end in themselves, i.e. providing data that had a bearing on understanding peoples past use of the landscape. While this analytical aspect of such surveys is outside the scope of this particular project, the digitisation of such projects allows for greater flexibility in the exploration of the analytical potential of such datasets.

7.1.4 As pointed out in Section 6.3.5, finds from the ploughsoil may be the only archaeological evidence from particular periods, and fieldwalking may represent the only opportunity to recover artefacts that would subsequently be lost.Considered as part of evaluation, the regular use of fieldwalking could gradually help to fill in the gaps in knowledge that exist across regions. Furthermore, the digitisation of legacy fieldwalking projects into the public domain within a GIS compatible framework means that a range of different aspects of fieldwalking surveys undertaken some time ago and those in the recent past can be compared very easily and quickly. Such comparisons would enhance the decisions made concerning the potential location for archaeological interventions. It would also allow future researchers to highlight areas of conflict between two surveys and consider ways to address such problems.

7.1.5 As an example of the above, it is also noted that when fields walked in the 1976-7 survey were ‘rewalked’ in the 1982-7 or 1988-89 surveys (where appropriate) different results were obtained. Although it is not within the scope of this project to attempt any fieldwork to the examine this issue, it is suggested that the phenomenon of sites ‘switching on and off’ is taken into consideration when designing fieldwalking projects. Naturally, it is likely that such an issue could be addressed through academic institutions and examined through some limited resurveying. Results from such work could be later appended to projects like these tightening any such ability to determine mitigation.

7.1.6 While the NMP/fieldwalking survey comparison was not productive at this point, it clearly has potential and it is recommended that this be undertaken in the future, as more of the county is mapped, as both sets of data will be greatly enhanced by their

comparison.

7.1.7 It is also recommended that plans from archaeological interventions be digitised, geo-referenced (that is spatially located to the pertinent Ordnance Survey grid) and then added as a layer to the fieldwalking data. Although the results of intrusive archaeological investigations are deposited with the appropriate authority, and the location of such work is noted on the HER, the plans of archaeological features are often only deposited as paper illustrations. It is therefore recommended that the scanning and geo-referencing or digitisation of such plans be undertaken. This would allow further comparison with the results of the fieldwalking (bearing mind the considerations of Section 6.3.3) and the NMP. It is also suggested that this process be undertaken for the Kennet Valley Survey as some form research project to enable such comparison.

7.1.8 It is also recommended that comparison is made to databases from other sources, such as the Portable Antiquities Scheme database. This will allow correlations to be drawn between different types of artefacts that lie within the subsoil but which might not be recovered during a fieldwalking survey.

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Later Bronze Age and Iron Age Draft Research Agenda (STRA, late Bronze/Iron Age)
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8.2 Web-based sources

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http://hec.english-heritage.org.uk/admisremote/ALSFOnline/HOME.ASP
http://hec.english-heritage.org.uk/admisremote/HEEPOnline/reports.asp
http://www.ucl.ac.uk/sustainableheritage/aggregates.htmhttp://www.wightstay.co.uk/context/geology.html

8.3 Other sources

British Geological Survey 1:50,000 Sheets 330, 331, 344 and 345

9 Appendixes

9.1 Methodology for creating survey area polygons & fieldwalking grid

Introduction

9.1.1 Included below is the technical path that was utilised within this project to digitise the data from the Kennet Valley Survey. It sets out how the field outlines were created and then how the grid squares were set and populated with the data recorded on the finds sheets from the three fieldwalking survey periods that comprise the Lower Kennet Valley Survey.

Creation of Fields

- Create in ARCMap the **fieldwalking mxd** and **fieldwalking mdb** into which everything you produce goes.
- Feature Class **FIELDWALKING_AREAS** will be used make new and edit area polygon of target field
- To create a fieldwalking area polygon for the specific site use mastermap and set 'snapping' to mastermap layer, vertex & edge (possibly), then digitise the polygon
- Open the mini-attribute window & fill in all site attributes for that polygon, save edits (any 'hectare' sheet will help ID the parish)
- The **UNIQUE_ID** field can be calculated using the ready-made calculation file (.cal file): open Fieldwalking_area attribute table, right click over Unique_ID and chose calculate values, chose load, navigate to **FIELDWALKING_AREAS_UNIQUE_ID.cal** chose ok
- copy these **UNIQUE_ID** field cell contents onto you clipboard – so you can eventually paste this common ID into the fieldwalking polygon dataset that you are now going to make for the same site

Creation of fieldwalking data

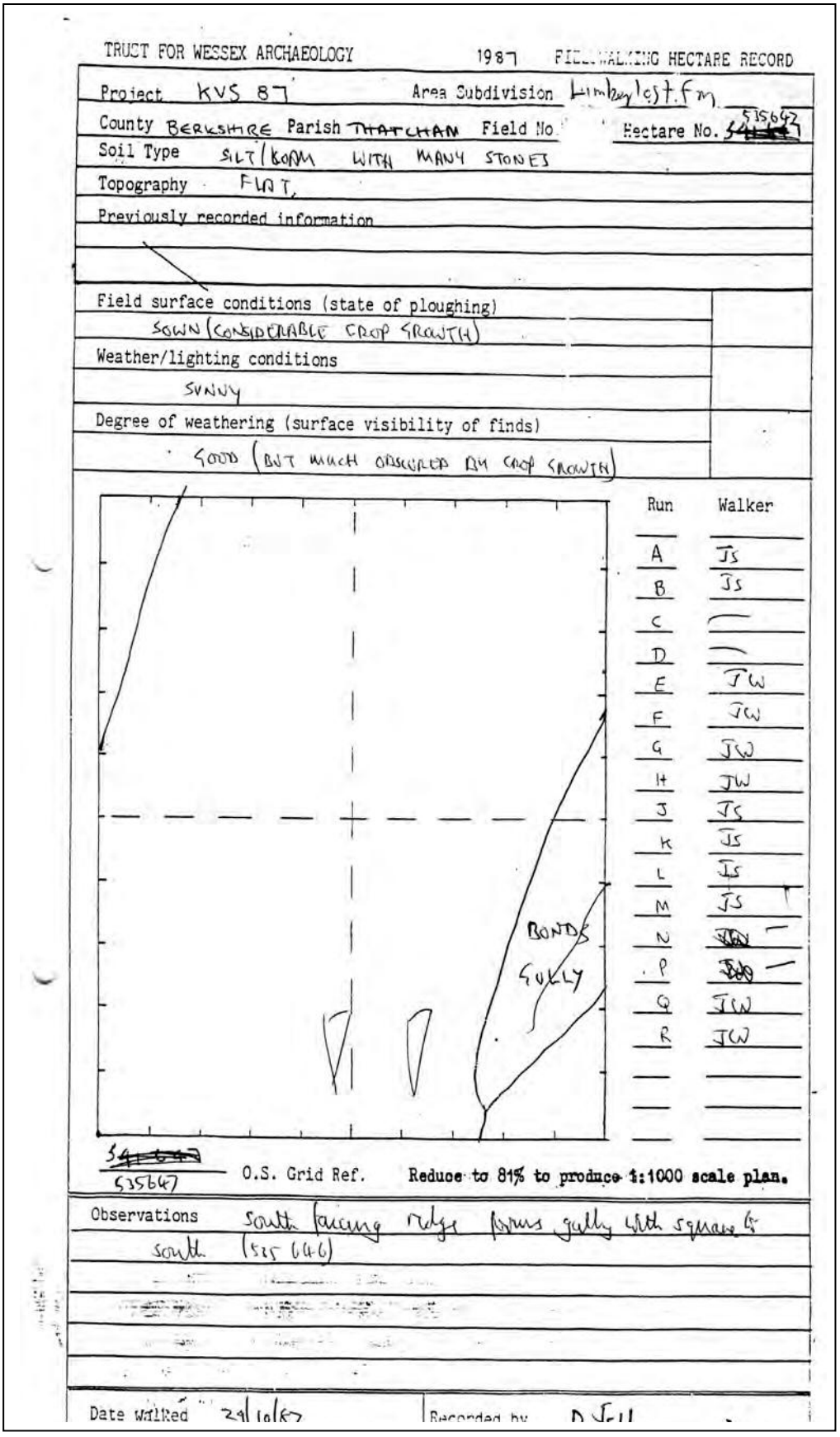
- In order to make a 25m grid polygon dataset for the specific site, select the relevant OS_1KM-GRID tile, from the 1KM Ordnance Survey grid shapefile and export as VG*_OS_1KM-POLY (VG = Vector Grid). This is an area boundary dataset which will provide the area in which to create relevant grid squares.
- Install ET Geowizards 9.7 for Arcgis 9.1 on pc & customised ET button onto your toolbar.
- Press ET button then basic then Vector Gird then GO then source and chose the relevant VG shapefile, VG*_OS_1KM_POLY, then next then GRID type = polygon then next then cell size = x=25m y=25m > Finish
- Name this output as VG*, which represents the squares layer – make symbology 'hollow'
- Now make site-specific dataset from the VG polygon coverage: select the relevant FIELDWALKING_AREAS polygon that you just digitised
- Select by location then select features from VG* that intersect the features in FIELDWALKING_AREAS >then check that you have the correct field by using selected features then press apply
- Export the selected features with a shapefile name relating to the appropriate field name e.g. VG_LIMBERLOST

- Now we load these new empty squares into the VG_MASTER dataset (which already has the correct attribute fields / schema set up). Put in edit mode press 'load object' with the target equalling VG_MASTER dataset then press load objects choosing the appropriate shapefile (note can be more than one source VG if needed)
- Once new squares loaded into VG_MASTER dataset, save edits. Now select all new records & paste in the UNIQUE_ID field the site-specific ID value which you copied from the area polygon attributes earlier. To do this with only relevant records selected, right-click UNIQUE_ID field-header then press calculate values then paste copied ID value into dialog with " " round it (eg "KVS-1987-THATCHAM-BOUNDS-GULLY-1-2") press ok, then stop editing and save edits
- Now the finds VG_MASTER database is ready to start attributing the dataset polygon grid squares. Make VG_MASTER only selectable layer & put in edit mode
- When editing in 'square' attributes for the new site - be methodical and try to follow any route established by the fieldwalkers if it is known. Keep the mini-attribute window open & edit in there; type in the attribute value > enter > select next square with cursor. On your master-site-photocopy, colour in each square as you attribute it – do all of one data type at a time (eg do all burnt flint squares , then all tile etc)

Incorporating new data in the future

9.1.2 New data can be added one of two ways, by the addition of a new field directly to the original data base through ARCGIS Catalogue or by relating/joining new columns from another database such as Excel. The former is useful if completely new data is being added and the latter is useful if you are adding new columns of manipulated data, for example average weight of CBM per sq metre. As it is not possible to undertake mathematical analysis within the actual VG_master database, relating/joining manipulated data is often the quicker method by which such data can be added. Rather than creating a new field, then working out averages, for example, in an external file, then typing in the new data, it can simply be imported back in by the relating/joining function as long as there is a unique identifier that ties new data to old data.

9.2 Appendix 2: Detail of Kennet Valley Lower survey record sheet for field



TRUCT FOR WESSEX ARCHAEOLOGY 1987 FIELDWALKING HECTARE RECORD

Project KVS 87 Area Subdivision Limbury(s)t.f.m.

County BERKSHIRE Parish THATCHAM Field No. Hectare No. 535647

Soil Type SILT/LOAM WITH MANY STONES

Topography FLAT.

Previously recorded information

Field surface conditions (state of ploughing)

SOWN (CONSIDERABLE CROP GROWTH)

Weather/lighting conditions

SUNNY

Degree of weathering (surface visibility of finds)

GOOD (BUT MUCH OBSCURED BY CROP GROWTH)

Run	Walker
A	JS
B	JS
C	—
D	—
E	JW
F	JW
G	JW
H	JW
J	JS
K	JS
L	JS
M	JS
N	JW
P	JW
Q	JW
R	JW

BONDS

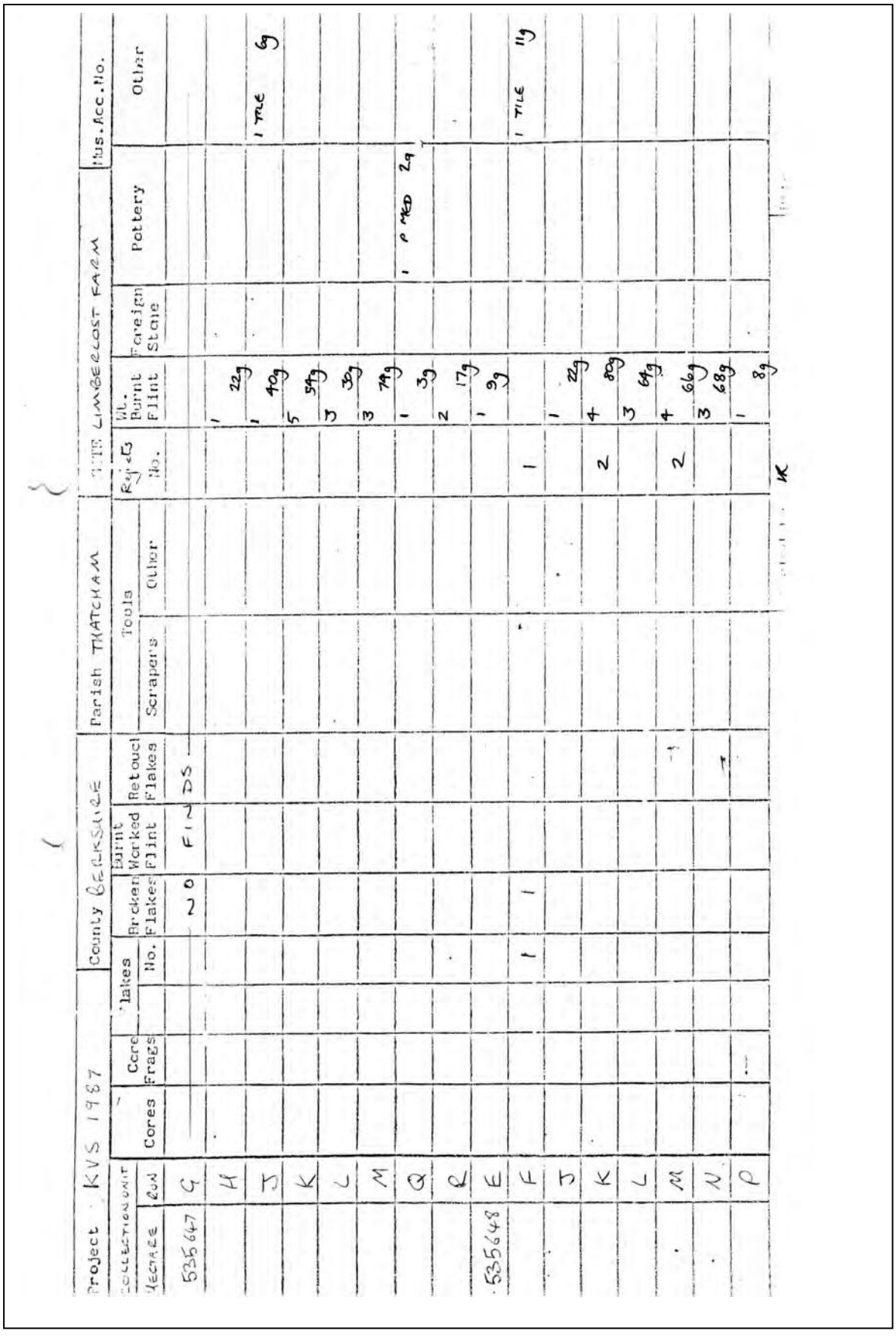
GULLY

535647 O.S. Grid Ref. Reduce to 81% to produce 1:1000 scale plan.

Observations South facing ridge spurs gully with square to south (525 646)

Date walked 29/10/87 Recorded by D.J.H.

9.3 Appendix 3: Example of Lower Kennet Valley survey finds record sheet



9.4 Appendix 4: GIS finds data entry sheet

Entry Field	Type of entry
UNIQUE_ID	Copy of concatenation from FIELDWALKING
BURNT_FLINT_COUNT	number of burnt flint pieces
FLINT_BURN	weight of burnt flint
TILE_COUNT	number of CBM
TILE	weight of CBM
TILE_PERIOD	letter or group of letters, indicating the date of the majority of CBM in the grid square, eg PM for post-medieval, M for medieval etc
TILE_PERIOD_B	letter or group of letters, indicating the date of any other CBM identified in the grid square, same as above
TILE_A	Single letter indicating presence of Tile A - particular type of medieval tile
FLINT_FLAKE	Single letter indicating presence of flint flakes, ie F
FLINT_FLAKE_COUNT (added later)	number of pieces of flint flakes
FLINT_CORE	Single letter indicating presence of flint cores, ie C
FLINT_CORE_COUNT (added later)	number of pieces of flint cores
FLINT_RETOUCHED	Single letter indicating presence of retouched flint flakes, ie R
FLINT_RETOUCHED_COUNT (added later)	number of pieces of retouched flint flakes
FLINT_TOOL	Single letter indicating presence of flint tools, ie T
FLINT_TOOL_COUNT (added later)	number of pieces of flint tools
PREHIST	number of sherds of unspecified prehistoric pottery
NEO	number of sherds of Neolithic pottery
BRONZE_AGE	number of sherds of Bronze Age pottery
IRON_AGE	number of sherds of Iron Age pottery
ROM_BRIT	number of sherds of Roman pottery
MED	number of sherds of medieval pottery
POST_MED	number of sherds of post-medieval pottery
MODERN	number of sherds of modern pottery
OBJECTID	Computer generated
ET_ID	Computer generated
ET_Index	Computer generated
SHAPE_LENGTH	Computer generated
SHAPE_AREA	Computer generated

9.5 Appendix 5: Total Area of each fields and area of field actually walked

Survey Year	Parish	Survey Field Name	Project Unique ID	Field area (km^2)	Area walked (km^2)
1976	ALDERMASTON	A2	KVS-1976-ALDERMASTON-A2-105	0.03	0.03
1976	BRIMPTON	BR1	KVS-1976-BRIMPTON-BR1-122	0.09	0.09
1976	BRIMPTON	BR10	KVS-1976-BRIMPTON-BR10-139	0.08	0.08
1976	BRIMPTON	BR11	KVS-1976-BRIMPTON-BR11-140	0.02	0.02
1976	BRIMPTON	BR12	KVS-1976-BRIMPTON-BR12-141	0.16	0.16
1976	BRIMPTON	BR13	KVS-1976-BRIMPTON-BR13-142	0.04	0.04
1976	BRIMPTON	BR14	KVS-1976-BRIMPTON-BR14-143	0.13	0.13
1976	BRIMPTON	BR15	KVS-1976-BRIMPTON-BR15-144	0.02	0.02
1976	BRIMPTON	BR16	KVS-1976-BRIMPTON-BR16-145	0.19	0.19
1976	BRIMPTON	BR2	KVS-1976-BRIMPTON-BR2-131	0.08	0.08
1976	BRIMPTON	BR3	KVS-1976-BRIMPTON-BR3-132	0.02	0.02
1976	BRIMPTON	BR4	KVS-1976-BRIMPTON-BR4-133	0.05	0.05
1976	BRIMPTON	BR6	KVS-1976-BRIMPTON-BR6-135	0.03	0.03
1976	BRIMPTON	BR7	KVS-1976-BRIMPTON-BR7-136	0.18	0.18
1976	BRIMPTON	BR8	KVS-1976-BRIMPTON-BR8-137	0.02	0.02
1976	BRIMPTON	BR9	KVS-1976-BRIMPTON-BR9-138	0.03	0.03
1976	THATCHAM	TH1	KVS-1976-THATCHAM-TH1-106	0.11	0.11
1976	THATCHAM	TH2	KVS-1976-THATCHAM-TH2-107	0.07	0.07
1976	THATCHAM	TH3	KVS-1976-THATCHAM-TH3-108	0.06	0.06
1976	THATCHAM	TH4	KVS-1976-THATCHAM-TH4-109	0.06	0.06
1976	THATCHAM	TH5	KVS-1976-THATCHAM-TH5-110	0.05	0.05
1976	WASING	WA1	KVS-1976-WASING-WA1-116	0.07	0.07
1976	WASING	WA2	KVS-1976-WASING-WA2-117	0.06	0.06
1976	WASING	WA3	KVS-1976-WASING-WA3-118	0.15	0.15
1976	WASING	WA4	KVS-1976-WASING-WA4-224	0.49	0.49
1977	ALDERMASTON	A1	KVS-1977-ALDERMASTON-A1-104	0.05	0.05
1977	ALDERMASTON	A10	KVS-1977-ALDERMASTON-A10-226	0.01	0.01
1977	ALDERMASTON	A11	KVS-1977-ALDERMASTON-A11-227	0.20	0.20
1977	ALDERMASTON	A12	KVS-1977-ALDERMASTON-A12-228	0.09	0.09
1977	ALDERMASTON	A13	KVS-1977-ALDERMASTON-A13-229	0.18	0.18
1977	ALDERMASTON	A14	KVS-1977-ALDERMASTON-A14-230	0.08	0.08
1977	ALDERMASTON	A15	KVS-1977-ALDERMASTON-A15-231	0.13	0.13
1977	ALDERMASTON	A16	KVS-1977-ALDERMASTON-A16-232	0.02	0.02
1977	ALDERMASTON	A17	KVS-1977-ALDERMASTON-A17-233	0.10	0.10
1977	ALDERMASTON	A18	KVS-1977-ALDERMASTON-A18-234	0.03	0.03
1977	ALDERMASTON	A19	KVS-1977-ALDERMASTON-A19-235	0.02	0.02
1977	ALDERMASTON	A20	KVS-1977-ALDERMASTON-A20-236	0.07	0.07
1977	ALDERMASTON	A21	KVS-1977-ALDERMASTON-A21-237	0.02	0.02
1977	ALDERMASTON	A22	KVS-1977-ALDERMASTON-A22-238	0.04	0.04
1977	ALDERMASTON	A23	KVS-1977-ALDERMASTON-A23-239	0.07	0.07
1977	ALDERMASTON	A24	KVS-1977-ALDERMASTON-A24-240	0.05	0.05
1977	ALDERMASTON	A25	KVS-1977-ALDERMASTON-A25-241	0.06	0.06
1977	ALDERMASTON	A26	KVS-1977-ALDERMASTON-A26-242	0.02	0.02
1977	ALDERMASTON	A27	KVS-1977-ALDERMASTON-A27-243	0.03	0.03
1977	ALDERMASTON	A28	KVS-1977-ALDERMASTON-A28-244	0.01	0.01
1977	ALDERMASTON	A29	KVS-1977-ALDERMASTON-A29-245	0.03	0.03
1977	ALDERMASTON	A3	KVS-1977-ALDERMASTON-A3-167	0.03	0.03
1977	ALDERMASTON	A30	KVS-1977-ALDERMASTON-A30-246	0.06	0.06
1977	ALDERMASTON	A4	KVS-1977-ALDERMASTON-A4-168	0.02	0.02
1977	ALDERMASTON	A5	KVS-1977-ALDERMASTON-A5-169	0.06	0.06
1977	ALDERMASTON	A6	KVS-1977-ALDERMASTON-A6-170	0.12	0.12
1977	ALDERMASTON	A7	KVS-1977-ALDERMASTON-A7-171	0.20	0.20
1977	ALDERMASTON	A8	KVS-1977-ALDERMASTON-A8-172	0.04	0.04
1977	ALDERMASTON	A9	KVS-1977-ALDERMASTON-A9-225	0.02	0.02
1977	BURGHFIELD	BD1	KVS-1977-BURGHFIELD-BD1-326	0.07	0.07
1977	BURGHFIELD	BD10	KVS-1977-BURGHFIELD-BD10-209	0.02	0.02
1977	BURGHFIELD	BD11	KVS-1977-BURGHFIELD-BD11-208	0.02	0.02
1977	BURGHFIELD	BD12	KVS-1977-BURGHFIELD-BD12-207	0.02	0.02
1977	BURGHFIELD	BD13	KVS-1977-BURGHFIELD-BD13-212	0.05	0.05
1977	BURGHFIELD	BD2	KVS-1977-BURGHFIELD-BD2-327	0.06	0.06
1977	BURGHFIELD	BD3	KVS-1977-BURGHFIELD-BD3-328	0.10	0.10
1977	BURGHFIELD	BD5	KVS-1977-BURGHFIELD-BD5-329	0.02	0.02

Survey Year	Parish	Survey Field Name	Project Unique ID	Field area (km^2)	Area walked (km^2)
1977	BURGHFIELD	BD6	KVS-1977-BURGHFIELD-BD6-330	0.03	0.03
1977	BURGHFIELD	BD7	KVS-1977-BURGHFIELD-BD7-210	0.06	0.06
1977	BURGHFIELD	BD8	KVS-1977-BURGHFIELD-BD8-331	0.05	0.05
1977	BURGHFIELD	BD9	KVS-1977-BURGHFIELD-BD9-211	0.06	0.06
1977	BEENHAM	BN1	KVS-1977-BEENHAM-BN1-200	0.05	0.05
1977	BEENHAM	BN2	KVS-1977-BEENHAM-BN2-201	0.03	0.03
1977	BEENHAM	BN3	KVS-1977-BEENHAM-BN3-202	0.06	0.06
1977	BEENHAM	BN4	KVS-1977-BEENHAM-BN4-203	0.02	0.02
1977	BEENHAM	BN5	KVS-1977-BEENHAM-BN5-204	0.02	0.02
1977	BEENHAM	BN6	KVS-1977-BEENHAM-BN6-205	0.09	0.09
1977	BEENHAM	BN7	KVS-1977-BEENHAM-BN7-206	0.07	0.07
1977	BRIMPTON	BR17	KVS-1977-BRIMPTON-BR17-146	0.01	0.01
1977	BRIMPTON	BR18	KVS-1977-BRIMPTON-BR18-147	0.03	0.03
1977	BRIMPTON	BR19	KVS-1977-BRIMPTON-BR19-148	0.03	0.03
1977	BRIMPTON	BR20	KVS-1977-BRIMPTON-BR20-182	0.01	0.01
1977	BRIMPTON	BR21	KVS-1977-BRIMPTON-BR21-183	0.08	0.08
1977	BRIMPTON	BR22	KVS-1977-BRIMPTON-BR22-184	0.12	0.12
1977	BRIMPTON	BR23	KVS-1977-BRIMPTON-BR23-185	0.12	0.12
1977	BRIMPTON	BR24	KVS-1977-BRIMPTON-BR24-186	0.02	0.02
1977	BRIMPTON	BR25	KVS-1977-BRIMPTON-BR25-187	0.06	0.06
1977	BRIMPTON	BR26	KVS-1977-BRIMPTON-BR26-188	0.04	0.04
1977	BRIMPTON	BR27	KVS-1977-BRIMPTON-BR27-189	0.01	0.01
1977	BRIMPTON	BR28	KVS-1977-BRIMPTON-BR28-149	0.03	0.03
1977	BRIMPTON	BR29	KVS-1977-BRIMPTON-BR29-150	0.03	0.03
1977	BRIMPTON	BR30	KVS-1977-BRIMPTON-BR30-190	0.02	0.02
1977	BRIMPTON	BR31	KVS-1977-BRIMPTON-BR31-191	0.05	0.05
1977	BRIMPTON	BR32	KVS-1977-BRIMPTON-BR32-192	0.14	0.14
1977	BRIMPTON	BR33	KVS-1977-BRIMPTON-BR33-193	0.04	0.04
1977	BRIMPTON	BR34	KVS-1977-BRIMPTON-BR34-194	0.01	0.01
1977	BRIMPTON	BR35	KVS-1977-BRIMPTON-BR35-195	0.08	0.08
1977	BRIMPTON	BR36	KVS-1977-BRIMPTON-BR36-196	0.02	0.02
1977	BRIMPTON	BR37	KVS-1977-BRIMPTON-BR37-197	0.02	0.02
1977	BRIMPTON	BR38	KVS-1977-BRIMPTON-BR38-198	0.05	0.05
1977	BRIMPTON	BR39	KVS-1977-BRIMPTON-BR39-199	0.07	0.07
1977	BRIMPTON	BR40	KVS-1977-BRIMPTON-BR40-271	0.09	0.09
1977	BRIMPTON	BR41	KVS-1977-BRIMPTON-BR41-272	0.04	0.04
1977	BRIMPTON	BR5	KVS-1977-BRIMPTON-BR5-134	0.05	0.05
1977	COLD_ASH	CA1	KVS-1977-COLD_ASH-CA1-511	0.02	0.02
1977	COLD_ASH	CA2	KVS-1977-COLD_ASH-CA2-512	0.05	0.05
1977	COLD_ASH	CA3	KVS-1977-COLD_ASH-CA3-513	0.07	0.07
1977	COLD_ASH	CA4	KVS-1977-COLD_ASH-CA4-514	0.05	0.05
1977	COLD_ASH	CA5	KVS-1977-COLD_ASH-CA5-515	0.06	0.06
1977	SHAW_CUM_DONNINGTON	D1	KVS-1977-SHAW_CUM_DONNINGTON-D1-319	0.10	0.10
1977	SHAW_CUM_DONNINGTON	D2	KVS-1977-SHAW_CUM_DONNINGTON-D2-320	0.07	0.07
1977	SHAW_CUM_DONNINGTON	D3	KVS-1977-SHAW_CUM_DONNINGTON-D3-321	0.04	0.04
1977	SHAW_CUM_DONNINGTON	D5	KVS-1977-SHAW_CUM_DONNINGTON-D5-323	0.11	0.11
1977	SHAW_CUM_DONNINGTON	D6	KVS-1977-SHAW_CUM_DONNINGTON-D6-324	0.20	0.20
1977	SHAW_CUM_DONNINGTON	D7	KVS-1977-SHAW_CUM_DONNINGTON-D7-325	0.21	0.21
1977	ENBORNE	EN1	KVS-1977-ENBORNE-EN1-500	0.16	0.16
1977	ENBORNE	EN2	KVS-1977-ENBORNE-EN2-501	0.14	0.14
1977	ENBORNE	EN3	KVS-1977-ENBORNE-EN3-502	0.03	0.03
1977	ENBORNE	EN4	KVS-1977-ENBORNE-EN4-503	0.02	0.02
1977	ENBORNE	EN5	KVS-1977-ENBORNE-EN5-504	0.06	0.06
1977	GREENHAM	GR1	KVS-1977-GREENHAM-GR1-507	0.06	0.06
1977	GREENHAM	GR2	KVS-1977-GREENHAM-GR2-508	0.04	0.04
1977	STRATFIELD_MORTIMER	M1	KVS-1977-STRATFIELD_MORTIMER-M1-213	0.07	0.07
1977	MIDGHAM	MG1	KVS-1977-MIDGHAM-MG1-255	0.07	0.07
1977	MIDGHAM	MG10	KVS-1977-MIDGHAM-MG10-264	0.03	0.03
1977	MIDGHAM	MG11	KVS-1977-MIDGHAM-MG11-265	0.04	0.04
1977	MIDGHAM	MG12	KVS-1977-MIDGHAM-MG12-266	0.02	0.02
1977	MIDGHAM	MG13	KVS-1977-MIDGHAM-MG13-267	0.06	0.06
1977	MIDGHAM	MG14	KVS-1977-MIDGHAM-MG14-268	0.04	0.04

Survey Year	Parish	Survey Field Name	Project Unique ID	Field area (km^2)	Area walked (km^2)
1977	MIDGHAM	MG15	KVS-1977-MIDGHAM-MG15-269	0.04	0.04
1977	MIDGHAM	MG16	KVS-1977-MIDGHAM-MG16-270	0.03	0.03
1977	MIDGHAM	MG2	KVS-1977-MIDGHAM-MG2-256	0.02	0.02
1977	MIDGHAM	MG3	KVS-1977-MIDGHAM-MG3-257	0.02	0.02
1977	MIDGHAM	MG4	KVS-1977-MIDGHAM-MG4-258	0.04	0.04
1977	MIDGHAM	MG5	KVS-1977-MIDGHAM-MG5-259	0.02	0.02
1977	MIDGHAM	MG6	KVS-1977-MIDGHAM-MG6-260	0.02	0.02
1977	MIDGHAM	MG7	KVS-1977-MIDGHAM-MG7-261	0.03	0.03
1977	MIDGHAM	MG8	KVS-1977-MIDGHAM-MG8-262	0.03	0.03
1977	MIDGHAM	MG9	KVS-1977-MIDGHAM-MG9-263	0.09	0.09
1977	NEWBURY	N1	KVS-1977-NEWBURY-N1-509	0.21	0.21
1977	NEWBURY	N2	KVS-1977-NEWBURY-N2-510	0.06	0.06
1977	PADWORTH	P1	KVS-1977-PADWORTH-P1-214	0.02	0.02
1977	PADWORTH	P10	KVS-1977-PADWORTH-P10-223	0.01	0.01
1977	PADWORTH	P2	KVS-1977-PADWORTH-P2-217	0.05	0.05
1977	THATCHAM	P3	KVS-1977-THATCHAM-P3-218	0.07	0.07
1977	PADWORTH	P4	KVS-1977-PADWORTH-P4-215	0.05	0.05
1977	PADWORTH	P5	KVS-1977-PADWORTH-P5-216	0.08	0.08
1977	PADWORTH	P6	KVS-1977-PADWORTH-P6-219	0.01	0.01
1977	PARWORTH	P7	KVS-1977-PARWORTH-P7-220	0.05	0.05
1977	PADWORTH	P8	KVS-1977-PADWORTH-P8-221	0.05	0.05
1977	PADWORTH	P9	KVS-1977-PADWORTH-P9-222	0.02	0.02
1977	SULHAMSTEAD	S2	KVS-1977-SULHAMSTEAD-S2-357	0.03	0.03
1977	SULHAMSTEAD	S3	KVS-1977-SULHAMSTEAD-S3-358	0.06	0.06
1977	SULHAMSTEAD	S5	KVS-1977-SULHAMSTEAD-S5-359	0.04	0.04
1977	SULHAMSTEAD	S6	KVS-1977-SULHAMSTEAD-S6-360	0.08	0.08
1977	SULHAMSTEAD	S7	KVS-1977-SULHAMSTEAD-S7-361	0.09	0.09
1977	SPEEN	SP1	KVS-1977-SPEEN-SP1-332	0.10	0.10
1977	SPEEN	SP10	KVS-1977-SPEEN-SP10-341	0.10	0.10
1977	SPEEN	SP11	KVS-1977-SPEEN-SP11-342	0.01	0.01
1977	SPEEN	SP12	KVS-1977-SPEEN-SP12-343	0.02	0.02
1977	SPEEN	SP13	KVS-1977-SPEEN-SP13-344	0.04	0.04
1977	SPEEN	SP2	KVS-1977-SPEEN-SP2-333	0.03	0.03
1977	SPEEN	SP3	KVS-1977-SPEEN-SP3-334	0.04	0.04
1977	SPEEN	SP4	KVS-1977-SPEEN-SP4-335	0.05	0.05
1977	SPEEN	SP5	KVS-1977-SPEEN-SP5-336	0.08	0.08
1977	SPEEN	SP6	KVS-1977-SPEEN-SP6-337	0.06	0.06
1977	SPEEN	SP7	KVS-1977-SPEEN-SP7-338	0.15	0.15
1977	SPEEN	SP8	KVS-1977-SPEEN-SP8-339	0.03	0.03
1977	SPEEN	SP9	KVS-1977-SPEEN-SP9-340	0.05	0.05
1977	THATCHAM	TH10	KVS-1977-THATCHAM-TH10-115	0.04	0.04
1977	THATCHAM	TH11	KVS-1977-THATCHAM-TH11-124	0.17	0.17
1977	THATCHAM	TH12	KVS-1977-THATCHAM-TH12-123	0.13	0.13
1977	THATCHAM	TH13	KVS-1977-THATCHAM-TH13-125	0.09	0.09
1977	THATCHAM	TH14	KVS-1977-THATCHAM-TH14-126	0.11	0.11
1977	THATCHAM	TH15	KVS-1977-THATCHAM-TH15-127	0.15	0.15
1977	THATCHAM	TH16	KVS-1977-THATCHAM-TH16-128	0.08	0.08
1977	THATCHAM	TH17	KVS-1977-THATCHAM-TH17-129	0.03	0.03
1977	THATCHAM	TH18	KVS-1977-THATCHAM-TH18-130	0.08	0.08
1977	THATCHAM	TH19	KVS-1977-THATCHAM-TH19-151	0.22	0.22
1977	THATCHAM	TH20	KVS-1977-THATCHAM-TH20-152	0.09	0.09
1977	THATCHAM	TH21	KVS-1977-THATCHAM-TH21-173	0.07	0.07
1977	THATCHAM	TH22	KVS-1977-THATCHAM-TH22-174	0.07	0.07
1977	THATCHAM	TH23	KVS-1977-THATCHAM-TH23-175	0.03	0.03
1977	THATCHAM	TH24	KVS-1977-THATCHAM-TH24-176	0.06	0.06
1977	THATCHAM	TH25	KVS-1977-THATCHAM-TH25-177	0.04	0.04
1977	THATCHAM	TH26	KVS-1977-THATCHAM-TH26-178	0.02	0.02
1977	THATCHAM	TH27	KVS-1977-THATCHAM-TH27-153	0.08	0.08
1977	THATCHAM	TH28	KVS-1977-THATCHAM-TH28-180	0.05	0.05
1977	THATCHAM	TH29	KVS-1977-THATCHAM-TH29-181	0.10	0.10
1977	THATCHAM	TH30	KVS-1977-THATCHAM-TH30-154	0.08	0.08
1977	THATCHAM	TH31	KVS-1977-THATCHAM-TH31-155	0.10	0.10
1977	THATCHAM	TH32	KVS-1977-THATCHAM-TH32-156	0.05	0.05
1977	THATCHAM	TH34	KVS-1977-THATCHAM-TH34-157	0.03	0.03
1977	THATCHAM	TH35	KVS-1977-THATCHAM-TH35-158	0.02	0.02
1977	THATCHAM	TH36	KVS-1977-THATCHAM-TH36-159	0.10	0.10
1977	THATCHAM	TH37	KVS-1977-THATCHAM-TH37-160	0.02	0.02
1977	THATCHAM	TH38	KVS-1977-THATCHAM-TH38-505	0.04	0.04
1977	THATCHAM	TH39	KVS-1977-THATCHAM-TH39-506	0.02	0.02

Survey Year	Parish	Survey Field Name	Project Unique ID	Field area (km^2)	Area walked (km^2)
1977	THATCHAM	TH40	KVS-1977-THATCHAM-TH40-161	0.04	0.04
1977	THATCHAM	TH41	KVS-1977-THATCHAM-TH41-162	0.09	0.09
1977	THATCHAM	TH42	KVS-1977-THATCHAM-TH42-163	0.05	0.05
1977	THATCHAM	TH43	KVS-1977-THATCHAM-TH43-164	0.05	0.05
1977	THATCHAM	TH44	KVS-1977-THATCHAM-TH44-165	0.03	0.03
1977	THATCHAM	TH45	KVS-1977-THATCHAM-TH45-166	0.04	0.04
1977	THATCHAM	TH6	KVS-1977-THATCHAM-TH6-111	0.06	0.06
1977	THATCHAM	TH7	KVS-1977-THATCHAM-TH7-112	0.06	0.06
1977	THATCHAM	TH8	KVS-1977-THATCHAM-TH8-113	0.04	0.04
1977	THATCHAM	TH9	KVS-1977-THATCHAM-TH9-114	0.05	0.05
1977	UFRON_NERVET	UN1	KVS-1977-UFRON_NERVET-UN1-179	0.14	0.14
1977	UFTON_NERVET	UN10	KVS-1977-UFTON_NERVET-UN10-281	0.04	0.04
1977	UFTON_NERVET	UN11	KVS-1977-UFTON_NERVET-UN11-282	0.04	0.04
1977	UFTON_NERVET	UN12	KVS-1977-UFTON_NERVET-UN12-283	0.07	0.07
1977	UFTON_NERVET	UN13	KVS-1977-UFTON_NERVET-UN13-284	0.06	0.06
1977	UFTON_NERVET	UN14	KVS-1977-UFTON_NERVET-UN14-345	0.04	0.04
1977	UFTON_NERVET	UN15	KVS-1977-UFTON_NERVET-UN15-346	0.05	0.05
1977	UFTON_NERVET	UN17	KVS-1977-UFTON_NERVET-UN17-347	0.06	0.06
1977	UFTON_NERVET	UN18	KVS-1977-UFTON_NERVET-UN18-348	0.08	0.08
1977	UFTON_NERVET	UN19	KVS-1977-UFTON_NERVET-UN19-349	0.03	0.03
1977	UFTON_NERVET	UN2	KVS-1977-UFTON_NERVET-UN2-273	0.06	0.06
1977	UFTON_NERVET	UN20	KVS-1977-UFTON_NERVET-UN20-350	0.01	0.01
1977	UFTON_NERVET	UN21	KVS-1977-UFTON_NERVET-UN21-351	0.02	0.02
1977	UFTON_NERVET	UN22	KVS-1977-UFTON_NERVET-UN22-352	0.02	0.02
1977	UFTON_NERVET	UN23	KVS-1977-UFTON_NERVET-UN23-353	0.02	0.02
1977	UFTON_NERVET	UN24	KVS-1977-UFTON_NERVET-UN24-354	0.05	0.05
1977	UFTON_NERVET	UN26	KVS-1977-UFTON_NERVET-UN26-355	0.04	0.04
1977	UFTON_NERVET	UN27	KVS-1977-UFTON_NERVET-UN27-356	0.09	0.09
1977	UFTON_NERVET	UN3	KVS-1977-UFTON_NERVET-UN3-274	0.08	0.08
1977	UFTON_NERVET	UN4	KVS-1977-UFTON_NERVET-UN4-275	0.04	0.04
1977	UFTON_NERVET	UN5	KVS-1977-UFTON_NERVET-UN5-276	0.03	0.03
1977	UFTON_NERVET	UN6	KVS-1977-UFTON_NERVET-UN6-277	0.11	0.11
1977	UFTON_NERVET	UN7	KVS-1977-UFTON_NERVET-UN7-278	0.09	0.09
1977	UFTON_NERVET	UN8	KVS-1977-UFTON_NERVET-UN8-279	0.08	0.08
1977	UFTON_NERVET	UN9	KVS-1977-UFTON_NERVET-UN9-280	0.02	0.02
1977	WASING	WA5	KVS-1977-WASING-WA5-120	0.08	0.08
1977	WASING	WA6	KVS-1977-WASING-WA6-121	0.07	0.07
1977	WOOLHAMPTON	WL1	KVS-1977-WOOLHAMPTON-WL1-247	0.14	0.14
1977	WOOLHAMPTON	WL2	KVS-1977-WOOLHAMPTON-WL2-248	0.12	0.12
1977	WOOLHAMPTON	WL3	KVS-1977-WOOLHAMPTON-WL3-249	0.05	0.05
1977	WOOLHAMPTON	WL4	KVS-1977-WOOLHAMPTON-WL4-250	0.04	0.04
1977	WOOLHAMPTON	WL5	KVS-1977-WOOLHAMPTON-WL5-251	0.05	0.05
1977	WOOLHAMPTON	WL6	KVS-1977-WOOLHAMPTON-WL6-252	0.02	0.02
1977	WOOLHAMPTON	WL7	KVS-1977-WOOLHAMPTON-WL7-253	0.08	0.08
1977	WOOLHAMPTON	WL8	KVS-1977-WOOLHAMPTON-WL8-254	0.04	0.04
1983	BURGHFIELD	FIELD_FARM_1	KVS-1983-BURGHFIELD-FIELD_FARM_1-97	0.13	0.11
1983	BURGHFIELD	PINGEWOOD_2A_10M	KVS-1983-BURGHFIELD-PINGEWOOD_2A_10M-101	0.04	0.03
1983	BURGHFIELD	PINGEWOOD_2B_10M	KVS-1983-BURGHFIELD-PINGEWOOD_2B_10M-101	0.01	0.01
1983	BURGHFIELD	TRASH_GREEN	KVS-1983-BURGHFIELD-TRASH_GREEN-91	0.13	0.11
1984	BRIMPTON	ABLE_BRIDGE_1	KVS-1984-BRIMPTON-ABLE_BRIDGE_1-23	0.13	0.11
1984	BURGHFIELD	AMNERS_FARM	KVS-1984-BURGHFIELD-AMNERS_FARM-96	0.15	0.09
1984	BRIMPTON	ARUNDELLS_COPSE_1	KVS-1984-BRIMPTON-ARUNDELLS_COPSE_1-19	0.17	0.14
1984	BRIMPTON	ARUNDELLS_COPSE_2	KVS-1984-BRIMPTON-ARUNDELLS_COPSE_2-20	0.37	0.31
1984	BRIMPTON	ARUNDELLS_COPSE_3	KVS-1984-BRIMPTON-ARUNDELLS_COPSE_3-21	0.03	0.02
1984	BRIMPTON	BOOT_FARM	KVS-1984-BRIMPTON-BOOT_FARM-27	0.21	0.18
1984	BURGHFIELD	BURGHFIELD_ROAD_1	KVS-1984-BURGHFIELD-BURGHFIELD_ROAD_1-92	0.22	0.18

Survey Year	Parish	Survey Field Name	Project Unique ID	Field area (km^2)	Area walked (km^2)
1984	BURGHFIELD	BURGHFIELD_ROAD_2	KVS-1984-BURGHFIELD-BURGHFIELD_ROAD_2-93	0.18	0.12
1984	BURGHFIELD	CHURCH_COTTAGES	KVS-1984-BURGHFIELD-CHURCH_COTTAGES-95	0.13	0.12
1984	BURGHFIELD	FIELD_FARM_2	KVS-1984-BURGHFIELD-FIELD_FARM_2-98	0.07	0.05
1984	BURGHFIELD	FIELD_FARM_3	KVS-1984-BURGHFIELD-FIELD_FARM_3-99	0.33	0.23
1984	BURGHFIELD	GREEN_FARM	KVS-1984-BURGHFIELD-GREEN_FARM-94	0.14	0.13
1984	BRIMPTON	HOLDAWAYS_FARM	KVS-1984-BRIMPTON-HOLDAWAYS_FARM-22	0.05	0.05
1984	BRIMPTON	LANE_END	KVS-1984-BRIMPTON-LANE_END-26	0.05	0.04
1984	BRIMPTON	LEA_COTTAGE	KVS-1984-BRIMPTON-LEA_COTTAGE-29	0.14	0.11
1984	THATCHAM	MANOR_ASH_MOATS_1	KVS-1984-THATCHAM-MANOR_ASH_MOATS_1-7	0.16	0.13
1984	BRIMPTON	MILLFIELD	KVS-1984-BRIMPTON-MILLFIELD-32	0.20	0.17
1984	UFRON_NERVET	PADWORTH_COMMON	KVS-1984-UFRON_NERVET-PADWORTH_COMMON-103	0.14	0.13
1984	THATCHAM	PARK_FARM_A	KVS-1984-THATCHAM-PARK_FARM_A-9	0.08	0.07
1984	THATCHAM	PARK_FARM_B	KVS-1984-THATCHAM-PARK_FARM_B-9	0.10	0.07
1984	BURGHFIELD	PINGEWOOD_1	KVS-1984-BURGHFIELD-PINGEWOOD_1-100	0.10	0.07
1984	BURGHFIELD	PINGEWOOD_2	KVS-1984-BURGHFIELD-PINGEWOOD_2-101	0.18	0.09
1984	THATCHAM	RAMSBURY_HILL_FORT	KVS-1984-THATCHAM-RAMSBURY_HILL_FORT-10	0.10	0.09
1984	BURGHFIELD	SMALLMEAD	KVS-1984-BURGHFIELD-SMALLMEAD-102	0.19	0.09
1984	WASING	WASING_LOWER_FARM	KVS-1984-WASING-WASING_LOWER_FARM-33	0.96	0.81
1984	WOOLHAMPTON	WOOLHAMPTON_PARK	KVS-1984-WOOLHAMPTON-WOOLHAMPTON_PARK-62	0.25	0.22
1986	WOOLHAMPTON	ABBEY	KVS-1986-WOOLHAMPTON-ABBEY-52	0.05	0.04
1986	ALDERMASTON	BASINGSTOKE_ROAD_1	KVS-1986-ALDERMASTON-BASINGSTOKE_ROAD_1-41	0.13	0.11
1986	BUCKLEBURY	COPYHOLD_FARM	KVS-1986-BUCKLEBURY-COPYHOLD_FARM-49	0.20	0.14
1986	WOOLHAMPTON	CROFT_COTTAGES	KVS-1986-WOOLHAMPTON-CROFT_COTTAGES-51	0.11	0.09
1986	BEENHAM	FERRISES	KVS-1986-BEENHAM-FERRISES-60	0.08	0.07
1986	ALDERMASTON	FRONDS_FARM	KVS-1986-ALDERMASTON-FRONDS_FARM-40	0.08	0.08
1986	BEENHAM	HALL_PLACE_FARM	KVS-1986-BEENHAM-HALL_PLACE_FARM-65	0.05	0.04
1986	WOOLHAMPTON	KIFF_GREEN	KVS-1986-WOOLHAMPTON-KIFF_GREEN-50	0.11	0.09
1986	BEENHAM	ROOKERY_COPSE	KVS-1986-BEENHAM-ROOKERY_COPSE-63	0.08	0.07
1986	WOOLHAMPTON	WOODCOCK	KVS-1986-WOOLHAMPTON-WOODCOCK-61	0.13	0.11
1987	BRIMPTON	ABLE_BRIDGE_2	KVS-1987-BRIMPTON-ABLE_BRIDGE_2-24	0.11	0.09
1987	ALDERMASTON	ALDERMASTON_BRIDGE_1	KVS-1987-ALDERMASTON-ALDERMASTON_BRIDGE_1-38	0.05	0.04
1987	ALDERMASTON	ALDERMASTON_BRIDGE_3	KVS-1987-ALDERMASTON-ALDERMASTON_BRIDGE_3-39	0.06	0.04
1987	BEENHAM	ALLOTMENT_GARDENS	KVS-1987-BEENHAM-ALLOTMENT_GARDENS-59	0.01	0.01

Survey Year	Parish	Survey Field Name	Project Unique ID	Field area (km^2)	Area walked (km^2)
1987	WASING	BACK_LANE	KVS-1987-WASING-BACK_LANE-28	0.02	0.01
1987	BUCKLEBURY	BAZETTS_PLANTATION	KVS-1987-BUCKLEBURY-BAZETTS_PLANTATION-42	0.05	0.04
1987	BEENHAM	BEENHAM_GRANGE	KVS-1987-BEENHAM-BEENHAM_GRANGE-67	0.11	0.08
1987	BRIMPTON	BLACKNEST_BRIMPTON_COMMON	KVS-1987-BRIMPTON-BLACKNEST_BRIMPTON_COMMON-25	0.14	0.11
1987	THATCHAM	BONDS_GULLY_2	KVS-1987-THATCHAM-BONDS_GULLY_2-3	0.07	0.06
1987	THATCHAM	BONDS-GULLY-1	KVS-1987-THATCHAM-BONDS-GULLY-1-2	0.06	0.05
1987	BEENHAM	BOURNE_COTTAGES	KVS-1987-BEENHAM-BOURNE_COTTAGES-58	0.09	0.07
1987	ALDERMASTON	BREACHES_GULLY_1	KVS-1987-ALDERMASTON-BREACHES_GULLY_1-35	0.03	0.02
1987	ALDERMASTON	BREACHES_GULLY_2	KVS-1987-ALDERMASTON-BREACHES_GULLY_2-35	0.03	0.02
1987	ALDERMASTON	BREACHES_GULLY_3	KVS-1987-ALDERMASTON-BREACHES_GULLY_3-36	0.07	0.06
1987	BRIMPTON	BRIMPTON_MANOR_FARM_1	KVS-1987-BRIMPTON-BRIMPTON_MANOR_FARM_1-30	0.08	0.07
1987	BRIMPTON	BRIMPTON_MANOR_FARM_2	KVS-1987-BRIMPTON-BRIMPTON_MANOR_FARM_2-31	0.07	0.06
1987	ALDERMASTON	CABLE_FACTORY	KVS-1987-ALDERMASTON-CABLE_FACTORY-64	0.05	0.04
1987	BUCKLEBURY	CARBINS_WOOD_LANE_1	KVS-1987-BUCKLEBURY-CARBINS_WOOD_LANE_1-45	0.02	0.02
1987	BUCKLEBURY	CARBINS_WOOD_LANE_2	KVS-1987-BUCKLEBURY-CARBINS_WOOD_LANE_2-46	0.05	0.04
1987	BUCKLEBURY	CHERRY_ORCHARD_COTTAGE_1	KVS-1987-BUCKLEBURY-CHERRY_ORCHARD_COTTAGE_1-47	0.03	0.03
1987	BUCKLEBURY	CHERRY_ORCHARD_COTTAGE_2	KVS-1987-BUCKLEBURY-CHERRY_ORCHARD_COTTAGE_2-48	0.04	0.03
1987	THATCHAM	COLTHORP_MANOR	KVS-1987-THATCHAM-COLTHORP_MANOR-17	0.11	0.07
1987	COLTHROP	COLTHROP_1	KVS-1987-COLTHROP-COLTHROP_1-15	0.07	0.07
1987	THATCHAM	COLTHROP_2	KVS-1987-THATCHAM-COLTHROP_2-16	0.09	0.08
1987	THATCHAM	CROOKHAM_MANOR_FARM	KVS-1987-THATCHAM-CROOKHAM_MANOR_FARM-6	0.01	0.01
1987	WOOLHAMPTON	EIGHT_ACRE_GULLY	KVS-1987-WOOLHAMPTON-EIGHT_ACRE_GULLY-53	0.06	0.05
1987	BEENHAM	FODDER_HOUSE_COPSE_1	KVS-1987-BEENHAM-FODDER_HOUSE_COPSE_1-55	0.06	0.05
1987	BEENHAM	FODDER_HOUSE_COPSE_2	KVS-1987-BEENHAM-FODDER_HOUSE_COPSE_2-56	0.05	0.04
1987	BEENHAM	FODDER_HOUSE_COPSE_3	KVS-1987-BEENHAM-FODDER_HOUSE_COPSE_3-57	0.02	0.02
1987	THATCHAM	HARTS_HILL_1	KVS-1987-THATCHAM-HARTS_HILL_1-12	0.30	0.27
1987	THATCHAM	HARTS_HILL_2	KVS-1987-THATCHAM-HARTS_HILL_2-13	0.09	0.06
1987	THATCHAM	HARTS_HILL_3	KVS-1987-THATCHAM-HARTS_HILL_3-14	0.01	0.004
1987	THATCHAM	HARTS_HILL_FARM_1	KVS-1987-THATCHAM-HARTS_HILL_FARM_1-11	0.06	0.06
1987	THATCHAM	HOP_GARDEN_GULLY	KVS-1987-THATCHAM-HOP_GARDEN_GULLY-5	0.05	0.04

Survey Year	Parish	Survey Field Name	Project Unique ID	Field area (km^2)	Area walked (km^2)
1987	THATCHAM	LIMBERLOST-FARM	KVS-1987-THATCHAM-LIMBERLOST-FARM-1	0.06	0.05
1987	THATCHAM	MANOR_ASH_MOAT	KVS-1987-THATCHAM-MANOR_ASH_MOAT-8	0.05	0.04
1987	BEENHAM	OAKWOOD_FARM	KVS-1987-BEENHAM-OAKWOOD_FARM-66	0.04	0.03
1987	THATCHAM	OSIERS_GULLY	KVS-1987-THATCHAM-OSIERS_GULLY-4	0.05	0.05
1987	MIDGHAM	OUZEL_GULLY	KVS-1987-MIDGHAM-OUZEL_GULLY-18	0.06	0.06
1987	BUCKLEBURY	PARK_VIEW	KVS-1987-BUCKLEBURY-PARK_VIEW-43	0.05	0.05
1987	BEENHAM	PEARTREE_COPSE_1	KVS-1987-BEENHAM-PEARTREE_COPSE_1-77	0.01	0.01
1987	BEENHAM	PEARTREE_COPSE_2	KVS-1987-BEENHAM-PEARTREE_COPSE_2-78	0.01	0.01
1987	BEENHAM	PIGEON_HOUSE_GULLY	KVS-1987-BEENHAM-PIGEON_HOUSE_GULLY-54	0.03	0.03
1987	BEENHAM	SEVEN_ACRE_COPSE	KVS-1987-BEENHAM-SEVEN_ACRE_COPSE-68	0.10	0.09
1987	ALDERMASTON	WASING_LANE	KVS-1987-ALDERMASTON-WASING_LANE-34	0.02	0.02
1987	BEENHAM	WEBBS_LANE_1	KVS-1987-BEENHAM-WEBBS_LANE_1-69	0.02	0.01
1987	BEENHAM	WEBBS_LANE_2	KVS-1987-BEENHAM-WEBBS_LANE_2-70	0.07	0.03
1987	BEENHAM	WEBBS_LANE_3	KVS-1987-BEENHAM-WEBBS_LANE_3-71	0.06	0.05
1987	BEENHAM	WEBBS_LANE_4	KVS-1987-BEENHAM-WEBBS_LANE_4-72	0.06	0.05
1987	BEENHAM	WEBBS_LANE_5	KVS-1987-BEENHAM-WEBBS_LANE_5-73	0.01	0.004
1987	BEENHAM	WEBBS_LANE_6	KVS-1987-BEENHAM-WEBBS_LANE_6-74	0.06	0.05
1987	BEENHAM	WEBBS_LANE_7	KVS-1987-BEENHAM-WEBBS_LANE_7-75	0.01	0.01
1987	BEENHAM	WEBBS_LANE_8	KVS-1987-BEENHAM-WEBBS_LANE_8-76	0.01	0.01
1987	BUCKLEBURY	WOOTTONS	KVS-1987-BUCKLEBURY-WOOTTONS-44	0.02	0.01
1988	SHAW_CUM_DONNINGTON	DONNINGTON_CASTLE_1	KVS-1988-SHAW_CUM_DONNINGTON-DONNINGTON_CASTLE_1-310	0.13	
1988	SHAW_CUM_DONNINGTON	DONNINGTON_CASTLE_2	KVS-1988-SHAW_CUM_DONNINGTON-DONNINGTON_CASTLE_2-311	0.11	
1988	SHAW_CUM_DONNINGTON	DONNINGTON_CASTLE_3	KVS-1988-SHAW_CUM_DONNINGTON-DONNINGTON_CASTLE_3-312	0.05	
1988	SHAW_CUM_DONNINGTON	DONNINGTON_CASTLE_4	KVS-1988-SHAW_CUM_DONNINGTON-DONNINGTON_CASTLE_4-313	0.06	
1988	SHAW_CUM_DONNINGTON	DONNINGTON_CASTLE_4A	KVS-1988-SHAW_CUM_DONNINGTON-DONNINGTON_CASTLE_4A-314	0.04	
1988	SHAW_CUM_DONNINGTON	DONNINGTON_CASTLE_5	KVS-1988-SHAW_CUM_DONNINGTON-DONNINGTON_CASTLE_5-315	0.07	
1988	SHAW_CUM_DONNINGTON	DONNINGTON_CASTLE_6	KVS-1988-SHAW_CUM_DONNINGTON-DONNINGTON_CASTLE_6-316	0.07	
1988	SHAW_CUM_DONNINGTON	DONNINGTON_CASTLE_7	KVS-1988-SHAW_CUM_DONNINGTON-DONNINGTON_CASTLE_7-317	0.06	
1988	SHAW_CUM_DONNINGTON	DONNINGTON_CASTLE_8	KVS-1988-SHAW_CUM_DONNINGTON-DONNINGTON_CASTLE_8-318	0.07	
1988	THATCHAM	DUNSTON_PARK_1	KVS-1988-THATCHAM-DUNSTON_PARK_1-79	0.04	0.04
1988	THATCHAM	DUNSTON_PARK_2	KVS-1988-THATCHAM-DUNSTON_PARK_2-80	0.02	0.02

Survey Year	Parish	Survey Field Name	Project Unique ID	Field area (km^2)	Area walked (km^2)
1988	THATCHAM	DUNSTON_ PARK_3	KVS-1988-THATCHAM-DUNSTON_PARK_3-81	0.06	0.06
1988	THATCHAM	DUNSTON_ PARK_4	KVS-1988-THATCHAM-DUNSTON_PARK_4-82	0.03	0.03
1988	ENBORNE	ENBORNE_ GATE_1	KVS-1988-ENBORNE-ENBORNE_GATE_1-285	0.21	0.20
1988	ENBORNE	ENBORNE_ GATE_10	KVS-1988-ENBORNE-ENBORNE_GATE_10-294	0.22	0.20
1988	ENBORNE	ENBORNE_ GATE_10A	KVS-1988-ENBORNE-ENBORNE_GATE_10A-295	0.14	0.13
1988	ENBORNE	ENBORNE_ GATE_11	KVS-1988-ENBORNE-ENBORNE_GATE_11-296	0.03	0.03
1988	ENBORNE	ENBORNE_ GATE_2	KVS-1988-ENBORNE-ENBORNE_GATE_2-286	0.08	0.07
1988	ENBORNE	ENBORNE_ GATE_3	KVS-1988-ENBORNE-ENBORNE_GATE_3-287	0.02	0.02
1988	ENBORNE	ENBORNE_ GATE_4	KVS-1988-ENBORNE-ENBORNE_GATE_4-288	0.06	0.05
1988	ENBORNE	ENBORNE_ GATE_5	KVS-1988-ENBORNE-ENBORNE_GATE_5-289	0.12	0.11
1988	ENBORNE	ENBORNE_ GATE_6	KVS-1988-ENBORNE-ENBORNE_GATE_6-290	0.03	0.02
1988	ENBORNE	ENBORNE_ GATE_7	KVS-1988-ENBORNE-ENBORNE_GATE_7-291	0.20	0.18
1988	ENBORNE	ENBORNE_ GATE_8	KVS-1988-ENBORNE-ENBORNE_GATE_8-292	0.12	0.11
1988	ENBORNE	ENBORNE_ GATE_9	KVS-1988-ENBORNE-ENBORNE_GATE_9-293	0.04	0.03
1988	MIDGHAM	KENNETHO LME_FARM _1	KVS-1988-MIDGHAM-KENNETHOLME_FARM_1-86	0.08	0.07
1988	MIDGHAM	KENNETHO LME_FARM _2	KVS-1988-MIDGHAM-KENNETHOLME_FARM_2-87	0.09	0.08
1988	MIDGHAM	KENNETHO LME_FARM _3	KVS-1988-MIDGHAM-KENNETHOLME_FARM_3-88	0.06	0.05
1988	MIDGHAM	KENNETHO LME_FARM _4	KVS-1988-MIDGHAM-KENNETHOLME_FARM_4-89	0.05	0.04
1988	MIDGHAM	KENNETHO LME_FARM _5	KVS-1988-MIDGHAM-KENNETHOLME_FARM_5-90	0.05	0.04
1988	THATCHAM	LOWER_HE NWICH_FA RM_3	KVS-1988-THATCHAM-LOWER_HENWICH_FARM_3-306	0.07	0.07
1988	THATCHAM	LOWER_HE NWICK_FA RM_1	KVS-1988-THATCHAM-LOWER_HENWICK_FARM_1-304	0.10	0.09
1988	THATCHAM	LOWER_HE NWICK_FA RM_2	KVS-1988-THATCHAM-LOWER_HENWICK_FARM_2-305	0.02	0.02
1988	THATCHAM	LOWER_HE NWICK_FA RM_4	KVS-1988-THATCHAM-LOWER_HENWICK_FARM_4-307	0.03	0.03
1988	THATCHAM	LOWER_HE NWICK_FA RM_5	KVS-1988-THATCHAM-LOWER_HENWICK_FARM_5-308	0.14	0.13
1988	THATCHAM	LOWER_HE NWICK_FA RM_6	KVS-1988-THATCHAM-LOWER_HENWICK_FARM_6-309	0.07	0.07
1988	THATCHAM	PARK_FAR M_1	KVS-1988-THATCHAM-PARK_FARM_1-83	0.04	0.04
1988	THATCHAM	PARK_FAR M_2	KVS-1988-THATCHAM-PARK_FARM_2-84	0.03	0.03
1988	THATCHAM	PARK_FAR M_3	KVS-1988-THATCHAM-PARK_FARM_3-85	0.15	0.14
1989	THATCHAM	HENWICK_ LANE_1	KVS-1989-THATCHAM-HENWICK_LANE_1-303	0.14	0.13
1989	SHAW	MOUSEFIE LD_FARM_ 1	KVS-1989-SHAW-MOUSEFIELD_FARM_1-301	0.10	0.09

Survey Year	Parish	Survey Field Name	Project Unique ID	Field area (km^2)	Area walked (km^2)
1989	SHAW	MOUSEFIELD_FARM_2	KVS-1989-SHAW-MOUSEFIELD_FARM_2-302	0.07	0.06
1989	SHAW	SHAW_1	KVS-1989-SHAW-SHAW_1-297	0.04	0.04
1989	SHAW	SHAW_3	KVS-1989-SHAW-SHAW_3-299	0.07	0.05
1989	SHAW	SHAW_4	KVS-1989-SHAW-SHAW_4-300	0.07	0.06
1989	SHAW	SHAW-2	KVS-1989-SHAW-SHAW-2-298	0.06	0.06
Total				27.78	25.59

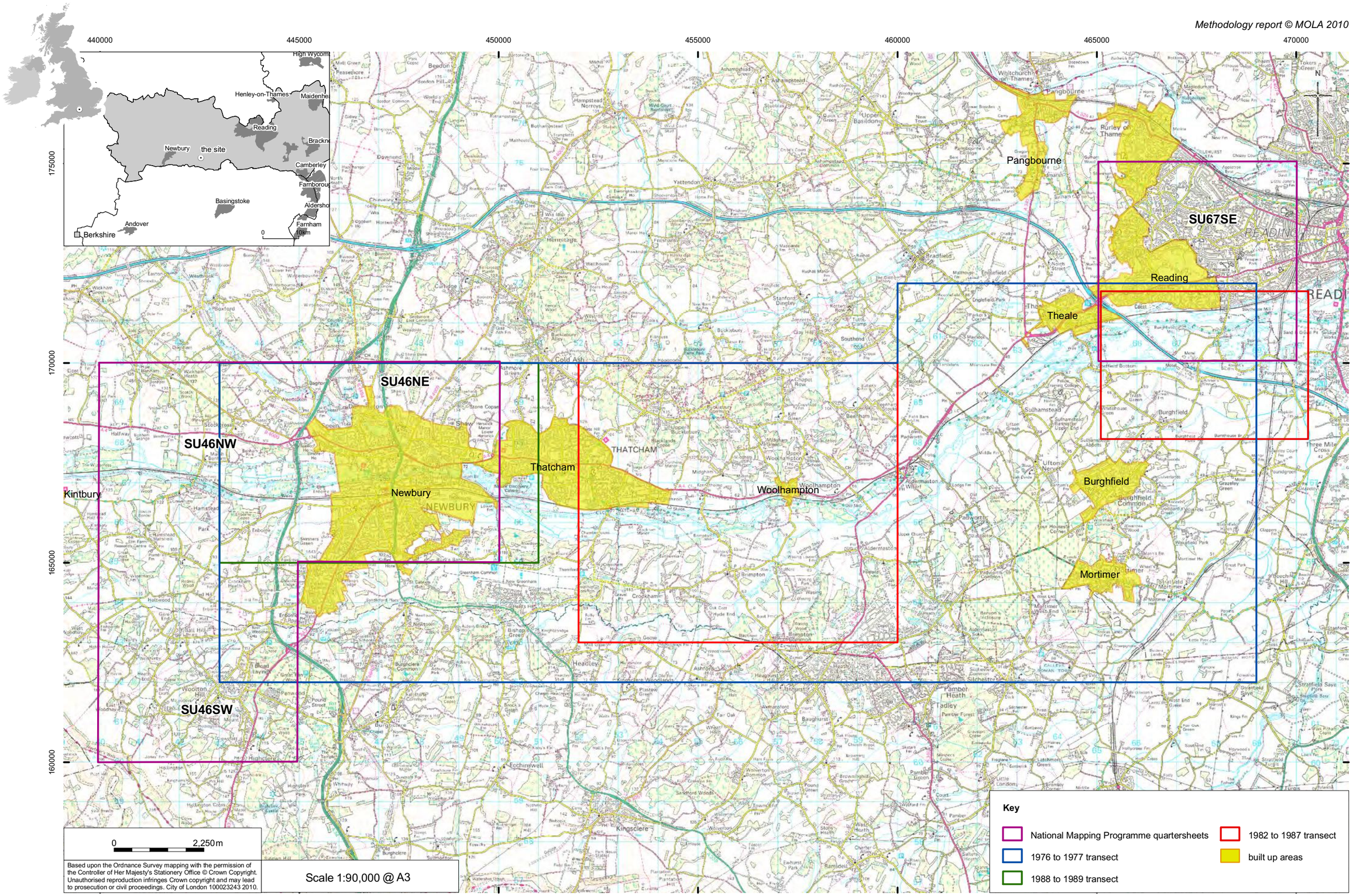


Fig 1 Location of Lower Kennet Valley Survey transects

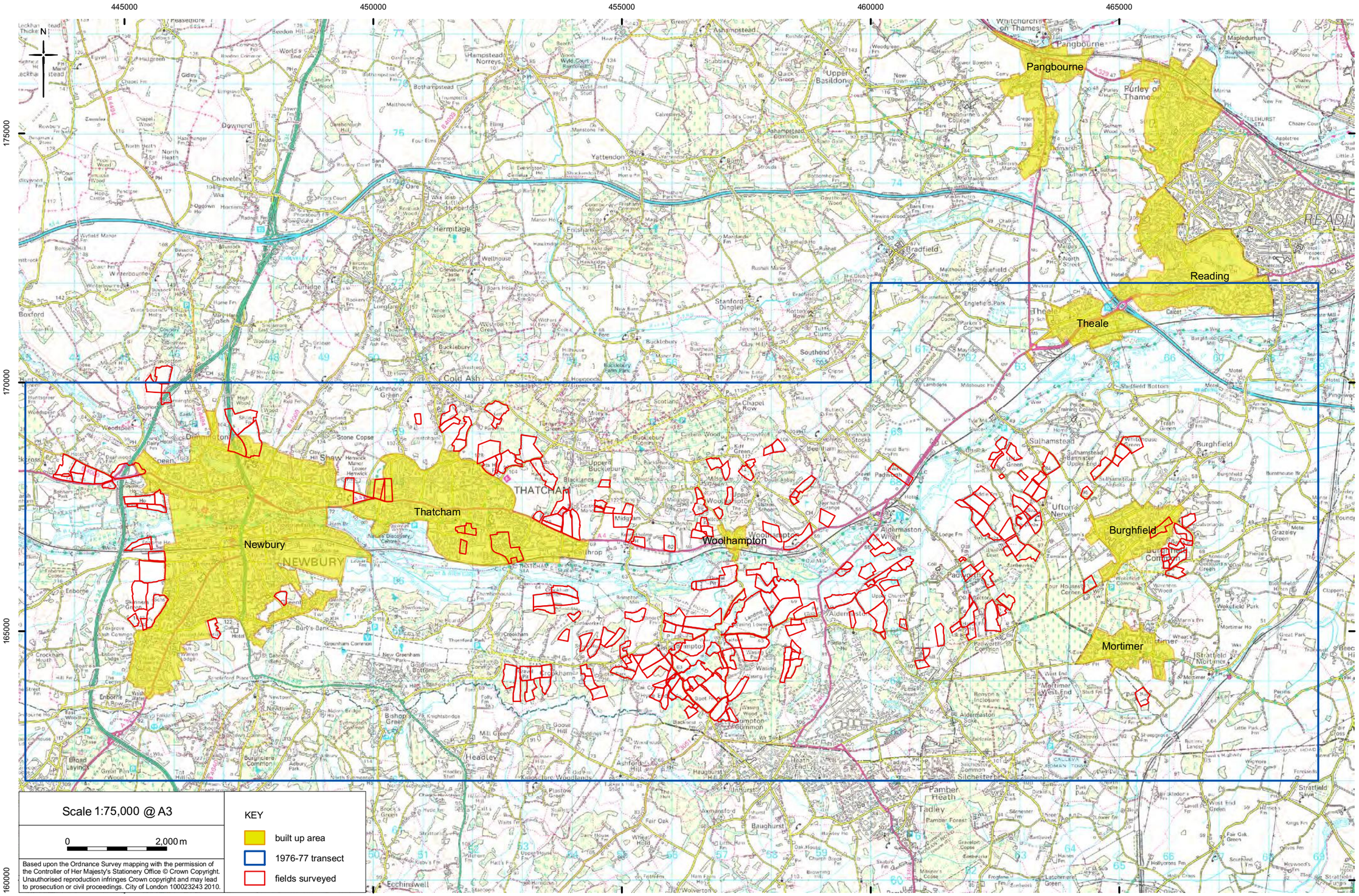


Fig 2 Location of fields surveyed during 1976-7 survey period

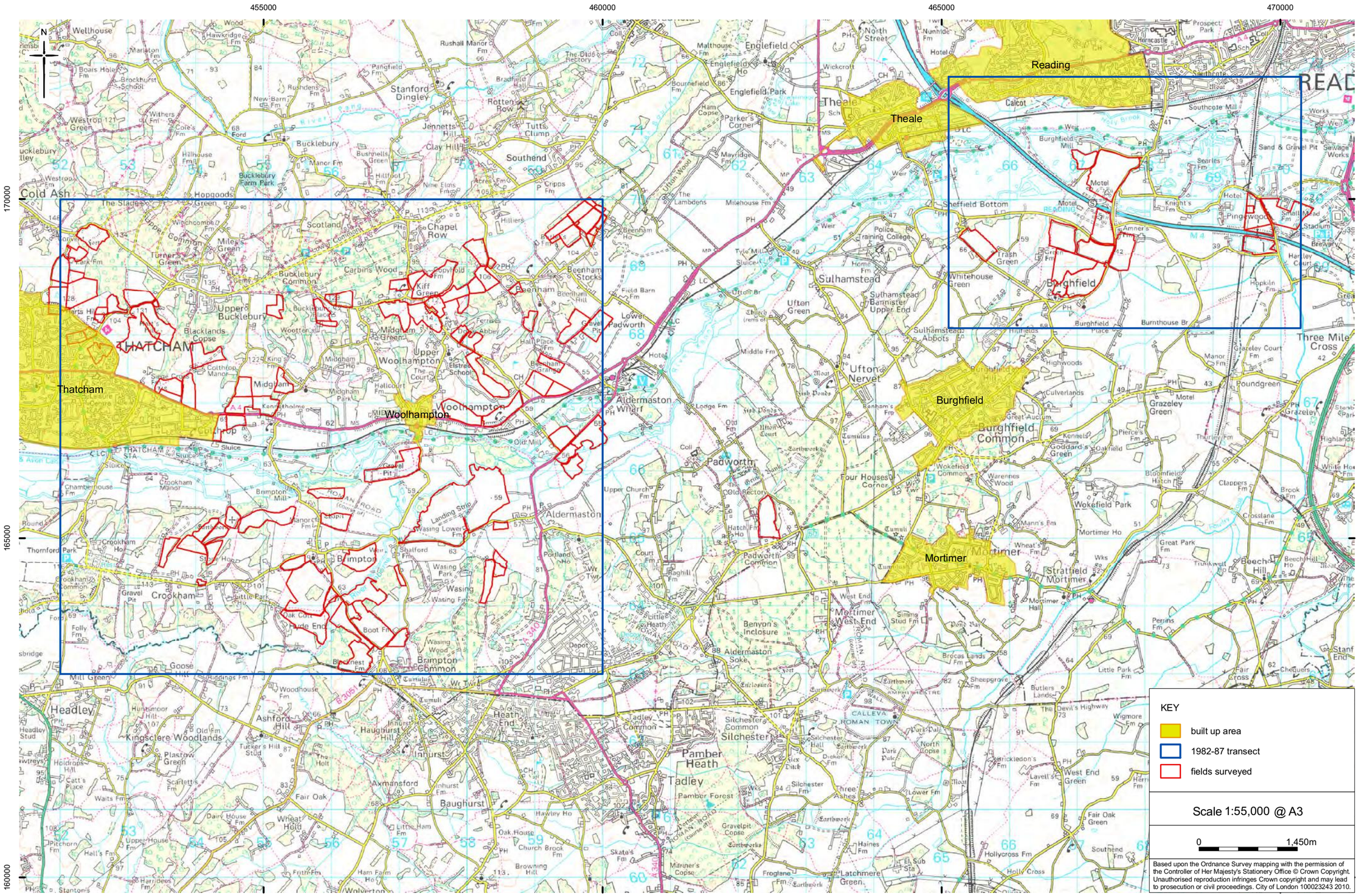


Fig 3 Location of fields surveyed during 1982–7 survey period

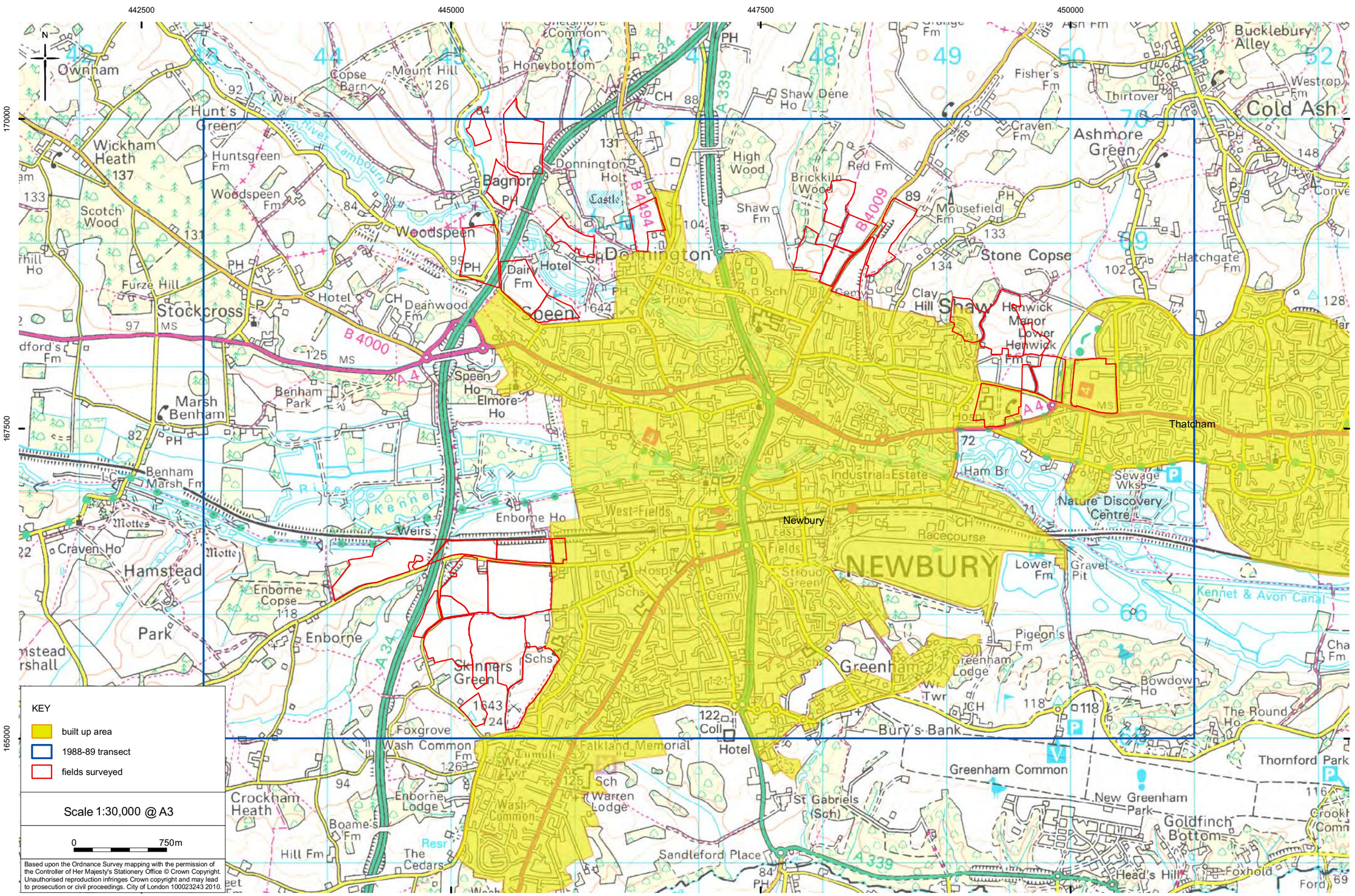


Fig 4 Location of fields surveyed during the 1988-9 survey period

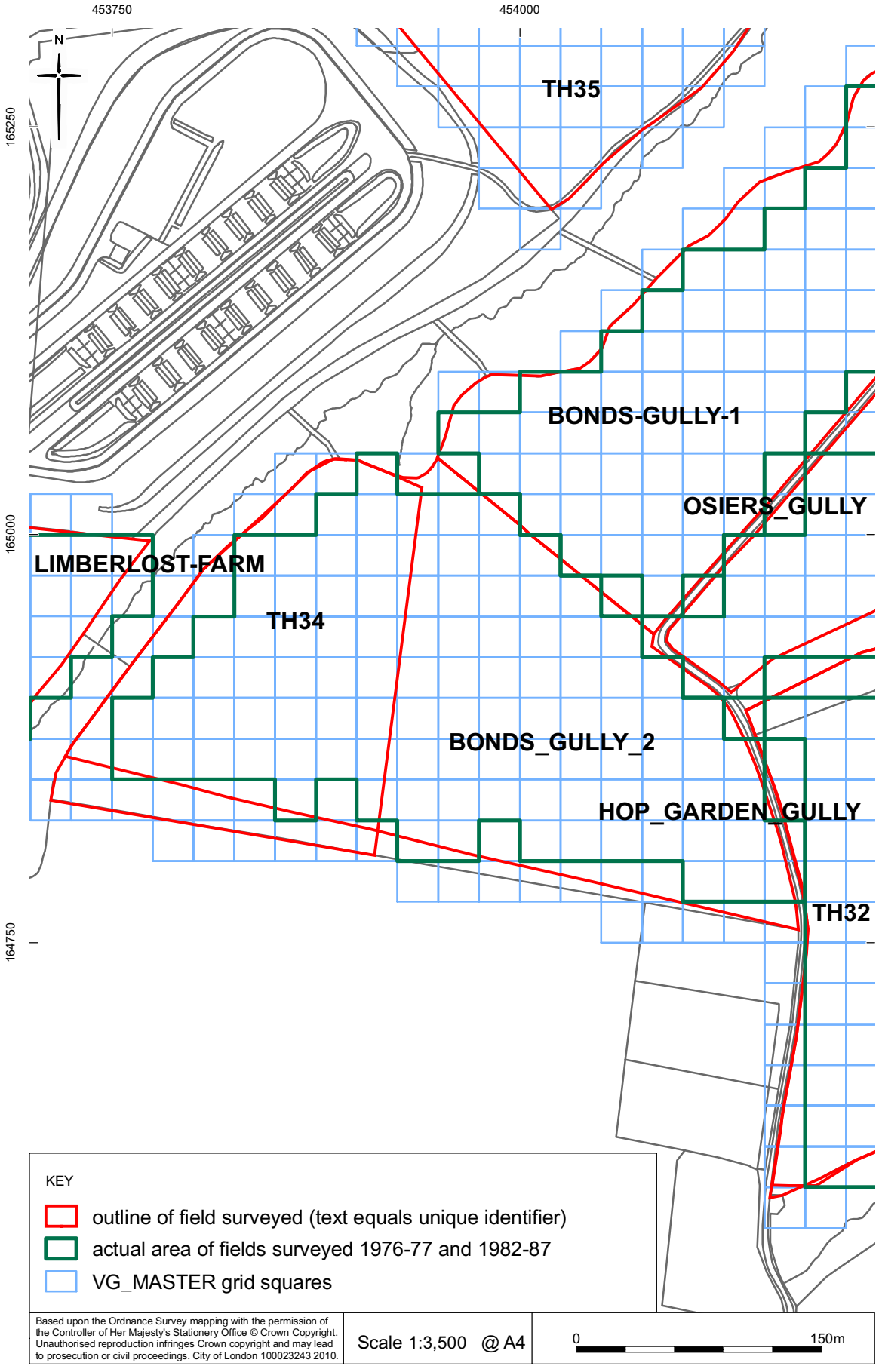


Fig 5 Detail of the GIS feature-class of digitised field boundaries overlaid with the GIS feature-class showing the area actually walked within the field and the GIS feature-class VG_MASTER (data grid square)

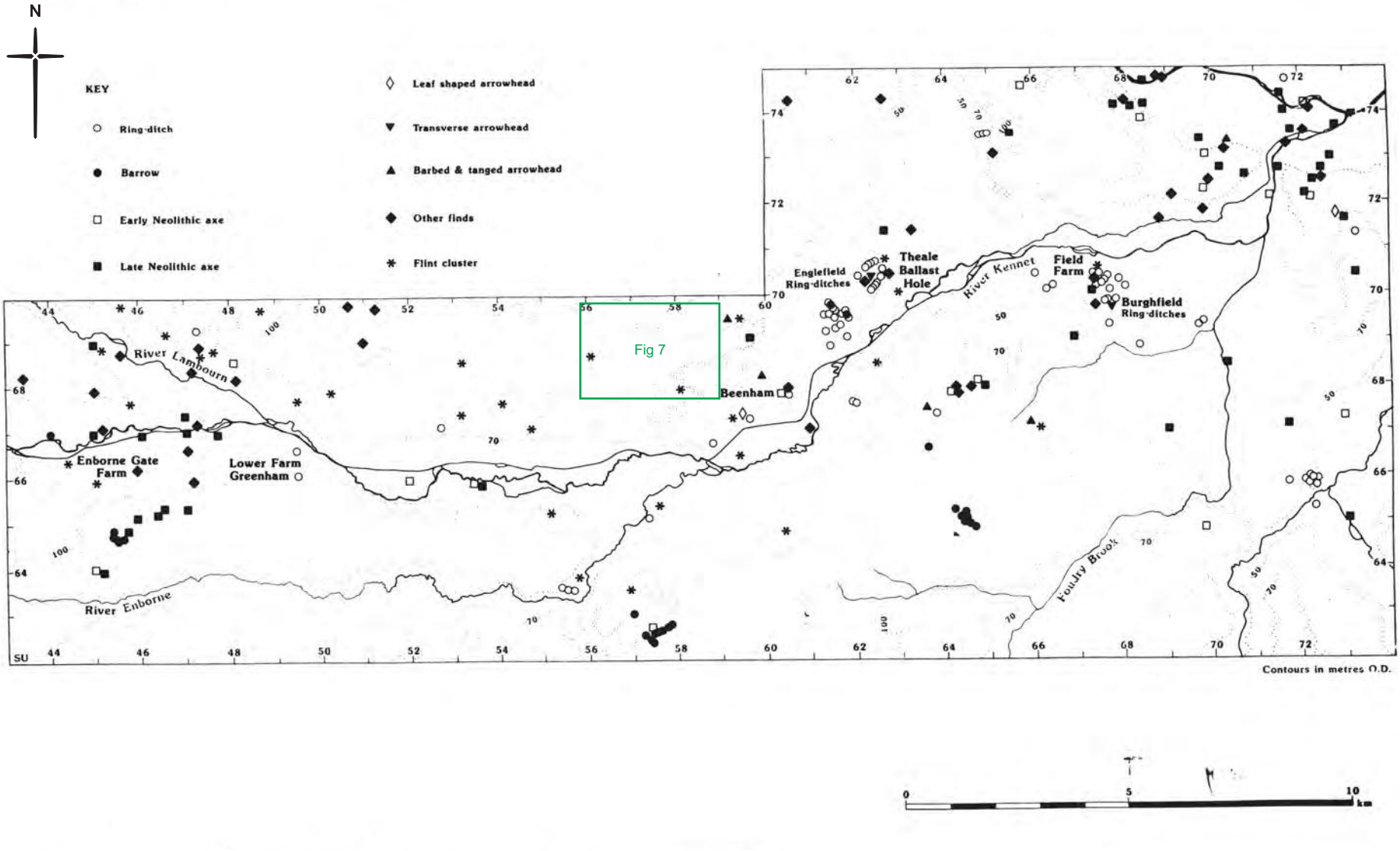


Fig 6 Figure 14 from the 'Archaeological Survey of the Lower Kennet Valley' (Leob and Rose, Wessex, 1996, page 76) showing distribution of Neolithic and Bronze artefacts with insert showing the location of Fig 7 of this report

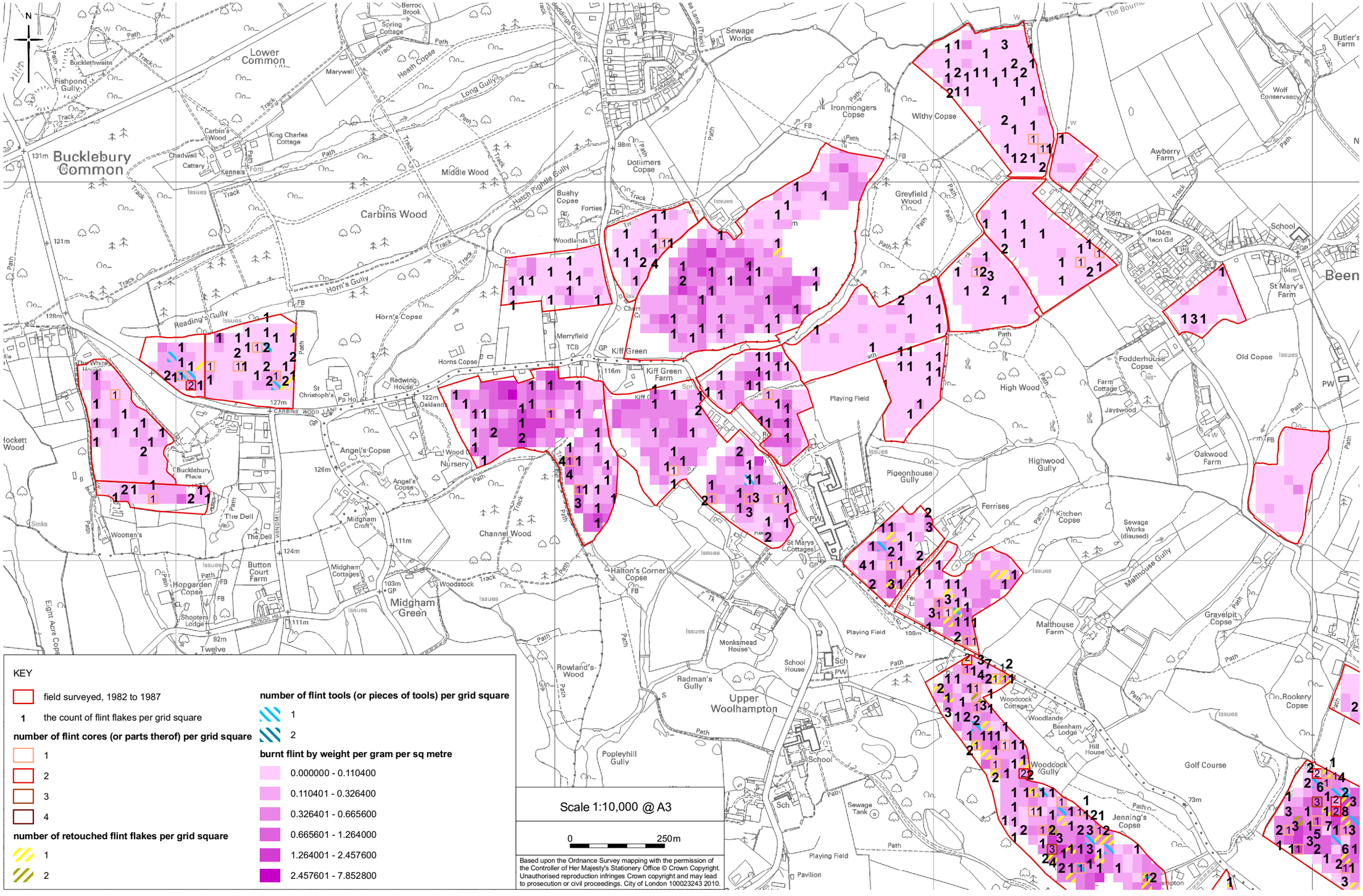


Fig 7 Detail of digitisation project showing the 'unrecorded' area of flint concentration in and around Kiff Green village - see Fig 6

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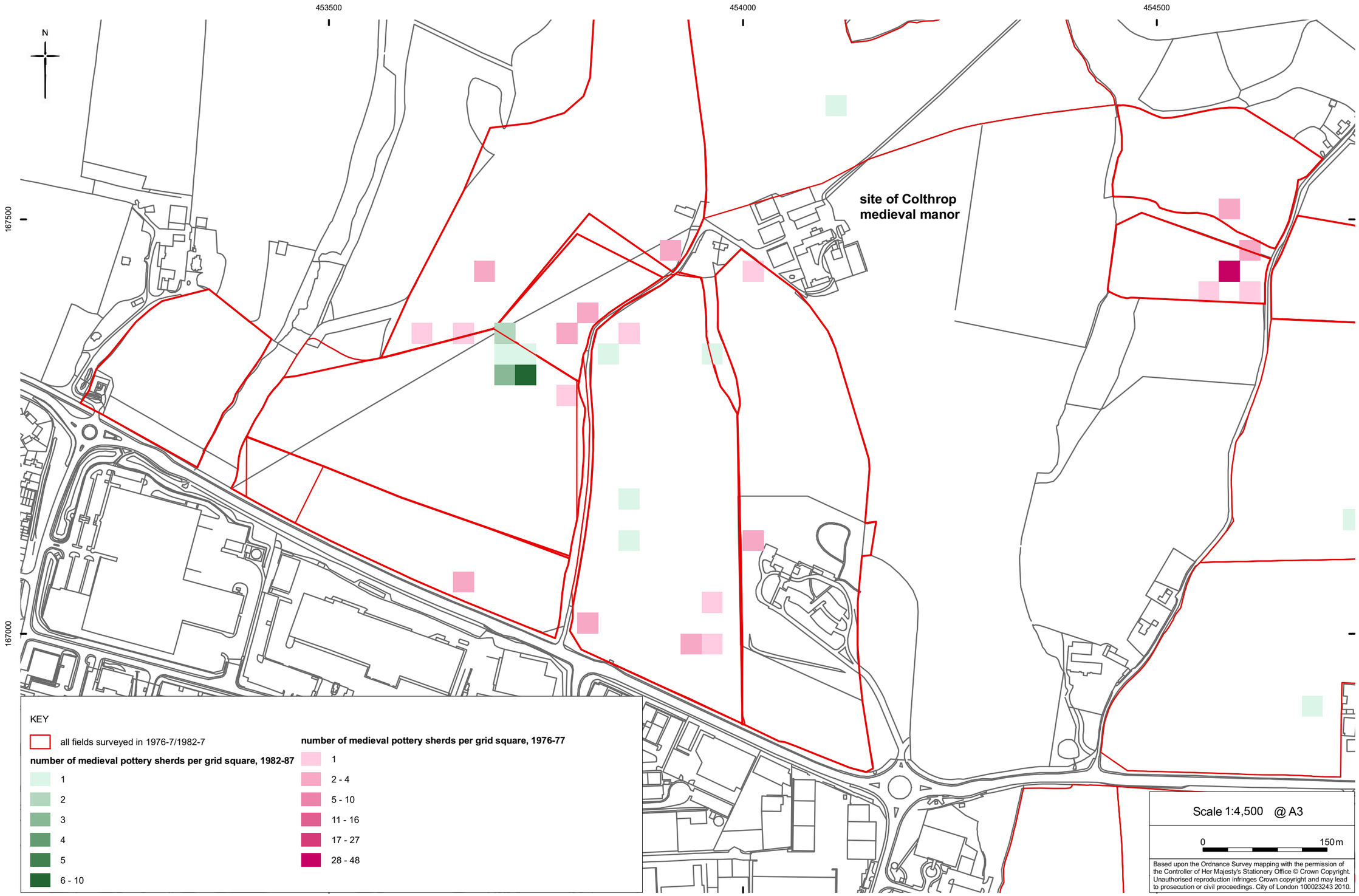

Fig 8 Detail of the digitisation project showing the distribution of medieval pottery recovered during 1976-777 and 1982-87 near Colthrop Manor

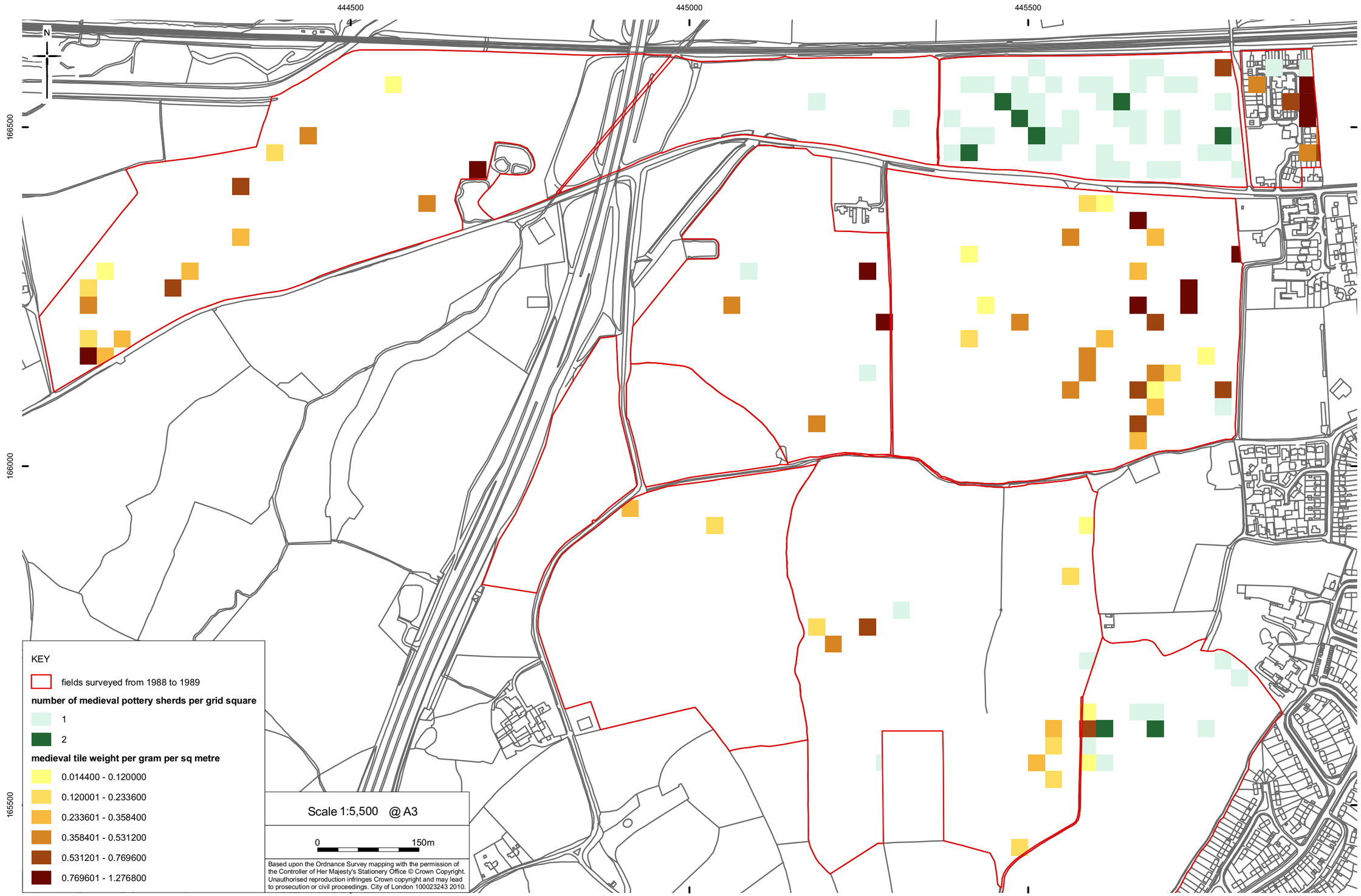

Fig 9 Detail showing distribution of medieval pottery recovered at Enborne Gate, 1988-89

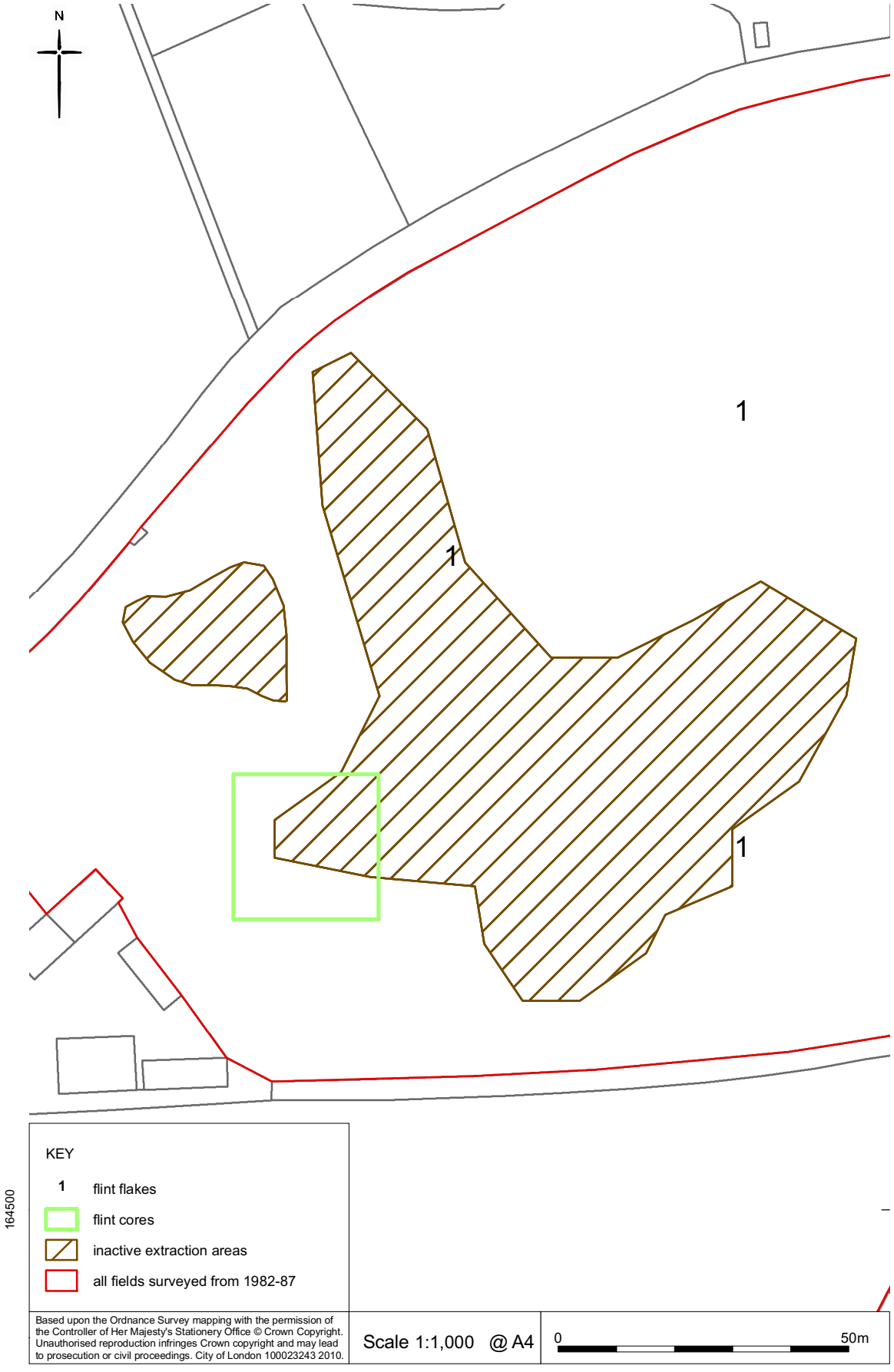

Fig 10 Detail showing past areas of extraction in the area of Holdaways Farm and their relationship to the location of flint artefacts found from 1982-87

467000 467500 468000

170500 170000

N

Burghfield Mill

MILL ROAD

FB

Kennet and Avon Canal

Burghfield Bridge

Towing Path

Burghfield Farm

PH

42m

MILL ROAD

enclosure

ring ditch

Drain

ring ditches

linear feature

PINGEWOOD ROAD NORTH

atlands ttages

Service Area

Golf Course

43m

BERRY'S LANE

FIELD ROAD

Slipway

KEY

cropmarks identified by NMP (quatersheet SU67SE)

fields surveyed 1982-87

1 the count of flint flakes per grid square

number of flint cores (or parts thereof) per grid square

1
2
3
4

number of retouched flint flakes per grid sqaure

1
2

number of flint tools (or pieces of tools) per grid squares

1
2

burnt flint by weight per gram per square metre

0.000000 - 0.110400
0.110401 - 0.326400
0.326401 - 0.665600
0.665601 - 1.264000
1.264001 - 2.457600
2.457601 - 7.852800

Scale 1:4,000 @ A3

0 100m

Fig 11 Detail showing the area of Pingewood/Burghfield covered by the National Mapping Programm over the fields surveyed from 1982-87

444500 445000 445500

166000 165500

N

linear features

ridge and furrow

Scale 1:4,000 @ A3

0 100m

KEY

cropmarks identified by NMP (quartersheet SU46 NW and NE)

field surveyed during 1988-89 survey

number of retouched flint flakes per grid square

1

2

number of flint cores (or parts thereof) per grid square

1

2

3

1 the count of flint flakes per grid square

number of flint tools (or pieces of tools) per grid square

1

burnt flint by weight per gram per square metre

0.000000 - 0.067200

0.067201 - 0.193600

0.193601 - 0.379200

0.379201 - 0.672000

0.672001 - 1.228800

1.228801 - 2.504000

Fig 12 Detail showing the area of Enborne covered by the National Mapping Programme over the fields surveyed from 1988-89

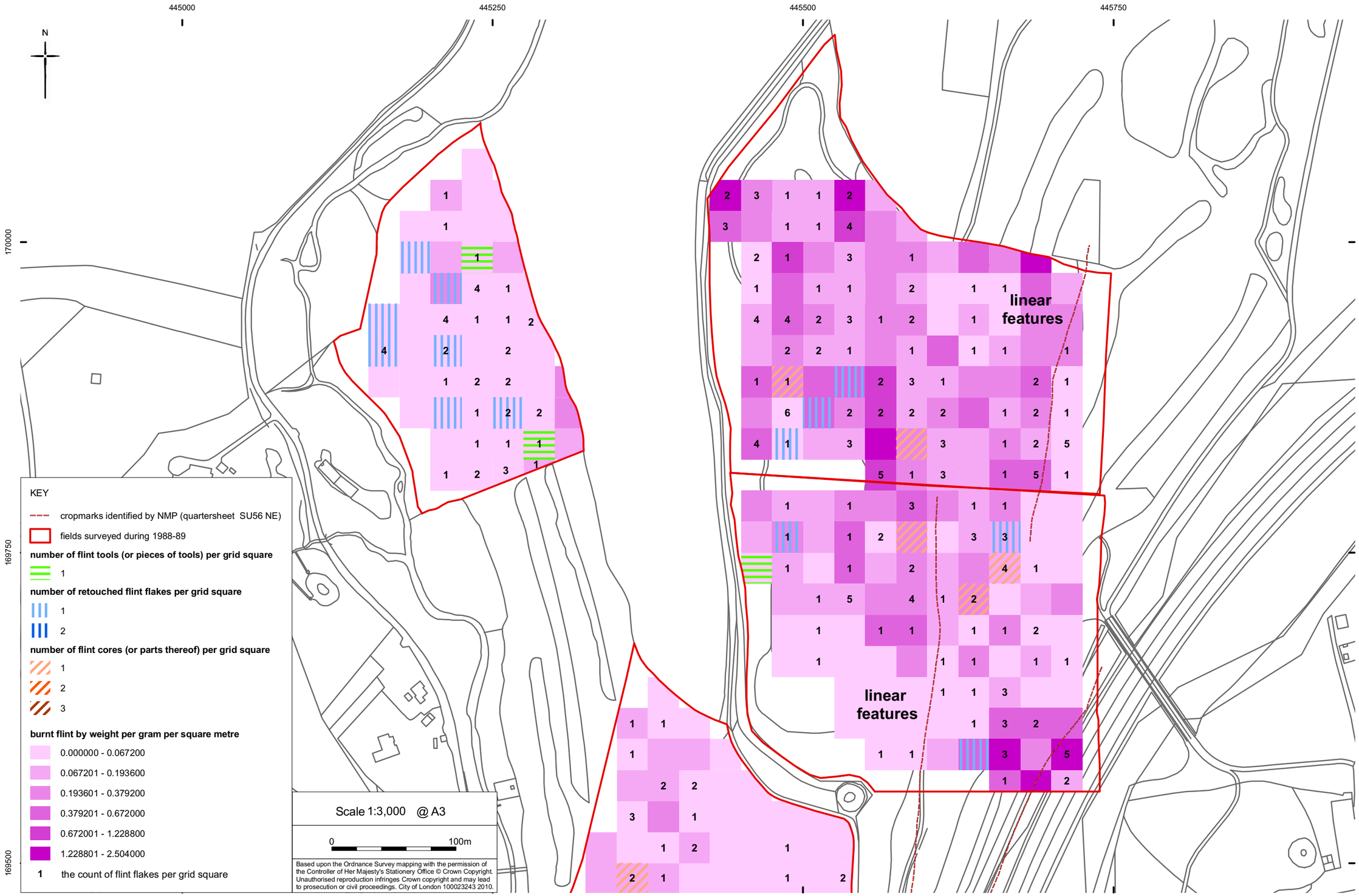

Fig 13 Detail showing the area of Donnington Castle covered by the National Mapping Programme over the fields surveyed from 1988 to 89

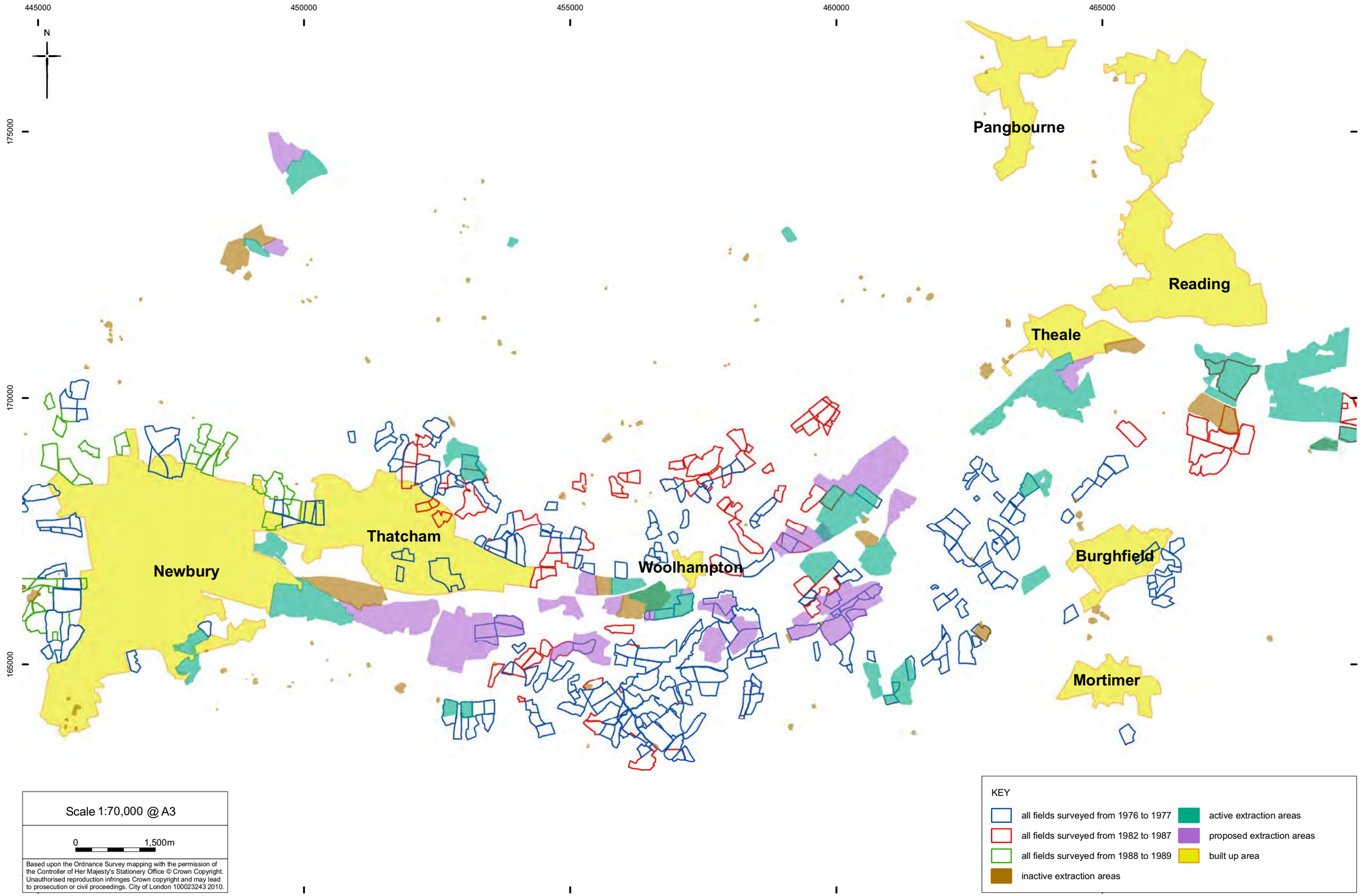

Fig 14 Map showing inactive, active, and proposed extraction areas in relation to fields surveyed during the Lower Kennet Survey