# AHRC Methodology

## INTRODUCTION

These notes are intended for users of the data deposited with ADS from the AHRC-funded project, 'A GIS-aided Study of Agriculture and Land Use in Northamptonshire'. It provides some idea of its character and limitations. All the data used in the project is discussed here, including the 'Background data sets,' 'Additional datasets' and 'Analysis data sets' which have not been deposited. For a full list of the tables deposited see project metadata.

The project area covered the whole of the pre-modern county of Northamptonshire which included the Soke of Peterborough, which does not form part of the modern county. Data was collected by the project team for the whole of this area. Where possible data provided from external sources also covered the pre-modern county, with some exceptions (see below).

The methodology for this project was first devised for projects undertaken by Northamptonshire County Council (NCC) for various local authorities, and later adapted for the Rockingham Forest Trust (RFT) by Glenn Foard, Tracey Partida and David Hall. Data from the Rockingham Project was provided with permission from the copyright holders (Rockingham Forest Trust, Glenn Foard, Tracey Partida and David Hall). The Rockingham Project formed the pilot for this current project with some alterations to the original methodology and many wholly new data sets added and analysis techniques developed. The project spanned four years with the first three concerned with data collection and limited analysis. The final year was employed to analysis and writing with limited additional data collected.

Data was initially held in directories by year and only later combined to create single countywide tables, where this proved practicable (see below). All new data was created in a Geographical Information System (GIS) using the programme MapInfo 8.5. Data provided in other formats was converted to MapInfo .tab files.

The 'Combined tables' derived from 'Base data sets' are available online at Archaeological Data Services (ADS) http://ads.ahds.ac.uk/. That for the post-medieval period comprises multiple sets for some places - where a series of maps shows the morphology of the landscape over time - and these have been simplified to a single data set for the whole county using the one closest in date to the enclosure.

## BACKGROUND DATA SETS

In addition to the base data tables created for the project, further data was supplied under licence or with permission from various sources. Additional data publicly accessible on the web was also utilised especially Google Maps; English Heritage National Monuments Record, Images of England; the National Archive.
All data supplied or acquired from external sources was held in separate directories to the base data created by the project team .

## Ordnance Survey (OS)

### OS 1ST EDITION 1:10560 SCALE MAPPING OF THE 1880S.

Original copies of the OS 1St Edition 1:10,560 scale maps were provided by Northamptonshire Record Office. Each map sheet was scanned and registered as raster images in MapInfo. These maps were used as the background against which almost all of the post medieval data was mapped (see below).

### OS 2" SURVEYOR DRAWINGS 1811-1819

Online copies of the Ordnance Survey 2" Surveyors Drawings at The British Library http://www.bl.uk/onlinegallery/onlineex/ordsurvdraw/ were utilised for additional data where no other historic map had been identified. These proved particularly useful for plotting woods and roads but were not sufficiently accurate for the mapping of field boundaries.

### OS MASTERMAP 2006.

Supplied under licence and converted for use in MapInfo by www.mapsbydesign.co.uk. This was the base data against which all raster images were registered.

### OS LANDFORM PROFILE

#### Data download and processing

The raw Digital Terrain Model (DTM) data was acquired from the Edina Digimap OS Collection (http://www.edina.ac.uk/digimap), and was downloaded in .ntf format from the OS Landform PROFILE DTM dataset.

The NTF files were downloaded by 5km grid square quarter sheets, and saved in the folder 'NTF files.' Using NTF2MIF 3.2, these were then merged into 10km squares and saved in MapInfo file (.mif) format in the folder 'MIF files.' After all of the 10km grid squares for the entire county were processed, the MIF files were then batch imported into MapInfo in .tab file format, saved in the folder 'DTM files.' Each 10km grid square of DTM data was thus represented by a separate MapInfo table. The DTM data as downloaded from Edina records elevations in decimeters, and as such it was necessary to convert the elevation data to meters for standardized analysis. Each 10km square file was run through the Update Table function in MapInfo, in which the entries in the Height field were divided by 10, thus giving DTM heights in meters.

In order to process the raw DTM data into the usable format of raster grid files (.grd), each 10km square .tab file was processed in MapInfo's Vertical Mapper 3.0. The following command line was executed: 'Create Grid' → 'Interpolation' → 'Triangulation with Smoothing' → Select appropriate .tab file for conversion → 'Average Value.' This resulted in an invidiual GRD file for each 10km grid square in Northamptonshire, which were saved in the folder 'Grid files.' In addition to the GRD files for each individual 10km square, a seamless GRD file for the whole county was created, to facilitate relief analysis at both large and small scales. This was accomplished through the Grid Splicer tool within Vertical Mapper's Grid Manager. Because errors in splicing are introduced if more than two objects are merged at once,

the 10km grid squares for the entire county could not be spliced in one single operation. Instead, a series of successive splices were used to achieve the seamless map. Two individual, abutting grid squares were spliced together, and the resulting file was saved under a temporary file name (e.g. splicedgrid1.grd.) That resulting GRD file was then spliced with the next adjoining single grid square. The resulting merged object was given a new temporary file name (e.g. splicedgrid2.grd), and joined with the next abutting single grid square. Through such repeated splicings a seamless GRD map of the entire county was created.

**Line and region contours**

After the processing of the DTM data was complete, both the individual grid square and county raster GRD files were converted into vector line and polygon format, for more ready integration with other landscape datasets. Each 10km grid square was processed into 1m polyline and region contours through Grid Manager. Within the Contour tool, polyline was selected for the appropriate grid square, and the Intervals tool box was selected. The minimum elevation value was set at the next factor of 5 lower than the actual minimum elevation (e.g. 41.8859 meter minimum set to 40), and the interval was set to 1. After the line contour was processed and saved in the 'Contour Line' folder, the same grid square's GRD file was processed again, to the same parameters, through region contours, and saved in the 'Contour Region' folder. The same process was then carried out for each 10km grid square in the county.

From the seamless county GRD file, line and region contours at 10m intervals were created for the whole of Northamptonshire. The same process was followed as for the individual grid squares, except that the interval value was set to 10.

## Northamptonshire County Council (NCC)

Data sets were provided by NCC for use within the project:

**SMR**

Countywide data on early-middle and late Saxon sites collected for use in the Rockingham project and analysed together with Hall's Saxon sites data on a countywide scale in 2002 by Foard and Hall, as published in Foard, Hall & Partida 2009. The combined data set was then employed in the AHRC project.

**ENGLISH HERITAGE (EH) DESIGNATIONS**

Locational information for Listed Buildings and Scheduled Ancient Monuments was provided as vector data in MapInfo .tab format in the form of a polygon of the designated area, with a limited amount of information (e.g. site number or listing grade). Additional data relating to specific buildings or sites was accessed via the EH website.

**EH NATIONAL MAPPING PROGRAMME (NMP)**

A simplified dataset 'NMP Interpretations' was provided by Northamptonshire County Council as a single MapInfo .tab file covering the modern county but excluding the Soke of Peterborough.

## Royal Commission on the Historical Monuments of England (RCHME)

Published earthwork surveys were scanned, warped and registered for use in MapInfo to act as guides to early features. Data was not created from the surveys.

## British Geological Survey (BGS)

Data was provided under licence by the BGS.

### DIGITAL GEOLOGICAL MAP OF GREAT BRITAIN (DIGMAPGB) DATA.

Digital geological data covering the whole of the pre-modern county was provided at 1:50,000 scale (DiGMapGB-50) in ESRI .shp format. This was converted to MapInfo .tab format and edited (see below) for use in the project.

**Bgs50_bedrock**

A table of all the bedrock for the region at 1:50,000. To create this table, the BGS 1:50,000 bedrock maps were sorted by the field LEX_ROCK, and all polygons of the same LEX_ROCK designation were combined.

**Bgs50_superficial**

A table of all the superficial (drift) geology for the region at 1:50,000. The same process for joining polygons was undertaken here.

**Bgs50_artificial**

A table of all the quarries, landscaping, infill, and made ground for the region, at 1:50,000. The same process for joining polygons was undertaken here.

**Bgs50_massmovement**

A table of all the landslips for the region at 1:50,000. The same process for joining polygons was undertaken here.

**Bgs50_Northants**

A table combining the geology for the entire region at 1:50,000. To create the table, Bgs50_superficial was overlaid on Bgs50_bedrock, and then the bedrock table was cut away where the superficial table overlapped. The superficial table was then copied and combined to the newly cut bedrock table (i.e. so that in places where the superficial drift overlays the bedrock, only the former is shown, and where there is no drift, the bedrock shows through.) After this, Bgs50_artificial and Bgs50_massmovement were overlaid on the combined superficial/bedrock table, copied, and combined with it. The resulting composite table was then named Bgs50_allgeo.

## National Soils Resources Institute

NATMAP soil vector data was provided under licence in ESRI .shp format and converted to MapInfo .tab format.

## English Heritage

Copies of RAF vertical air photos from the 1940s at the National Monuments Record (NMR) and Northamptonshire record Office (NRO) were used to enhance the data.

**BASE DATA SETS**

## Township

Township boundaries were the most important features to be identified and digitised from historic map sources. Townships were the primary unit of administration, within which communities and their resources were organised from the medieval period to the late nineteenth century, when they were reorganised into civil parishes. Administrative boundaries were arguably as influential as topography and geology on the way the landscape worked. The township also forms the basic unit by which most of the earlier written sources for the landscape are organised. It is therefore essential to construct accurate township boundaries from the earliest possible source. All map sources for each township were consulted, as well as all maps for places abutting that township, in order to the most accurate and earliest version of the boundaries possible. It is of particular importance not to rely solely on enclosure maps, as boundaries were often realigned at enclosure when intermixed land was divided up. Details of individual maps can be found in 'map sources' below. Map sources were verified, where possible, by other data such as charter boundaries, perambulations and furlong data.

For those townships where there is no historic map (see 'no data' below) the township boundary has been drawn from adjoining township maps, with reference to the OS 1st edition 1:10560. A full list of map references is given in the township table. Additional information (such as the fact that the township had detached blocks) is included in the 'notes' field of the browser.

Forest related woodland is excluded from the township table, as it was not part of the same administrative structure (see 'forest' below).

The source data for the township table is derived from post-medieval sources and therefore has a direct relevance only to that period. Township boundaries may not have remained static over time: nevertheless, it can be stated with some confidence that this data is as accurate as possible given the available sources. The same level of confidence cannot be given to the boundaries in the medieval period, but it is likely (on the basis of the open field survey data) that many, probably most, were in existence, and running along the course presented, in the Middle Ages. These units have therefore been used as the framework for analysing data from both the medieval and the post-medieval periods.
Fields within the table are:

**Township name**: If more than one name is given separated by a semi-colon it indicates that they are separate townships but the boundary between the two has not been established. Similarly the name followed by 'Great & Little' indicates two townships but a single polygon as the dividing boundary is unknown. Townships with the same name have a qualifier in brackets e.g. Upton (Soke), or Upton (Northampton) to indicate their location.
**Source:** the full reference/s
**Notes**: any additional information such as detached blocks

## Township and medieval land use

A copy of the Township table was made and columns added for each of the land use types to provide statistical data of medieval land use. A calculation of the total acreage of each type within each township was made using the 'update column' facility. The percentage of each type within each township was then made using the SQL query facility. Fields within the table are:

**Township name**: as in the township table
**Township acreage**: total acreage of the township
**OF extent acreage**: acreage of the open field extent, including OF arable and OF pasture within the township
**OF extent percentage**: open field extent, including OF arable and OF pasture, as a percentage of the township area
**OF arable acreage**: acreage of open field arable within the township
**OF arable percentage**: open field arable as a percentage of the township area
**OF pasture acreage**: acreage of open field pasture within the township
**OF pasture percentage**: open field pasture as a percentage of the township area
**Meadow acreage**: acreage of meadow within the township
**Meadow percentage**: meadow as a percentage of the township area
**Fen acreage**: acreage of fen within the township
**Fen percentage**: fen as a percentage of the township area
**Woodland acreage**: acreage of woodland within the township
**Woodland percentage**: woodland as a percentage of the township area
**Heath acreage**: acreage of heath within the township
**Heath percentage**: heath as a percentage of the township area
**Settlement area acreage**: acreage of settlement area within the township
**Settlement area percentage**: settlement area as a percentage of the township area
**No data acreage**: acreage of no data within the township
**No data percentage**: no data as a percentage of the township area

## Forest

A single table was created for those areas that were not deemed to be part of any township. These were principally Royal Forests, together with deer parks and assarted land. The latter, and many of the former, had once been forest land, lying outside townships: all were therefore included in a single table. Only the portion of each forest lying within the county boundary is given (both Whittlewood and Salcey extended into other counties).

## Archaeology Data

All data within this and the 'medieval' section is from David Hall's fieldwork surveys. Fieldwork began in 1961 and was completed in 2008, the greater part of the area being surveyed during 1972-2002.[1] Private woodland was surveyed at the same time as each parish was studied. Woodlands under the management of Forest Enterprise were surveyed during 1998-2004 and the results are available in five reports, of which there are copies in the NCC HER and NRO. Surveys were undertaken in winter, recording archaeological 'sites' as represented by earthworks and relevant scatters of flint or pottery on the ground surface.[2]

Copies of the original fieldwork 1:10560 scale base maps from the OS Provisional Edition of 1955 were printed and marked in a series of colours identifying the various archaeological features seen during fieldwork survey. The data includes evidence from all periods and was digitised into seven separate tables using different fonts and colours for each type. The tables include polygons, polylines and point locations.

When archaeological features fall into more than one category (e.g. deserted medieval villages are both Medieval Earthworks and Archaeological Sites), polygons for each table were created.

#### ARCHAEOLOGICAL SITE

Recorded as point locations or polygons with additional data in two fields in the browser: 'D Hall site' and 'period type'.

'D Hall Site' records an individual identification code for each archaeological site tied to David Hall's database. Each identification code consists of a four-letter parish abbreviation, a site-type prefix of; S (site), A (artefact), or U (undetermined), and a sequential number.

'Period Type' dates for each site are broken down into 10 separate phases represented by abbreviations:
Indeterminate Prehistoric (Prehist)
Neolithic (Neo)
Mesolithic (Meso)
Bronze Age (BA)
Iron Age (IA)
Roman/Romano-British (RB)
Saxon - c.600-1000 AD (Sax)
Medieval - c.1000-1600 AD (Med)
Post-Medieval c. 1600 AD+ ( PM)
Un-datable (Undat)

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[1] Thanks are especially due to Paul Martin who accompanied D. Hall from 1972-2000 and discovered most of the Saxon sites, using his considerable expertise to collect pottery sherds from them.
[2] Archaeological fieldwork techniques are fully described in Hall 1994 in M. Parker Pearson and R.T. Schadla-Hall 1994. *Looking at the land: archaeological landscapes in eastern England: recent work and future directions: a conference held at Jewry Wall Museum, Leicester, 6-7 October 1989.* Leicestershire Museums, Arts and Records Service.

When one site contained evidence from multiple periods, the periods are listed chronologically, from earliest to latest, separated by a semicolon.

#### BANK AND DITCH

Represented by polylines. Wood banks were created by the excavation of ditches and were topped by hedges or fences as part of coppice management. Where the type of feature is known e.g. wood bank, or park bank the information is added to the table browser.

#### HOLLOW WAY

Represented by polygons with any additional information regarding the feature added to the table browser.

#### MEDIEVAL EARTHWORKS

Represented by polygons, this category encompasses settlement earthworks and therefore usually indicates areas of settlement shrinkage or desertion. In some cases it may include earthworks from water features, although an attempt has been made to treat these separately (see below).

#### MILL RACE

Represented by polygons. There are few earthworks identified as mill races.

#### QUARRY

Represented by polygons this category contains historic quarries identified from fieldwork; it does not include modern or active quarries, which would substantially increase the areas recorded as having been destroyed by mineral extraction.

#### WATER FEATURE POND

Represented by polygons, this category primarily consists of medieval fish ponds.

## Medieval

#### OPEN-FIELD AND RELATED ARCHAEOLOGICAL LANDSCAPE DATA

The medieval landscape comprised six main categories of land use: open-field arable, open-field pasture, meadow, wood, wood pasture, and settlement. These units can be simplified by combining arable and open field pasture to give an extent of open field; wood and wood pasture, not always easily distinguished for the medieval period, to give the extent of woodland (see land use below). The dominant land use type in Northamptonshire was arable, and the base unit of arable agriculture was the strip ('land', or 'selion'), individually ploughed as ridge and furrow . Groups of strips (furlongs) were separated by headlands (low banks of soil) or natural features such as streams and slades. Blocks of surviving ridge and furrow are easily recorded but are few in number. Headlands are often the only archaeological features to survive modern ploughing: recording these has allowed the reconstruction of much of the county's medieval field systems.

Data was recorded in the field on a 1:10560 scale base map (from the OS Provisional Edition of 1955). At this scale used each strip could not be represented individually: instead, each drawn strip represents about four on the ground. The simplification of the strips means that the reverse-S curvature of some strips was more acute than represented, a problem exacerbated by the vectorising process (see below). Data was validated using the RAF 1940s vertical photographs (VAP), held by the National Monuments Record (NMR) at Swindon, and additional data added. Where the archaeology has been destroyed by modern mineral extraction and/or urban expansion, and where there is no data on the RAF VAPs, then detail has been added from pre-enclosure maps. Particular care has been taken when interpreting the latter, however, to ensure that only the arable strips are recorded: some maps delineate strips by tenure rather than land use; i.e. ownership of a strip could include a narrow piece of meadow or pasture at the end of the arable as this formed part of the same unit of property, and the map may record it as a single strip although it was not wholly arable. Similarly, areas of meadow were sometimes referred to as 'furlongs', and could be held in strips Care was also taken not to include ridge and furrow of probable post-medieval origin.

Data obtained from fieldwork and documentary evidence is separately mapped and identifiable with the former having greater validity (see 'source' below).

**BASE DATA TABLES**

From the original fieldwork maps, plans were drawn by hand, accurately detailing the ridge and furrow strips and the furlong boundaries by type; headlands, streams and slades. Slight gaps were left between the lines of the strips and those of the furlong boundaries, and each plan was marked with four NGR kilometre reference points to facilitate the vectorising process. Each plan was then scanned at 300dpi and saved as TIF. files. These were then converted to vector format (dxf. files) using the programme Scan2CAD, imported and georeferenced into MapInfo and converted to MapInfo tables (TAB. Files). Each plan was imported as a single MapInfo table which was then separated into five furlong base tables. Data from each plan was added to each table creating a single table for each type, by the area covered for each year of the project (see 'combined tables' below).

All the furlong tables are in the form of polylines with different fonts, colours and styles making identification of the nature of the source immediately apparent . Additional tables for the source data have also been created.

**Furlongs**

The representation of ridge and furrow gives, as far as is known, the correct orientation, curvature and relative length of each strip.

**Headland Earthwork**

Headlands are low earthwork boundaries that demarcate the furlong blocks, and this table comprises those headlands which were still visible on the ground at the time of survey.

**Headland documentary**

These furlong boundaries are no longer visible on the ground, but are mapped from pre-enclosure open field plans.

**Headland interpolated**

Interpolated headland lines represent furlong boundaries which are not visible on the ground, but are likely to have once existed, as assessed from surviving and documented headlands, strip orientation and professional judgement.

**Streams and slades**

Slades are shallow, often dry, valleys and waterways that run between the blocks of furlongs. They are now mostly dry with modern drainage and agriculture. They were mostly wet before 1750 except for the upper reaches, especially those on the edges of heaths and limestone plateaux

**Source**

Three tables identify the source for the furlong base data tables. Two represent archaeological features seen from fieldwork survey; the third is based on documentary evidence. When one field has evidence of multiple types, the archaeology on the ground is given primacy e.g. when a field has earthworks on the ground *and* AP data for ridge and furrow, the field will be recorded as 'ridge and furrow fieldwork earthwork'. All three data sets are polygons and are mapped to modern field boundaries, as they were at the time of fieldwork/assessment, not to the extent of the source: that is, if a field is marked as one of the three source types, such as earthworks, this means it 'contained' earthworks, not that the earthworks covered the entire field. For those areas not covered by the three categories, the strip orientation shown is based on professional judgement, taking into consideration topography and the pattern of headlands and slades. Where there are no surviving archaeological features it may be assumed that the strip orientation is as indicated on an historic map.

Source data and the map conventions used to distinguish the different types of data will distinguish what is 'real' and what is 'reconstructed' data.

### *Ridge and Furrow Fieldwork Earthwork*

Representing where ridge and furrow is visible on the ground as raised earthworks.

### *Ridge and Furrow Fieldwork Soilmark*

Representing where ridge and furrow is visible on the ground in soil or crop marks.

### *Ridge and Furrow AP Earthwork & Soilmark*

Representing where ridge and furrow is no longer visible on the ground due to erosion, ploughing, or loss to development, but appears in aerial photos as earthworks or soil/crop marks.

**LAND USE**

The land use tables were created using the furlong data discussed above. They are intended to show the landscape at the height of the medieval arable expansion in c.1300. The tables were created in two ways: by computer generation (open field arable, open field pasture, open field extent); or by hand (all others (see below)). For the latter, printouts were made of the furlong base data with the OS MasterMap data

as a background, and the extent of the various land use types marked by hand by David Hall. The data was then digitised to separate tables. The nature of GIS means that there is often a harsh line between different land use types where in reality the junction would have been more gradual and blurred. It is particularly apparent where pasture and meadow abut, and this should be taken into consideration when using the data.

There are nine base land use areas, created as polygons and defined by township, so that all polygons of a single category are combined within the township boundaries. In addition there are areas of 'no data', where the original medieval land use could not be determined due to large scale mineral extraction or modern urban development. These tables were used to calculate statistics for land use, see 'township and medieval land use' above.

See also 'combined tables' below.

**Open-field arable**

Open-field arable polygons demarcate the full extent of the medieval arable. They are produced in MapInfo from the 'furlongs' table (above) by selecting all the furlongs within a township and creating a buffer to a distance of 20 metres around them. A single polygon is produced of all the blocks of furlongs, leaving gaps between them.

**Open-field pasture**

Open-field pasture comprises areas of common grazing land incorporated within the open-field system that was *never* ploughed. Such areas are thus different to the areas of pasture that were created in the post-medieval period by laying down blocks of furlongs or ends of strips as 'leys' or 'cow commons'. Commonly taking the form of narrow ribbons of grass between the furlongs, open-field pasture can also comprise large blocks of grass often associated with particularly wet areas, their disposition strongly influenced by soils and topography. Strips of pasture between the furlongs are determined by the buffering process for the furlongs, discussed above, while larger blocks are marked by hand.

**Interpolated open field**

Interpolated open field comprises areas for which no archaeological or documentary evidence survives but which are deemed, on the basis of professional judgement, to have formed part of the arable open fields.

**Open field extent**

Open field extent polygons comprise the combined areas of open-field arable, pasture, and interpolated open field within each township.

**Settlement area**

Settlement area represents the full *probable* extent of medieval settlement and was created using a variety of data sets: pre-medieval archaeology; post-medieval settlement data; open-field data; earthwork data from NMP and RCHME surveys; soils; aerial photographs; historic maps; and David Hall's original fieldwork maps. In

spite of the number of data sets utilised this remains an approximation, rather than a definition, of the area covered by medieval settlements.

**Meadow**

Meadow comprised areas of alluvial grass, periodically waterlogged and unsuitable for ploughing. Often held in severalty like the furlongs, it was open to commoners stock after the hay harvest. Meadow was a valuable asset to the community providing rich fodder. The extent of meadow in the high medieval period is assessed from the furlong base data, soils and geology data and professional judgement

**Woodland**

The extent of medieval woodland, incorporating both woods and wood pastures.

**Heath**

Heaths lay on sand, sandy limestone, or sandy ironstone. There are no furlong boundaries. The areas agree fairly precisely with historically mapped or documented heaths. In the early modern period heaths 'expanded' a little as they included furlongs of leys and their periphery.

**Fen**

For this project fen is defined as the wet peaty area drained in the mid-17$^{th}$ century, even though most of the peat has now disappeared. Upstream, as at Northborough, there was much admixture of alluvium with the peat, but it was stilled called 'fen' and now differs only slightly from normal river alluvium.

**No Data**

There are four tables identifying areas for which no archaeological data for the medieval landscape has been obtained. The first three tables represent areas where the archaeology has been destroyed; the fourth table identifies areas for which no archaeology has been recorded due to restricted access. All are polygons.

### *No data airfield*

Archaeology destroyed by airfields and appurtenances.

### *No data built up*

Archaeology destroyed by development.

### *No data quarried*

Archaeology destroyed by quarrying and associated rail lines and spoil heaps (see also 'quarry' in pre-medieval archaeology data).

### *No data unwalked*

Restricted access prevented fieldwork, but archaeology may exist within the denoted area.

## Post medieval

Data for the post medieval period is derived from map sources. The quality of the data is dependant upon the reliability of the source which varies widely (see below). Caveats such as 'damaged' or 'illegible' will be recorded in the 'notes' field for each source but a general caveat to note is that, on maps of all kinds, absence of a particular kind of feature, or land use type, does not necessarily mean that these did not exist at the time. With maps, more than any other source, absence of evidence is not to be read as evidence of absence.

### HISTORIC MAPS

Over 1,000 historic maps were examined and analysed for landscape features relating to the post-medieval period. Many of these features were then digitised in MapInfo GIS. The objective was to establish the state of the landscape at the time of, or immediately prior to, enclosure. At enclosure the open field within a township would not have looked precisely as they would have done in the medieval period . Some piecemeal enclosure had often taken place, usually in the form of small closes on the periphery of the township, on the poorer soils. One or more of the great fields had often been hedged and the township itself may have been ring-fenced. Early deer parks, and later landscape parks, had sometimes been laid out across the fields. Most importantly, significant areas of the furlongs had often been laid to grass, as baulks, leys or cow pastures and commons.

The first enclosure by parliamentary act in Northamptonshire was in 1727. For those townships enclosed by parliamentary act the enclosure map was the primary source, with priority given to the draft maps. Where no such map has survived but a contemporary or earlier estate map was available, then a calculation of the area of land enclosed was made from the award and compared to that shown on the estate map. If the two figures were compatible then the estate was used in preference to having 'no data'. For townships enclosed prior to 1727, and for the few enclosed by private act after 1727, the relevant map closest to the date of enclosure was used as the initial map base. Often these were estate maps made for private owners but in many cases the earliest map identified was the Tithe Award from the first half of the nineteenth century. Where no map was identified the Ordnance Survey (OS) 2" 1st Edition draft maps from the British Library were used to identify woods and commons, but were found to be inaccurate for field boundaries, and insufficiently accurate for plotting buildings.

The OS 1st Edition 1:10560 scale maps from the 1880s were used as the background data set when plotting the various landscape features shown on earlier maps. They provide the earliest, accurate large scale countywide map base. Using them, rather than the modern 1:10,000, as a base greatly simplifies and facilitates the tasks of digital reconstruction and map regression, as many of the features shown on the historic maps still survived at the time the survey was made.. Raster copies of the OS map sheets covering the whole county were Warped and registered for use in GIS.

Archive searches were made on-line via A2A for any relevant historic maps and documents (surveys, terriers, field books and sale catalogues) relating to the historic landscape of Northamptonshire. Most of the maps were located at Northamptonshire Record office but others were found in the Bedfordshire Record Office, the Bodleian Library, Jesus College (Oxford), Magdalen College (Oxford), the British Library, and

the National Archives. In addition to these many were located in private collections, notably at Boughton House, and Burghley House. Where possible the original of each map was located and digitally photographed. This enabled direct on-screen digitising and also provided a convenient copy of the map for reference during the project. Digital photography also allows features not easily seen with the naked eye to be digitally enhanced, thus allowing more accurate data to be extracted. This is of particular importance as many early maps and documents are faded and/or damaged and dirty.

The type of historic map used is typically the estate map, the enclosure map or the tithe map, each having particular advantages and limitations.

Estate maps are by nature problematic as they are concerned with a particular holding, which may range in size from a single farm embracing as little as one hundred acres, to an entire township or more. Furthermore, the information they contain must be treated with caution: only those features directly associated with a particular estate may be recorded. Their advantage is that the data which they do include is often extremely detailed, and they are often accompanied by a schedule or terrier. An added advantage is that there is no limitation to their date or number, and multiple maps can be created for a single estate over a long period of time, allowing detailed reconstruction of the evolution of the landscape.

Enclosure maps omit as much data as they record. Typically they will record the detail of the settlement, closes and buildings, and any dispersed buildings such as mills, but will only show the allotment boundaries for the new closes, created at enclosure, and rarely provide any detail of the landscape being replaced. It is possible to reconstruct the extent of open fields from this information, but not the details, such as the disposition of arable, pasture and meadow. Much of the open field may have been put down to grass during the previous centuries, but the map gives no indication of this. Roads too were often altered at enclosure and while the fact of alteration will generally be clear from the attached award, the details of the change are usually unclear. Draft enclosure maps are arguably the best resource, giving both the landscape being replaced and the new being imposed. The complexity of the data which they contain makes them difficult, but essential, to work with.

The main disadvantage of Tithe Award maps is their late date (1836 – 1858). By this time almost all the townships in Northamptonshire had been enclosed, some hundreds of years before, and the landscape they depict may thus bear little resemblance to that which was created when originally enclosed from the open fields. In addition, they often include titheable lands only, may omit much of the township, and rarely detail the glebe lands. Their main advantage is that they were surveyed to nationally accepted standards allowing accurate location of features to modern mapping. Equally useful is the schedule that accompanies each map. This gives details of ownership, tenure, landscape names and land use. The data from this can be invaluable in locating former features and types of landuse such as woods and meadows.

### BASE DATA TABLES

All historic land use features identified from a particular map source were digitised into separate tables and held in sub-directories according to the township and date of

source. With the exception of roads and field hedges (see 'open fields', below) all were digitised as polygons in order to facilitate computerised spatial analysis. The data is held in separate tables named by place, date and type e.g. 'Abthorpe 1824 building'. For each source map used, six digital tables were typically created: enclosure, building, wood, lawns and ridings, open field, source (i.e., extent of historic map). Data in the browser with a '?' prefix indicates where there is uncertainty in the interpretation of the data, often due to a map's illegibility, or failure to state the function of a particular landscape feature: but where professional judgement has suggested an explanation. For example, on the 1741 map of Fawsley the hedges are drawn at varying widths, but not labelled in any way. Double-hedges, a ditch with a hedge either side of it creating a wide boundary, are a feature found in other townships belonging to the same estate, and so have here been interpreted as such. Names relating to land use, as given in the source, are recorded in the browser of each data set. The enclosure table in particular may have names indicating some earlier form of land use for particular areas, for example, where woodland has been cleared but its memory preserved in some name like 'Wood Close' It is therefore important to search for names of a particular type of feature e.g. wood related, in the wood, lawn and enclosure tables.

**Ancient enclosure**

Each ancient enclosure, either within the settlement or elsewhere within a township, is recorded separately and names that relate to former land use (such as 'stockings' warren or moor) are recorded in the browser. Where there is no early map, but a township is known to have been anciently enclosed then a single polygon, excluding the settlement area (mapped separately from the OS 1st Ed 1:10560, see below) is mapped to the township boundary. In some cases where no nucleated settlement survives then the extent of ancient enclosure will cover the entire township, without interruption. This information is held in a separate table called 'enclosure extent' and a note in the browser will indicate that internal boundaries are not shown.

**Buildings**

Each building is mapped in the same way and information relating to its function, (such as 'manor', 'church' or 'mill'), is recorded in the browser. Buildings lying outside the main area of settlement, such as lodges, are also recorded. Where no enclosure map has been located for townships enclosed by parliamentary act, then a later estate or tithe map has been used to map the village, with the rest of the township recorded as 'no data'. In those few cases where no map earlier than the OS 1st edition map from the 1880s exits, then this has been used to map the village , with the rest of the township recorded as 'no data'.

**Wood**

All woods were recorded, as well as individual coppice boundaries within woods and where given all names recorded. Double-hedges, where identified, have also been mapped as woods as they are classified as such on the tithe award maps.

**Lawns, ridings, greens**

Woodland pasture (ridings, plains, greens and lawns) are recorded along with their names. Greens within villages, where identified as such on maps (as opposed to simply being shown as an open space) have also been recorded.

**Open field**

The extent of the open field is mapped as a single polygon. Any hedges lying within the fields are separately recorded. Similarly, field closes - parcels of land within the open fields physically separate from the rest of the arable by a dead hedge but still commonable at the appropriate time of year - are also mapped. Pasture within the open fields is mapped where practicable: that is, large cow pastures, droves and substantial baulks have been plotted but the small strips of grass within the furlongs have not been. Meadow is not separately recorded in the base data tables but is mapped for case studies.

**Source**

A single polygon is mapped to the extent of the source map (occasionally it is mapped to the extent of the data mapped from it, see below) and attributes relating to it; name of the township, archive or published reference, date of map and additional notes recorded in the browser. Where additional maps, or other data such as earthworks, have been used to verify data from the principal source the secondary reference will appear in brackets after the source reference e.g. Roade is mapped from the draft enclosure map but using an estate map to cross check and verify data therefore it will appear in the source field as: NRO Map 2932 (NRO Map 440).

Source tables are held in sub folders by place and also by date, where there is more than one map. Where a map covers more than one township the source polygon will equate to the extent of the data mapped: e.g. the enclosure map of Milton Malsor and Collingtree covers both townships, but the data mapped for Collingtree will have a source boundary that covers just Collingtree and Milton will have a source boundary that covers just Milton. This is necessary because combining tables requires source data for each data set. This means that the same map will, on occasions, appear in the source table twice.

Similarly, where a map includes data from outside the township with which it is primarily concerned, but data is only mapped for that township, then the source boundary is cut to the area mapped: e.g. the Longthorpe estate map of 1798 includes Milton Park but no data for Milton was recorded from this source; the source polygon is therefore conterminous with Longthorpe township, a note in the browser records that the map includes additional data.

For details relating to individual maps see ‘map sources’ below.

#### ADDITIONAL DATA SETS

Many townships also have additional tables of significant features such as parks (excluding those from the OS 1:10,560), pre-enclosure roads, plains, cow pastures, and areas of fen and heath. Additional data sets can be derived from more than one map. Kings Cliffe township was enclosed in 1809 and the enclosure map made in 1813. But the park had been enclosed since 1227 and there are several maps made between 1600 and 1813 which show it with different boundaries. Three of these have been mapped to the ‘parks’ table, and can be overlaid with the base data set. Similarly, there is no single map showing the full extent of Helpston Heath, which has therefore been mapped from three different sources. Most townships will not have

these additional tables simply because the source map does not provide the detail for them (see Historic Maps above).

**No data**

Townships for which no pre - OS 1st edition map has been identified have a single polygon mapped to the township boundary as 'no data'. The settlement is then mapped from the OS 1st edition with reference to the OS 2" 1st edition draft maps to exclude post 1810s expansion, and this is cut from the 'no data' area. Similarly, woods are mapped from the OS 2" 1st edition draft maps, and cut from the 'no data' area.

**Multiple map data**

In addition to the primary map source, early surveys that show a significantly different extent or pattern of areas or features were also mapped. This is particularly important for identifying phases of enclosure, and to show the earlier extent and character of ancient enclosures, as well as that of coppices, parks etc, thus providing a chronology for the development of the local landscape. For example where a designed woodland landscape or regular rides have replaced a coppice pattern of medieval origin, or where a landscape park has replaced an enclosed field system.

**ANALYSIS DATA SETS**

These are data sets created from the base data above, or created separately to facilitate analysis. Numerous additional tables were created by the project team for their analysis of a particular theme, but these are not detailed here.

## Combined tables

Single tables covering the whole of the pre-modern county were generated by combining the medieval and post-medieval data sets above, and incorporating data from the Rockingham Forest Project.

It was not possible to create a single table for furlongs as this would contain some 620,000 separate lines. This data is therefore held in the four tables as created for the base data.

The base data for the post-medieval period generated 554 folders and 8,428 MapInfo files. A program was written for the project by Higher Mapping Solutions www.highermappingsolutions.com to combine each of the data seta by type into a single set and to add the source reference and date to each polygon or polyline. This process created data sets that included the multiple map data as well as base data. For deposition and online access with ADS the data was simplified to a single set using that closest to the date of enclosure.

**MEDIEVAL**

**Furlong base data**

All furlong base data tables, with the exception of 'furlongs' (see above), were combined into single tables by type: headland earthwork; headland documentary; headland interpolated; streams and slades.

**Land use**

Land use tables from the base data sets were combined into single tables by type: open-field arable; open-field pasture; interpolated open field; open field extent; settlement area; meadow; woodland; heath; fen ; and 'no data'. The only change made was that the four types of 'no data' were combined into a single table, with the type identified in the browser.

#### POST MEDIEVAL

All tables from the post-medieval base data sets were combined into single tables by type: ancient enclosure; enclosure extent, building; wood; lawn etc; open field; fen; heath; hedge; road; park; source; land use (incorporating commons and cow pastures, and areas bearing names indicative of a particular landscape type, such as 'wold' or 'furze').

## Additional data sets

In addition to the base data sets others were created, or provided.

#### GLENN FOARD

Several data sets created by Glenn Foard for personal research were provided for the use of the project.

**Hundreds** – Hundred moots (point and polygon data), Hundredal manors (point locations) and Hundreds in the nineteenth century (polygons).
**Forest perambulations** – Rockingham forest perambulations of 1286 and 1299 (polygons); Whittlewood long and short perambulations of 1286 (polygons)
**Taxation data** – see below
**Deer parks –** from the RCHME, Steane (*The Medieval Parks of Northamptonshire,* 1975*,* NP&P Vol.5) and personal research
**Saxon sites** – as part of the Rockingham project, data from Burl Bellamy's Saxon sites data base, and an extract from the SMR, were enhanced to create point locations of Saxon sites which was then integrated with David Hall and Paul Martin's survey data to create a composite data set.
**Medieval settlement –** point locations of medieval settlement by type: town; village; hamlet; end; deserted; shrunken; farm; grange; manor; lodge
**Country Houses**
**Churches**
**Monastic sites & estates –** estates from 1291 & 1530s
**Castles**
**Markets & fairs**
**Turnpikes**
**Post roads –** from Ogilby 1675
**Charcoal burning –** from aerial survey

#### CROP RETURNS

A MapInfo data base was created using figures from the 1801 Crop Returns. The figures in the database were taken from the 1801 Crop Returns, TNA: PRO HO/67/15 and 19, transcribed and published by Michael Turner1982 (List and Index Society

Volume 190). The figures give the total of all cropped land, excluding fallow, grass, and rotational grass (including clover etc.)

## DOMESDAY

A database of the Domesday statistics for Northamptonshire was complied in MS Excel and converted for use in MapInfo.

### Excel

The Domesday database is based on the Phillimore edition, edited by F. and C. Thorn (1979). A separate entry has been made for each listed holding (i.e., the material has been listed by individual holdings, and not aggregated into vills).

Tenants in chief and tenants in 1086 are listed, together with tenants TRE where this information is provided: there are sometimes grounds for uncertainty over the latter, as when a TRE tenant is listed after several holdings, with the statement that he held 'all these lands', for example.

Hidation assessments are given as decimal fractions, with virgates taken to be 0.25 of a hide. The term 'part' – as in phrases like 'three parts of a hide', or 'four parts of one virgate' - appears on the basis of internal evidence to mean a fifth (0.2) of the stated measure. Figures for slaves, socmen, freemen, bordars, villeins etc. are transcribed directly, and added together to give the total population. The figures for ploughlands, demesne ploughs, men's ploughs are likewise transcribed directly. In cases where the total number of ploughs on a holding is specified by the text (e.g., 'land for two ploughs … they are there'), but these are not clearly defined as belonging to the demesne or to the tenants, they have been allocated to the relevant ('men's' or 'demesne') column on the basis of internal evidence: for example, if no population is listed on the holding (or none except slaves) it is assumed that the ploughs in question must belong to the demesne (because there aren't any 'men' for them to belong to).

The value given for mills is the *total* value – that is, it is not the value per mill, in places where there are multiple mills. Figures for meadow and woodland are transcribed directly. The extent of woodland is described in a range of ways: in terms of its area (acres) or in terms of its dimensions (leagues, furlongs, perches). The linear measures are used in all possible combinations: a wood can be so many *furlongs* wide, but so many *leagues* long, for example.

A distinction is made between the different ways that one place can be connected with another. A vill is noted as a 'manorial member' of another place if it is described as being a 'member' of it, as 'belonging to' it, or if it is a berewick of it. It is part of the 'sokeland' of another place if its *soc* is said to lie there, or if some other phrase incorporating this word is employed. If only part of a holding is in the *soc* of another place, this is stated. The precise wording used in describing such connections is listed in the 'other details' column of the database. This column also provides further information which would not sit easily within, or which serves to amplify or qualify the information given in, the other columns.

The 'other details' column also notes where there are 'compound entries'; that is, where a Domesday entry lumps the hidation assessment, ploughs, resources etc lying in two or more places together. In such cases, the resources of the holding in question

have simply been divided equally between the two (or more) geographical locations. Integers of people etc have been retained, however, so that if any figure cannot be divided equally, (e.g., 'three socmen' located in two places), then the larger portion is allocated to what is deemed, perhaps subjectively, to have been the more important holding. The total value for the holding is divided between the named places. However, in those cases where a number of places are valued together as 'members' of a main manor, all of that value has been assigned to the head manor, and nothing to the dependencies.

In the case of Peterborough Abbey, a distinction has been made – following the text – between the lands held directly by the abbey (described in the database as ''Peterborough Abbey'), and the 'Land of this church's men' (described simply as 'Peterborough').

**MapInfo**

### *Tables*

Two main Domesday data tables were used: one ('Domesday Tabulation') has been compiled specifically for the project from the Phillimore edition of the Northamptonshire Domesday: the other has been externally compiled for the entire country from the Phillimore volumes and hosted on AHDS http://ahds.ac.uk/history/domesday.htm

The AHDS data was downloaded in MS Access format, and the Northamptonshire data was queried out from the 'Domesday Statistics' table and saved in Excel and MapInfo format as 'Northamptonshire DB.'

### *Data Validation*

In order to facilitate georeferencing of the Domesday data, the place names in the Domesday Tabulation table were standardized with the project's basic Township table ('Domesday townships'). The primary place name data for georeferencing is held in the Place_name field of the Domesday Tabulation table. Two additional fields of data, Domesday_name and Hundred, were also added to this base table. The place name validation exercise was also performed on the MapInfo version of the downloaded Northamptonshire DB table, with matching township names entered in the added 'AHRC place name' field.

Where the place name given in the Domesday text is a known location with a different modern name (e.g. Thorpe/Longthorpe), the modern township name has been entered in the Place_name field (Longthorpe), and the name given in Domesday Book is recorded in the Domesday_name field (Thorpe). Where there are two townships with the same base name (e.g. Great and Little Addington, Upper and Nether Heyford) which are not differentiated in the Domesday text, the base name is entered in the Place_name field, and the 'Domesday township' polygons are joined and renamed with only the base name.

*Polygons joined:*
Great and Little Addington→Addington
Barnwell All Saints and Barnwell St Andrew→Barnwell

Upper and Lower Boddington→Boddington
Great and Little Brington→Brington
Cranford St Andrew and Cranford St John→Cranford
Hardingstone East End and Hardingstone West End→Hardingstone
Great and Little Harrowden→Harrowden
Great and Little Houghton→Houghton
Great and Little Oxendon→Oxendon
Upper and Nether Heyford→Heyford
Upper and Lower Radstone→Radstone
Rothwell and Orton (separate townships)→Rothwell and Orton (joined)
Church and Upper Stowe→Stowe
Great and Little Billing →Billing
Great and Little Oakley →Oakley

Where it has not proved possible to determine the individual township boundaries for places for which separate entries are given in Domesday Book (e.g. Barnack and Pilsgate), both township names are entered in the Place_name field, and the individual township is entered in the Domesday_name field. In certain cases, the boundaries of individual townships have not been established, yet only one of the two townships appears in Domesday (e.g. Astwell and Falcutt, but only Astwell is in Domesday). In these cases, the combined township polygon name is changed to that of the township mentioned in Domesday, but the notes field entry explains that the polygon area also contains the other, unnamed, township.

*Polygons joined:*
Astwell; Falcutt→Astwell
Cold Higham; Grimscote→Cold Higham
Potterspury; Yardley Gobion→Potterspury

In other instances, the location of a Domesday vill is unknown or uncertain (e.g. *Brime* or *Hantone*). Where a possible attribution is made in the published Domesday or other text, that location is entered in Place_name, the original name is entered in Domesday_name, and the notes field gives the citation(s) for the attribution. Where no attribution can certainly be made, 'Unlocated' is entered in the Place_name field, and the Domesday name in Domesday_name. Some Domesday entries give no particular location for the land, and only say 'in X hundred.' In these cases, the Place_name field is entered as 'Unlocated,' the Domesday_name field is entered as 'Unnamed,' and only the Hundred field is filled in. The remainder of the hundred names were filled in by updating the Hundred field in Domesday Tabulation from the downloaded and validated Northamptonshire_DB table.

Places that appear in Domesday, whose boundaries are unknown, but which can be identified with a deserted medieval settlement located within another township are linked to that polygon but retain their Domesday name.
Chadstone →Castle Ashby
Chilcotes →Thornby
Hale →Apethorpe
Thrupp →Norton
Wythemail →Orlingbury

A separate polygon (mapped as a circle to indicate uncertain boundaries) was created for the Domesday place 'Wakefield' in the area of Wakefield Lawn, which does not appear on the township table because by the post medieval it had become part of Whittlewood Forest.

### 1125 NORTHAMPTONSHIRE SURVEY

A database of statistics from the 1125 Northamptonshire Survey was compiled in MS Excel and converted for use in MapInfo. The compilation was designed to facilitate comparison with the Domesday Book and *Nomina Villarum* databases.

#### Excel

The information for database is taken from J. H. Round's translation of the Survey published in the Northamptonshire *Victoria County History* Vol.1 pp.357-92 (London, 1902) and compared, when required, with the Latin text in K. S. B, Keats-Rohan, *Domesday People: A Prosopography of Person Occurring in English Documents 1066-1166, I. Domesday Book* (Woodbridge, 1999), Appendix II. A separate entry has been made for each listed holding and not aggregated into vills.

Tenants and Chief and tenants in 1125 are listed and hidation assessments are given, as in the Domesday database, in decimal fractions. Round's conclusions on the values use of 'Great' and 'Little Virgates' have been followed: that is a 'great virgate' in 1125 was the same as a 'virgate' in Domesday Book and a 'little virgate' in the 1125 survey was equivalent to a one tenth of a hide.

#### MapInfo

##### *Tables*

A copy of the projects base MapInfo 'Township' table was made and named 'temp NS' (this is a temporary table which at the end of the process was archived).

In order to facilitate georeferencing of the Northamptonshire Survey data, the place names in the Excel database were standardized with those in 'temp NS' table, a column 'place name' was added to the database, and the column 'vill' changed to 'survey name'. The excel database was then imported into MapInfo and linked to the graphic objects in 'temp NS'. A new fully georeferenced table was created and named 'Northants Survey polygons'.

##### *Data Validation*

Where there are two townships with the same base name (e.g. Church and Chapel Brampton) which were not differentiated in the Survey text, the base name is entered in the Place Name field, and the 'Northants Survey' polygons are joined and renamed with the base name only.

*Polygons joined:*
Church and Chapel Brampton→ Brampton
Hardingstone East End and Hardingstone West End→Hardingstone
Barnwell All SS and Barnwell St Andrew→Barnwell
Great and Little Harrowden→Harrowden

Cranford St Andrew and Cranford St John→Cranford
Upper and Lower Radstone→Radstone
Upper and Lower Boddington→Boddington
Church and Upper Stowe→Stowe

Where it has not proved possible to determine the individual township boundaries of separate but adjacent places and both are listed in the Northamptonshire Survey (e.g. Cosgrove and Furtho), both township names are entered in the Place Name field, and the individual township is entered in the Survey Name field (with the modern spelling in brackets if different).

In certain cases, the boundary between two townships is undetermined, and only one of the places appears in the Survey (e.g. Easton Neston and Hulcote: the boundary between the two is uncertain, and only Easton Neston is listed in the Survey). In these cases, the combined township polygon name is changed to that of the township mentioned in Survey, but the notes field in the browser explains that the polygon area also contains the other, unnamed, township.

*Combined townships:*
Easton Neston; Hulcote → Easton Neston
Barnack; Pilsgate → Barnack
Woodend; Kirby → Woodend
Cold Higham; Grimscote → Grimscote
Potterspury; Yardley Gobion → Potterspury

Place names that appear in the Survey that have no known township boundary, but where the DMV is known to be located within another township, have been linked to that polygon but retain their Survey name:
Wythemail →Orlingbury
Badsaddle →Orlingbury
Thrupp →Norton

Entries 267 Cotton, 268 and 269 Cotes, are unlocated within Raunds and/or Ringstead. A combined polygon of the townships of Raunds, Raunds Cotton Fields and Ringstead has been created and renamed Cotes. All three entries are attached to this polygon.

Entry 285, Heyford, has been identified as Nether Heyford because Upper Heyford has a separate entry in the Survey. Similarly Oxenden (419, 420) has been identified as Great Oxenden as Little Oxenden has a separate entry, and Oakley (484, 485) has been identified as Great Oakley as Little Oakley has a separate entry.

Entries 478 & 479 are for Laxton and Henwick, but only Laxton has a township boundary and Henwick now lies within Bulwick township. The entries have been attached to the Laxton polygon with an explanation in the notes field.
Henwick also has a separate entry, 482, which has been attached to Bulwick polygon.

There are 19 entries that include two or more place names. For these the polygons from each of the named townships has been combined:

Stoke Bruerne and Alderton
Brackley and Halse
Badby and Newnham
Southwick and Yarwell
Rothwell, Orton and Loddington
Wilbarston and Stoke Albany
Aston le Walls and Appletree
Sutton Bassett and Weston by Welland
Newton Willows and Great Oakley
Corby, Gretton and Brigstock
Lilbourne and Clay Coton
Easton Maudit and Strixton
Glassthorpe and Upper Heyford
Brockhall and Muscott
Nobottle and Brington Great & Little
Ravensthorpe and Teeton
Blisworth and Courteenhall
Little Houghton and Brafield on the Green
Yardley Hastings and Grendon

As in the case of the Domesday Survey, a separate polygon, (mapped as a circle to indicate uncertain boundaries) was created for 'Wakefield', in the area of Wakefield Lawn, a place which does not appear on the township table because, by post medieval times, it had become part of Whittlewood Forest .

There are 540 entries in the original Northamptonshire Survey Excel data base, and 533 in the Northants Survey polygons MapInfo TAB file. The missing seven entries are:

| | |
|---|---|
| Catworth | attached to Thrapston but out of county |
| Elton x2 | next to Fotheringhay but out of county |
| Stibbington | next to Wansford but out of county |
| Gildeby | unlocated |
| Alecote | unlocated |
| Northborough entry 65 | probably the whole of the Nassaburgh Hundred. Not mapped but a polygon of the hundred could be created for this entry if required. |

**NOMINA VILLARUM**

A database of statistics from the 1316 *Nomina Villarum* was compiled in MS Excel and converted for use in Map Info. The compilation was designed to facilitate comparison with the Domesday Book and 1125 Northamptonshire databases.

**Excel**

The database is based upon the text published in *Inquisitions and Assessments Relating to Feudal Aids, with other analogous documents, AD, 1284-1431 vol.4 Northampton-Somerset* (London, 1906). Vills and landowners are listed separately. In the case of split vills, then there are separate listings i.e. when a single vill is recorded with two owners, then two entries have been listed, one for each owner.

A column 'place name' was added which gives the modern spelling of the 'survey name' to match that in the township table.

**MapInfo**

### *Tables*

A copy of the projects base MapInfo 'Township' table was made and named 'Nomina Villarum polygons'. The excel database was then imported into MapInfo and linked to the graphic objects in 'Nomina Villarum polygons' giving a fully georeferenced table.

### *Data Validation*

Where there are two townships with the same base name (e.g. Church and Chapel Brampton) which were not differentiated in the Survey text, the base name is entered in the Place Name field, and the 'Nomina Villarum' polygons are joined and renamed with the base name only.

*Polygons joined:*
Great and Little Addington → Addington
Barnwell St Andrews and Barnwell All Saints → Barnwell
Great and Little Billing → Billing
Upper and Lower Boddington → Boddington
Church and Chapel Brampton → Brampton
Great and Little Brington → Brington
Cranford St Andrew and Cranford St John → Cranford
Great and little Everdon → Everdon
Hardingstone East End and Hardingstone West End → Hardingstone
Great and Little Harrowden → Harrowden
Upper and Nether Heyford → Heyford
Great and Little Oxenden → Oxenden
Preston Capes and Little Preston → Preston
Upper and Lower Radstone → Radstone
Church and Upper Stowe → Stowe
Great and Little Weldon → Weldon

Where it has not proved possible to determine the individual township boundaries of separate but adjacent places and both are listed in the Nomina Villarum (e.g. Cosgrove and Furtho), both township names are entered in the Place Name field, and the individual township is entered in the Survey Name field (with the modern spelling in brackets if different).

Place names that appear in Nomina Villarum that have no known township boundary, but where the DMV is known to be located within another township, have been linked to that polygon but retain their Survey name:

Badsaddle → Orlingbury
Caswell → Greens Norton
Chadstone → Castle Ashby
Field Burcote → Greens Norton
Hale → Apethorpe

Newbottle → Harrington
Wythemail → Orlingbury

There are 6 entries that include two or more place names. For these the polygons from each of the named townships has been combined:

Bozeat, Easton Maudit and Strixton
Hanging Houghton and Lamport
Norton and Thrupp
Stanwick and Newton Bromswold
Wollaston and Strixton
Yardley Hastings and Denton

Any additional information is recorded in the 'notes' field of the database.

**ENCLOSURE**

In order to examine the patterns of landownership at the time of parliamentary enclosure (1727-1901) across the county, as well as the relationship between these and aspects of geology, topography, soil quality, and settlement characteristics, the project undertook an extensive program of recording and analysing Northamptonshire enclosure data. This was drawn from a number of sources, principally the enclosure Acts and Awards held at the Northamptonshire Record Office (NRO), but also historic maps (see Map sources), parish records, and secondary sources. The latter included: D. N. Hall, *Enclosure in Northamptonshire,* NP&P 1997-8; J W Anscombe, *Notes on the Parliamentary Acts and Awards for Northamptonshire 1727-1844*; W E Tate, *A Domesday of English enclosure acts and Awards,* 1978 (see also bibliography). In addition, an MS Excel database was provided by David Hall giving data already collected and correlated by him. This was integrated into the datasets below.

Awards for a total of 195 townships or groups of townships were recorded, out of a total of 210 awards from the county (i.e., 93% of the available awards). The only awards not entered into the database were those in formats that were damaged or excessively faded and therefore too difficult to read or use. Of the total, 27 awards had been previously recorded by David Hall, and were not re-examined. These awards had been recorded in MS Excel format, and were imported and altered in order to fit into the fields devised for the Access database. Hall's awards are less precise in their record of the amount of land allotted to each landholder, in that allotments were rounded to the nearest acre, rather than recording the exact number of acres, roods, and perches allotted.

In addition to the analytical tables created and detailed below, numerous other tables were generated by the project team for individual research, from the base data tables.

**Sources of Enclosure Data**

The first tasks to be undertaken were the compilation of a complete list of the enclosure sources available for Northamptonshire, and an assessment of how many enclosure awards were accessible for recording. The NRO card catalogue was

systematically searched for enclosure acts and awards, and the dates and archive reference numbers of these documents were recorded in a MapInfo table entitled 'Enclosure References All.' These were then queried for documents dated to 1726 or later, the period of parliamentary enclosure, and the table 'Parliamentary References All' was created from the query. The table of parliamentary enclosure references was then sorted in order to isolate enclosure awards that were located in the NRO, and from which landholding information could be extracted.

Awards were located in a variety of formats in the NRO archives, listed below:

**Inclosure Volume** – Series of nine books of enrolled awards
**Inc.** – Award, flat in folder
**ML** – Miscellaneous Ledger book
**M** - Microfilm
**'P' refs e.g. 269p/156** – all numbers ending in 'p' are parish documents. Format varies.
**Map** – map of settlement and allotments
**Others** – box numbers and format varies which could indicate ledger, loose paper, or rolled parchment

The majority of the county's awards were enrolled in Inclosure Volumes, so these were prioritized for recording as representing the most systematic way to gather a large sample of data across the county. MapInfo tables were thus created which sorted the awards into those which were contained in the Inclosure Volumes, and those which were not. However, the notation system of awards within the Inclosure Volumes, as well as in other award formats, varies widely. Some feature tabulated schedules summarizing landholders and allotments; others include marginal notes alongside the text detailing the landholders and allotments; while others lack both. All of the awards were therefore examined to assess how easy they might be to use and transcribe, and whether they included marginal data or schedules. Short notes were made and compiled by township in a document entitled 'Enclosure notes.' A list of the tables created in the process of compiling, sorting, and locating the available award data can be found below. Some of these tables were later 'archived' i.e. a copy was kept for the project archive but the datasets were not further utilized. These are indicated by the suffix 'archived'.

**Source Tables Created in MapInfo**

### *Enclosure references all - 662*

All references from the enclosures index at NRO were recorded in MapInfo and attached to the township table. Almost all relate to the period of Parliamentary enclosure, but a few are related to documents concerning earlier forms of enclosure, by agreement.

### *Parliamentary References All - 486*

Extract from 'enclosures references all' which includes all references dated 1726 onwards.

### *Award All – 220 (210 without repeat entries)*

Extract from 'enclosure references all' which includes only references to enclosure awards.

### *Parliamentary Inclosure Volume – 143 - archived*

Extract from 'parliamentary references,' containing only those townships that are listed in the Inclosure Volume books.

### *Parliamentary Non Volume – 156 - archived*

Extract from 'parliamentary references,' containing those townships that are not listed in the Inclosure Volumes. References can include acts, awards, maps, etc and repeat entries.

### *Award Non Volume – 67 - archived*

Extract from 'Parliamentary non volume' giving just the awards.

### *Enclosure Maps – 94 - archived*

Table created to record townships that have enclosure maps, recording the year, features, and coverage of each map.

**Recording the Enclosure Data**

After the enclosure awards were sorted into their various categories, MapInfo tables were created to expedite the recording process and enable prioritisation of recording by award format, location, or feature. The primary base table created in this process was 'Enclosure Data Awards,' based on the original township table. In this table, Yes/No fields were created for various types of marginal data and schedules, as well as a 'notes' field for short comments. A number of queries were saved so as to be able to work through different formats of award systematically, and all updated automatically to the original base table with any changes. The MapInfo tables created and updated in the process of recording enclosure awards are detailed below.

### *Enclosure Data Awards - 209/389*

Table created to record landowner data available from awards, tied to the township table. Yes/No fields for complete marginal data (proprietor's name and amount of land); schedule of allotments; schedule of ancient enclosures; schedule of costs; schedule with a map; proprietors and the number of the allotment in margins; and proprietors' names only in margins. There were also additional fields relating to whether David Hall had previously recorded the awards data for parliamentary enclosure ('David parliam' Yes/No); an updatable field for when award recording was completed ('finished' Yes/No); and a 'character' field for notes and comments.

### *David Data – 68 – archived*

Extract from Enclosure Data Awards, showing only those awards previously recorded by David Hall. Includes data from both ancient and parliamentary enclosures.

### *Enclosure Data Awards Positive2 – 124 - archived*

Table extracted from Enclosure Data Awards, by querying those records in which a "Y" appears for any of the landowner data variables (margin, schedule of allotments,

schedule with a map, or David Hall's parliamentary enclosure data). Additional fields are a Y/N field called 'finished', for when the award's data has been recorded in the MS Access enclosure database, and a 'notes' field for each record which has been kept from Enclosure Data Awards.

### *Margins (Query) – 104 - archived*

Query from Enclosure Data Awards Positive2, showing only those awards with margin data. Constantly updates any changes from Enclosure Data Awards Positive2.

### *Schedule Allotment (Query) – 30 - archived*

Query from Enclosure Data Awards Positive2, showing only those awards with schedules of new allotments. Constantly updates any changes from Enclosure Data Awards Positive2.

### *Schedule Ancient (Query) – 38 - archived*

Query from Enclosure Data Awards Positive2, showing only those awards with schedules of ancient enclosures. Constantly updates any changes from Enclosure Data Awards Positive2.

### *Schedule Map (Query) – 14 - archived*

Query from Enclosure Data Awards Positive2, showing only those awards with tabulated schedules associated with maps. Constantly updates any changes from Enclosure Data Awards Positive2.

### *Finished (Query) - archived*

Query from Enclosure Data Awards, showing only those awards which have currently been entered into the enclosure database. Constantly updates from Enclosure Data Awards or any of the above queries when the 'Finished' table is altered.

**MS Access Enclosure Database**

The enclosure awards were recorded in an MS Access database, in which each allotment to each landholder was treated as a separate entry. The fields included in the database are as follows:

**ID**—automatic index number created by Access
**Primary Place**—Township or townships included in the award; this can include more than one place enclosed together (e.g. Milton Malsor and Collingtree)
**Institution**—Includes community institutions (e.g. rector, vicar, churchwarden), organizations holding as a collective (e.g. Magdalene College Oxford, Dean and Chapter of Peterborough), Wills or Trusts, Charities, Schools, or the Poor
**Surname**—Surname of the primary landholder or creator of the will/trust
**First Name**—First name of the primary landholder or creator of the will/trust
**Title**—Title of esteem or rank (e.g. Sir, Rev, Earl Fitzwilliam), or descriptor for differentiating individuals with the same name (e.g. 'of Northampton', 'baker'), of the primary landholder
**Other holders**—Any additional people listed as holding together with the primary landholder

**Lord of the manor**—A note if the landholder has been designated as lord of the manor
**Lessee/Trustee/Devisee**—The names of those who hold the land in trust, as an inheritor, or as a tenant from the primary landholder or institution
**In lieu of**—What the allotment is given in lieu of (e.g. tithes, glebe)
**Number/exchange**—The number of the allotment, if a landholder has been allotted a number of plots. Exchanges are designated by a number + e; purchases are designated by a number + p
**Acres**—Number of acres contained in the allotment
**Roods**—Number of roods contained in the allotment
**Perches**—Number of perches contained in the allotment
**Comments**—Notes which can include comments originally made by David Hall, details concerning the parties to an exchange or purchase, clarifications, or unusual aspects of the allotment

## Enclosure analysis

### The Access Database

Once recording was complete, the Access database was queried to provide a consolidated field entitled 'Landholder,' for simplified use in analyses. This field combined the various name, title, and institution fields with the formula "Surname, + First Name + Title + Institution", skipping any fields not relevant to the entry. Thus, the following landholder name formats were produced:

*Standard*—e.g. Smith, John
*Standard with title*—e.g. Langham, William Sir Bart
*Standard with institution*—e.g. Pratt, Joseph Stephen Rev Vicar of Peterborough
*Titled Lord*—e.g. Fitzwilliam, William Wentworth Earl Fitzwilliam
*Institution only*—e.g. Magdalen College Oxford
*Trustees or Devisees*—e.g. Jenkinson, Robert Trustees of Robert Jenkinson (with named trustees in Lessee/Trustee/Devisee field)
*Lessee of Institution*—e.g. Bishop of Peterborough and his lessee (with named lessees in Lessee/Trustee/Devisee field)
*Poor*—e.g. Poor of Syresham, overseers of the

### Excel and MapInfo Base Data Tables

After carrying out the above query, the database was imported into Excel and MapInfo in order to carry out spatial, chronological, and statistical analyses. The first step involved exporting the complete Access database to .dbf format, which was then opened in Excel and saved in .xls format, in the Excel table 'Northampton enclosure awards.' The Landholder field was cleaned up to eliminate any extraneous spaces or commas from the CONCATENATE expression run in Access. In addition, a further expression field was added to the Excel table, entitled 'Decimal Acres,' which tallies the full acreage for each allotment in decimal format. It has been calculated through the formula (((perches/40)+roods)/4)+ acres, to five decimal places. This enabled statistical analyses to be carried out on the total number of acres allotted to landholders.

The Excel table was then imported into MapInfo .tab format, and again titled 'Northampton enclosure awards,' which then needed to be tied to graphic objects based on the township table. A copy of the original township table was saved as 'Enclosure Townships,' and the names of each township were checked so as to ensure they matched exactly with entries in the 'Primary place' field in the enclosure table. In addition, township polygons were combined if the townships had been enclosed together (e.g. Milton Malsor and Collingtree). The 'Northampton enclosure awards' table was then joined to the new 'Enclosure Townships' table through an SQL query, resulting in the georeferenced table 'Northamptonshire enclosure.'

**Analytical Tables**

Further analytical tables were created in MapInfo from the base data, including:

### *Act Year*

Derived from 'Enclosure township.' The table includes the fields:
**Township name**
**Act Year**—the year of the Parliamentary Act
**Acreage of Township** (Expression: Area(obj, "acre"))—the total acreage of the township, calculated from polygons

### *Act Year_graph*

Derived through an SQL query from 'Act year,' in order to graph chronological progression of Northamptonshire enclosure. The table includes the fields:
**Act Year**
**Number of Acts** (Expression: COUNT field Act Year, GROUP by Act Year)

### *Township Allotment Total*

Derived through an SQL query from tables 'Act Year' and 'Northamptonshire enclosure,' with calculated fields. The table includes the fields:
**Township name**
**Act Year**
**Allotment total** (Expression: SUM field Decimal Acre, GROUP by Township name)—the total number of acres allotted by parliamentary act within a township, from sum of all recorded allotments
**Township acreage** (Expression: Area(obj, "acre"))—the acreage of the township, calculated from polygons
**Percentage enclosure** (Expression: (Allotment Total x 100)/Township acreage)—calculates the extent of the township which was enclosed by parliamentary act
**Number of landholders** (Expression: COUNT of field landholders)—the number of individual landholders holding in the township, regardless of the number of allotments given to each

### *Landholder Acreage*

Derived through an SQL query from the tables 'Northamptonshire enclosure' and 'Township Allotment Total,' with calculated fields. The table includes the fields:
**Township name**
**Landholder**

**Landholder acreage** (Expression: SUM field Decimal Acre, GROUP by Landholder and Township name)—the sum of all the acres allotted to an individual landholder
**Total allotment**—total of all allotments in the township, regardless of landholder, from Allotment total field in 'Township Allotment Total'
**Percentage of township** (Expression: (Landholder acreage x 100)/Total allotment)—calculates the percentage of the total allotment of the township that each landholder owns

### *Countywide Landholding*

Derived through an SQL query from the table 'Northamptonshire enclosure.' A non-georeferenced table which compiles landholders' allotments across the county, regardless of township. The table includes the fields:
**Landholder**
**Total Acreage** (Expression: SUM field Decimal Acre, GROUP by Landholder)

#### MAP SOURCES

A MapInfo database was created listing all known historic maps sources (exclusive of the OS maps above). Fields included in the database are listed below.

Where a map is known to exist but has not been seen it is added to the 'map sources' table as the extent of the township with a note in the browser to indicate that it is 'unseen' and therefore the exact extent of the area it covers is unknown. Similarly where a map covers a very small area, the location of which within the township is not immediately obvious, then the full extent of the township will again be used, with a note in the browser indicate the exact extent is uncertain. The number given in the field 'coverage' will also indicate that the area covered may be minimal. Both the 'coverage' and 'notes' fields should be checked when assessing map sources. Unpublished reconstructions are added to the map sources table, with the source given as 'unpublished' and the surveyor noted. Where no map has been identified a polygon of the township is added to the map sources table, with the statement 'no maps' entered in the 'notes' field of the browser.

**Township name** – the name of the township covered by the map. Where more than one township is shown, both names will appear in this field, with that showing the greater area appearing first and separated by a semi-colon. Forest maps will have the name of the Forest first followed by any townships also covered by the map e.g. 'Whittlewood Forest; Whittlebury'.
**source** – archive or published reference
**type** – estate, draft enclosure, enclosure, tithe, forest; sale catalogue; reconstruction. The latter refers to existing reconstruction maps and not to data reconstructed as part of the project.
**year** – the date of the map. Where this is uncertain a probable date is given and qualified in the 'notes' field
**coverage** – numeric field. 0 = no maps; 1 = minor area covered; 2 = part of township covered; 3 = most of township covered; 4 = all of township covered
**village** – refers to the nucleated settlement only. Search terms are 'all'; 'some', where only part of the village is shown, usually with estate maps where the owner is

interested only in his own property; 'sample', where (occasionally) only the principal buildings in a settlement are shown such as the church and manor.
**open field** – 'yes' if any data relating to open fields is shown. Left blank if no data is shown.
**enclosed field** – 'yes' if any data relating to closes is shown. Left blank if no data is shown.
**woodland** – 'yes' if any data relating to woods is shown. Left blank if no is data shown
**openfield data** – detailed features of open field such as great fields, strips, furlongs, roads etc. shown on the map; 'landuse' indicates non-arable open field features, such as cow pastures.
**enclosedfield data** – detailed features of the enclosed landscape such as closes, allotments, names, roads etc. shown on the map. The existence of a schedule is also noted here whether it is within the map, as typically found on estate maps; or separate as typically found with tithe maps.
**woodland data** – detailed features of the woodland such as wood, coppice, riding, plantation etc. as shown on the map.
**settlement data** – nucleated or dispersed to indicate the type of settlement shown. 'Building' implies a single structure shown on the map; 'sample' implies more than one building shown, but less than is known to exist (e.g. the manor house and church may be the only buildings shown within a nucleated village).
**notes** – additional and qualifying information relating to any of the fields within the table. Where there are no map sources this is indicated by the statement 'no maps' in this field.

### PARISH

The parochial history of the county was studied from: *The Victoria County Histories of Northamptonshire (VCH) Vol's II - V*; John Bridges, 1791, *The History and Antiquities of Northamptonshire Vol. I & II*; George Baker, 1822, *The History and Antiquities of Northamptonshire Vol. I & I I*; Franklin, M.J. *Minsters and Parishes: Northamptonshire Studies* (PhD thesis 1982).

All the above sources offer information about parochial structure and relationships of dependency between churches; the VCH has been found to be the most thorough, although incomplete. All also offer brief architectural descriptions of the churches; again the VCH is the most thorough, but Bridges often gives insight into architectural form prior to modern renovations.

A non-georeferenced table was created in MapInfo using data from the above sources. Fields within the browser are:

**Parish –** name as given in the source
**Place –** name of township or hamlet belonging to the parish
**Chapelry –** a 'logical' field indicating true or false for chapelry status of a place within a parish
**Deanery –** the name of the deanery the parish belongs to
**Hundred –** the name of the hundred the parish belongs to
**Dedication –** dedication of the church/chapel

**First documented –** date of first documentary reference with qualifying data such as 'before' in brackets, or name of monarch followed by 'reign' in brackets if that is all the information known.
**Founders –** where known, the name of the founder is added, although few are known.
**Reference –** the reference, with volume number and page is recorded
**Notes –** a free text field giving additional data relevant to the database entry

### TAXATION & CENSUS

This data was largely collected by Stephen Mitchell for the Northamptonshire Sites and Monuments Record in c.1980. It includes a substantial unpublished text on the sources, interpretation and organisation of the data. His research undertaken on townships has been largely superseded by the present work (see above), but his analysis of the taxation units has been used in allocating values to groups of townships.

The data from the taxation and census documents of 1301, 1334, 1377, 1524-25, 1674, 1676, and 1720 are all recorded in tabulations in Mitchell's handwritten notes and typescript. For the 1377, 1524-25, 1676, and 1720 documents, data was available both in original notes and in the typescript, and so both were used, and validated against each other, in the data entry for these documents. However, for the 1301, 1334, 1674 taxations, the typescript is incomplete or includes only a sample of the overall data for the county, and so in these instances the original handwritten notes were relied upon almost entirely. For the Bridges 1720 survey, the original document was also consulted, in order to validate Mitchell's data.

The various medieval and post-medieval taxation and population documents for Northamptonshire were entered into MapInfo tables in order to facilitate mapping of the data by township unit and across the whole of the county, thereby illustrating distributions of wealth and population at various points in time from the 14$^{th}$ to the 18$^{th}$ centuries. As each taxation document was complex, and substantially different in both what it records and the manner in which the data is presented, individual methodologies for each document were developed which are discussed in more detail below. However, there are some overarching methodological issues, applicable to each source, which need to be discussed first.

#### Fields in Taxation Tables

Each taxation was given a separate table in MapInfo, and individual fields were created as necessary both for the raw figures and for the calculations necessary in order to map the data. The majority of the fields are specific to particular taxations, but the fields of Hundred, No Data, and Notes appear in each taxation table.

The Hundred field specifies the hundred in which the township is found, according to the 19$^{th}$ century map of hundreds, and in the original taxation document. For the vast majority of townships, there was no discrepancy; but when the hundred affiliation in the 19$^{th}$ century differs from that of the document, or the affiliation is unclear, the entry in the Hundred field is recorded as "(possible hundred)?/(possible hundred)?" When a township is known to have been divided between two hundreds in a certain taxation, the entry in the Hundred field is recorded as "(known hundred)/(known hundred)".

The No Data field specifies when either the original document, or Mitchell's notes, do not provide useable data for that township, even though it is known to have existed at the time of the taxation. These instances are denoted by the letter "N" ("no data"). When the original document or Mitchell's notes provide some data for a township, but this data is substantially incomplete, the letter "I" ("incomplete") has been entered into the No Data field, to distinguish zeroes in that entry as incomplete data, rather than recorded zeroes. Finally, when either the original document or Mitchell's notes present a problem (in that the data as given is unclear; further action needs to be taken once more information is available; or the data is difficult to deal with within the confines of MapInfo (e.g. the specification that "part of" a township is included within another)); then the letter "P" ("problem") is entered into the No Data field. When possible, explanations of why there is no data, the data is incomplete, or there is a problem with the data are entered in the Notes field.

The Notes field consists of additional information helpful to understanding the significance of the data as it is recorded in each field; or specifying problems, questions, or lack of clarity where they occur. The particular use of the Notes field varies from taxation to taxation, for which see the discussions below. However, across all the taxation tables, text in square brackets indicates notes made by the research team in the course of the entry and analysis of taxation data, while unbracketed text derives from notes in Mitchell's original research.

**Township Polygons**

All of the figures and calculations from the various taxations are tied to the polygon data of the Northamptonshire Townships table. In some cases, taxation data has also been mapped on individual settlement points, taken from the Northamptonshire Settlement table. Township names obviously appear throughout time in a number of different forms, but for consistency and facilitation of searching the data, the townships have always been referred to by those names used in the Township table, regardless of the way in which they are referred to or spelled in the original documents.

The mapped townships cover the historic boundaries of Northamptonshire, including the Soke of Peterborough, but the Soke has not been mapped in any of the taxation tables, as most of them do not provide data for this section of the county. Detached portions of other counties included within the boundaries of Northamptonshire (e.g. Biddlesden) have also not been mapped.

In each taxation, the decision to combine township polygons into single entities was taken according to the character of the data available for that document, but there are a few cases in which townships were always combined with another, regardless of whether the township was mentioned, or if such a combination was indicated in the document. These instances are: 1) Costow, which has been included with Marston St Lawrence. Costow is not listed separately in any taxation, and appears on early maps as part of Marston St Lawrence, so the assumption has been made that it is always included in Marston's figures. 2) Buscot, which has been included with Higham Ferrers. 3) Raunds Cotton Fields, which has been included with Raunds.

**1301 Lay Subsidy**

The 1301 Lay Subsidy records the payments of tax by township or taxation unit, as well as the number of taxpayers per settlement. Fields specific to this taxation are detailed below.

**Taxation unit:** This field specifies the primary unit by which taxes and taxpayers were recorded. This is most often equivalent to a single township, but in some cases subsidiary settlements are associated with the primary unit.

**Subsidiary settlement:** In the 1301 Lay Subsidy, subsidiary settlements within overall taxation units were classified according to three characteristics: 1) subsidiary settlements with wealth or population data enumerated separately from the overall taxation unit ("enumerated places"); 2) subsidiary settlements whose tax value was included with the overall taxation unit, and which were specifically mentioned in the document as being associated ("documented places"); and 3) subsidiary settlements assumed by Mitchell to be associated with the overall taxation unit, as they were in existence at the time and are otherwise (e.g. parochially) affiliated, but are not mentioned in the document ("assumed places"). These were indicated in Mitchell's handwritten notes from the original document in the following manner: Enumerated Places—capital letters and underlined; Documented Places—lowercase letters and underlined; Assumed Places—lowercase letters. Eponymous fields were created in MapInfo to represent these categories.

In the first case, where separate enumeration was available, the subsidiary settlements were mapped independently, and the taxpayers and wealth figures were tied to their own township boundary polygon. However, they were noted, along with their values, in the Enumerated Places field of the primary taxation unit, in order to preserve the affiliations that were in existence in the fourteenth century. In the related separate subsidiary entry, the note "Taxed with (primary taxation unit)" was entered in the Notes field. In cases when subsidiary settlements were mentioned, and had their own township polygons, but no separate enumeration was available, the polygon of the subsidiary settlement was combined with that of the overall taxation unit.

**Taxpayers and Wealth:** These fields specify the total number of taxpayers for a taxation unit, and the amount paid in tax in pounds, shillings, and pence. When a number of enumerated places are associated with a primary taxation unit, each are listed with their wealth in the Enumerated Places field, but the taxpayer and wealth fields for the primary unit list only the figures for that unit. Each enumerated place's taxpayer and wealth values are listed in their own separate entry.

**1334 Lay Subsidy**

The 1334 Lay Subsidy records payments of the tax by township. Fields specific to this taxation are detailed below.

**Taxation unit:** This field specifies the primary unit by which taxes paid were recorded. This is most often equivalent to a single township, but in some cases subsidiary settlements are associated with the primary unit.

**Subsidiary settlement:** In the 1334 Lay Subsidy, subsidiary settlements within overall taxation units were classified as either: 1) mentioned in the document ("documented places"); or 2) assumed to be associated with the overall taxation unit, as they were in existence at the time and are otherwise (e.g. parochially) affiliated, but which are not mentioned in the document ("assumed places"). These were indicated in the handwritten notes from the original document in the following manner: Documented Places—lowercase letters and underlined; Assumed Places—lowercase letters. Eponymous fields were created in MapInfo to represent these categories. Since subsidiary settlements had no separate enumeration, any township polygons were combined with that of the overall taxation unit.

**Wealth:** The total payment for a taxation unit is given in shillings in the Payment Shillings column. [But fields for Pounds, Shillings, and Pence are available in order to break the payment down if later desired, primarily for consistency of fields between tables.]

### 1377 Poll Tax

The 1377 Poll Tax records the number of taxpayers per township. Fields specific to this taxation are detailed below.

**Taxation unit:** This field specifies the primary unit by which taxpayers were recorded. This is most often equivalent to a single township, but in some cases subsidiary settlements are associated with the primary unit.

**Subsidiary settlement:** In the 1377 Poll Tax, subsidiary settlements within overall taxation units were classified as either: 1) mentioned in the document ("documented places"); or 2) assumed to be associated with the overall taxation unit, as they were in existence at the time and are otherwise (e.g. parochially) affiliated, but which are not mentioned in the document ("assumed places"). These were indicated in the handwritten notes from the original document in the following manner: Documented Places—lowercase letters and underlined; Assumed Places—lowercase letters. Eponymous fields were created in MapInfo to represent these categories. Since subsidiary settlements had no separate enumeration, any township polygons were combined with that of the overall taxation unit.

**Taxpayer:** The total number of taxpayers for a taxation unit is recorded in this field.

### 1524-25 Lay Subsidy

The 1524-25 Subsidy records taxpayers and tax paid in two separate assessments of 1524 and 1525. The incomplete survival of the document means that in some places records are extant for both surveys, but in some cases for only one, or that certain data is missing from one or both. Fields specific to this taxation are detailed below.

**Taxation Unit:** This field specifies the primary unit by which taxpayers and the amount of tax paid were recorded. This is most often equivalent to a single township, but in some cases subsidiary settlements are associated with the primary unit.

**Associated Places:** This field records places mentioned in Mitchell's notes that, in addition to the primary taxation unit, comprise the given totals for taxpayers or wealth. Since these subsidiary places had no separate enumeration, any township polygons were combined with that of the overall taxation unit. When subsidiary places have been enumerated separately from the primary unit, but no township boundary is available to tie the figures to, the figures for each settlement have been totalled to enter into the taxpayer and wealth fields, but the specific figures for each settlement have been entered separately in the Notes field.

**Taxpayer:** The two sets of taxpayer fields, for 1524 and 1525, are each broken down into Total Taxpayers, Taxpayers Paying on Land, and Taxpayers Paying on Wages. The number of taxpayers paying on land and wages was originally recorded, but that part of the document has not survived. The number of total taxpayers for each taxation unit includes the figures for those paying on land and those paying on wages. In some cases, more specific data was given for the number of taxpayers in a unit who paid on wages, but at a different, lower rate of $1/60^{th}$. These figures were added to those paying at the normal rate, in order to obtain a total number of taxpayers paying on wages, but a "+" in the Notes field indicates that there are taxpayers recorded paying at $1/60^{th}$ for this unit, and that the specific figures can be consulted in Mitchell's original notes if necessary.

**Wealth:** There are two sets of wealth fields, for 1524 and 1525, which are each broken down into pounds, shillings, and pence.

**Total Payments and Total Taxpayers:** The Total Payments and Total Taxpayers fields were created in order to map variations across the whole county, since the data for comparing either 1524 or 1525 would have been substantially incomplete for many townships. The Total Taxpayers field consists of the 1524 total of taxpayers for a unit, and where this was not available, the 1525 data was used. The Total Payments field, recorded in shillings, uses the same format.

**Tax and Taxpayers Above £1:** Payments of tax over one pound, and the number of taxpayers who paid such an amount, have been recorded in order to further illuminate the distribution of wealth within communities. The number of taxpayers paying over one pound was totalled for each unit to reach the figure in the Taxpayers Above £1 field, and the number of payments over one pound were also added together to reach the figures in the Tax Above £1 Pounds, Shillings, and Pence fields. These were then converted into shillings in the Payments Above £1 field, for ease of mapping. Where there were multiple payers over £1, but one taxpayer paid an inordinate amount of the total, this is mentioned in the Notes field with a "*", so that the significance of that data was not lost in the totals.

For these figures, 1524 data was again used unless non-existent, in which case. the 1525 data has been used instead. The only exception is Polebrooke hundred, for which the reverse is true. The hundred has data for both years, but the 1525 data on taxes and taxpayers over one pound is more complete, and so is used in preference to 1524 data for calculations.

**1674 Hearth Tax**

The 1674 Hearth Tax records the number of householders, hearths, and exemptions from the tax by township. However, without going back to the original document, the figures for exemptions and hearths are unavailable, as Mitchell's original notes do not specify them, and his typescript gives the full data for only a small sample of townships. In addition to this missing data, one page of the original notes is also missing, so there are no records for all of Greens Norton Hundred, while those for Fawsley and Guilsborough hundreds are incomplete. Fields specific to this taxation are detailed below.

**Taxation Unit:** This field specifies the primary unit by which the number of householders, hearths, and exemptions was recorded. This is most often equivalent to a single township, but in some cases subsidiary settlements are associated with the primary unit. In a few cases, totals for an entire taxation group, comprising a number of individually enumerated places, were noted in addition to the figures for each settlement. The total for the taxation group is specified in the Notes field of all of the relevant settlements, along with the settlements that comprised it and their figures. However, when individual township boundary polygons were present, each enumerated settlement was always mapped separately.

**Associated Places:** This field records places mentioned in Mitchell's notes that, in addition to the primary taxation unit, comprise the given totals for population, or are part of a taxation group, but are enumerated separately. When associated places were enumerated separately, they were mapped to their individual township boundaries when those were available. When associated places were enumerated separately from the primary unit, but no township boundary was available to tie the figures to, the figures for each settlement have been totalled to enter into the taxpayer and wealth fields, but the specific figures for each settlement have been entered separately in the Notes field. When associated places had no separate enumeration, any township polygons were combined with that of the overall taxation unit.

**Householders/Hearths/Exemptions:** These fields record the number of householders, hearths, and exemptions associated with each taxation unit, but due to the incomplete character of Mitchell's notes the figures for hearths and exemptions are, as already described, unavailable .

**1676 Compton Census**

The 1676 Compton Census records the number of Anglicans, Roman Catholics, and Non Conformists by parish, and occasionally records the number of families resident in that parish. Fields specific to this source are detailed below.

**Parish Name:** This field specifies the primary unit by which the number of people of different religious denominations was recorded. This is most often equivalent to a single parish, but in some cases subsidiary settlements are associated with the primary unit. Due to the lack of a parochial map, the figures have been tied to township polygons rather than to parishes, but as the association of parishes to townships in Northamptonshire is often 1:1, this has, for now, been deemed to be accurate enough for mapping purposes.

**Deanery:** Deanery was used in preference to Hundred as the grouping unit, because of the ecclesiastical nature of the record.

**Associated Places:** Associated places are ones that are associated in Mitchell's notes with the parochial unit. However, the origin of these associations is unclear. Without referring to the original document, it is impossible to know whether they are listed in that way in the document, or whether they were assumed to be associated by Mitchell because of known ecclesiastical links. Because of the uncertainty of association these places have not been combined with the main township but the association is recorded in the Notes fireld. In most cases, the associated places were not enumerated separately, but in some instances, figures for individual chapelries within the parish were given (e.g. Rushton All Saints and Rushton St Peter). In these cases, the figures for both were totalled to enter into the various denomination fields, but were enumerated separately in the Notes field.

**Anglicans/Roman Catholics/Non-Conformists/Families:** These fields record the number of people of each denomination by parish, and the number of families per parish when given.

**Total Population:** This field was calculated by adding together the figures for Anglicans, Roman Catholics, and Non-Conformists, in order to enable the mapping of the total population distributions across the county.

**c.1720 Bridges Survey**

John Bridges' 1720 survey records figures for the number of houses or families in settlements, along with occasional data about total population, dispersed houses associated with settlements, seats and manor houses, and mills. As the survey was compiled by a number of different surveyors, the categories of data and the manner in which they were recorded varies somewhat across the county, and is often inconsistent, in that not all types of data are recorded for every settlement. The fields specific to this survey are detailed below.

**Township name:** This is the basic unit of the survey, as specified by Bridges, and are directly related to township boundary polygons in MapInfo. The majority of the time, Bridges' figures refer to only one township/settlement, although there are occasions when subsidiary or associated places are grouped under one township, in which case they are noted.

**Associated places:** This field notes cases in which the total of houses given in the document includes those in a number of separate settlements (e.g. Greens Norton and its hamlets). When township boundary polygons existed for these subsidiary settlements, they were combined with that of the primary township to make one polygon representing the entire unit area.

**Houses:** This field consists of the total number of houses, dispersed houses, seats, and mills given in Bridges. The survey is not always consistent in the way it lists the other houses, separate and distinct from the normal houses in a village, in relation to the village total. Sometimes these are included in that total, sometimes they are clearly stated as additions to it. The number of seats/dispersed houses/mills were all

added to the 'houses' total when explicitly stated to be *in addition to* the houses in the main settlement. When this is not explicitly stated, the total of houses given by Bridges for the township was assumed to include such additional habitations.

**Families:** This field consists of the figures given by Bridges for the number of families in a settlement .

**Persons:** Occasionally Bridges specifies figures for the total population of a settlement.

**Dispersed houses/seats/mills:** These fields note any additional houses specified by Bridges, apart from the overall number of houses or families for a settlement. They are added together and included in the total found in the Houses field, unless the overall figure for that township was recorded in families, rather than in houses.

**Total Houses or Families:** The majority of Bridges' entries give figures for houses *or* for families, rather than both. In order to map variations in population across the county, the two have been treated as equivalent – that is, the assumption has been made that each dwelling housed a single family. A field called Total Houses or Families was created, into which the data for either one category or the other was entered, taking the larger of the two if both types of data were present. The Houses column, as it was already a total of houses, dispersed houses, seats, and mills, was included "as is" in the Total column. However, the figure for 'families' was added to any dispersed houses, seats, or mills that were recorded in each township, in order to arrive at the family total, effectively assuming one additional family for each dispersed house/seat/mill that is mentioned.

Nucleated Houses or Families field: This field was necessary in order to map the Bridges data to points, settlement by settlement, rather than to township polygons. It was created by taking the Total Houses figure and subtracting the dispersed houses column from it, thereby giving the best estimate for the number of houses found within the nucleated village itself. Figures from the 'families' column were inserted directly into this column, with nothing added or subtracted from the data given by Bridges. This is because, when family numbers are given in his survey, it is almost always when discussing a nucleated village settlement. When both are available, the larger of the figures for 'houses' or 'families' has been used.

**Census 1801 & 1891**

Data for the census returns from 1801 to 1901 was provided by Glenn Foard as a MapInfo .tab. A new table, 'Census 1801 & 1891', was created using extracts from this data and a modified copy of the Township table. The enumeration units used in the two census years is not identical: e.g. Cranford St Andrew and Cranford St John are recorded together in 1801 but separately in 1891; Barford separately in 1801 but with Glendon in 1891. Similar problems are encountered with the other census years. Thus Upper Benefield has entries for each of them, but Lower Benefield only for 1841 and 1851. It is uncertain if the missing years for Lower are included with Upper but as there is only a single polygon for both Benefields all the data has been added to that. Where such anomalies occur they are recorded in the 'notes' field

A copy of the township table was made and new fields added as listed below. Where no data appears for a particular township in 1801, but does for every other census year, it has been left in the new table and appears as '0' in 1801. If there is no data for either 1801 or 1891 the township has been removed from the new table. Where two or more townships were recorded together in the census returns the townships were combined and all their names will appear together in the 'township name field'. Where census data is recorded for a township which has no separate boundary e.g. Potterspury and Yardley Gobion have separate census entries but a single township boundary, then the census data has been summed and a note recorded in the Notes field to indicate that the data includes both places.

**Township name –** the name of the township, or all combined townships
**Population 1801**
**Population 1891**
**Change –** the difference between 1801 and 1891. A minus sign indicates reduction, no sign indicates a plus
**Acreage –** area of township/s
**Square km -** area of township/s
**Square mile -** area of township/s
**Notes –** additional information

### TITHE

Where summaries of landholder / tenant acreage and land cultivation are given in the schedules accompanying the tithe award maps, in those cases where these include complete townships, they were recorded in separate files. The tithe was an ecclesiastical tax and we might thus expect the process of commutation to be parish-based. The maps and schedules, however, variously refer to the areas they deal with as 'lordship', 'hamlet', 'township' or 'parish'. Township is the unit used throughout the project and is therefore adopted here. For detail of parochial structures see 'Parish' above.

### Tithe Landholder Summary

Landholder data was recorded in an MS Access database with each person's total holding recorded as a separate entry. Fields included in the database are:

**ID**—automatic index number created by Access
**Township**—Township or townships as given on the map.
**Landowner Institution**—Includes institutions such as rector, lord of the manor, trusts, charities, schools, the Poor.
**Landowner Surname**—Surname of the primary landholder.
**Landowner First Name**—First name of the primary landholder
**Landowner Title**—Title of esteem or rank of the primary landholder; e.g. Earl, Esq, Rev, or descriptor for differentiating landholders of the same name, e.g. 'of Moreton Pinkney', 'a tailor'.
**Occupier**—name of landowner if land is in hand or name of tenant if leased.
**Acres**—Total number of acres contained in the summary
**Roods**—Total number of roods contained in the summary
**Perches**—Total number of perches contained in the summary

**Notes**—additional information relating to the entry e.g. if land is glebe, or list of trustees' names

### Tithe Land Use Summary

The state of cultivation as given as a summary in the tithe schedule was recorded in a MapInfo database and georeferenced to the Township table. Grassland is variously recorded as 'pasture,' 'meadow,' 'grass,' or 'sward': for simplification the term 'meadow/pasture' has been used. Fields included are:

**Township**— Township or townships as given on the map
**Source**—archive reference
**Arable acres**— Total number of arable acres contained in the summary
**Arable roods**— Total number of arable roods contained in the summary
**Arable perches**— Total number of arable perches contained in the summary
**Pasture/meadow acres**— Total number of grass acres contained in the summary
**Pasture/meadow roods**— Total number of grass roods contained in the summary
**Pasture/meadow perches**— Total number of grass perches contained in the summary
**Wood acres**— Total number of wood acres contained in the summary
**Wood roods**— Total number of wood roods contained in the summary
**Wood perches**— Total number of wood perches contained in the summary
**Notes**—additional information relating to the entry