Colne Valley Park

Historic Landscape Characterisation Project

Ruth Beckley

March 2007

ENGLISH HERITAGE

Executive Summary

The English Heritage ALSF funded Colne Valley Park Historic Landscape Characterisation (HLC) Project was carried out by Buckinghamshire County Council and Groundwork Trust on behalf of the Colne Valley Regional Park. The project complements the county HLC databases maintained by Buckinghamshire, Hertfordshire and Surrey County Councils. As well as providing a detailed and cohesive historic landscape characterisation for the Park, this database includes additional information on historic farmsteads and estates, boundaries, routeways and waterways. The report provides a detailed summary of this database focussing on the impact of aggregates extraction and settlement expansion in the twentieth century. The report also defines and describes local historic landscape zones which can be used to inform future land use within the Park. The potential for further research and involving the local community is also discussed.

The Colne Valley Park HLC highlights areas of significant twentieth century development including large areas of flooded mineral extraction sites, reservoirs and early twentieth century settlement zones. However, despite this high level of modern influence, historic parks and ancient woodland survive as public recreation areas whilst areas of significant 19th century and earlier field systems also survive. Distinctive historic characteristics of the present day Colne Valley Park include the following:

- *A rich archaeological heritage spanning more than ten thousand years. Several nationally important prehistoric sites are recorded in and around the Colne Valley Park such as Three Ways Wharf, Uxbridge and Yeoveney Lodge, Spelthorne.*
- *Series of flooded mineral extraction sites running from Batchworth Lake in Three Rivers, Herts to Denham Quarries, near Denham the majority of which are used for recreation and are recognised for their wildlife interest under a number of designation from SSSI's to local or county wildlife sites.*
- *Four large reservoirs in the south of the Colne Valley Park also functioning as recreational areas. The reservoirs are also protected by several designations including Special Protection Areas for three of the four with Wraysbury reservoir listed as a local or county wildlife site.*
- *Several nationally important registered historic parks now open to the public including Langley Park and Denham Country Park*
- *National Trust property at Ankerwycke Estate*
- *A number of historic parks now in use as golf courses such as Harefield Place and Richings Park.*
- *Several areas of pre 18th century hedged field systems.*
- *Surviving areas of meadowland around the river Misbourne.*
- *Significant early twentieth century settlement including Richings Park estate and Wraysbury estates*
- *The 19th century planned community of Heronsgate, now a conservation area.*
- *Artificial watercourses, including the Grand Junction Canal.*

Table of Contents

List of Tables

List of illustrations

List of Abbreviations

ALSF	Aggregates Levy Sustainability Fund
BRG	British Regional Geography
BP	Before Present (1950)
CVP	Colne Valley Park
CVRP	Colne Valley Regional Park authority
EH	English Heritage
HLC	Historic Landscape Characterisation
HLT	Historic Landscape Type
HLZ	Historic Landscape Zone
Ha	Hectare
Ma	Million years Ago
SSSI	Site of Special Scientific Interest

1. Background

1.1. Circumstances of the study

The Archaeological Service of Buckinghamshire County Council conducted the Colne Valley Historic Landscape Characterisation (HLC) Project in conjunction with Groundwork between August 2006 and March 2007 on behalf of the Colne Valley Regional Park (CVRP). In recognition of the substantial impact of mineral extraction on the Colne Valley's modern landscape, funding was provided by the Aggregates Levy Sustainability Fund (ALSF) and administered by English Heritage (EH). The project team reported to a steering group that included representatives of English Heritage and the local authorities covered by the Park. This report covers the technical HLC study carried out by Buckinghamshire's Archaeological Service, which formed stages 1 to 3 of the project. A fourth stage involving public dissemination and community involvement was led by Groundwork.

1.2. Aims

The overall aim of the Colne Valley HLC project was to produce a detailed historic landscape characterisation of the Park that would combine existing HLC data from several county level studies as well as creating base mapping for relevant areas in Hillingdon, Slough and Windsor and Maidenhead in order to provide a complete dataset and analytical report for the Park.

The end uses for this resource is to inform future planning decisions within the Park as well as identifying areas that might benefit from conservation and community based projects.

The project was divided into several stages, each with specific aims.

Stage 1

- To produce a completed HLC for the entire Park.
- To enhance this dataset to allow for a more in depth study of the landscape focusing on twentieth century change in settlement and aggregates.

Stage 2

- To produce a more detailed study of the historic farmsteads and their associated estates in order to assess the impact of increased twentieth century urbanisation and gravel extraction.
- To create a detailed study of boundary change within the current field systems with the aim of providing an additional dataset for future planning and community projects.
- To create a comprehensive study of the routes and watercourses within the Park in order to provide a basis for future planning and community projects.

Stage 3.

- To deliver a GIS based HLC database
- To deliver a report describing and analysing the HLC
- The fourth and final stage of public dissemination run by Groundwork is not covered by this report.

1.3. National relevance of project

This report forms part of a genre of HLC projects commissioned by English Heritage from the early 1990s with the initial aim of producing HLC databases at a county level for England as a whole. These projects have been carried out at local government level with the end database being housed at both county HER/SMR Offices and at English Heritage. The ALSF funding provides the scope to further enhance this data through smaller scale, more in-depth, surveys of specific areas affected by mineral extraction, such as the Colne Valley.

This project has followed the general principles as laid out by the English Heritage HLC programme; examining the historic derivation of the modern landscape of an area through the use of GIS software and assessing the human impact at a broad scale. It has used a number of English Heritage papers in order to inform certain aspects of this project including the following;

English Heritage Research Papers

- *Using Historic Landscape Characterisation. Clark, J. & Darlington, J. & Fairclough, G.*

Overview of the applications and methodology involved in HLC.

- *Living buildings in a living landscape: finding a future for traditional farm buildings (long version). (HELM Paper)*

The southeast preliminary character assessment created as part of this paper was also used in order to help identify trends in farmstead patterns specific to this area.

English Heritage Research Agenda. 2005

The Colne Valley Park Project has also aimed to fulfil several aspects of the 2005 English Heritage Research Agenda including the following general themes;

- *A1. What's out there? Defining, characterising and analysing the historic environment.*

Through the enhancement of existing HLC datasets and the creation of new data for certain areas, the Colne Valley Project has produced a comprehensive database of the survey area paying particular attention to the impact of the 19th and 20th century on the landscape through settlement growth, mineral extraction and boundary change as well as the transport network.

- *C2. Making friends. Building understanding and appreciation through education & outreach.*

The Colne Valley HLC Project will included dissemination and presentation to the public through guided historic walks and talks held at the Colne Valley Visitor Centre. A website will also be developed together with a travelling display and leaflets.

It is also the intention of the Partnership to extend the use of this report beyond planning and conservation to provide for educational projects and community involvement in the Colne Valley.

- *D2. Measuring threat. Studying the reasons for risk and developing responses.*

The study looked particularly at the effects of mineral extraction and other modern land use change on the rural-urban fringe of Greater London. A primary function of

this database will be to help inform planning decisions as well as to identify areas in need of conservation works. In particular, the boundary mapping will be used as a basis for more in-depth surveys of hedgerow survival and biodiversity.

ALSF Research Priorities

This project has also addressed several objectives and priorities of the Defra led ALSF Research Initiatives including the following;

Objective 3: Addressing the environmental impacts associated with past aggregates extraction.

- *Addressing the impacts of past aggregate extraction; specifically conservation and repair of sites, monuments, buildings and landscapes within communities affected by aggregates extraction*

The Colne Valley Regional Park has undergone extensive aggregates extraction in the past and assessing the impact of this extraction is an integral part of this study. The study has documented and quantified the distinctive contribution of mineral extraction to the landscape and heritage of the area as well as identifying where earlier landscapes have survived

- *Local education, interpretation, outreach and community involvement*

Dissemination of the findings of this report will be carried out primarily by Groundwork Trust in the form of travelling displays and publicity but also by Buckinghamshire County Council through a series of walks and talks in the Colne Valley Park.

Colne Valley Park Regional Park Action Plan 2006-2009

This report encompasses several points of the current Colne Valley Regional Park action plan including the following;

- *Action 53. Investigate the potential to establish an educational resource in partnership with a CVP farm.*

The historic farmsteads and estates segment of this report will provide a basis of understanding for local farmsteads and dissemination to a wider audience.

- *Action 58. Produce leaflets and web based information on CVP historic landscape characterisation and provide a series of guided walks and talks.*

Leaflets, a permanent travelling display and web based information will be produced by Groundwork Trust following the completion of this report.

- *Action 67. Undertake an ancient hedgerow survey/management project*

The boundaries mapping data will be used as a basis for more detailed projects on hedgerow changes and habitat surveys within the Colne Valley Park.

1.4. Sources and resources

The project drew upon existing county-based HLC studies available for Buckinghamshire, Hertfordshire and Surrey and filled in the gaps for the remaining areas of Hillingdon, Slough and Windsor and Maidenhead. Due to the majority of the area lying within the borders of Buckinghamshire, the methodology used for this completion and integration exercise (project stage 1) was based on Buckinghamshire

County Council's HLC. In order to address the "deepening themes" of stage 2 historic estate and tithe maps were used and other characterisation methodologies incorporated. The Black Country Urban Survey provided the methodological basis for characterising the built environment. The HELM historic farmsteads preliminary characterisation report was used for the farmsteads mapping; the Chilterns HLC project for the routeways mapping; and Hertfordshire's Minerals Historic Environment Characterisation Project for assessment of boundary change and survival. A number of parallel studies were also used for the creation and assessment of historic landscape character zones for the Colne Valley Park including the current Bucks CC historic landscape zones methodology and Hampshire's historic landscape character assessment report. Appendix 2: Table 1 provides a list of sources together with their main application for this project. Appendix 2: Table 2 supplies a list of datasets provided by other counties. Finally, Appendix 2: Table 3 provides a summary of the datasets produced in this project with their main purpose.

1.5. Acknowledgements

Report written and produced by Ruth Beckley, supervised by David Green and managed by Sandy Kidd MIFA of the Buckinghamshire County Archaeological Service.
Assistance was provided from the following organisations as part of the project steering group:

- English Heritage
- Groundwork Trust
- Greater London Archaeology Advisory Service
- Hertfordshire County council
- Surrey Archaeology Services
- Berkshire Archaeology Services

1.6. Copyright

1.7. Historic Landscape Characterisation

The landscape around us is formed by the interaction of the natural and human environments. It represents a dynamic environment that has been affected and altered by thousands of years of human activity, it is what we see around us, both the physically altered and the culturally embodied environment. Historic landscape characterisation is the study of the human dimension of landscape, particularly how the modern landscape has been created by human action whether in the recent or more distant past.

The word ‘landscape’ is derived from the Dutch term ‘landschap’ and was brought to wider audiences through painters in the 16th century as concepts of perspective were first introduced to art (Gosden, 1999). It was used to describe wholly or partially created sceneries and vistas both through the obvious mediums of landscape gardens and planned communities as well as through the greater countryside. Today the term ‘landscape’ has been broadened to include other environments; we talk about urban townscapes and maritime seascapes with equal validity, expanding on the classical definition of the term. Characterisation seeks to define the special characteristics of a place through an understanding of origin, development, form and function.

HLC has its roots in a number of different projects and ideas; in the 1990’s it became increasingly important to characterise the environment in a clear and comprehensive way. Some approaches to characterisation focused on specialised zones such as settlement or woodland rather than the landscapes as a whole (e.g. Roberts and Wrathmell’s Settlement Atlas, 2000). It became increasingly apparent however, that characterisation of the historic landscape as a whole was the next necessary step in understanding the landscape. A 1994 study of the Cornish landscape was the first to define the historic dimension of the landscape at a county level using the emerging HLC techniques (Herring et al). This work has since formed the basis for an English Heritage led national programme of characterisation.

All HLC programmes today share a number of basic principles that guide and shape how each project develops (Clark et al: 2004). However, there is also a desire to keep individual projects as flexible as possible allowing for variations in methodology and interpretation on a county level.

Some guiding principles for HLC projects (EH: Using Historic Landscape Characterisation):

Projects should aim to characterise all aspects of the landscape up to and including the modern day. The landscape is a dynamic environment that is constantly changing and as such HLC projects aim to characterise not only the past landscape but also the modern. It is understood that HLC is not a static database and should be maintained and changed as the landscape changes.

Projects should characterise the entire landscape and not just focus on site level assessment. Projects should be able to adequately characterise all aspects of the landscape in such a way as to focus on the landscape rather than the site level, terms and methodologies based on site interpretation should be avoided.

Projects are acknowledged to be based on interpretation and perception. Interpretation is a valid form of characterisation and can contribute valuable insights into the cultural heritage of a landscape. HLC relies on interpretation by the officer in charge and the concise justification and explanation of the process involved.

Projects should be accessible to the public. Reports should be clear and concise and understandable to the non-professional. Dissemination and publication including community outreach programmes should also be an important aspect of a project.

1.8. Stage 1 Methodology: Complete mapping of the Colne Valley Park

At the outset of this project, three different HLC databases needed to be merged to form a basis for a more in-depth characterisation of the Colne Valley Park. This included several parishes from the Buckinghamshire HLC project comprising 45% of the total area, as well as segments of the boroughs of Spelthorne in Surrey (10%) and Three Rivers in Hertfordshire (11%). The remaining 34% of the Park had yet to

be characterised. The first stage of this project, therefore, involved the merging of the three completed datasets followed by characterisation of the un-mapped areas. This involved finding suitable equations between the terms used in each study, Appendix 2: Table 4 outlines the comparisons between relevant codes. The HLC methodology developed by Bucks CC was adopted in this case as it was the most recent survey and because the majority of the Colne Valley Park lies within Buckinghamshire; it was also the easiest characterisation to use. The second stage of base mapping involved the completion of a single comprehensive HLC for the Park; using the Bucks CC methodology, characterisation was carried out over the remaining areas of Hillingdon, Slough and Windsor & Maidenhead. The previously completed characterisation across the Colne Valley Park was also updated in order to reflect modern changes to the landscape since the original HLC county projects; current mapping was based on the latest edition of the OS Mastermap dating to 2005 (see Appendix 2:Table 5 for attribute table for stage 1 HLC mapping). Appendix 2 Figure 1 illustrates the completed HLC mapping for stage 1 including the deepening phase.

Figure 1: Location of Colne Valley Park in relation to neighbouring authorities

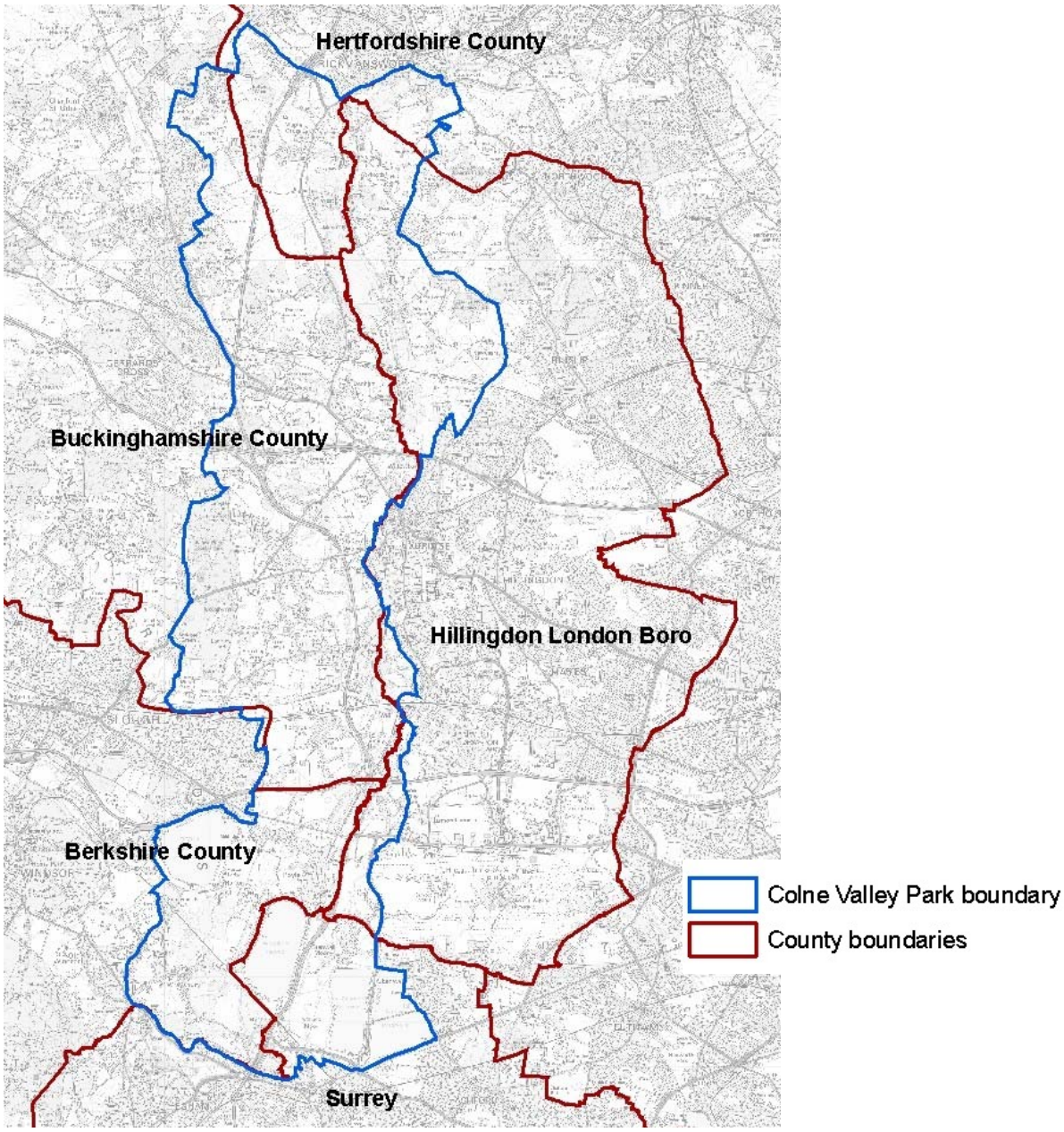


Figure 2: The Colne Valley Park in its wider context

The Colne Valley changed rapidly in the twentieth century when its close proximity to London made it a prime location for new settlement and its geology a prime location for aggregate extraction. The primary aim of this study was to examine in detail this twentieth century change and how it has affected the landscape. In order to achieve this, a more detailed methodology, based in part on the Black Country Urban Survey, was created to characterise twentieth century development. The Black Country report (Wolverhampton CC) covered an area of rural as well as urban landscapes producing, in particular, a highly detailed characterisation of settlement types based on a number of factors including the morphology and size of individual buildings. For the Park this methodology was simplified to include categories for historic settlement pre-dating maps, 19th century settlement as well as separate categories for 1920's, 1950's, 1970's and modern housing (see Appendix 7 for full HLC characterisation). Characterisations of housing types were based firstly on their period of construction as documenting settlement growth in the Park was a primary aim of this project and secondly on their morphology; if, for example, they were terraced, semi detached or detached housing. Also taken into account was the size of housing development as, for example, several large scale housing developments were built in the 1920's around Wraysbury and Richings Park, whereas development from other periods were carried out on a much smaller scale. Assessment was based entirely on map and photographic sources using primarily the OS series of maps from the 1820's to the present day and aerial photographs providing further information for the 1950's and 2003.

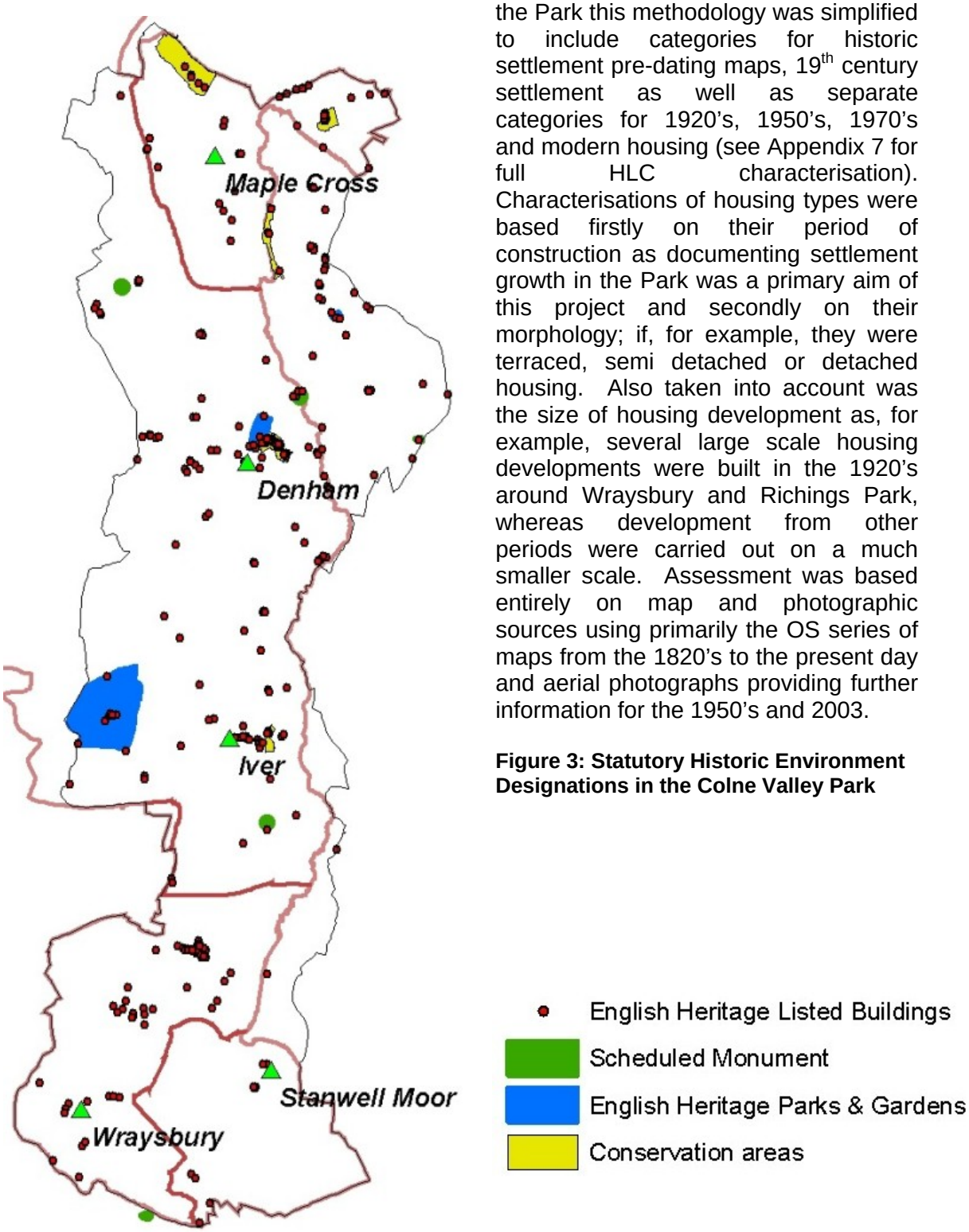
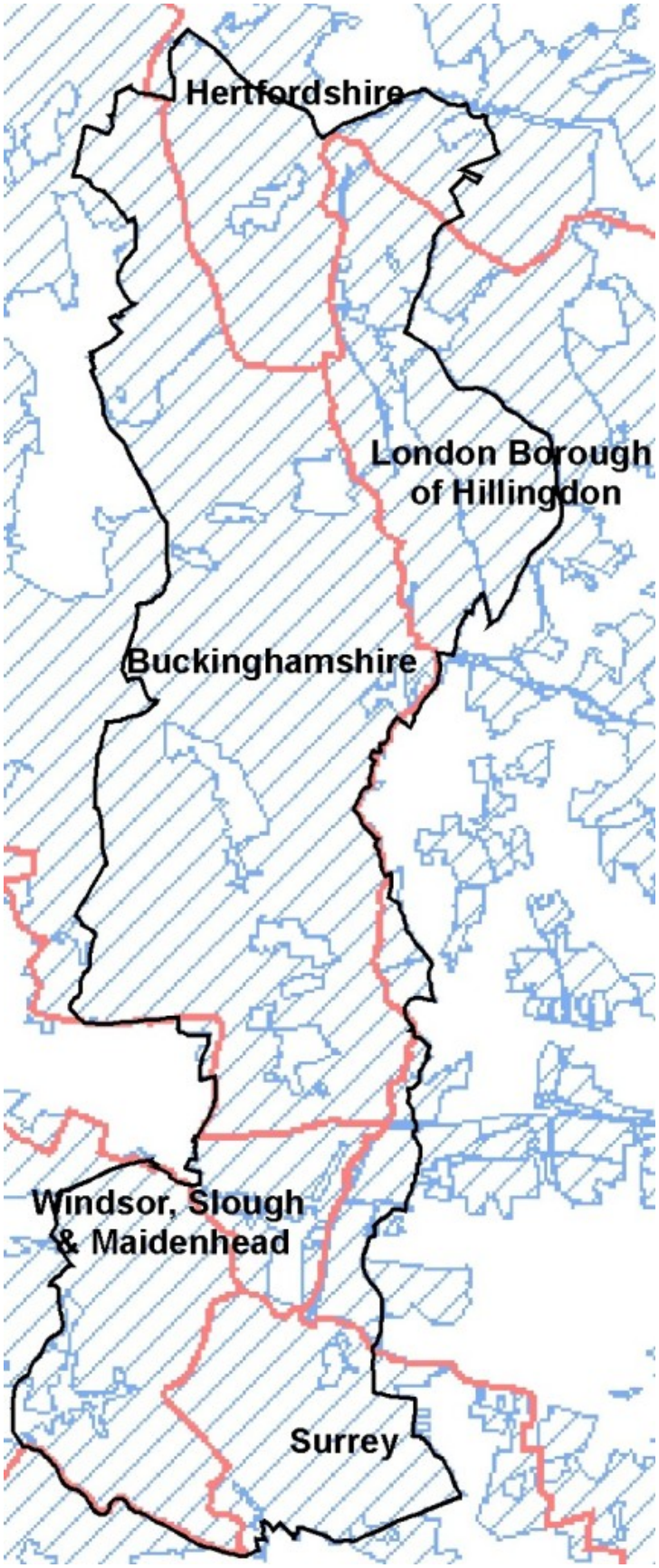


Figure 3: Statutory Historic Environment Designations in the Colne Valley Park

2. The Colne Valley Park

2.1. The Colne Valley Park: An Introduction

Figure 4: Extent of the Metropolitan Green Belt in the Colne Valley Park (Image from Magic)

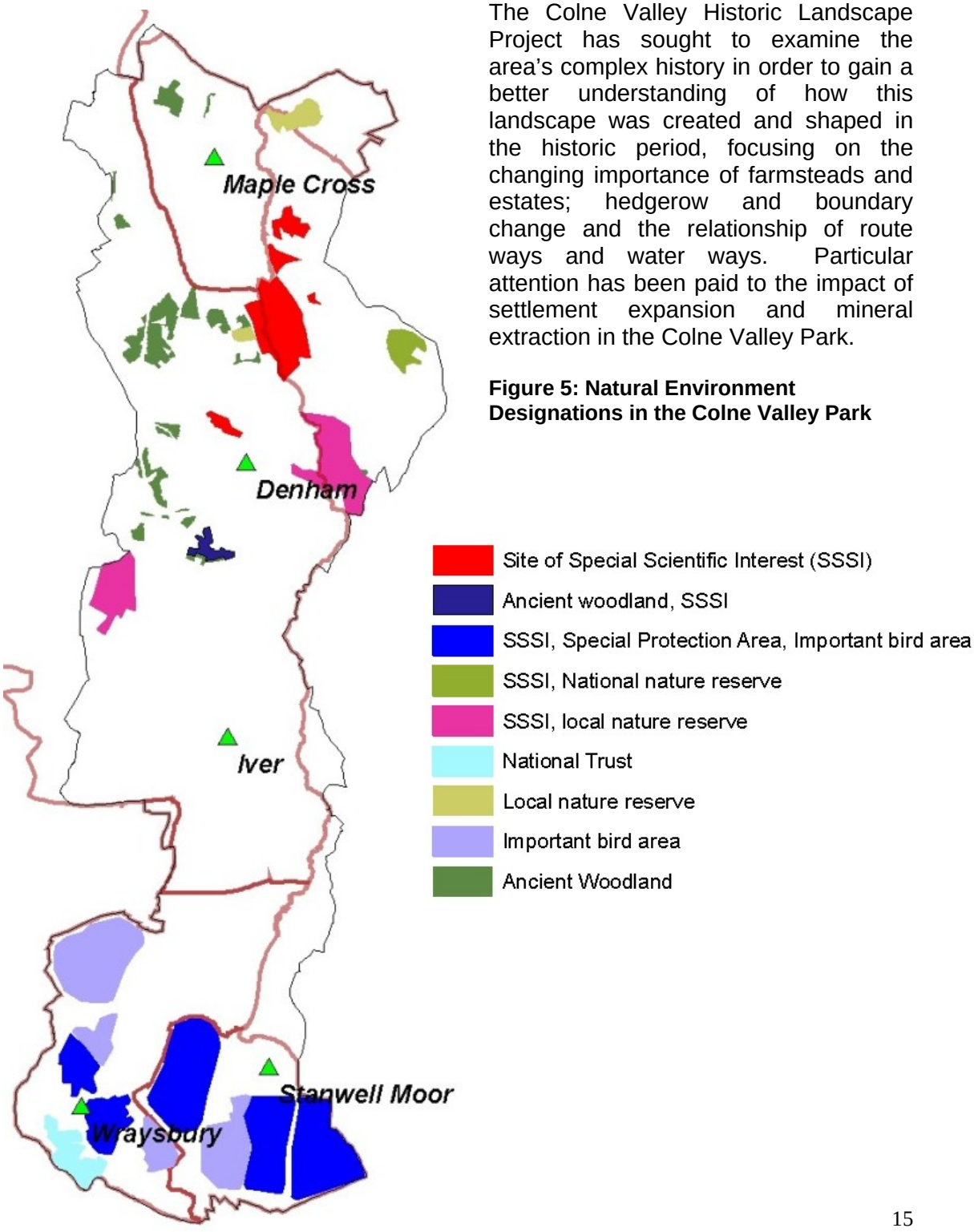


The Colne Valley Regional Park is an area of land surrounding the River Colne situated to the west of London. It spans the boundaries of three counties, Buckinghamshire, Hertfordshire and Surrey, plus Slough and Windsor & Maidenhead in the former county of Berkshire and the London borough of Hillingdon. The Colne Valley Park has approximately 45,000 inhabitants but has in its catchment total in excess of three million.

The Colne Valley Park shows a rich diversity of historic landscape spanning some 200 years of rapid urban growth and landscape change with significant elements surviving from earlier landscapes and a rich archaeological heritage stretching back to some of the earliest modern human inhabitants of Britain. Historically the Colne Valley had been an essentially agricultural landscape from prehistoric times until the late 19th century. Industrialisation began slowly in the late 18th century with the construction of the Grand Junction Canal and accelerated from the mid 19th century. This process led to extensive management of the rivers, the construction of canals and railways, the expansion of historic settlements. The demand for raw materials also added to the pressures of modernisation, as the river gravels common throughout the valley became an increasingly valuable asset.

The early 20th century saw further change in the wake of increased demand for housing leading to the creation of suburban settlements,

only to be halted in the late 1950s by the establishment of the Metropolitan green belt (Figure 4). Nevertheless the valley has continued to experience pressure for mineral extraction and transport infrastructure, of which the M25 and the nearby Heathrow Airport are the most obvious examples. At the same time there has been a decline in the viability of traditional agricultural land management whilst some sites have developed into valued recreational facilities. With the establishment of the Colne Valley Partnership in the mid 1960's, there has been a valley-wide emphasis on protecting the environment and enhancing its recreational value. The Partnership plays an increasingly active role in the management of the Park and in promoting the available leisure facilities. Figure 5 illustrates some of the natural environment designations in the Park, with several areas being protected by more than one designation.



The Colne Valley Historic Landscape Project has sought to examine the area's complex history in order to gain a better understanding of how this landscape was created and shaped in the historic period, focusing on the changing importance of farmsteads and estates; hedgerow and boundary change and the relationship of route ways and water ways. Particular attention has been paid to the impact of settlement expansion and mineral extraction in the Colne Valley Park.

Figure 5: Natural Environment Designations in the Colne Valley Park

2.2. Geological Background

Figure 6: Bedrock geology of the Colne Valley Park

Bedrock geology lies in successive formations of consolidated rocks on a roughly southwest-northeast alignment across the country with the oldest bedrock in northern Britain, to the south where the London Clay deposits is one of the youngest. The bedrock geology (Figure 6) is fairly uniform throughout the Colne Valley Park. The oldest formations of Upper Cretaceous chalk (99-66 Ma) date to the late Mesozoic Era (251-66 Ma). This formation lies in the north around Maple Cross and reaches as far south as Denham (BRG: 1960) and roughly co-relates with the higher ridges in the Park.

Moving further south the bedrock deposits shift to mudstone deposits dating to the present Cenozoic Era (66 Ma-present). Lambeth Clay mudstone immediately surrounds the chalk ridges and dates to the start of the inter-glacial Palaeocene, the first epoch of the Cenozoic (BRG: 1960). The remainder of the bedrock geology consists of the youngest formations of London Clay mudstone dating to the glacial Eocene epoch (55-33 Ma). For the most part, younger superficial deposits cover bedrock geology, however some areas of bedrock do remain on the surface, in particular around Harefield and Maple Cross. The bedrock geology remains undisturbed by modern development.

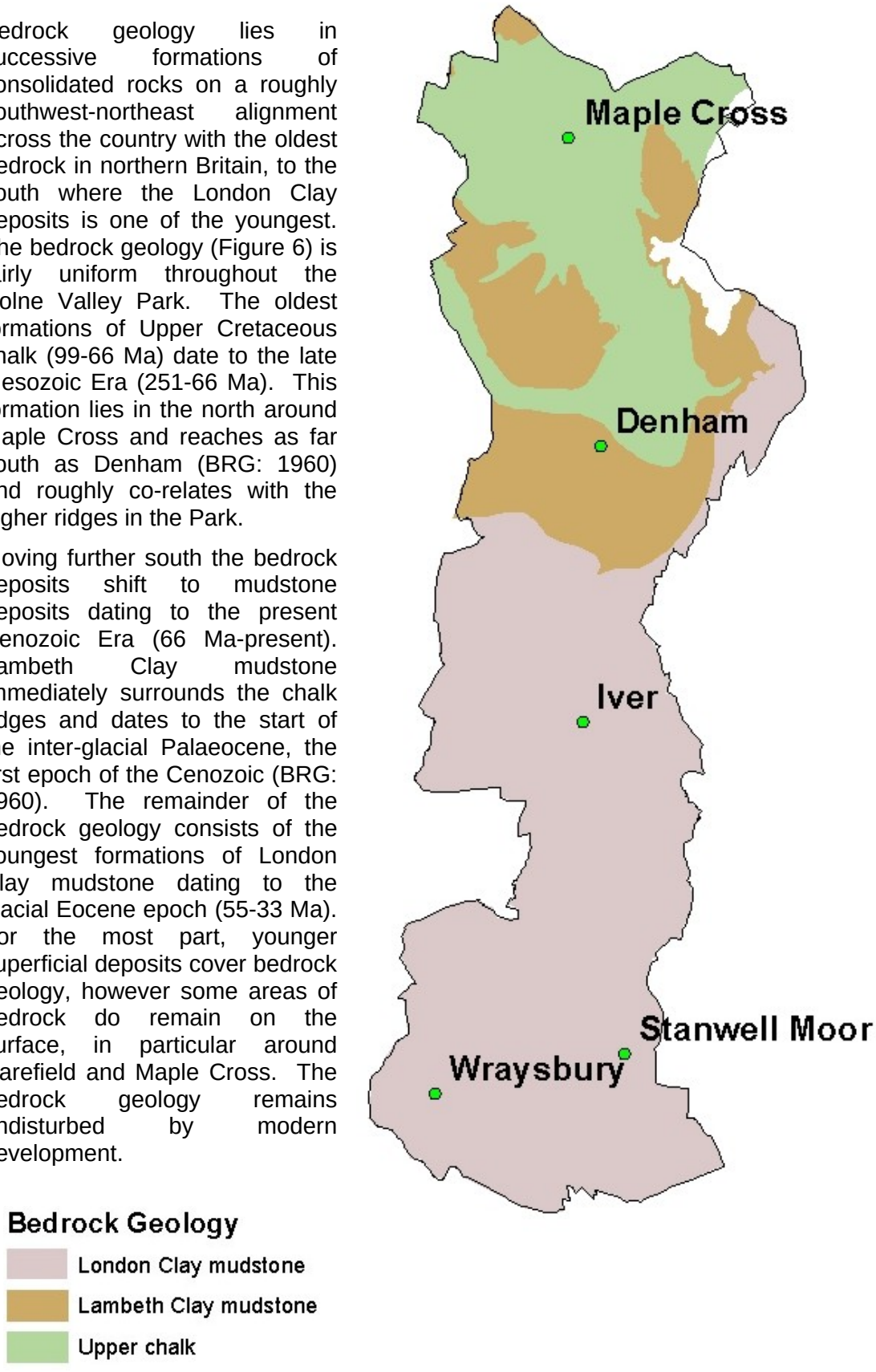
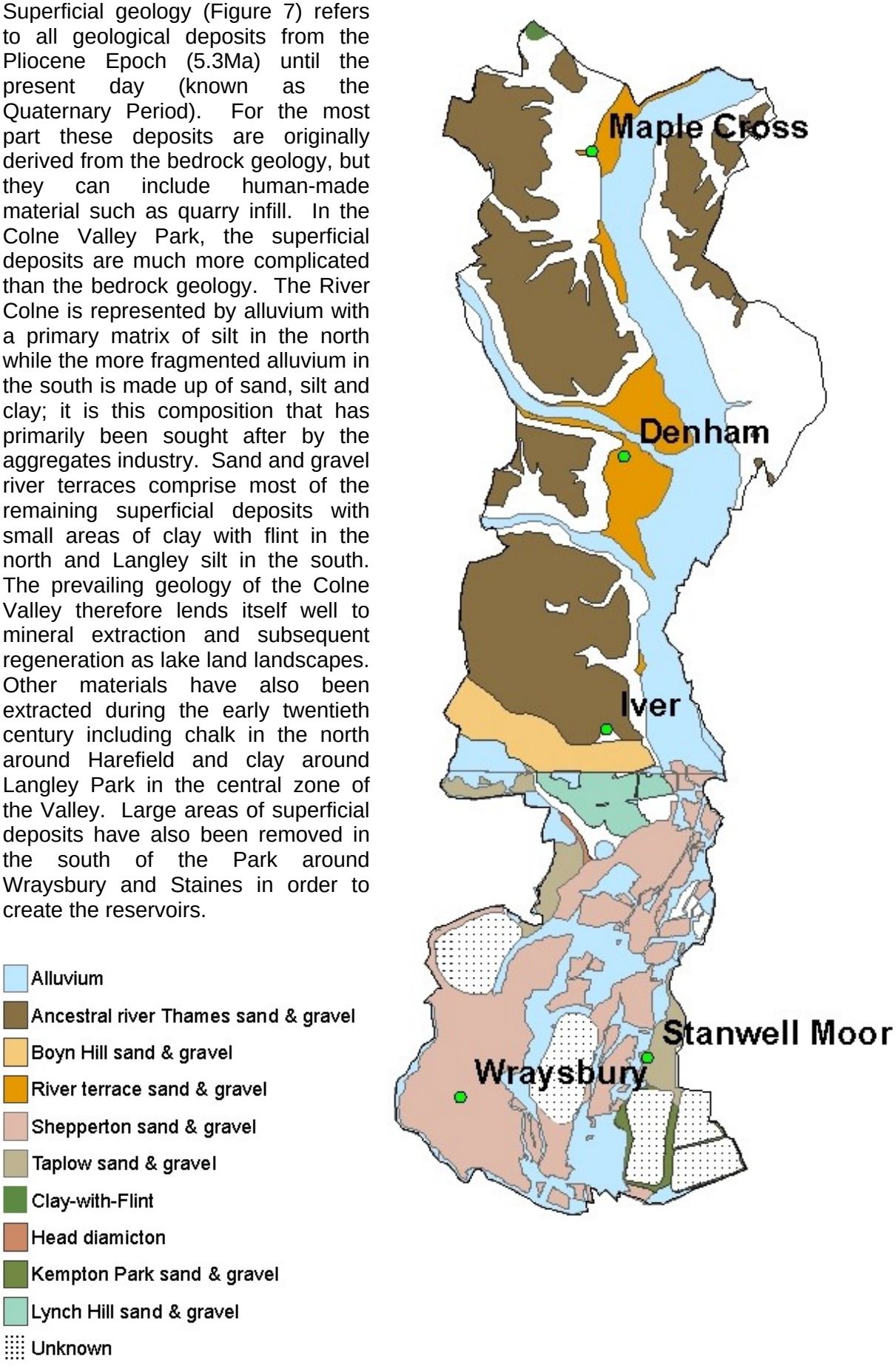


Figure 7: Superficial Geology of the Colne Valley Park

Superficial geology (Figure 7) refers to all geological deposits from the Pliocene Epoch (5.3Ma) until the present day (known as the Quaternary Period). For the most part these deposits are originally derived from the bedrock geology, but they can include human-made material such as quarry infill. In the Colne Valley Park, the superficial deposits are much more complicated than the bedrock geology. The River Colne is represented by alluvium with a primary matrix of silt in the north while the more fragmented alluvium in the south is made up of sand, silt and clay; it is this composition that has primarily been sought after by the aggregates industry. Sand and gravel river terraces comprise most of the remaining superficial deposits with small areas of clay with flint in the north and Langley silt in the south. The prevailing geology of the Colne Valley therefore lends itself well to mineral extraction and subsequent regeneration as lake land landscapes. Other materials have also been extracted during the early twentieth century including chalk in the north around Harefield and clay around Langley Park in the central zone of the Valley. Large areas of superficial deposits have also been removed in the south of the Park around Wraysbury and Staines in order to create the reservoirs.



2.3 Archaeology of the Colne Valley Park

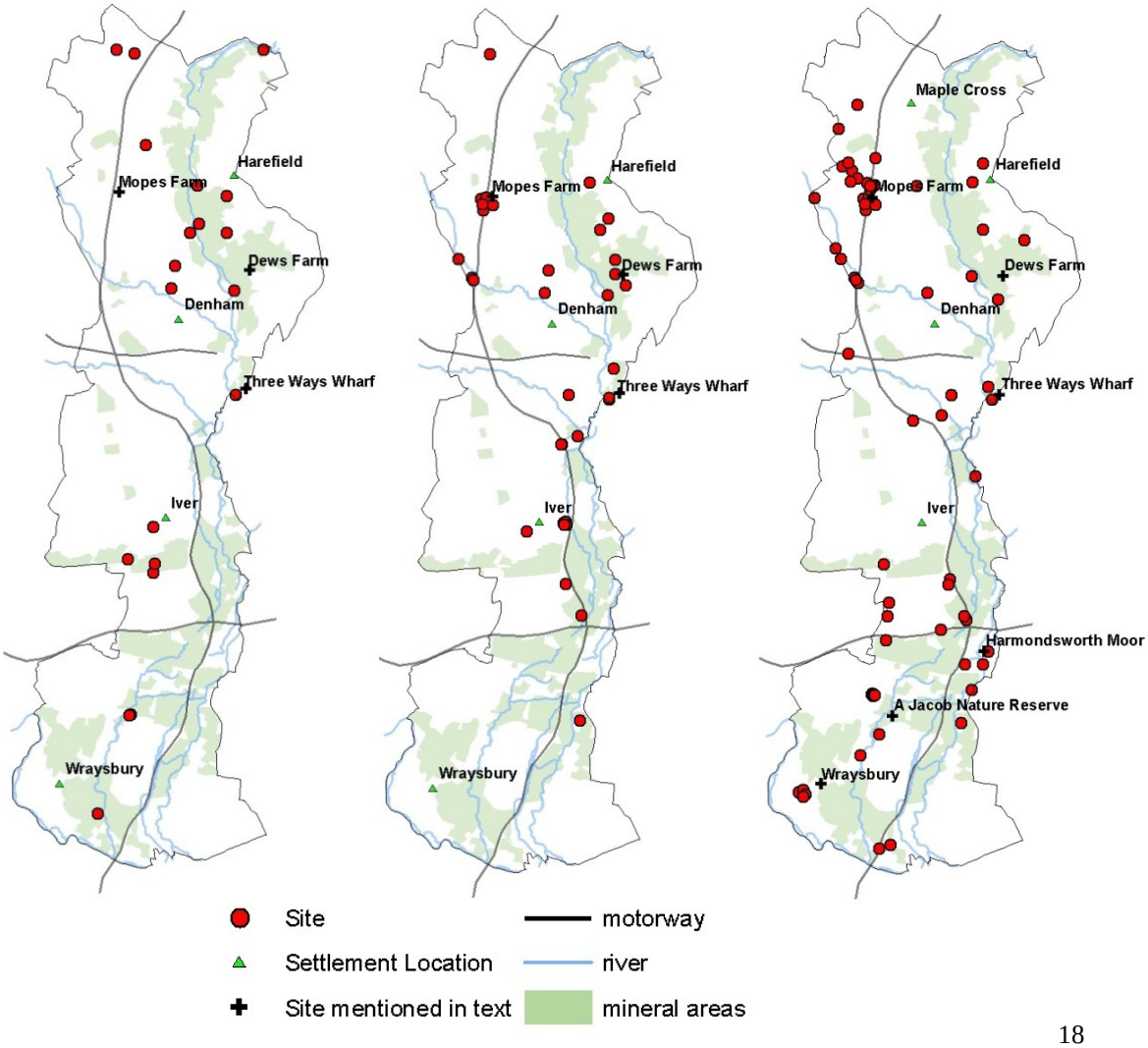
A period by period summary of the existing state of knowledge for the Colne Valley Park is set out in appendix one. This section provides an introductory overview.

Palaeolithic to Neolithic periods (700,000-2300 BC)

Motorway construction and the aggregates industry have provided a great deal of evidence for these earlier prehistoric periods in areas of the Colne Valley Park where archaeological work might not otherwise have been undertaken. Figure 8 illustrates the distribution of sites and finds in the Park along with the river channels in order to show the relationship with the vital river systems. This data helps indicate the high archaeological potential of the Park for these early prehistoric periods. There are nationally important sites within and surrounding the Park. The Upper Palaeolithic and Mesolithic periods are well represented in the Park, in particular on the floor of the Colne Valley in the Denham/Uxbridge area where sites have been preserved undisturbed beneath later peat and alluvium. The Upper Palaeolithic/Mesolithic site at Three Ways Wharf on the boundary of the Colne Valley Park near Uxbridge is the best known exemplar of this nationally significant concentration of key sites. In the Neolithic period several important sites have been recorded including the Stanwell Cursus at Heathrow and a causewayed enclosure at Wraysbury. The archaeological resource for the earlier prehistoric periods is thus of national significance with high research potential.

Figure 8: HER/SMR data Palaeolithic - Neolithic

a) Palaeolithic (400,00-8500 BC). b) Mesolithic (8500-4500 BC). c) Neolithic (4500-2300 BC).

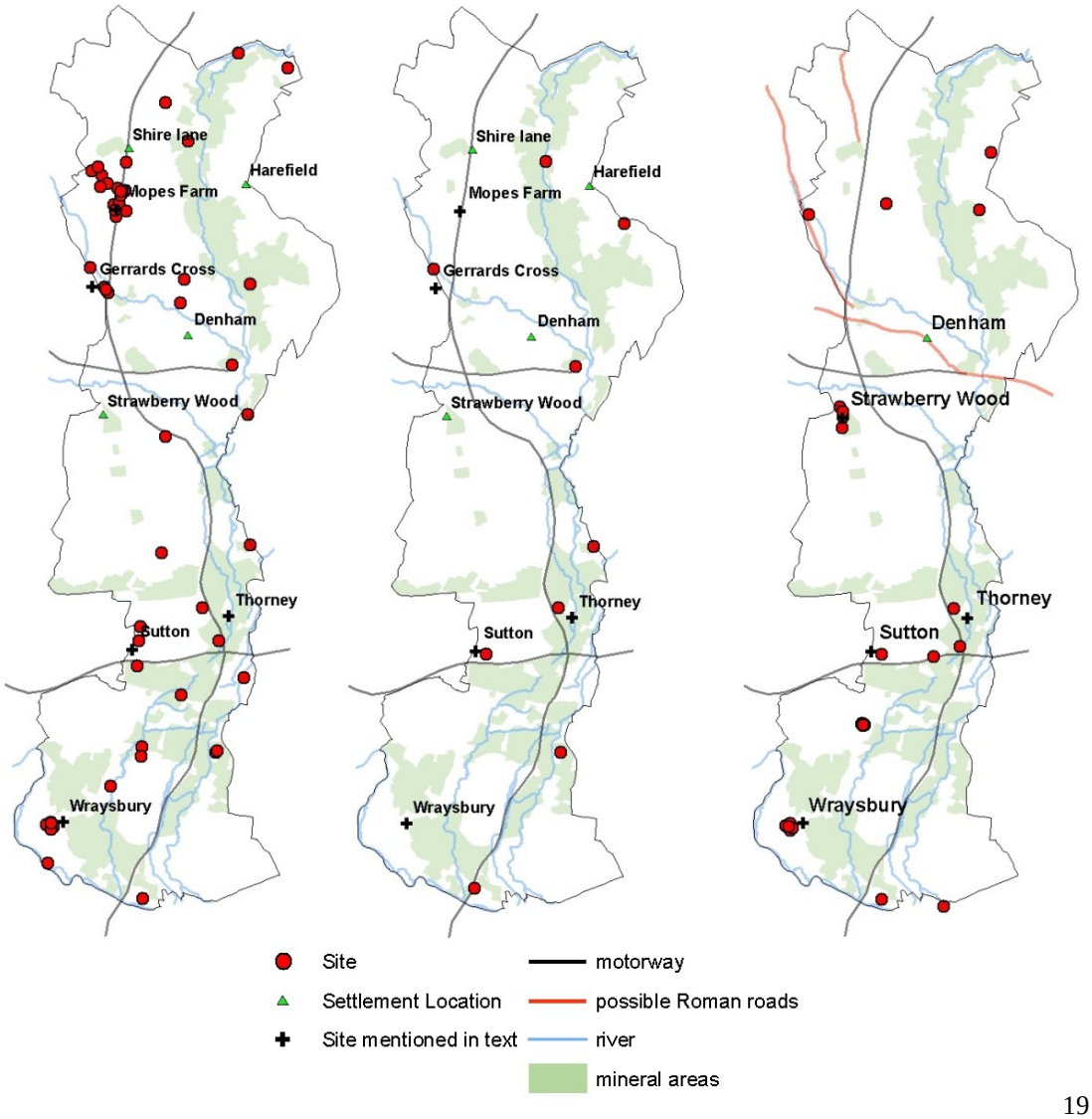


Bronze Age to Romano British periods (2300 BC- AD 410)

The Bronze Age sees evidence for further settlement activity and the first laying out of extensive field systems . An exceptional high status site has been excavated at Runnymede Bridge whilst burial sites may be indicated by ring ditches. An isolated cremation site near Gerrards Cross has been recorded with a second funeral site west of the Lea, Denham as well as numerous flint scatters. Evidence becomes rather more scarce during the Iron Age and primarily comprises a few isolated find spots and probable occupation sites, although just to the east of the Park at Heathrow there is evidence of continued settlement together with a defensive and ritual site. The Roman period sees an expansion in evidence for settlement, re-organisation of field systems and introduction of foreign burial practices. As yet no villas have been recognised and it seems likely that the area's location in the hinterland of Londinium and a small town established at Staines may be significant in understanding land use. Whilst the study area's prominence in earlier prehistory appears to carry forward into the late Bronze Age it drops away in the Iron Age when the Lower Colne Valley provides less evidence than comparable areas further upstream along the Thames or northwards in the Chilterns and beyond. The reasons for this apparent change are not yet clear. There seems to be some resurgence in the Roman period.

Figure 9: HER/SMR data Bronze Age- Roman

a) Bronze Age (2300-700 BC) b) Iron Age (700 BC – 43AD) c) Roman (43-400 AD)

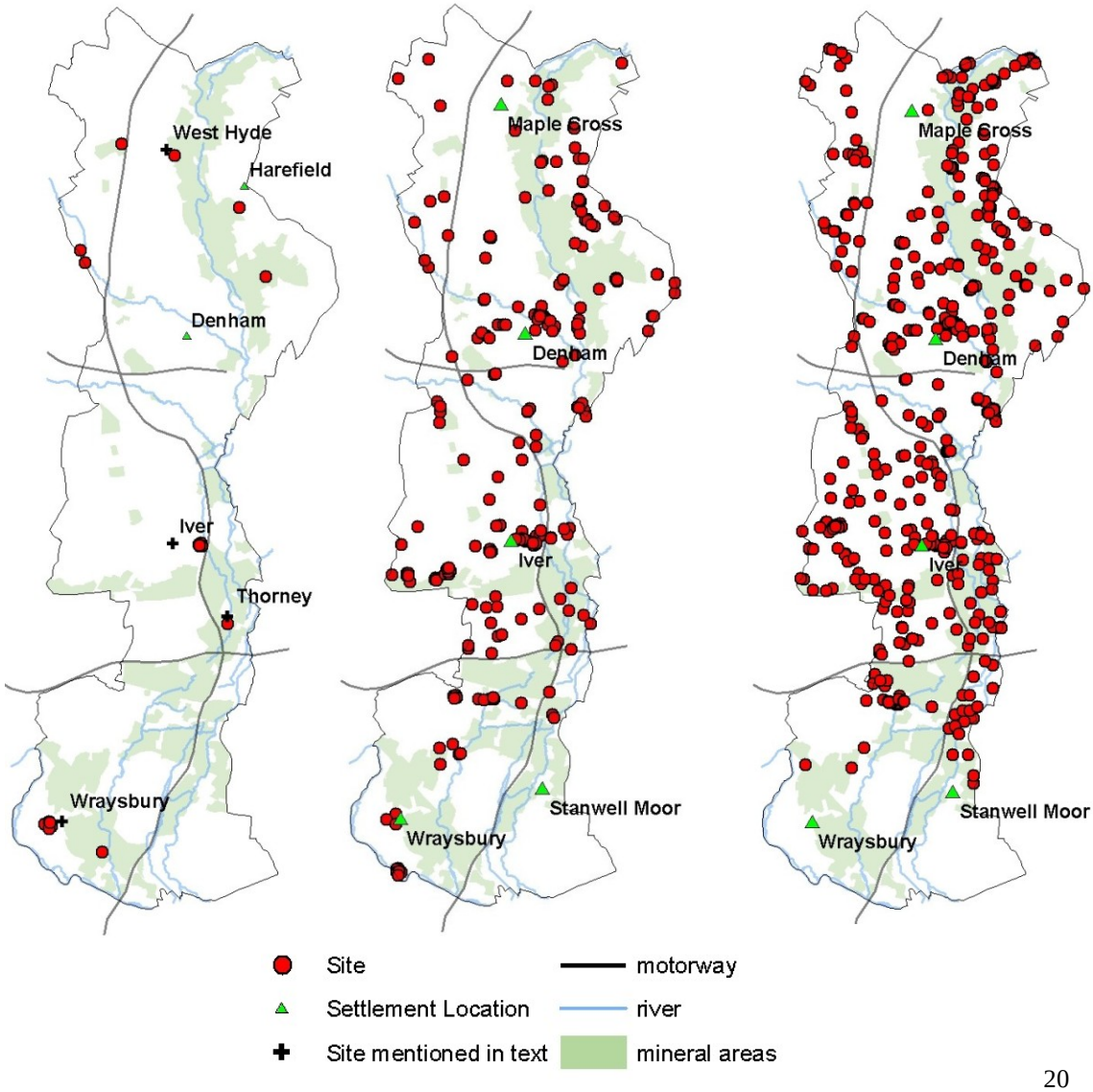


Saxon to Modern Period (300 AD- present day)

The Saxon period is not very well represented in the Colne Valley Park, due to a general sparsity of recognised physical remains for this period (Figure 10). However written evidence, particularly from religious institutions does provide some extra background. Continuous patterns of settlement begin to emerge at Iver during the Saxon period while evidence for settlement at Wraysbury dates back even further to Neolithic times. The medieval period, dating from the 11th-16th century, sees a significant leap in archaeological data for the Park including numerous records relating in particular to manors and historic parkland such as at Langley Park. Several kiln sites dating to the 11th century are also recorded at Alderbourne Manor. Domesday indicates early use of the rivers with several mills already in existence as well as numerous fish ponds such as at Ankerwycke Priory. Industrialisation arrived relatively late in the Colne Valley Park despite construction of the Grand Junction Canal in the late 18th century and did not have a significant impact until the late 19th and early 20th century. There is considerable, but still largely unrealised, potential for research into the medieval and early modern periods, especially into the effects of the growth of London and the influence of the Royal Court at Windsor.

Figure 10: HER/SMR data Saxon - Present day

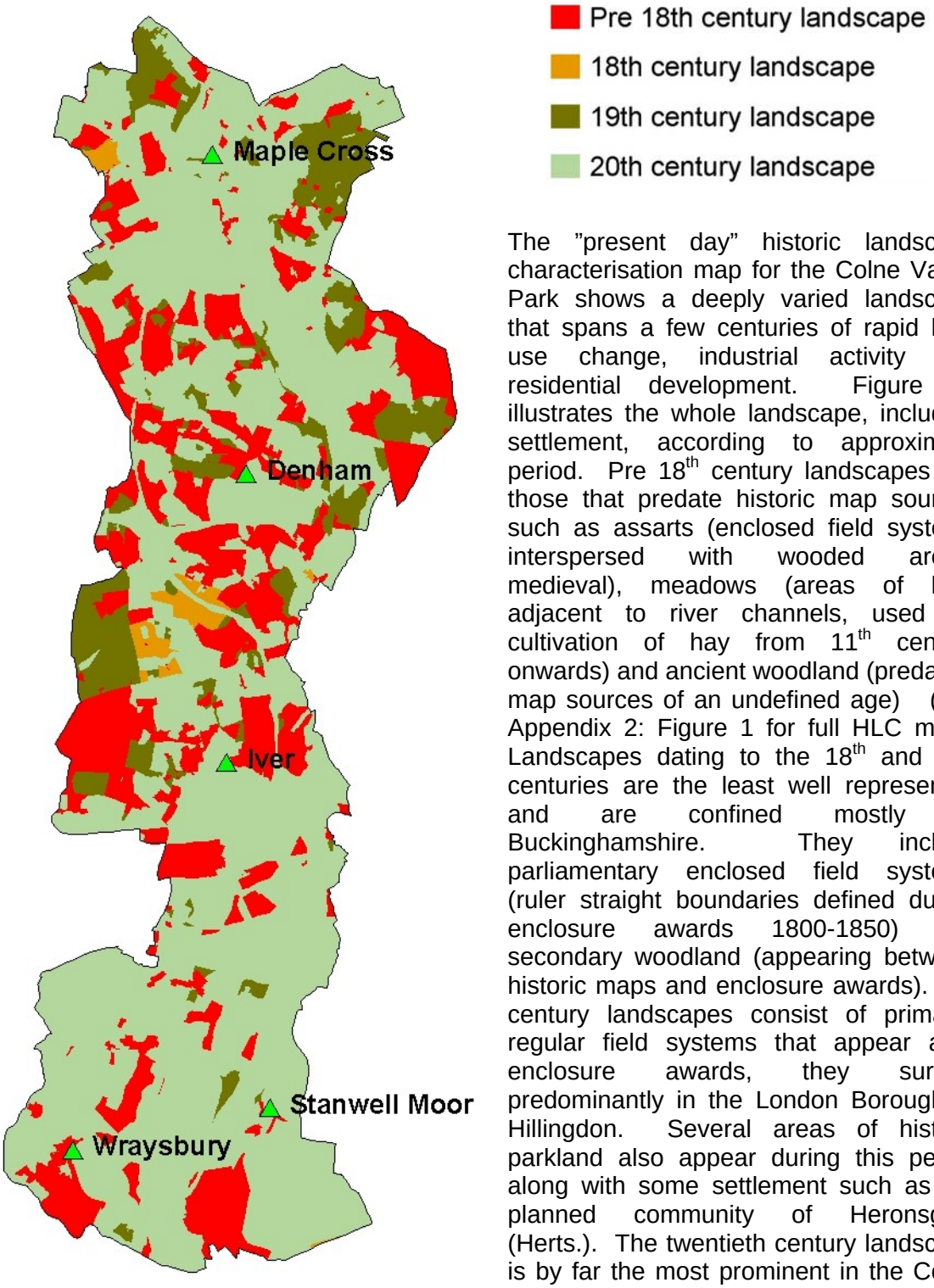
a) Saxon (400-1066) b) Medieval (1066-1700) c) Modern (1700-present)



3. The Landscape

3.1. Classification by chronology of the Historic Landscape

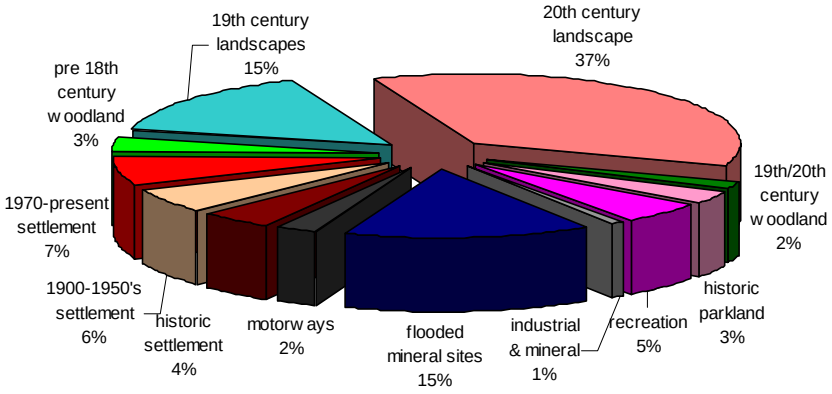
Figure 11: Origin of the historic landscape characterised by century



The "present day" historic landscape characterisation map for the Colne Valley Park shows a deeply varied landscape that spans a few centuries of rapid land use change, industrial activity and residential development. Figure 11 illustrates the whole landscape, including settlement, according to approximate period. Pre 18th century landscapes are those that predate historic map sources such as assarts (enclosed field systems interspersed with wooded areas, medieval), meadows (areas of land adjacent to river channels, used for cultivation of hay from 11th century onwards) and ancient woodland (predating map sources of an undefined age) (see Appendix 2: Figure 1 for full HLC map). Landscapes dating to the 18th and 19th centuries are the least well represented and are confined mostly to Buckinghamshire. They include parliamentary enclosed field systems (ruler straight boundaries defined during enclosure awards 1800-1850) and secondary woodland (appearing between historic maps and enclosure awards). 19th century landscapes consist of primarily regular field systems that appear after enclosure awards, they survive predominantly in the London Borough of Hillingdon. Several areas of historic parkland also appear during this period along with some settlement such as the planned community of Heronsgate (Herts.). The twentieth century landscape is by far the most prominent in the Colne Valley Park, particularly in the south and consists of primarily minerals sites, reservoirs, settlement zones and motorways. A number of preliminary statements can be drawn from these maps, including some essential differences between the counties.

Figure 12: Historic landscape characterisation of Three Rivers segment

The Three Rivers District, Hertfordshire

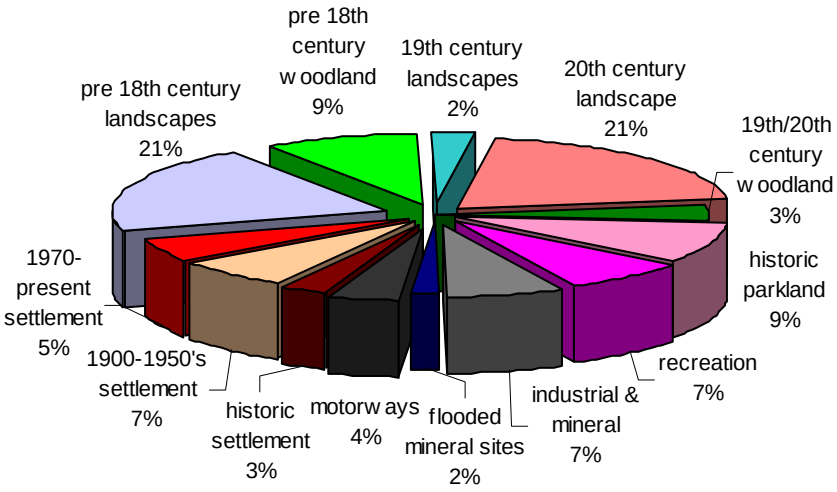


The Three Rivers segment within the Colne Valley Park (12km^2) contains some interesting variations in landscape although it is much less varied than Buckinghamshire and is primarily modern.

An extensive series of modern lakes created out of former extraction sites in the early twentieth century divide the east and west. To the east around Batchworth, the landscape is primarily 19th century in character with virtually untouched field systems surviving around Stockers farm with the exception of the modern golf course on what was once Moor Park. The landscape around Maple Cross primarily consists of extensive “prairie fields” (large modern fields dating to the mid 20th century and created by the removal of hedges for mechanised arable cultivation), while further north the landscape around the planned village of Heronsgate is characterised by several large fields dating to the mid 19th century. There are no medieval settlements of note in the Three Rivers segment of the Colne Valley Park; Maple Cross is a primarily modern settlement with a small historic core. Heronsgate, however, is an interesting example of a 19th century planned community. Built by Feargus O’Connor, it was based on Chartist ideals of disillusionment with the industrial era. The principles behind this were that rather than working in factories, workers would buy small plots of land with which they could create a self-sustaining community (Page: 1908). In reality only a few plots in Heronsgate were sold and never farmed, the village however has survived more or less intact with very little modern development or alteration to the plot boundaries.

Figure 13: 19th century landscape around Fieldways farm

Figure 14: Historic landscape characterisation of Buckinghamshire segment



Buckinghamshire

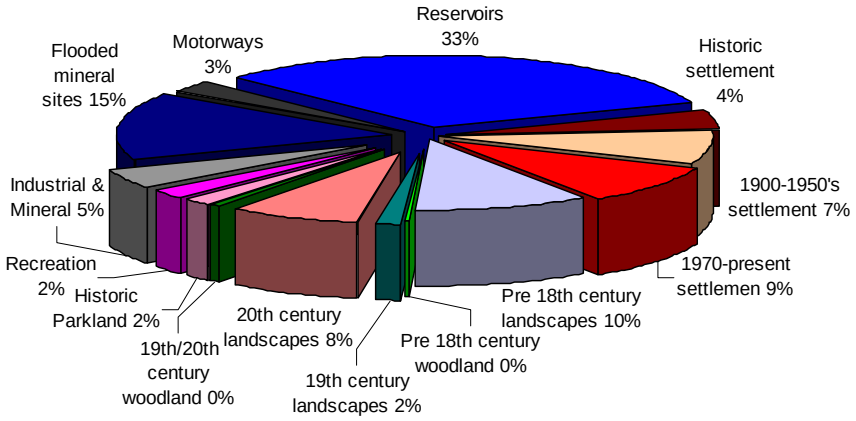
The Buckinghamshire segment of the Colne Valley Park (51km^2) exhibits a much more fragmented landscape than that of the other counties (Figure 14). The landscape is dominated by enclosed land and woodland spanning several centuries and interspersed with several small historic settlements that have undergone significant twentieth century expansion.

The field systems of Buckinghamshire encompass a wide range of periods from the medieval to the modern day, covering approximately 44% of the current landscape characterisation. Pre 18th century landscapes are fairly common as are ancient woodlands and historic settlement (settlement predating OS 2" Surveyors, 1822-1835). 19th century landscapes are the most under-represented field systems in Buckinghamshire, covering just 2% of the current characterisation. There are several significant historic settlements including Denham and Iver. Other settlements are essentially modern creations albeit developed around a pre-existing dispersed network of farms and hamlets. The motorway network has had a significant impact on the landscape, affecting field and farm systems as well as waterways such as the county ditches. Mineral sites in the Buckinghamshire segment have been relatively small scale in comparison to the remainder of the Park covering less than 10% of the current landscape, several large clay extraction sites are recorded in Langley at the beginning of the twentieth century while the majority of aggregates extraction sites have occurred more recently and on a much smaller scale than other sites in the Colne Valley Park. The majority of disused mineral sites in the Buckinghamshire segment of the Colne Valley Park have been regenerated as recreation or modern field systems.

Figure 15: Denham Mount, North of M40: surrounded by twentieth century fields.

Figure 16: Historic landscape characterisation of Spelthorne Borough, Windsor, Slough & Maidenhead

Spelthorne Borough, Windsor & Maidenhead and Slough

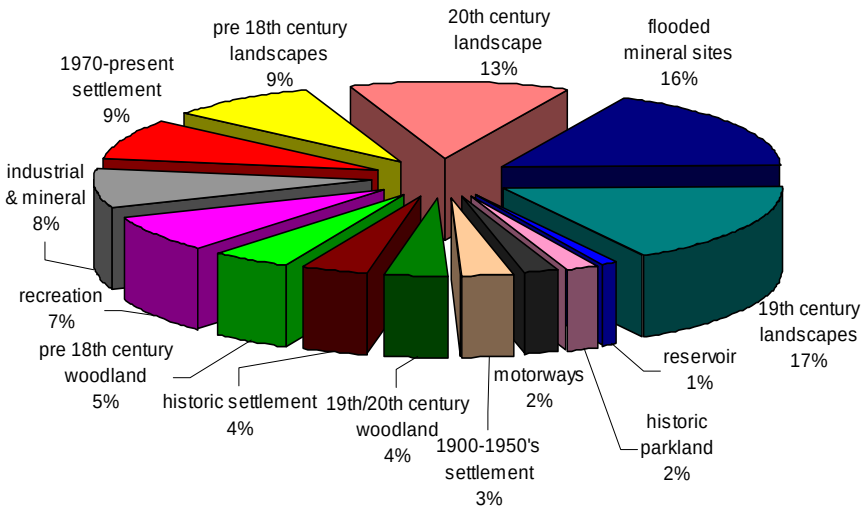


In contrast, the southern segment of the Colne Valley Park (covering 30km^2) is predominately characterised as 20th century water scapes, represented either through the large reservoirs that cover most of Spelthorne Borough or through the flooded mineral extraction sites that cover Wraysbury and Horton. There are also significant areas of current mineral extraction and development, particularly in the areas west of Heathrow around Stanwell Moor. There are several significant historic settlements in this area, forming the core of Wraysbury, Horton, Colnbrook and Stanwell Moor; there is also evidence of prehistoric settlement in this area, in particular around Stanwell Moor and Wraysbury. The settlement of Stanwell Moor, along with Staines moor, represent some of the few surviving elements of the historic landscape in the Borough of Spelthorne. The 1920's saw considerable urban expansion while the latter half of the twentieth century saw the majority of land use change from enclosed land to flooded mineral sites. Small patches of older landscapes remain in relative isolation among the water bodies in this area (Figure 17).

Figure 17: Ankerwycke Estate, Wraysbury

Figure 18: Historic landscape characterisation for London Borough of Hillingdon

London Borough of Hillingdon



To the east of the Colne River, the London Borough of Hillingdon (19km$^{2)}$ represents one of the better-preserved areas of pre-twentieth century landscape. Due to the creation of the Metropolitan green belt, the settlements in this area remain small and the majority of the landscape varies from pre 18th century to 19th century farming landscapes. This preservation is in part due to a long tradition of dairy farming in the region as well as consistent land ownership by a small number of families. Both the Ashby family of Breakspear House and the Newdegate family of Harefield Place held significant acreage around Harefield for several hundred years until the mid twentieth century. The pre-enclosure landscapes of the parishes in this area primarily consisted of moor land, heaths and commons separated by small areas of pre enclosure field systems. The landscape immediately to the east of the River Colne and separating Buckinghamshire from Hillingdon exhibits the highest level of modern impact through the extensive network of flooded mineral extraction sites that stretch from Rickmansworth to Denham.

Figure 19: Newyears Green Landscape looking towards Copthall farm

3.2. Classification by use of the Historic Landscape

Figure 20: The present day landscape, classification by use

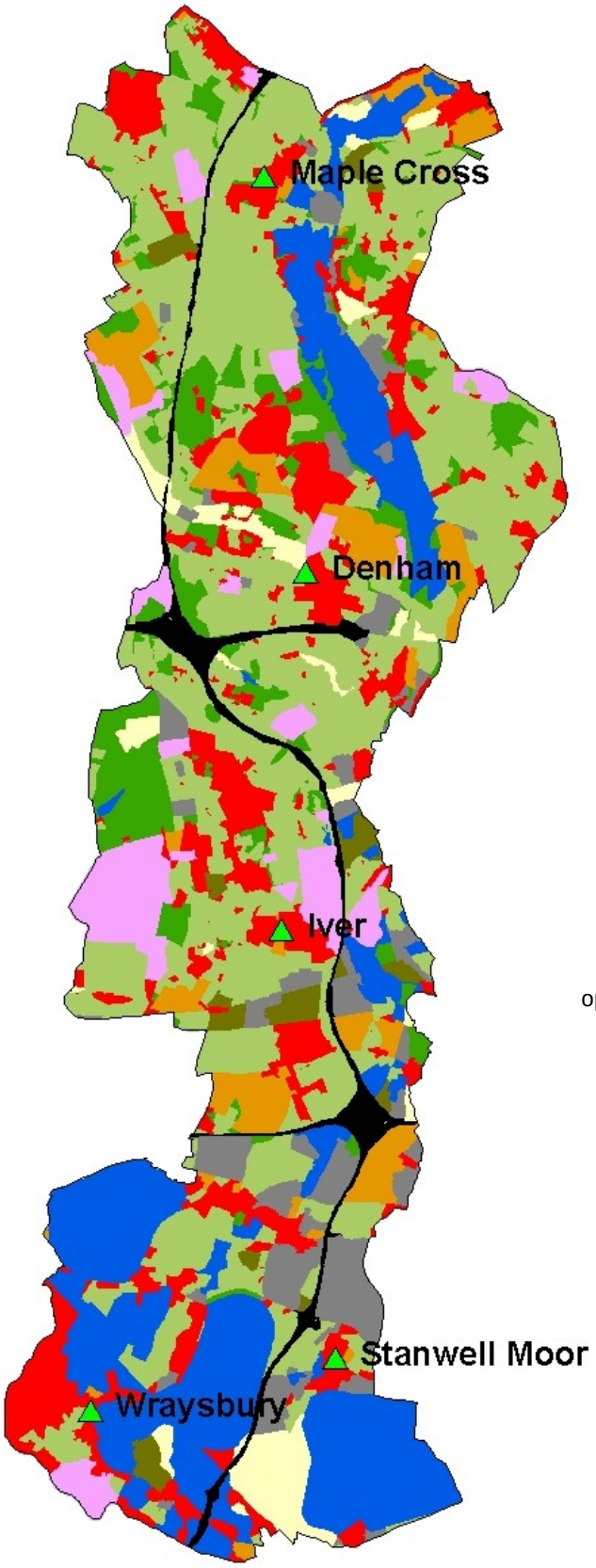


Figure 20 shows the general classification of the landscape as it is now in terms of current land use. What is immediately apparent is the extent of water coverage, comprising 18% of the total land use, 8% of which is characterised as reservoirs. Settlement, recreation and golf courses cover only marginally more area and make up a further 20% of the Park. The majority of the water bodies, with the exception of the four large reservoirs in the south, were formed from disused mineral extraction sites. It is these water bodies that define the present day landscape, as the Colne Valley Park is known as a popular recreational destination for water-based activities and walking. In contrast with the 1820's landscape, the present day landscape has become highly variable, dominated by enclosure, settlement and water but with significant areas of parkland, woodland and industrial and landfill sites.

Figure 21: General land use characterisation at the present day landscape

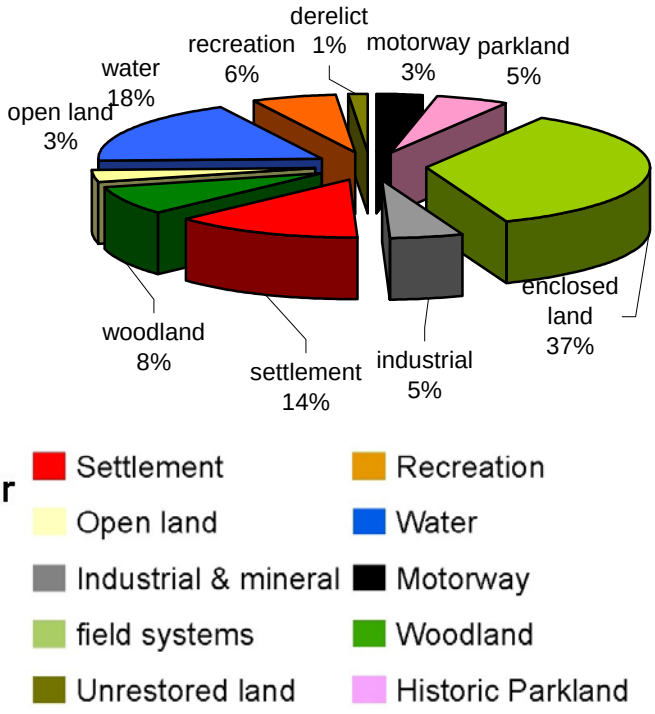


Figure 22: The 1950's landscape

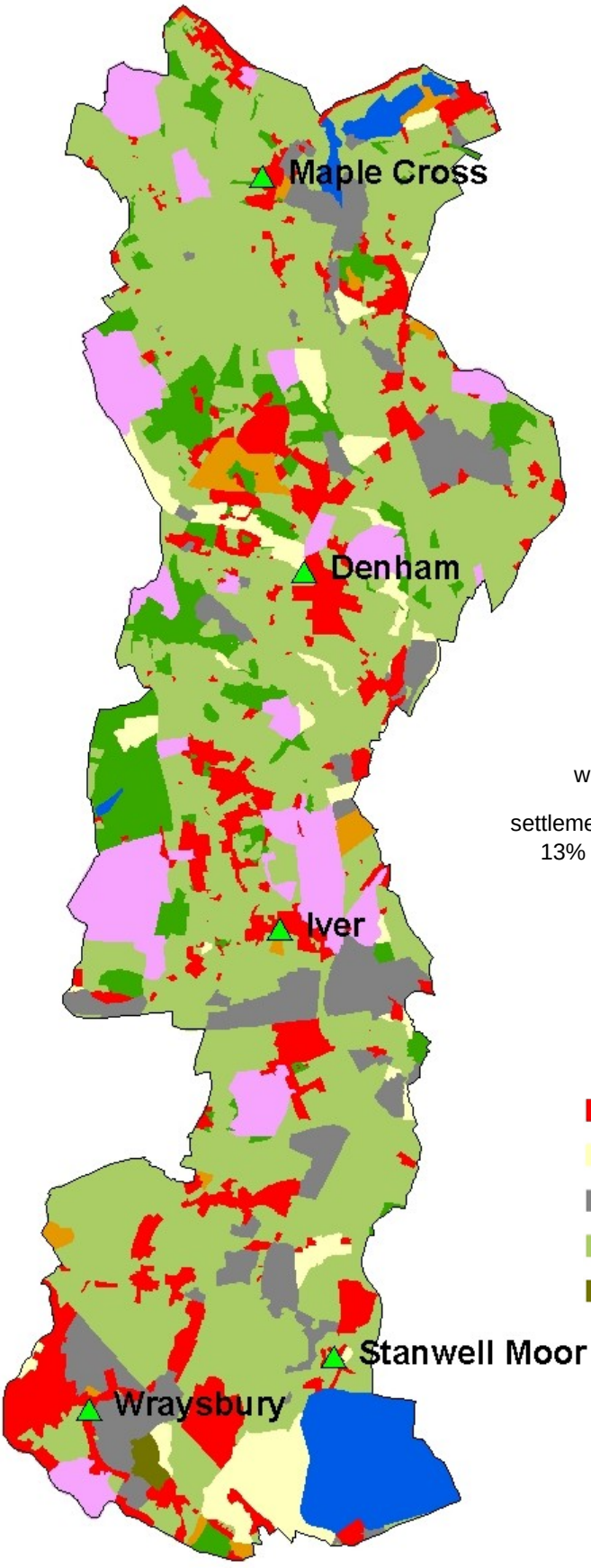


Figure 22 shows the landscape in the 1950's to be in a transitional stage with enclosure still dominant but with some areas of water now encroaching in the south and north and industrial activity, mainly aggregate extraction, dotted across the southern and eastern parts of the study area. Interestingly, this shows that urbanisation has increased most dramatically up to this point, while the latter half of the twentieth century is characterised by urban stabilisation. A significant proportion of enclosed land had disappeared by the 1950's (26km^2) compared to 19km^2 between the 1950's and the present day.

Figure 23: General characterisation of the 1950's landscape

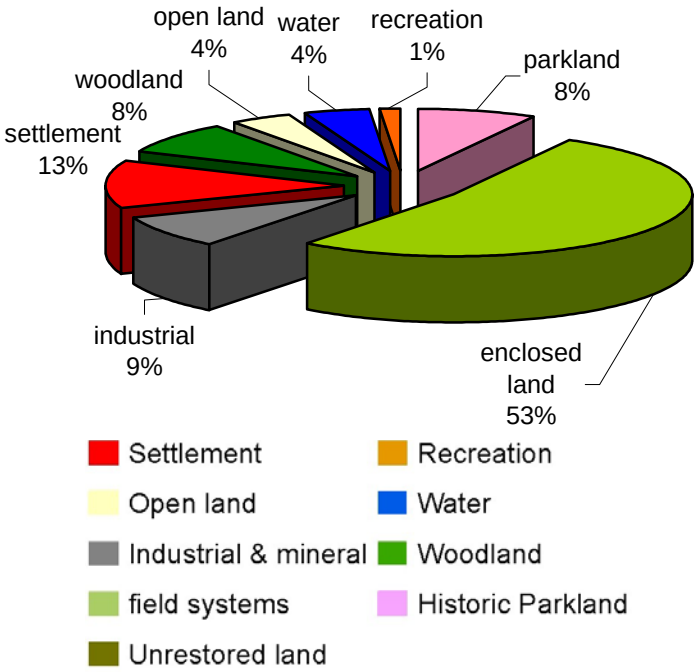


Figure 24: Landscape in the 1820's

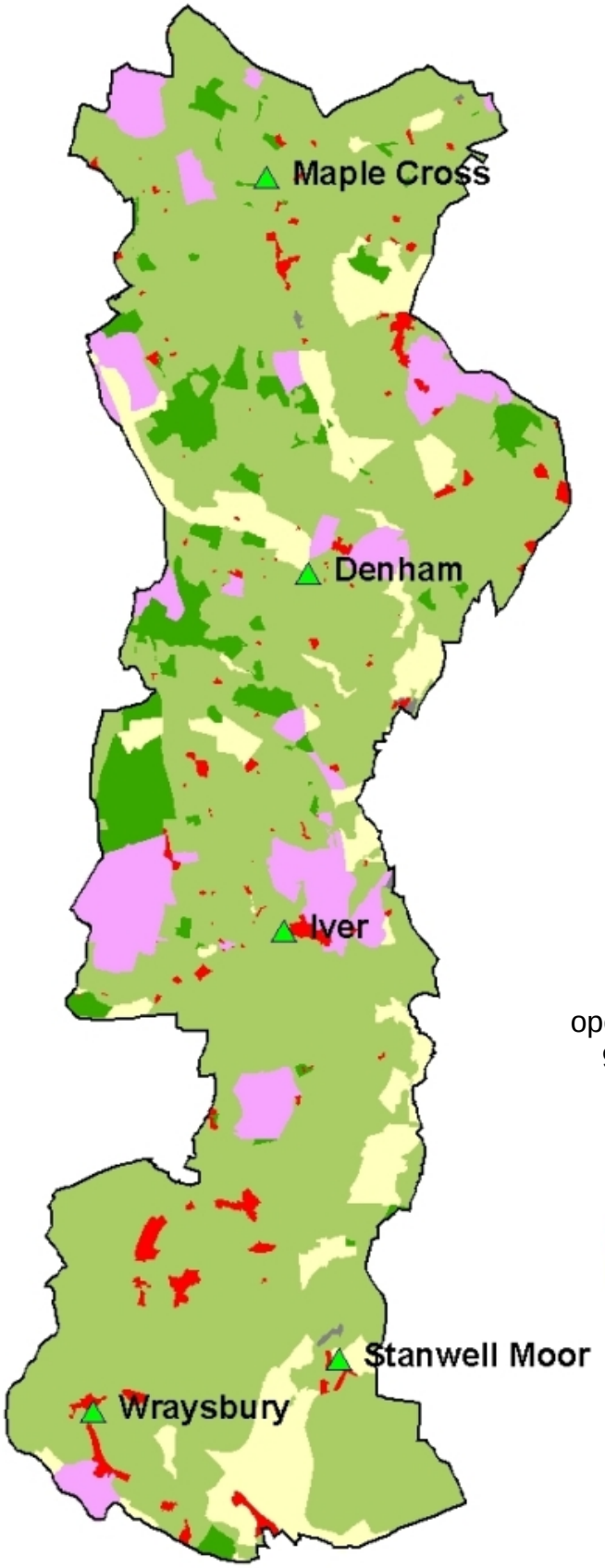


Figure 24 shows the landscape in the 1820's and it is immediately clear that the landscape has undergone significant changes since this time. Industrial sites, comprising mill sites and factories make up less than 20ha. It shows that agricultural enclosed land was the dominant character type covering almost 75% of the total area, 40% higher than the current agricultural landscape while settlement barely covers 2% of the land, and water is not present at all at this time. The majority of this landscape would have been owned by a number of influential landowners. These landowners would have controlled the historic parkland and much of the woodland as well as the agricultural land.

Figure 25: General characterisation of the 1820's landscape

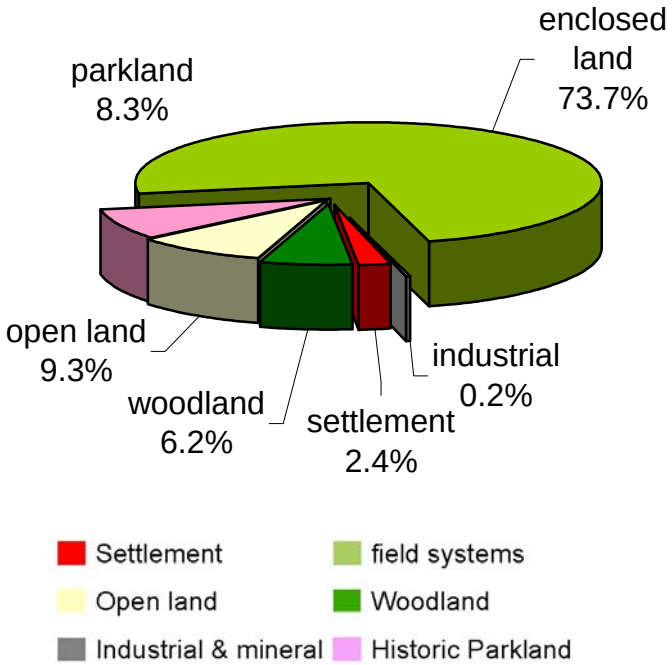
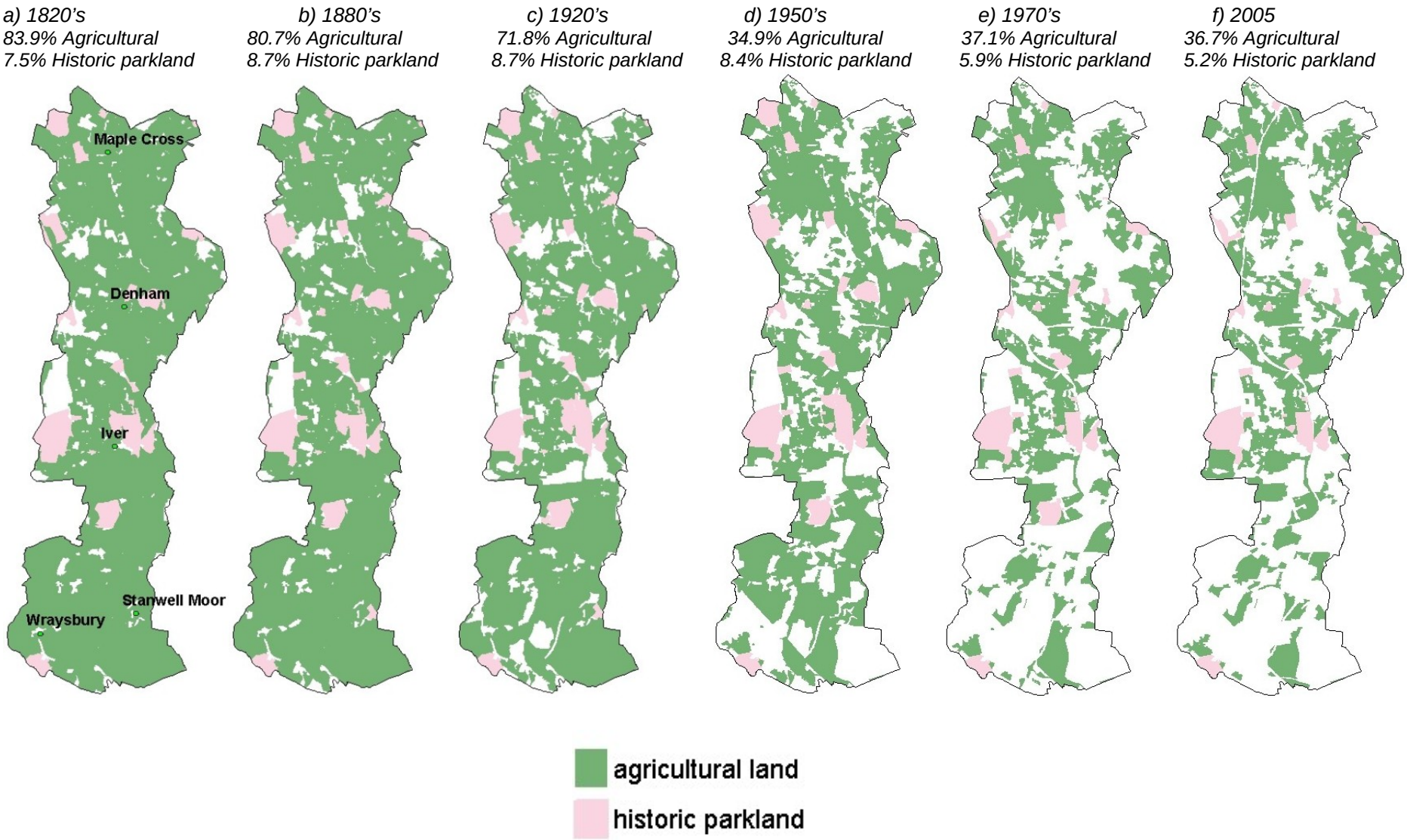


Figure 26: Loss of available agricultural land in the Colne Valley Park



3.3. Landscapes: Agriculture

Agriculture in the Colne Valley Park

External pressures on the agricultural economy have affected farming and farmsteads in the Colne Valley Park; agriculture has been in a long period of decline from the mid 1800's up to the present day with only a temporary increase in productivity during the Second World War (HELM, 2006). Twentieth century developments such as large scale aggregates extraction, increased settlement and industrialisation have also increased the pressure on available land. In addition, the increased mechanisation of farming practices has lead to a general decrease in rural employment. Fundamental changes in agricultural technology have also led to significant changes to the layout of the farmstead in terms of building function, size and the suitability of historic farm buildings (HELM, 2006). Yet despite this, enclosed land still makes up 34% of the total land use in the Park and the evidence suggests a relatively high level of boundary survival. This is perhaps indicative of the general trend towards dairy and cattle farming as well as a general increase in privately owned farmland for equestrian purposes.

Analysis of change

Figure 26 shows the gradual loss in agricultural land since the 1820's; for the purposes of this illustration, agricultural land is considered to include enclosed as well as open land where grazing was common, also included is parkland as these were occasionally used for animal grazing and many farms that were associated with larger estates and houses were located within this parkland. From this it is possible to track the degree of loss over a relatively short period of time. High levels of loss are concentrated in the south of the county while parts of Gerrards Cross and the parish of Iver remain largely intact.

Figure 27: Graph showing the decline in agricultural land

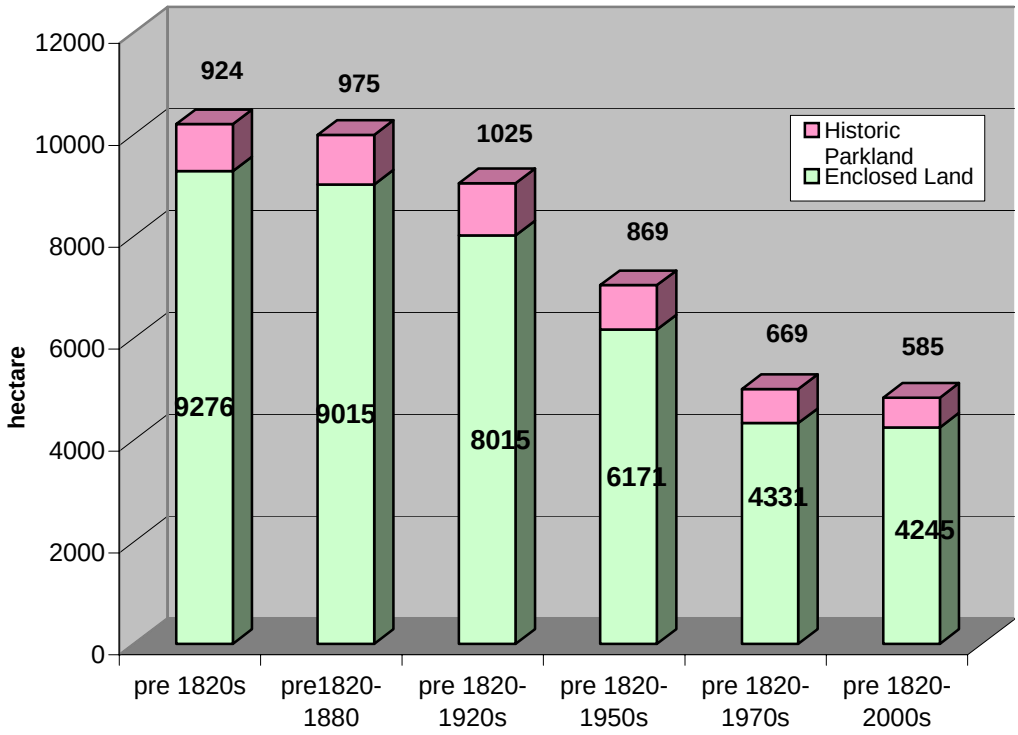


Figure 27 shows this decline in agricultural land in conjunction with parkland in terms of hectare coverage. It shows a significant decrease of over 5000ha in the last 180 years, with the most dramatic decrease occurring between 1920 and 1950 - a period of significant development within the Park as employment shifted from local industries such as the mill factories or agriculture to business and commercial pursuits as well as further pressures on the landscape from significant increases in urbanisation and extraction. In contrast, parkland actually increased until the 1920's when it too began to decrease albeit to a lesser extent as parkland and their associated houses increasingly moved away from private ownership to public. This period saw the dissolution of many remaining country houses with land and property being bought by local councils for redevelopment as hospitals, colleges and residential homes. The stability of historic parkland landscapes within the Colne Valley Park is perhaps an indication of the importance of this landscape to local communities, local government and the greater public.

Figure 28: Current landscape characterisation of historic enclosed land lost since the 1820's

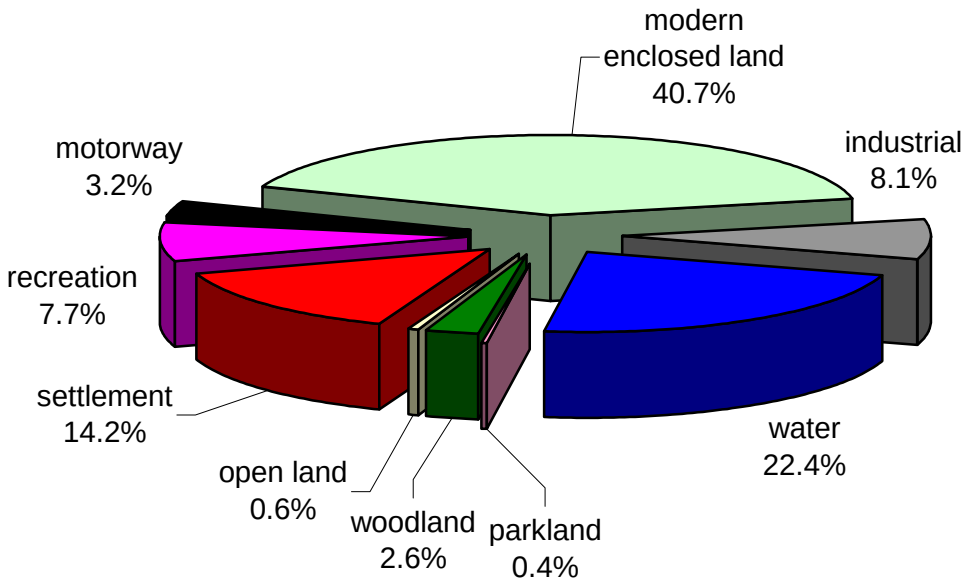
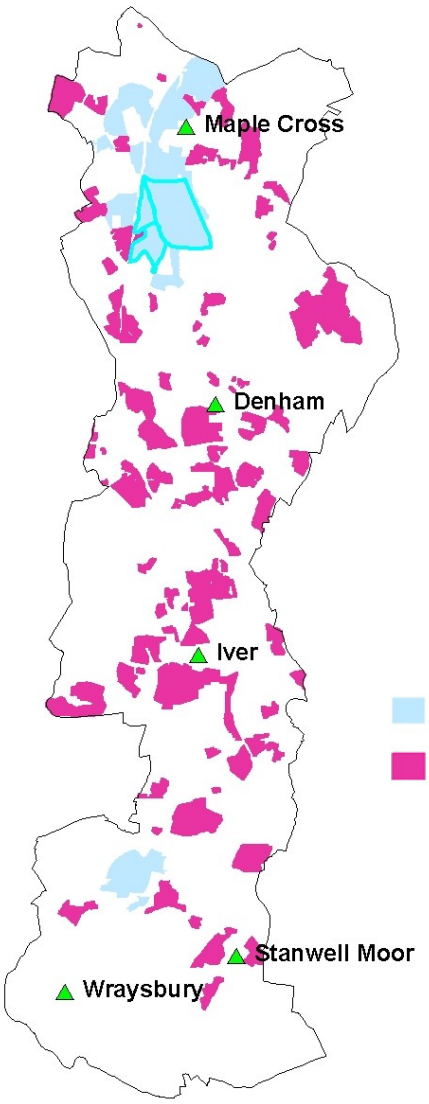


Figure 28 shows the general current characterisation of lost enclosed land identified on the 1820's map, showing a loss of 58% of enclosed land to twentieth century development. Significant proportions of this land have now been converted to settlement and recreation including golf courses while mineral extraction and flooded mineral extraction sites account for at least 25% of the loss in agricultural land, a further 42% has been regenerated as modern enclosed land either for private use as pony paddocks or through eventual regeneration following extraction and development.

Surviving modern agricultural landscapes

Figure 29: The 20th century landscape in the Colne Valley Park

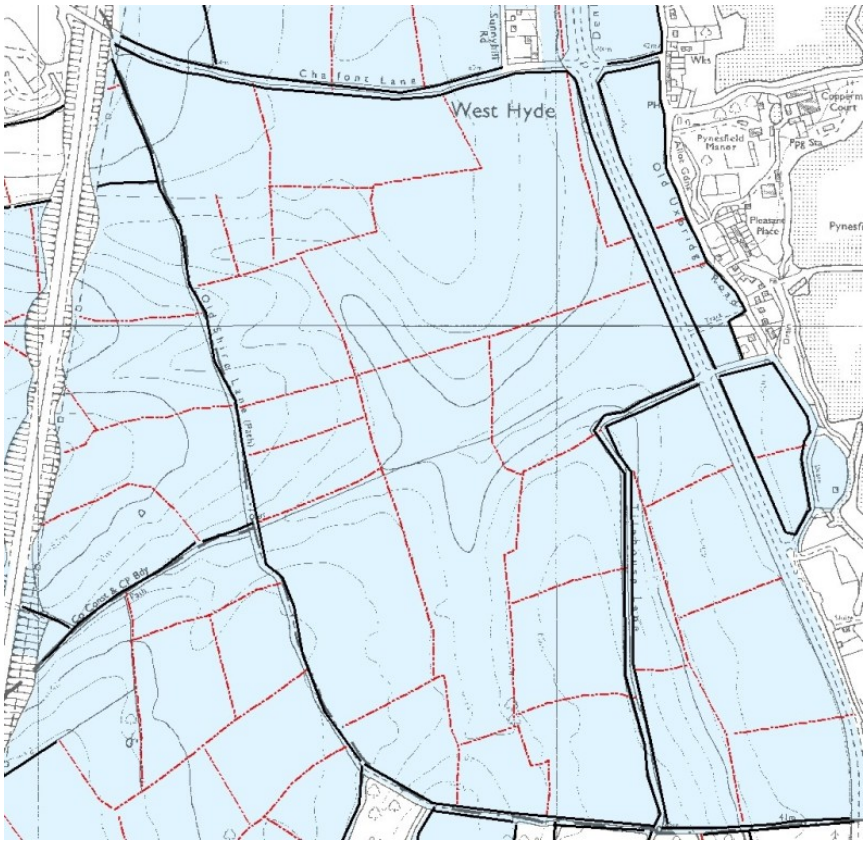


The 20th century enclosed landscape (usually morphologically regular field systems resulting from either modern agricultural methods or reversion of a site to enclosed land), including modern field systems and prairie fields, cover a much more significant proportion of the landscape, standing at 17% of the Park with by far the largest area of modern field systems lying in the north around Maple Cross (Figure 29). Modern landscapes characteristically exhibit a low level of boundary survival as shown in Figure 30. This illustrates the large prairie fields around Shire Lane near Maple Cross where the boundary loss has occurred in two distinct phases; the internal boundaries within the large fields directly south of West Hyde date to the 1839 Tithe awards but were already removed by the 1900's while the field boundaries to the west of Old Shire Lane were not removed until the mid 1950's with the increased mechanisation of agriculture following World War II.

Prarie Field

Enclosure (20th 21st Century)

Figure 30: Modern prairie field system around Shire lane. OS 1955 edition

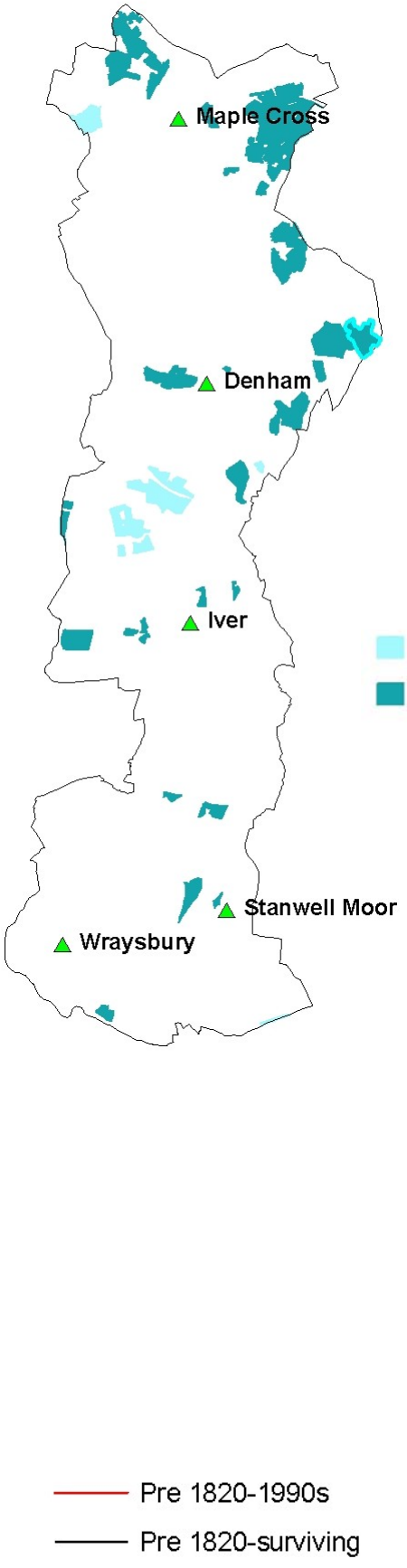


Pre 1820-1990s

Pre 1820-surviving

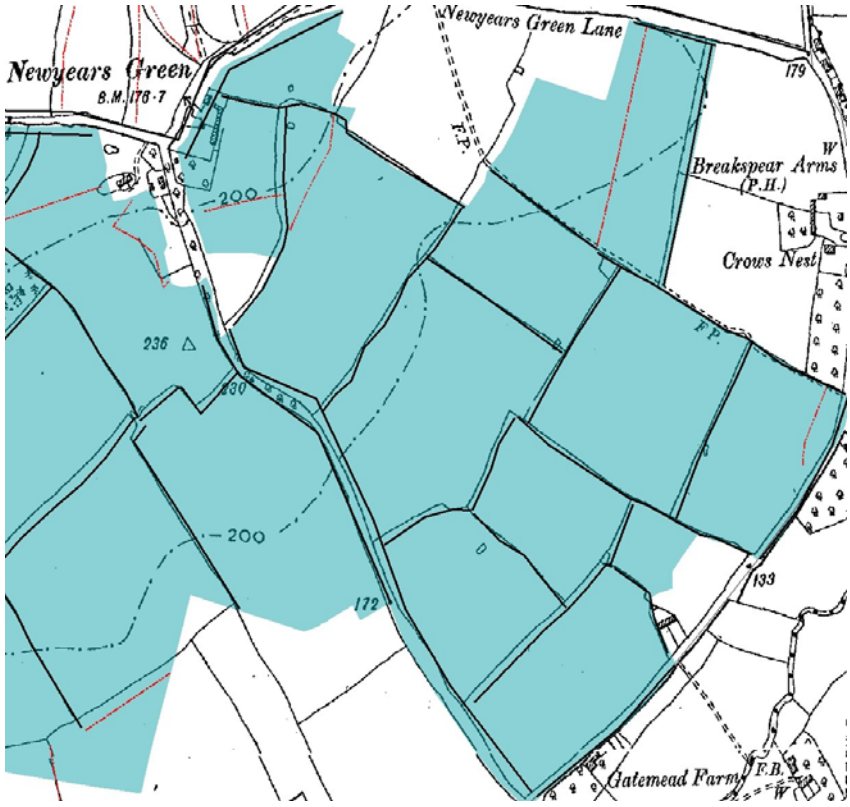
Surviving 19th century agricultural landscapes

Figure 31: Distribution of 19th century field systems in the Colne Valley Park



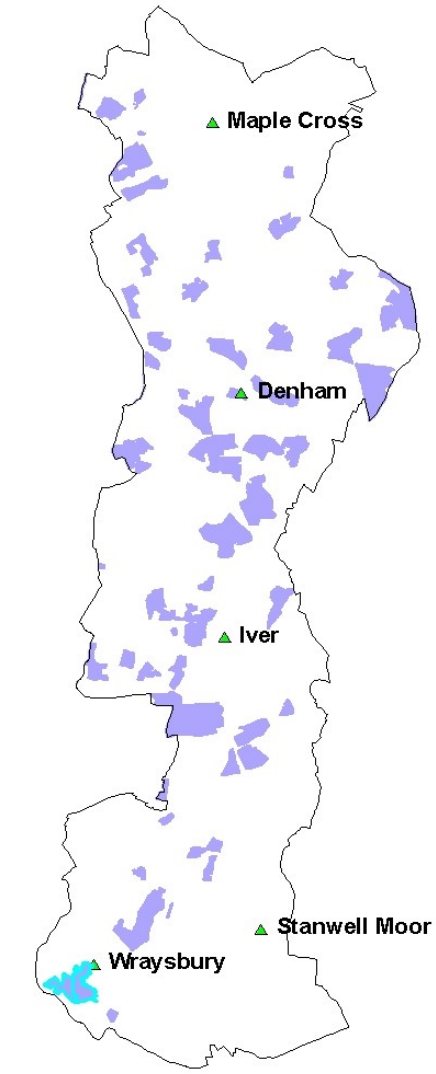
During the 19th century two distinct field patterns emerged; first the parliamentary field systems dating to the first half of the century in the Colne Valley Park, followed by 19th century landscapes that were characteristically similar to parliamentary field systems but exhibit a less exact morphology and appear on maps subsequent to enclosure and tithe awards. The 19th century enclosed landscape accounts for approximately 6% of the Colne Valley Park, survival is predominately based in a few significantly sized areas in the north, in particular around Harefield and the Three Rivers segment of the Park (Figure 31), however, all areas that are characterised as 19th century field systems exhibit some loss of internal field boundaries. The landscape illustrated in Figure 32, lying to the south of Newyears Green is one of the most complete examples of 19th century field systems in the Colne Valley Park with only a few boundary losses recorded by the 1900's.

Figure 32: Newyears Green Farm field systems. OS 2nd edition (1900)



Surviving 18th century and earlier agricultural landscapes

Figure 33: Distribution of 18th century and earlier enclosed landscapes in the Colne Valley Park



These are field systems mapped in the early 19th century Ordnance Survey. In most cases they are believed to be essentially pre 18th century enclosed field systems characteristically based in medieval and later field systems, common characteristics for this type include formation through piecemeal enclosure and bounded by ancient hedgerows and lanes. These older field systems are surprisingly common in what is essentially a modern landscape. Figure 33 illustrates the distribution of all 18th century and earlier enclosed landscapes comprising the four HLT subtypes of regular, irregular, co-axial and sinuous landscapes. Unlike later landscapes, surviving 18th century field systems are concentrated in the central zone of the Park with small pockets of survival in the north around Newlands Park and the south around Wraysbury. The landscape illustrated in Figure 34 lies just to the north of Ankerwycke Park in Wraysbury and shows a small pocket of survival in a fundamentally different landscape. Formerly part of the Harcourt estate this field system, along with Ankerwycke Park itself, comprises the only surviving elements of pre 20th century landscapes in the parish.

Figure 34: Wraysbury 18th century landscape. OS 1st edition (1880)

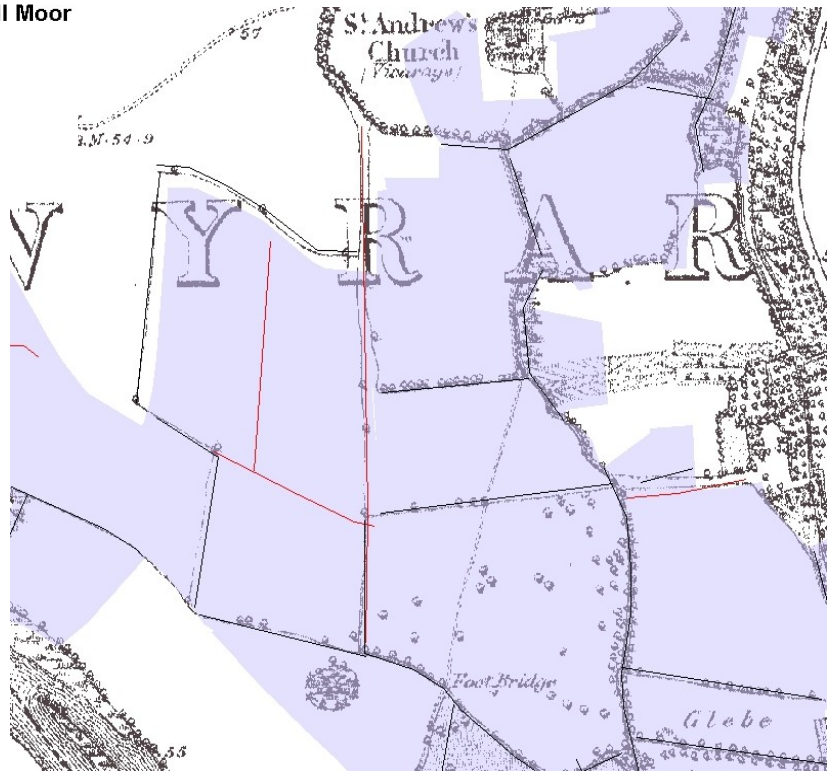
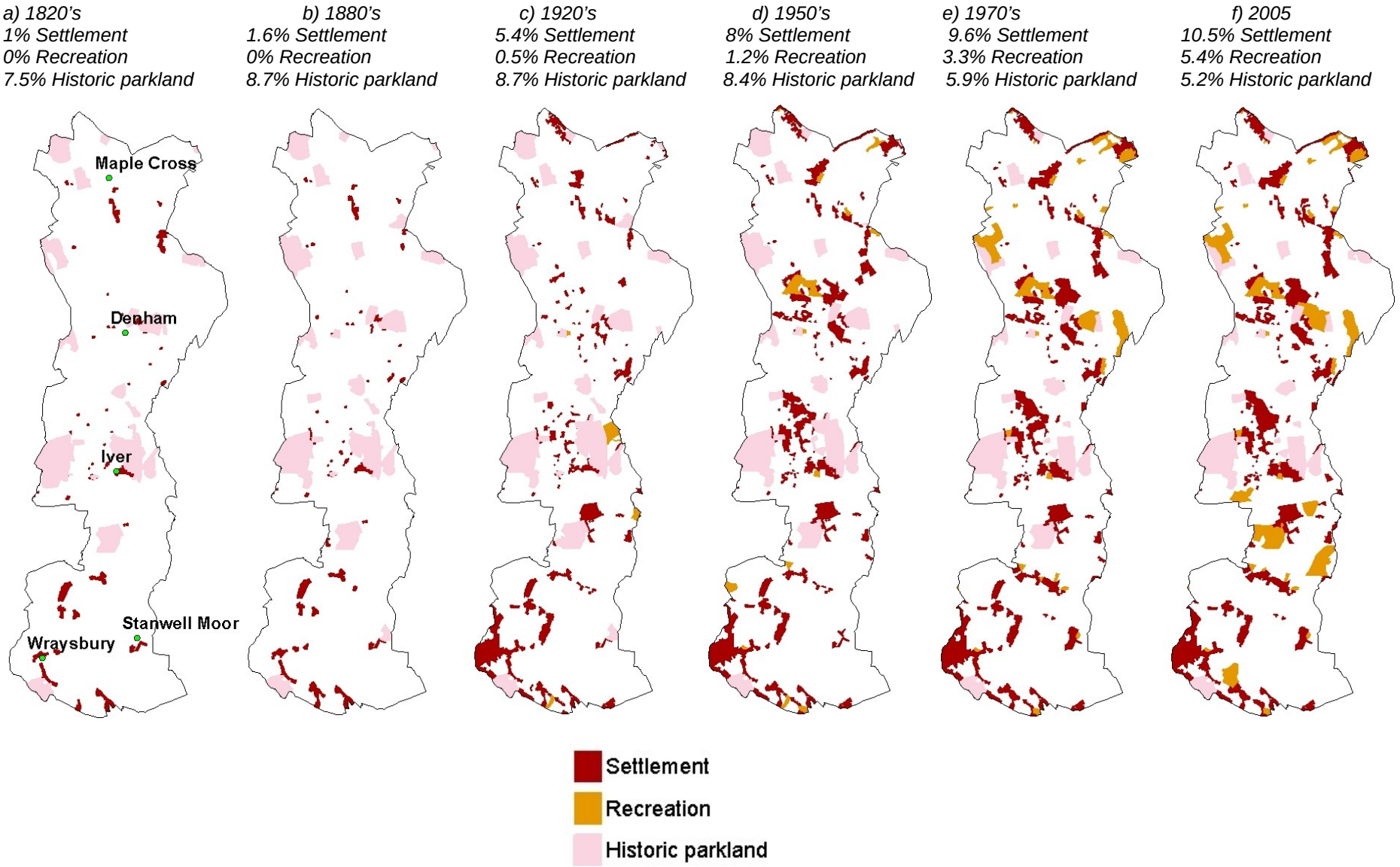


Figure 35: Growth of settlement and recreation



3.4. Landscapes: Settlement.

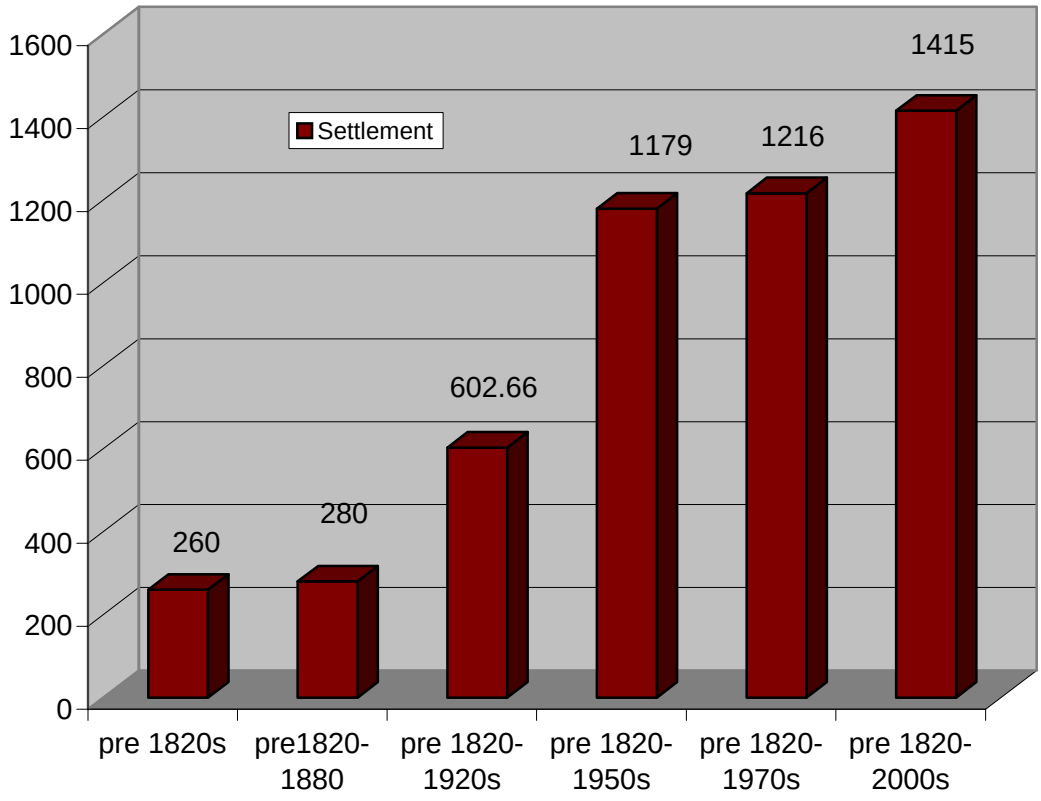
Settlement in the Colne Valley Park

The twentieth century saw significant expansion in the areas surrounding London including the Colne Valley Park, in particular the first half of the century experienced major development as housing increased by over 30% between 1820 and 1950. The major growth areas have been around Wraysbury in the south and Iver and Denham in Buckinghamshire. Harefield represents a dispersed linear settlement pattern following the Harefield road from Rickmansworth down to Uxbridge and has primarily retained its historic characteristics. The creation of the Metropolitan green belt in 1959 significantly curtailed later twentieth century development and from the 1960s onwards development became much smaller. Figure 35 shows the growth of settlement within the Colne Valley Park along with the growth of recreational land. Recreation includes several landscape characterisation types including golf courses and leisure areas. Parkland is also included because of its importance to the leisure industry in the twentieth century, but not included as recreation unless its fundamental character has been significantly altered.

Analysis of change

Settlement

Figure 36: Growth of settlement/hectares



The graph shown in Figure 36 illustrates the increase in settlement coverage by hectare in the Park; it illustrates a significant rise in the period 1880-1920 with coverage almost tripling in area. The 1940s/50s saw significantly less expansion than the previous decades while recent decades have seen a stabilisation in housing development from the 1950's and 1970's with smaller development plots used to infill

open spaces within urban areas rather than contributing to an increased urban sprawl and by the present day, urban landscapes have almost doubled again since the 1920's.

Figure 37: 1820's Characterisation of the present day settlement zones showing the type of land preferred for new housing development.

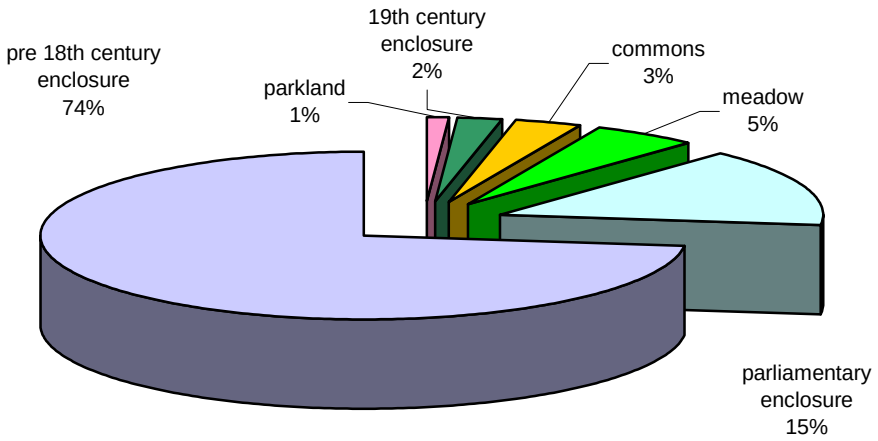
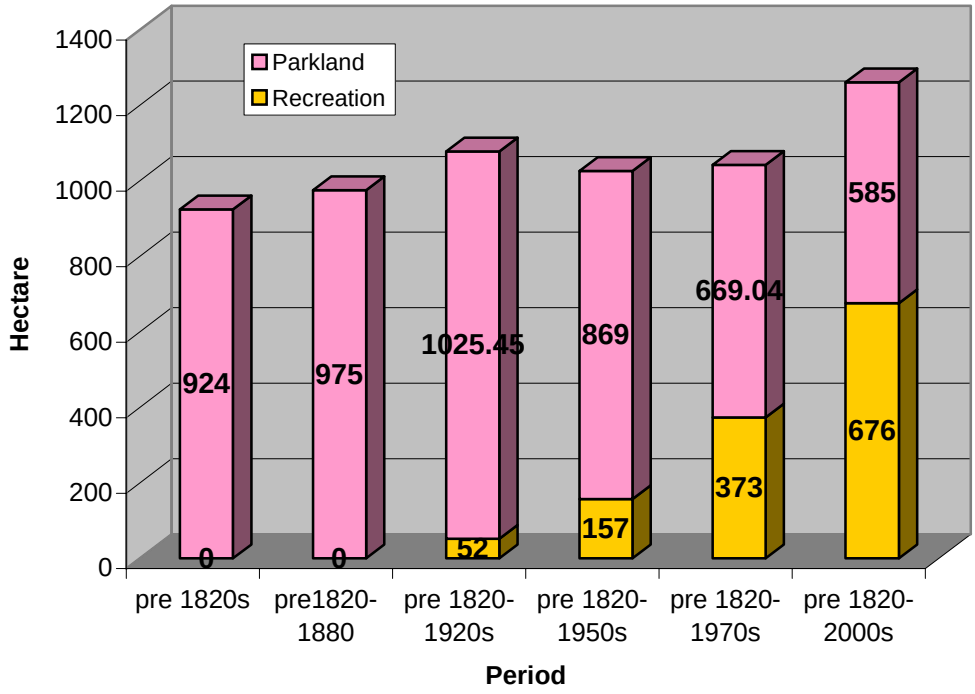


Figure 37 shows the historic characterisation of present day settlement areas based on the OS 2" surveyors map (1820's), this shows that the vast majority of urbanisation has been carried out over historic enclosed land representing a cultural shift away from the prioritisation of agricultural land towards a consumer based society. The vast majority of settlement on pre 18th century enclosed landscapes occurred over areas defined as smallholdings in Figure 51. Significantly large areas of land were lost to housing developments during the 1920's at Richings Park and Wraysbury (approximately 200ha) with the later development of Denham Garden Village in the 1950's removing another 68ha of pre 18th century enclosure. Richings Park housing development previously formed part of the Richings Park estate owned by the Syke's family in the early 20th century until the 1920's when the entire estate was sold. The Wraysbury housing estate now sits on land that belonged to several 19th century estates including the Marquis of Devonshire and William Gyll. The 15th century Remenham House owned by J Hargreaves in the 20th century sits in isolation amongst the modern development having never been sold. The land at Denham Garden Village was developed from parts of the Goodlake estate who bought the entire estate of St Thomas's Hospital in the late 19th century.

Recreation

Figure 38: Growth of recreation and historic parkland/hectare



Recreation is characterised as areas of land designed for public leisure pursuits and includes playing fields and open areas for leisure activities. Historic parkland has also been included, but as a separate field because although it would have been a distinctively private landscape in the 19th century, in the present day, it is often very much a part of public leisure. This can in part be attributed to the increased demand for recreational pursuits from an urban society that for the first time could afford the time and effort involved in travelling greater distances for recreational needs. A second important factor, however, would be the establishment of the Colne Valley Partnership in the 1960's and its mandate of preserving areas suitable for leisure, recreation and conservation. Figure 38 illustrates the massive increase in recreational land use as coverage more than doubled in a twenty-year period between the 1950's and 1970's.

Figure 39: Previous characterisation for golf courses

Golf courses currently account for 430ha of land within the Colne Valley Park including Sawyers Green, Thorney Park, Denham golf club and Denham Court Park although several of these clubs are private clubs. Figure 39 illustrates the previous landscape characterisation of present day golf courses and it shows that the majority of golf courses were laid out over either historic parkland or enclosed land, although a minority lie on restored aggregates sites.

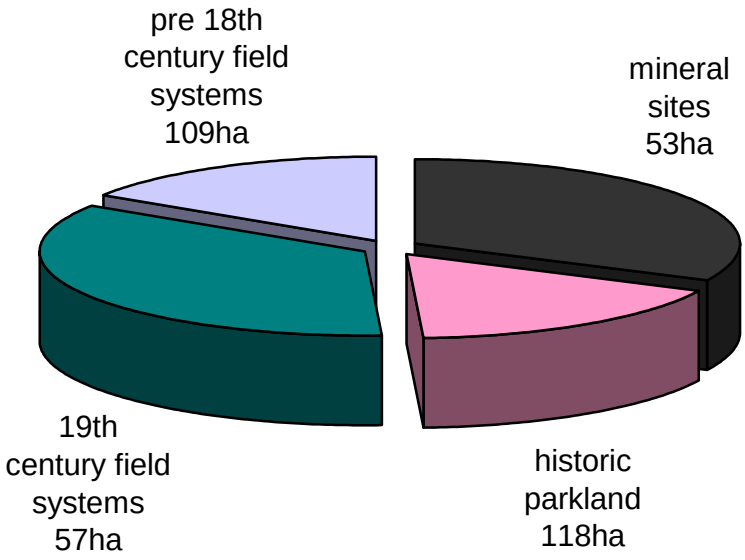
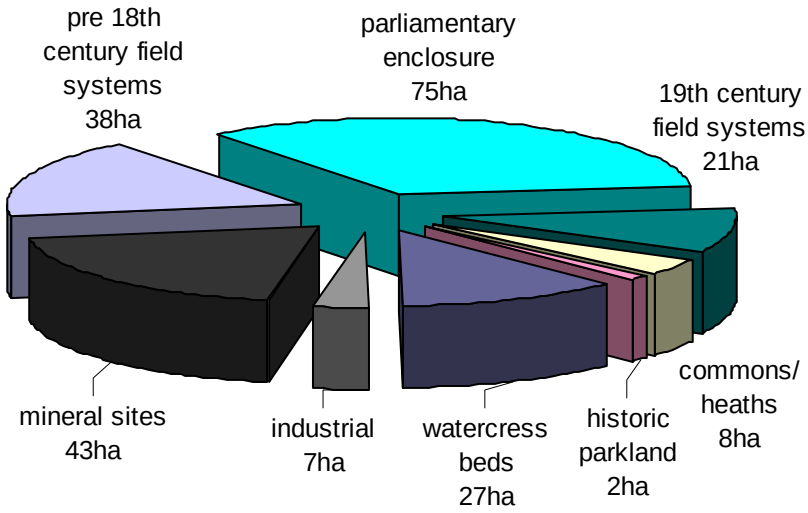


Figure 40: Previous Characterisation for recreation

Previous landscape characterisation for present day recreational land is much more varied than that of golf courses. For the purposes of this project, characterisation of recreation areas has included marginal zones around flooded mineral sites used for walking but not historic parkland. Figure 40 shows that a y significant proportion of current recreation bordering river channels and lakes had previously been characterised as watercress beds. Interestingly, 75ha of recreation was previously characterised as parliamentary enclosure, a rare historic landscape type in the study area. Harmondsworth Moor lies just to the north of the M25 where ruler straight field boundaries remained in existence until the mid 1970's when it underwent some hard landscaping to create a series of modern paths and wooded areas. Former aggregates sites now regenerated for leisure activities account for a further 43ha of



previous landscape characterisation located in Wraysbury amongst the flooded mineral sites.

Historic Parkland

In comparison to the sharp increase in recreation, historic parkland has shown some fluctuation since the 1820's. Parkland is characterised as areas of designed landscapes, frequently constructed along the Repton and Brown ideals of planned walks intended to represent a journey through the park using wide vistas and interspersed with classical structures such as at Langley Park. While the majority of the historic parks within the Colne Valley Park were originally created for pleasure purposes they were frequently for private use only and have therefore been added as a separate field.

Figure 41: Current characterisation of historic parkland lost since the OS 1st edition (1880)

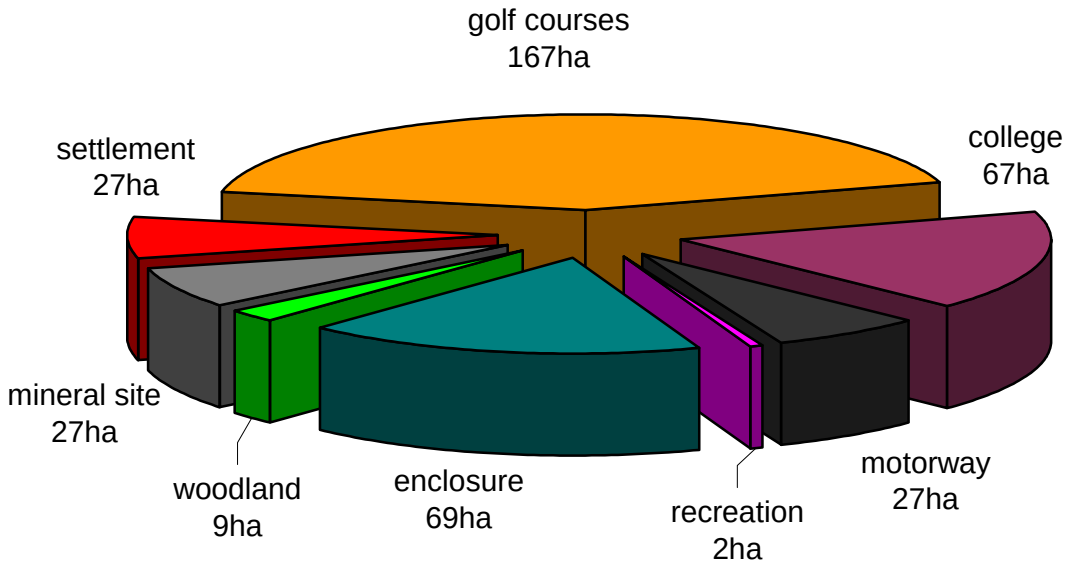
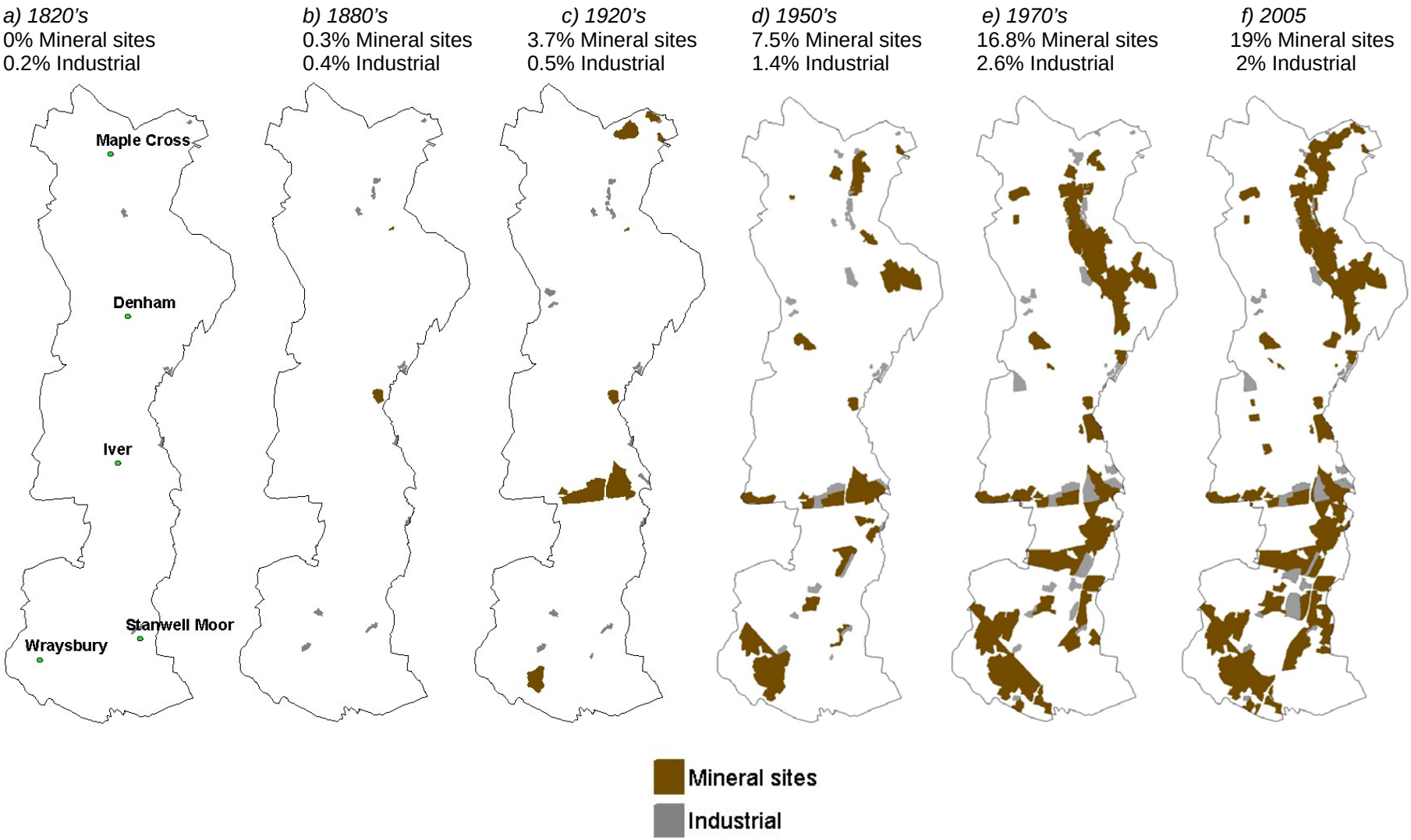


Figure 41 illustrates current landscape characterisation for the 445ha of historic parkland lost twentieth century. This shows that recreation has been the most significant regeneration of parkland as land use had now been fundamentally altered from the private sanctuary of the owner to a recreational resource for the public. Of the 15 historic parks recorded in the Colne Valley Park three are open to the public and owned by public bodies (Langley Park, Black Park, Ankerwycke and Denham Country Park) while a several others allow open access to the grounds although they are probably privately owned (Ladywalk, Huntsmoor and Delaford parks). A further four historic parks are also now used as golf courses whether public or private (Chalfonts, Harefield, Richings and Moor Park).

Figure 42: Expansion of mineral extraction and industrial zones



3.5. Landscapes: The aggregates industry

The aggregates industry in the Colne Valley Park

The aggregates industry has been particularly influential to the current characterisation of the Colne Valley Park and today the landscape is characterised by aggregates activity both past and present. The industry has had a direct impact on almost 14% of the Park area but its impact has been far greater than physical alteration. The origins of the Colne Valley Regional Park itself lie in the desire to safeguard the flooded mineral sites for leisure and recreation and to stabilise further development within the Park. Whilst extraction has been primarily confined to the alluvial floodplain of the river Colne in the north and the river Thames in the south, isolated areas of extraction have occurred in almost all areas of the Colne Valley Park.

Analysis of change

Figure 43: Aggregates coverage in Colne Valley Park

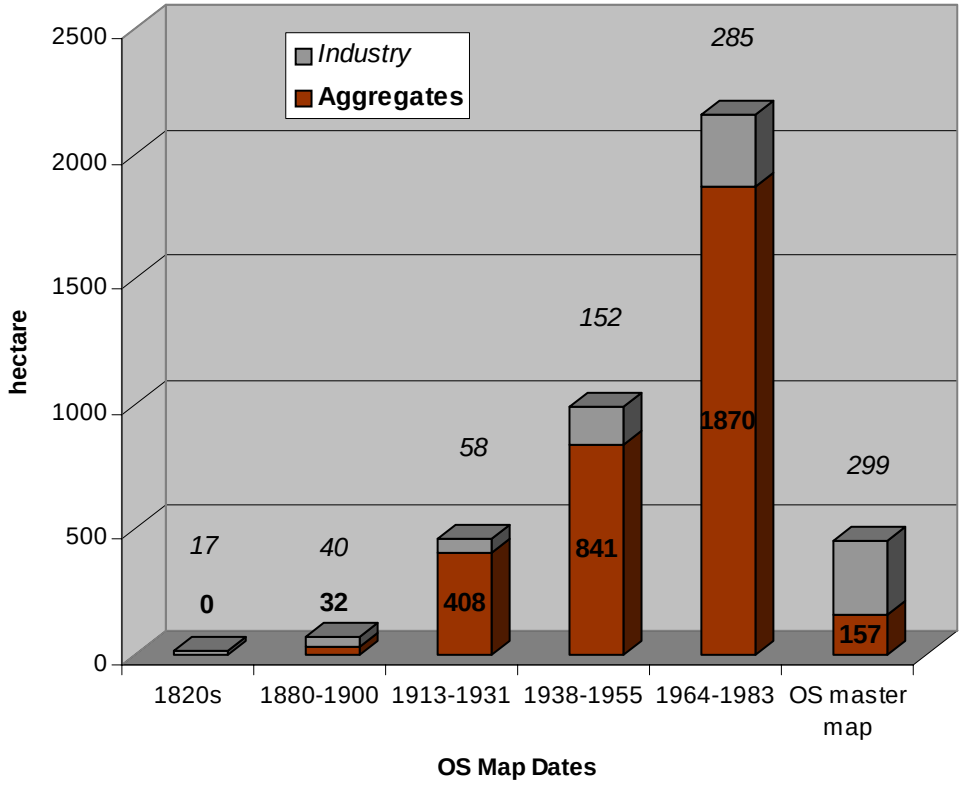
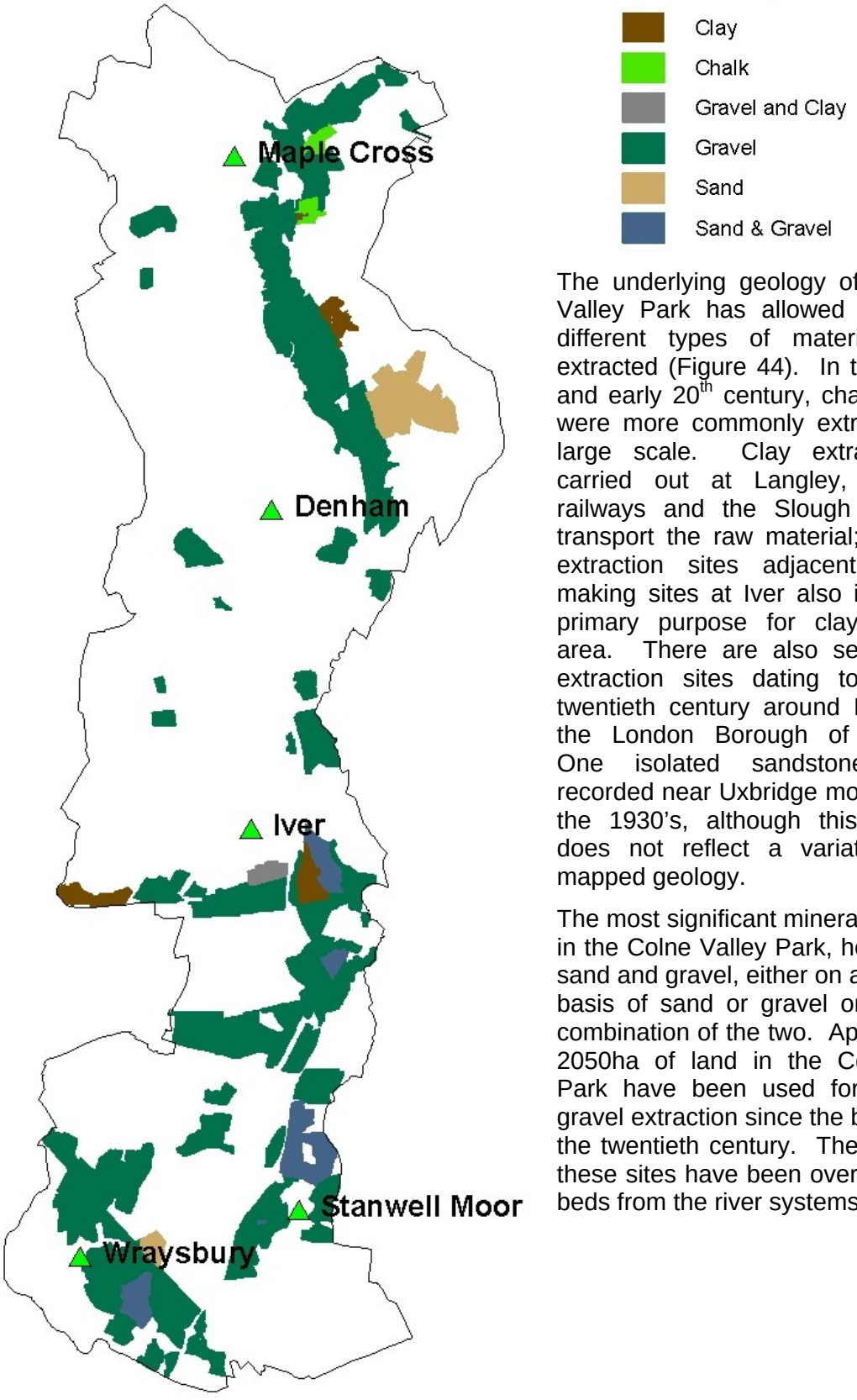


Figure 42 shows the rapid expansion of mineral extraction and industrial sites since the 1820's, this was based on all characterisation types for mineral and industrial landscapes including disused and flooded mineral sites in order to present an overall picture of industrial development within the Park. From this a distinct pattern of growth emerges concentrated in the south and in the long stretch of sites that separate Buckinghamshire, Hillingdon and Hertfordshire. Figure 43 shows contemporary minerals and industry characterisation according to the available map sources, unlike Figure 42, which shows the cumulative growth of minerals and industry. This graph shows the peak of the extractive industry occurring during the period recorded on the 1964-1983 OS maps when 1870ha of land use was characterised as current mineral extraction, in contrast to the current mineral sites

that only account for 241ha thus demonstrating significant successes in securing land restoration and afteruse.

Figure 44: Extractive materials from Colne Valley Park



The underlying geology of the Colne Valley Park has allowed for several different types of materials to be extracted (Figure 44). In the late 19th and early 20th century, chalk and clay were more commonly extracted on a large scale. Clay extraction was carried out at Langley, using the railways and the Slough Branch to transport the raw material; more clay extraction sites adjacent to brick-making sites at Iver also indicate the primary purpose for clay from this area. There are also several chalk extraction sites dating to the early twentieth century around Harefield in the London Borough of Hillingdon. One isolated sandstone site is recorded near Uxbridge moor dating to the 1930's, although this distinction does not reflect a variation in the mapped geology.

The most significant minerals extracted in the Colne Valley Park, however, are sand and gravel, either on an exclusive basis of sand or gravel or through a combination of the two. Approximately 2050ha of land in the Colne Valley Park have been used for sand and gravel extraction since the beginning of the twentieth century. The majority of these sites have been over the alluvial beds from the river systems.

Figure 45: Aggregates industry with underlying geology

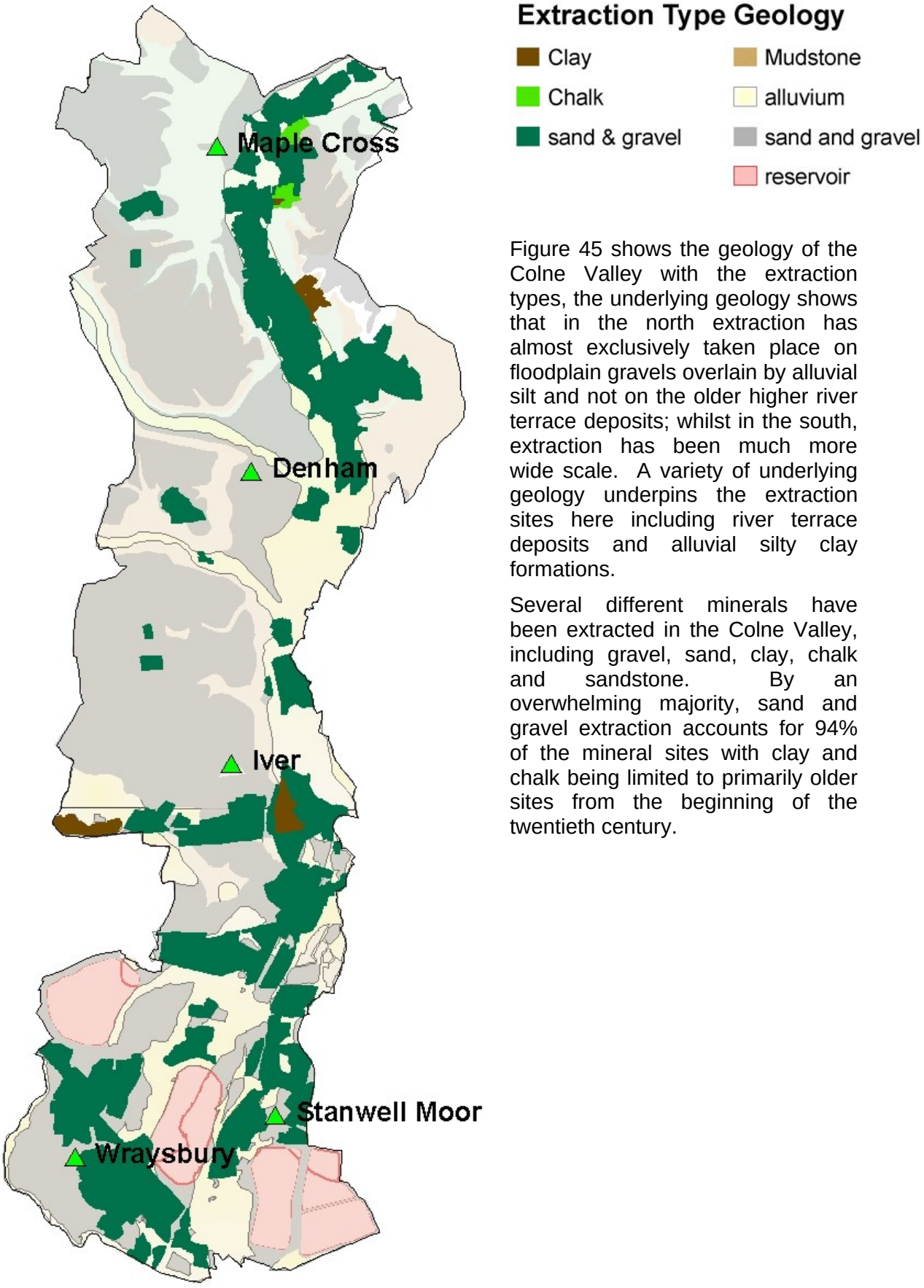
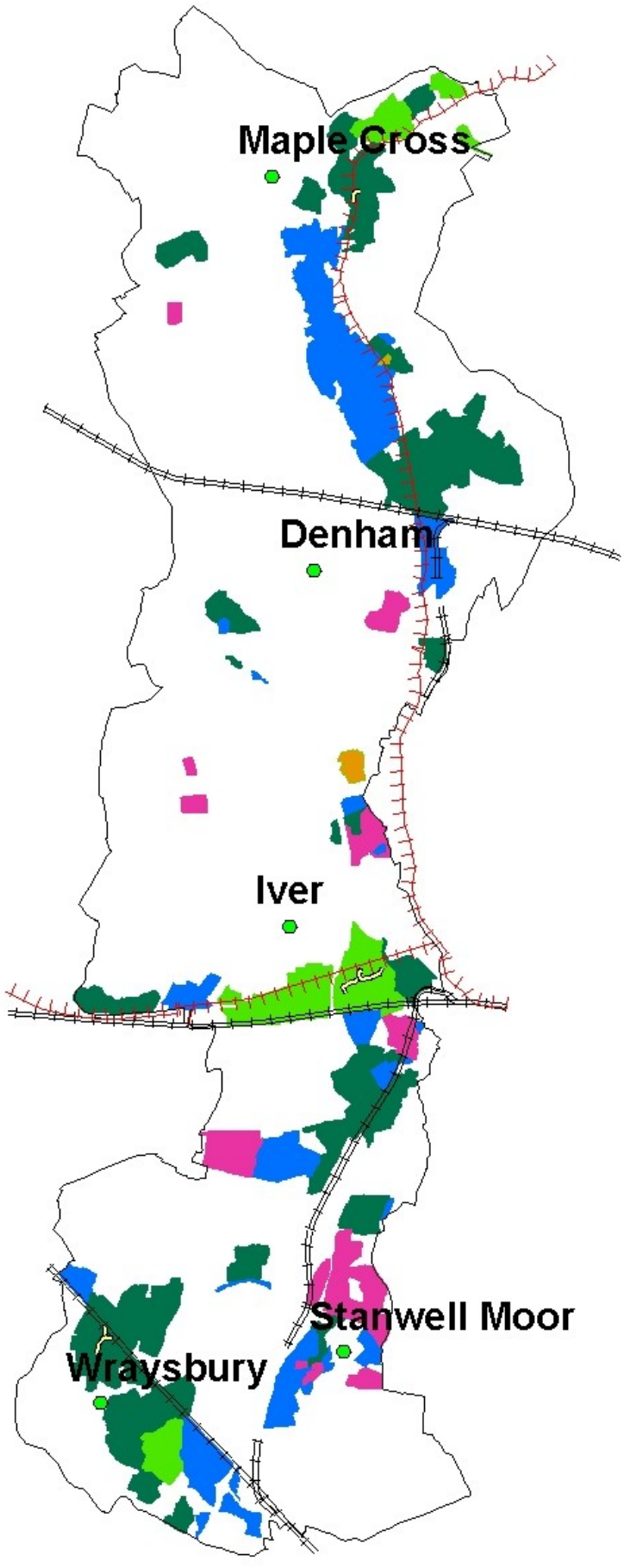


Figure 45 shows the geology of the Colne Valley with the extraction types, the underlying geology shows that in the north extraction has almost exclusively taken place on floodplain gravels overlain by alluvial silt and not on the older higher river terrace deposits; whilst in the south, extraction has been much more wide scale. A variety of underlying geology underpins the extraction sites here including river terrace deposits and alluvial silty clay formations.

Several different minerals have been extracted in the Colne Valley, including gravel, sand, clay, chalk and sandstone. By an overwhelming majority, sand and gravel extraction accounts for 94% of the mineral sites with clay and chalk being limited to primarily older sites from the beginning of the twentieth century.

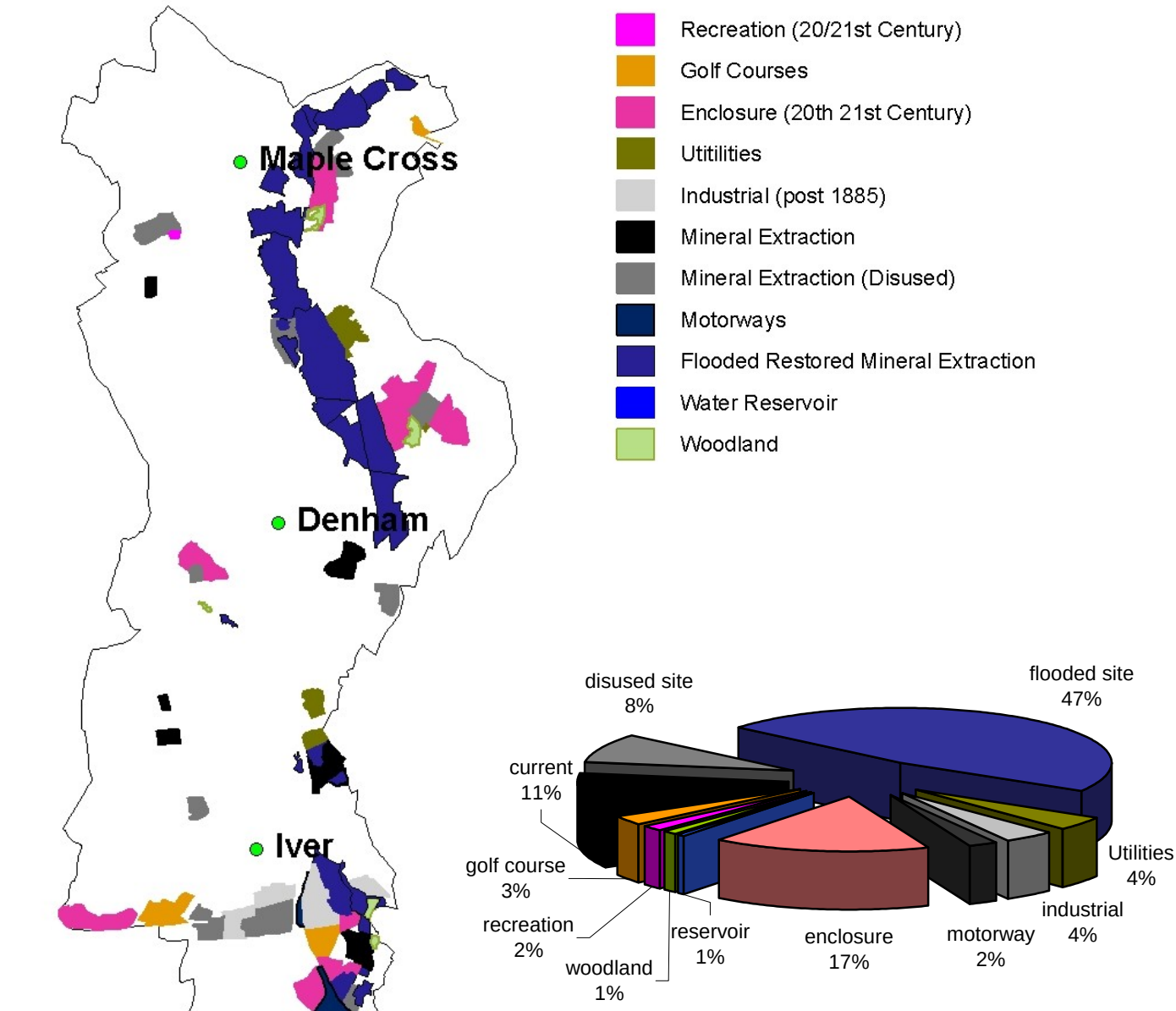
Figure 46: Extraction sites in relation to communication lines



Canal
Railway
Mineral sites pre 1900s
Mineral sites 1901-1920s
Mineral sites 1920s-1960s
Mineral sites 1960s-1990s
Current Mineral sites

Figure 46 shows the growth of extractive sites in relation to the major transport lines of the 19th and 20th centuries. The Grand Junction Canal was constructed in the late 18th century and there is map evidence in the form of temporary tramlines that the canal was used to transport extracted materials from the sites around Rickmansworth and Hill End. The later addition of the Slough branch in the 1880s was also used to transport clay from the extraction sites at Langley and Iver Brickworks. The railways date to the late 19th century and the motorways were added in the 1970's. A distinct pattern emerges from this showing a clear relation between the location of extractive sites and proximity to major means of transportation. Around Wraysbury, for example, there is a clear line of early twentieth century extractive sites clustered around the London and South-western railway built c.1915; and again, along the paths of the Slough branch of the Grand Union Canal and the Great Western Railway (c.1900), there is another stretch of early twentieth century sites.

Figure 47: Restoration of mineral extraction sites



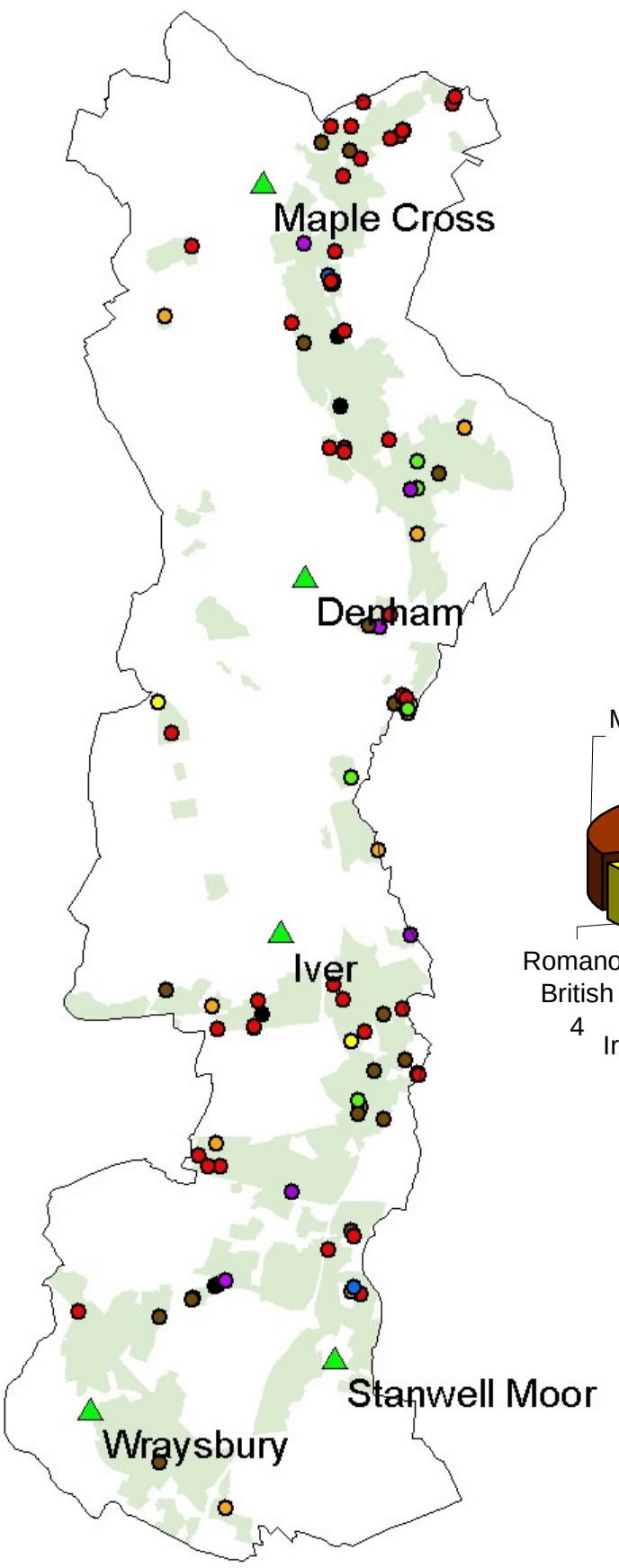
The majority of disused mineral extraction sites have been restored by the aggregates industry as lakes, forming an extensive network of artificial water bodies across the Park. Flooded mineral sites now cover a 10km^2 area and account for 52% of the artificial water within the Park. This has added considerably to the attractiveness of the valley for recreation purposes such as water-sports and walking as well as promoting the area as nature and wildlife sanctuaries (Figure 48).

Figure 48: Flooded mineral site, Denham Quarries.

The impact of the aggregates industry in the Colne Valley has been high, not least from the creation of these vast bodies of water, but also from the visual impact of extraction sites during their lifetime and any other subsequent regeneration of the land such as use as landfill sites, industrial purposes or recreation. After flooded sites, the next most common regeneration of aggregates sites is as 20th century landscapes where underlying geology and water levels have prohibited the creation of lakes. There is a small proportion of land (1.85km^2) that has no obvious current re-use as determined from map sources and aerial photographs. Several areas of land are now used for recreational purposes either as golf courses or playing fields and, finally, some smaller gravel sites in the Harefield area have been regenerated as woodland (Figure 49). The aggregates industry reached its peak in the 1970s when it accounted for 22km^2 within the Park, much of which had already been regenerated as water bodies.

Figure 49: Former gravel site now woodland and pasture. Nr Springwell farm, Harefield

Figure 50: HER/SMR data within aggregate extraction areas



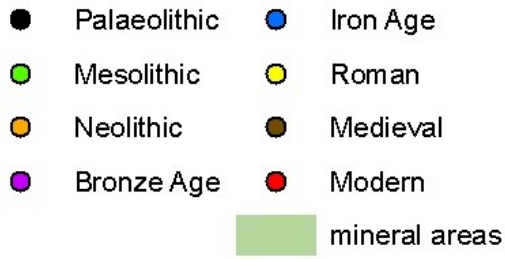
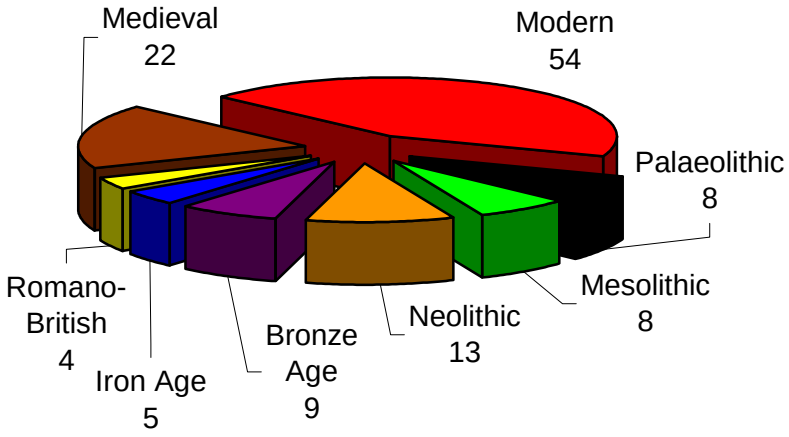


Figure 50 shows the correlation between aggregates sites and HER/SMR data from Buckinghamshire, Greater London and Hertfordshire. This shows a significant number of early sites from the Palaeolithic to the Bronze Age, periods that are otherwise under-represented in the archaeological record. This can give an indication of the number of potentially important sites that might be uncovered during mineral extraction.



4. Historic Farmsteads and Estates

4.1. Estates

Aims

The objective behind the creation of this dataset was principally to gain a greater understanding of the rural landscape within the Park and how it has changed since the 18th century. Agriculture and farming were important industries in the Colne Valley Park until the late 19th century, however, the pressures of urbanisation and the extraction industry have had a significant impact on historic estates and farmland essentially changing the character of the modern landscape.

Agricultural land in the Colne Valley Park has undergone major change since the 1800's with a significant reduction in available land as well as some change in land use. This report records changes to the agricultural landscape since the 19th century and relates these changes to the farmsteads in an attempt to map estate holdings.

Methodology for historic estates

This stage of the project involved visits to records offices in order to research enclosure and tithe awards for every parish within the Colne Valley Park (see Appendix 3, Table 6 for dates). The first step in creating a computer based mapping layer focused on digitising the field systems taken from the enclosure awards before examining changes since that time. This rapid survey was carried out across the entire Colne Valley Park in order to begin with an overview of the landscape at this time; Figure 51a shows the major landowners at the beginning of the 19th century.

The data gathered for the farms and estates interpretation stage was represented on a different layer to the original HLC. Consequently a separate attribute table was created with initial information on surviving farms, taken from the original HLC, incorporated into the enclosed field systems in order to limit repetition between this layer and the original dataset. The attribute table was then adapted to accommodate new information applicable to this stage. Appendix 2: Table 7 outlines the adapted attribute table for this stage. Once complete mapping for the Colne Valley Park was carried out from the enclosure and tithe awards, areas of lost enclosed land (i.e. enclosed land which has been "lost" to other land uses in the 2oth century) were removed in order to focus on the surviving field systems. Areas of lost enclosed lands were preserved in a separate file for reference.

This layer also recorded other information concerning the current field systems including the condition of the enclosed land, and their land use. This essentially divided land use into arable or animal grazing. This information was gathered using aerial photographs to distinguish between arable land and land used for grazing and as such does not distinguish between land used for dairy farming and land used for piggeries and stables. However, some inference can be made concerning this through proximity to known farms, piggeries and stables. Inevitably this data is provisional and should not be relied upon without further ground-truthing.

Analysis

Figure 51: Landscape of the time of the enclosure awards (1820s)

a) The major landowners of the 1800s

b) Historic landscape survival of the 19th century estates

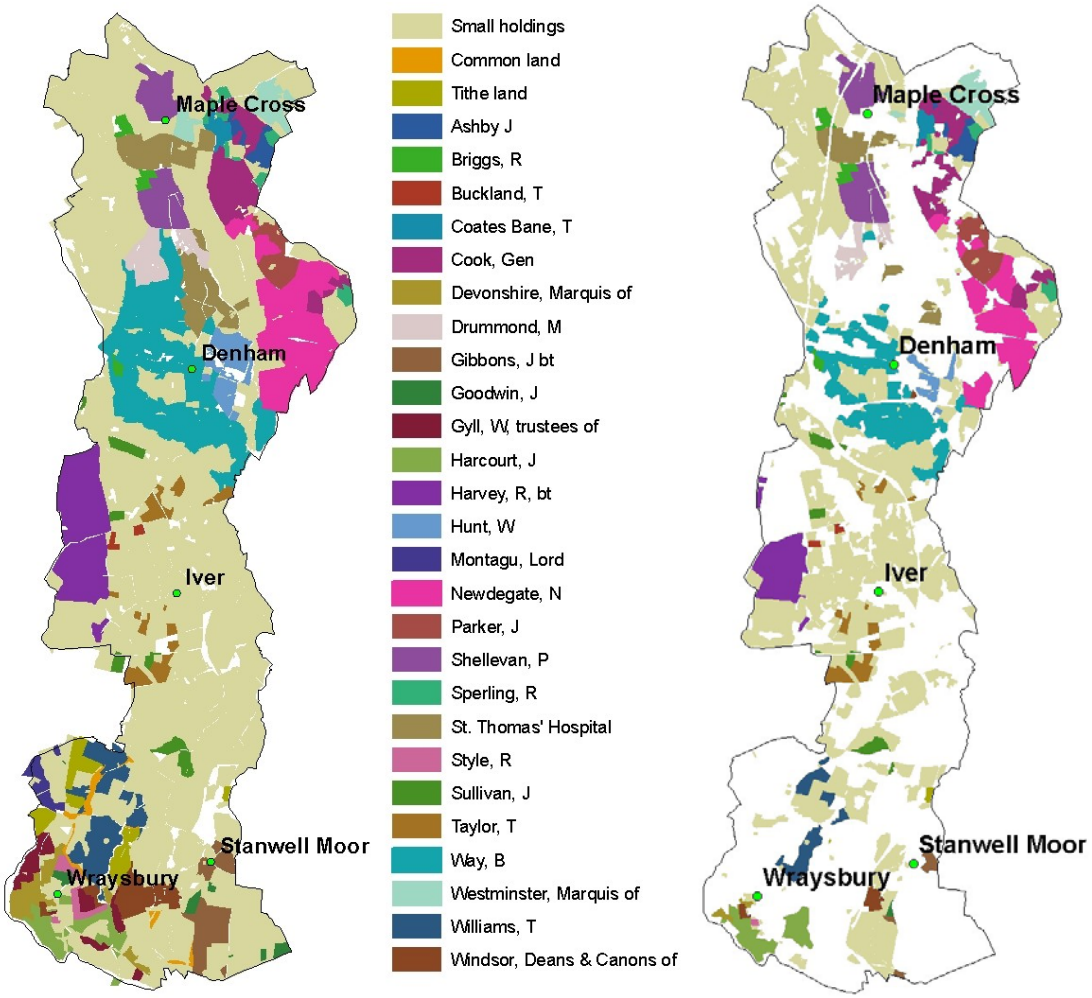
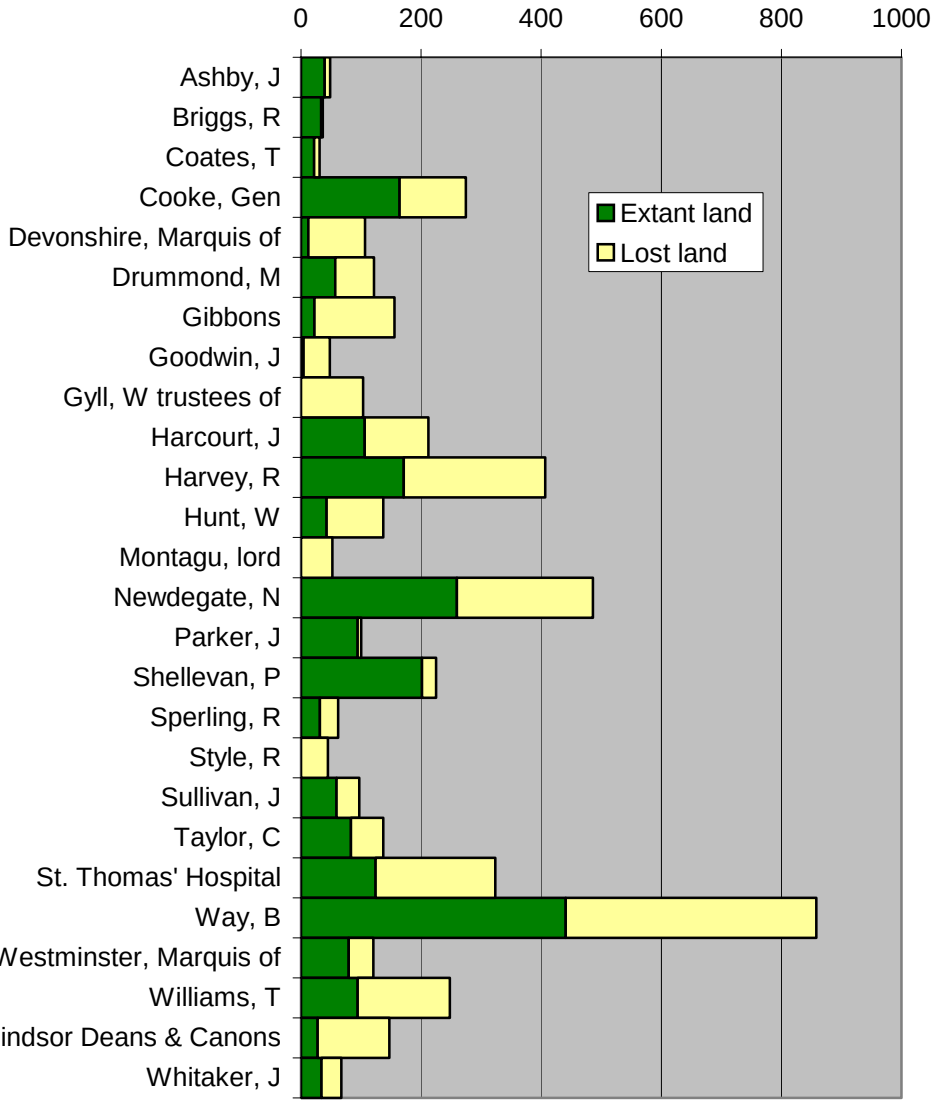


Figure 51a shows the major landowners of the 19th century according to their estate holdings at the time of the enclosure awards. A generic term (smallholdings) was used for areas where no ownership was recorded or where individual holdings were limited to one or two fields. Immediate differences can again be seen between the north and south of the Park with the north divided into a few large estates while the south was more fragmented. This can be used to assess levels of preservation of the historic landscapes of these estates; for example, the landscape of the estate of St Thomas' Hospital around Maple Cross remained intact despite the cessation of the hospital in the late 19th century because the entire estate was sold to Mrs Goodlake who retained possession until the mid 20th century (Page: 1925). The majority of the estate belonging to the Newdegate family of Harefield was also sold in the late 19th century but again has remained intact. Many of the other estates, however, have either disappeared entirely such as William Gill's estate in Wraysbury and that of Lord Montagu in Datchett, or have been significantly reduced as estates were broken up in later years such as the estate of General Cooke in Harefield. Originally bought from the Ashby family prior to the enclosure awards, the estate has since been heavily divided due to the loss of fortune for the Cooke family (Baker et al: 1962). The remainder of the Ashby family estate, totalling some 230ha, survived

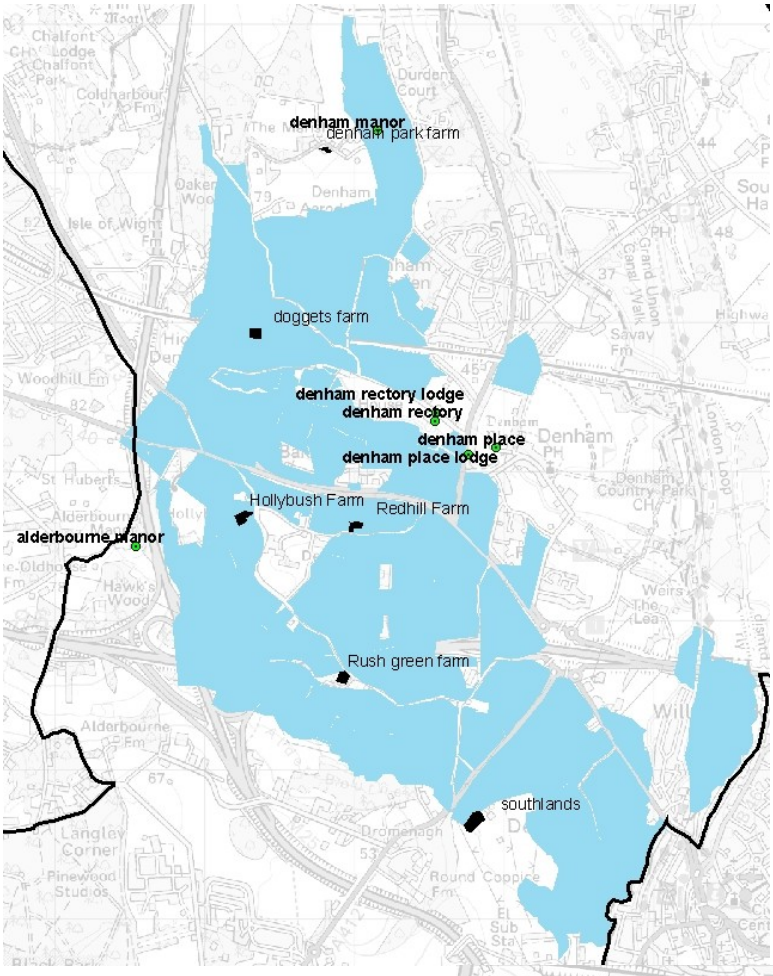
intact until the early 20th century when the land, along with Breakspear House, was purchased by the County Council (Baker et al: 1962).

Figure 52: Extent of land ownership according to major landowners of the 19th century



A number of estates from the 19th century no longer exist at all, with only one or two estates surviving more or less intact, the principal example being that of the Way family around Denham, yet this landscape is significantly altered in terms of its characterisation possibly indicating that the historic farms and estates previously incorporated into the Way estate have since become estates in their own right. Figure 52 shows the breakdown of land ownership from the 1800's and the present day survival of these estates. This shows that the Way family estate, for example, is approximately half of what it once was indicating a high level of fragmentation in this area, this is in common with all the major estates of the 19th century with the majority showing at least a 50% loss in land.

Figure 53: Extent of the Way family estate in the early 19th century



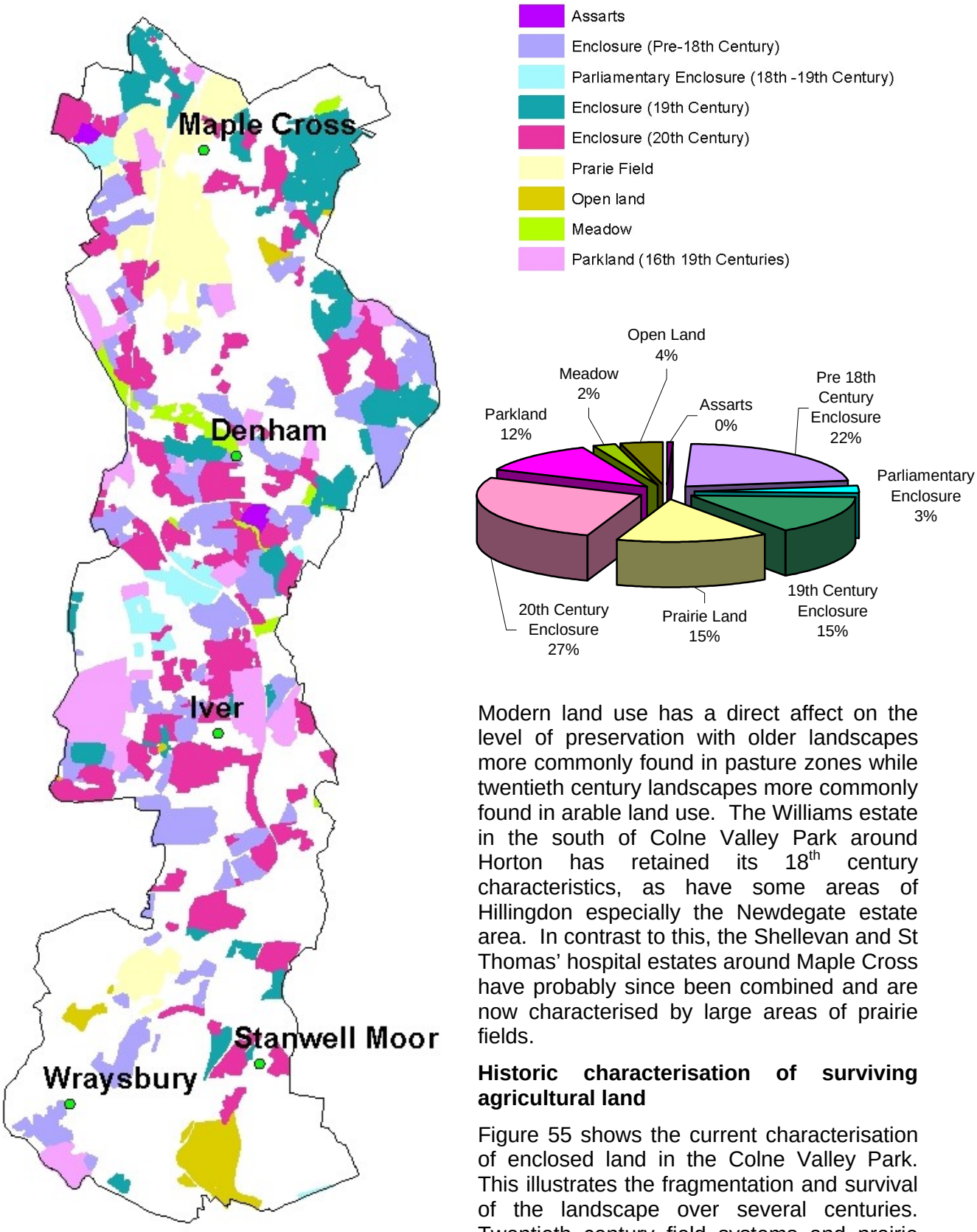
The Way Family Estate

The Way family were major landowners in Denham during the 1800s, they owned over 800ha along with several houses and farms many of which were leased out to tenants (Figure 53). By the present day, however, land that had been owned by them in the 1800s had been reduced to 440ha and of the five farms within the estate in the 1800s, just two have continued as working farms (shown on Figure 54). The characterisation of the surviving land also exhibits some variation between 18th to 20th century landscapes with some degree of preservation of landscapes such as meadows. Of the non-surviving land, significant proportions are now characterised as golf courses and airfields suggesting that the estate was divided through a small number of large sales in the twentieth century rather than a more gradual decline.

Figure 54: Historic characterisation of surviving land from the Way estate

Historic characterisation of surviving agricultural land

Figure 55: Current characterisation of agricultural land



Modern land use has a direct affect on the level of preservation with older landscapes more commonly found in pasture zones while twentieth century landscapes more commonly found in arable land use. The Williams estate in the south of Colne Valley Park around Horton has retained its 18th century characteristics, as have some areas of Hillingdon especially the Newdegate estate area. In contrast to this, the Shellevan and St Thomas' hospital estates around Maple Cross have probably since been combined and are now characterised by large areas of prairie fields.

Historic characterisation of surviving agricultural land

Figure 55 shows the current characterisation of enclosed land in the Colne Valley Park. This illustrates the fragmentation and survival of the landscape over several centuries. Twentieth century field systems and prairie

fields dominate enclosed land in the Park covering 42% of the landscape. Pre 18th century field systems have survived throughout the Park whilst parliamentary enclosure has fared less well with only a small number of surviving field systems, primarily in Buckinghamshire. 19th century field systems are characteristic of the landscape around Hillingdon and Rickmansworth with small patches surviving elsewhere in the Park.

Figure 56: Changes in land use over the 20th century

a) 1950's land use *b) 1990's land use* *c) present day land use*

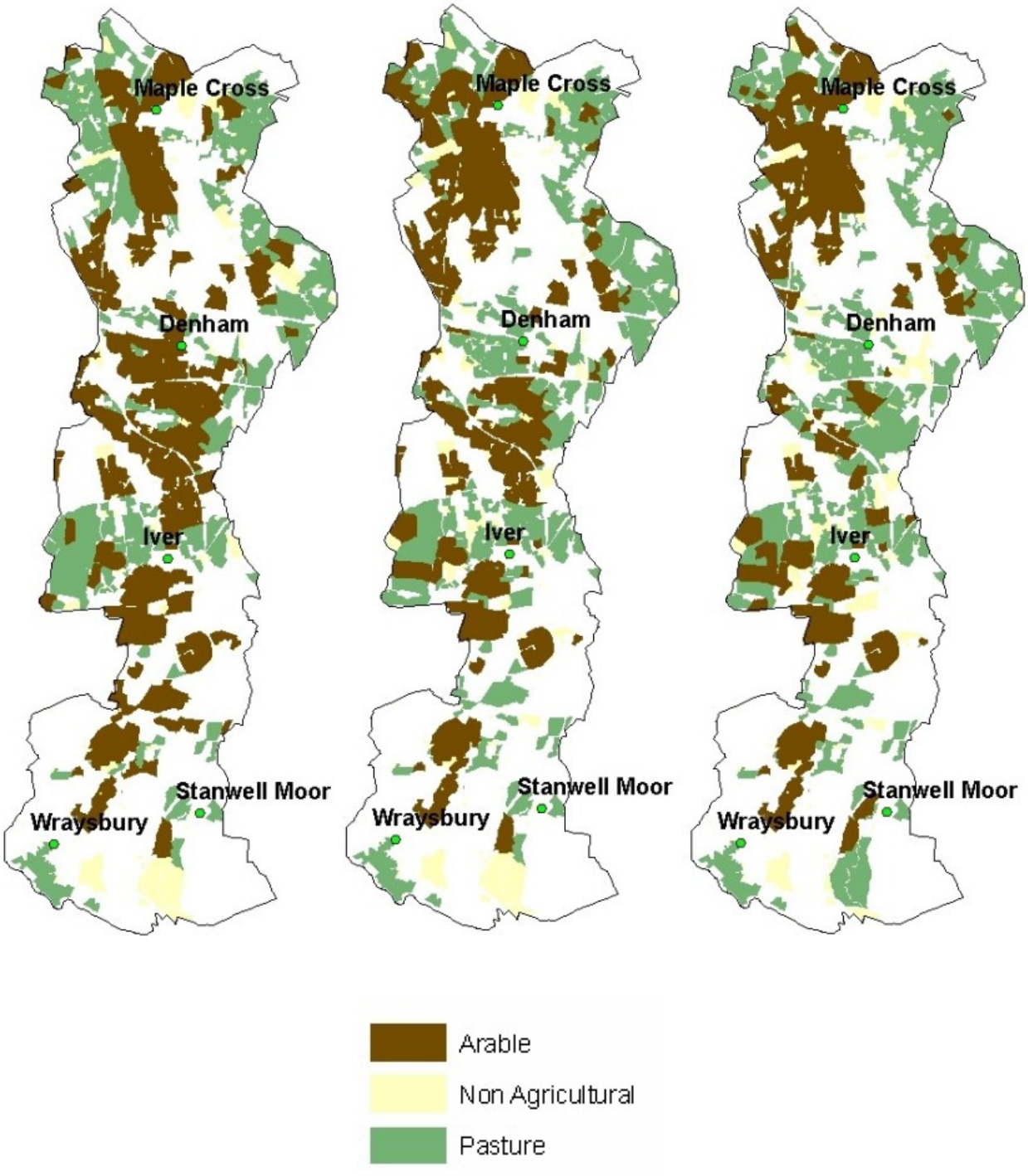


Figure 56 shows the changes in land use over three stages from the 1950's - 2003 the information for this was taken from aerial photographs showing time slices for the 1950's, 1990's and 2003; this shows a significant shift in agricultural land across the middle of the Park moving away from arable farming around Denham and Iver this in part reflects the introduction of a number of piggeries to this area, and Colnbrook. In contrast, land use in the north around the Chalfonts and Maple Cross, has shifted in the other direction with land becoming increasingly used for arable farming. This pattern is very clearly shown in the historic characterisation of the Park (Figure 55). The landscape in the central and southern areas is characterised by smaller field systems of variable morphology and date while the landscape in the north is predominately large open prairie fields. The small area of pasture to the south of Newlands Park represents an area of landscape stability through changing land use as the field systems here consist of primarily small field systems ideally suited to the current land use for horses.

By the middle of the 20th century enclosed agricultural land in the Colne Valley Park was roughly equally divided between arable and pastoral land. Unenclosed agricultural land at this point included landscapes where specific agricultural uses might be temporary or hard to discern such as heaths and commons. Some land was currently in use as mineral extraction sites but later reverted to agricultural land. By the 1990's, however, land use had significantly changed again with a shift of approximately 200ha from arable to pasture farming and a further loss of 100ha to non-agricultural purposes. This shift may reflect an increase in specialist farming outside of the traditional dairy production towards piggeries, sheep farming and poultries. It is also likely that this change in land use reflects a shift towards private non-agricultural land use for horse/pony grazing. Land use in 2003 shows a further overall decrease of approximately 250ha in arable land with a locational shift from the central zone to the north of the Park around Three Rivers.

4.2. Historic Farmsteads

Aims

Historic working farmsteads were once a key part of the English landscape, but this resource is fast becoming lost through a combination of urbanisation, re-use or abandonment. Barns and outbuildings, especially, frequently face one of two choices - renovation as a house or business or abandonment and dereliction. This is an important issue as typically only a small proportion of farm outbuildings are registered as listed buildings or included on local HER/SMR databases. This resource assessment attempts to record the farmsteads in the Park in order to gain an understanding of change in the landscape and what factors have affected the survival of the fabric of farm units.

Methodology

The second section of this stage was a more in depth study of the historic farms within the Park using English Heritage's categories for farmstead morphologies as shown in Table 1 (HELM: 2006) in order to assess first their current morphology and then their condition by assessing changes to this morphology, considering the loss and additions of buildings, between the OS 1st edition map and the current OS landline. Farmsteads were also then characterised according to their current use - whether they remain as working farms or whether they have been converted to other uses such as business or residential. Other information recorded included the current size and name of farmsteads.

Table 1: Farmstead Morphologies (see appendix 3 for greater detail)

Linear Plan	House and farm buildings arranged in a single line, rare in the south of England.
L Shaped Plan	A possible evolution of the linear plan, house and farm buildings organised in continuous L shape design
Dispersed	Irregular scattering of farm and farm buildings, can often represent two separate farms.
Courtyard	Several courtyard morphologies are used including loose; L plan; U plan and full regular. Farm and farm buildings are arranged around a central area.

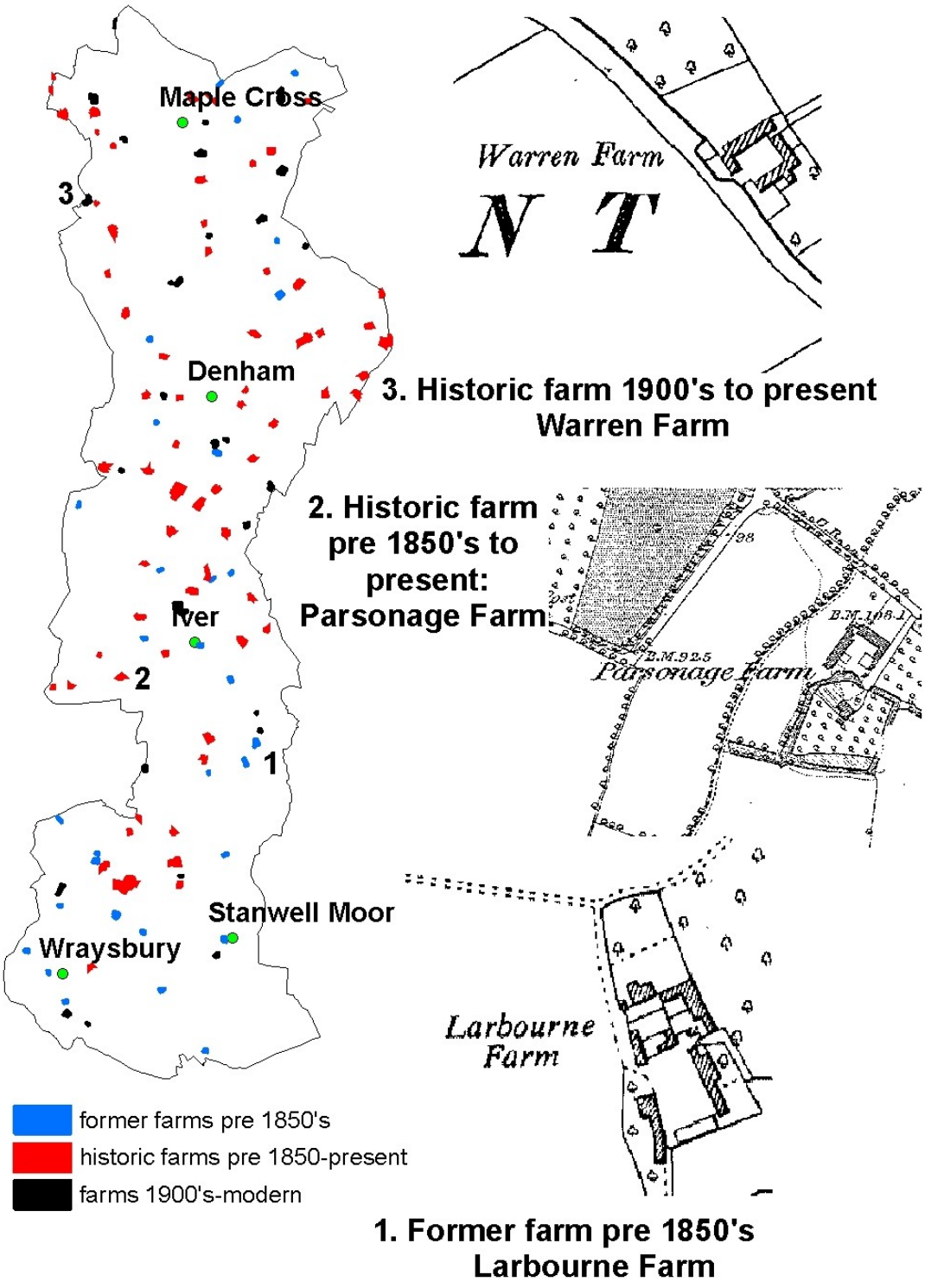
Analysis

There are approximately 131 farms recorded on the original HLC database for the Colne Valley Park, including modern and historic types. These HLT's were transferred from the original database to the Historic farms and estates layer. 34 are modern farms dating from the OS 1955 map to the present and have therefore been excluded from this section of the project, while the remaining 97 historic farms have been subdivided into farms that first appear on the earliest map sources, characterised as historic farms (69); and those which appear between the OS 1st edition map (1876) and the OS 1955 edition, characterised as early 20th century farms (28). An additional 33 farms were plotted in the Historic farms and estates database, characterised as farms that appear on the earliest map sources (OS 2" surveyors, historic maps) but that no longer exist.

Figure 57 shows the distribution of farms within the Colne Valley Park, existing farms were taken from the original Colne Valley HLC while non-surviving farms were plotted onto a new layer, modern farms were not included in the historic farmsteads

database. The examples shown highlight some of the characteristics of farmsteads from each period.

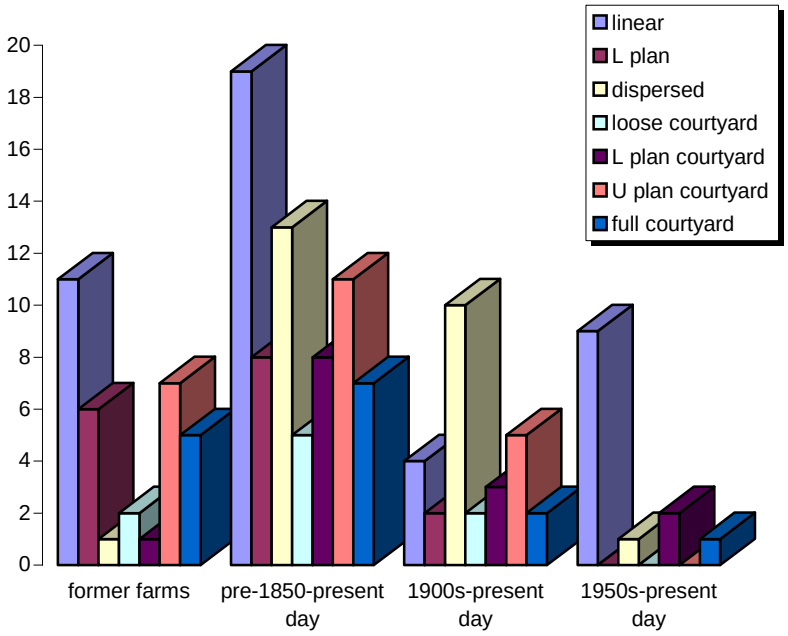
Figure 57: All farms recorded within the Colne Valley Park © Ordnance Survey (background maps)



Historic farms built before 1850 tend to be much more varied in style, linear farmstead morphologies account for 28 of the 97 pre 1850 farms but, courtyard farmsteads of varying types including U shaped, L shaped and regular account for

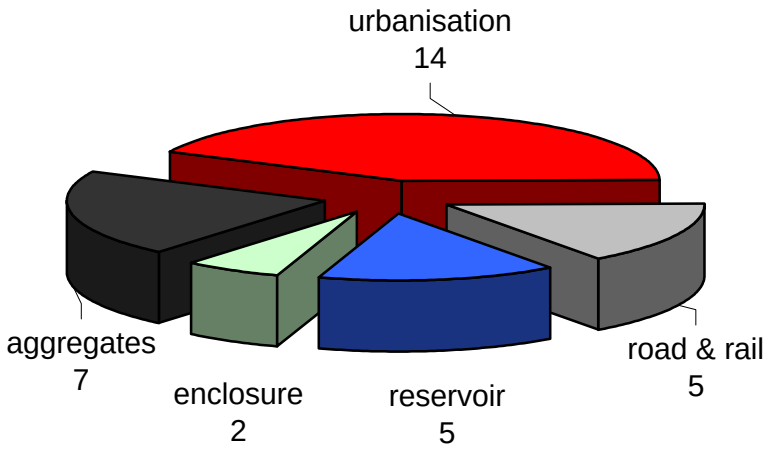
45. This is indicative of a more planned farm unit with a particular function that did not vary to any significant extent. Farms built after 1900, however, exhibit much less variation in morphology as 10 of the 25 farms display a dispersed morphology indicative of *ad hoc* additions and unplanned buildings suggesting more frequent changes to the function and size of the farm and estate in response to changing demands from the agricultural industry.

Figure 58: Morphology of farmstead by period



A total of 33 farms are no longer recorded on current maps, Figure 59 illustrates the subsequent landscape characterisation for farmsteads in the Colne Valley Park. The most common single cause of loss is shown to be urbanisation as farms became incorporated into towns and villages and eventually underwent redevelopment. The construction of reservoirs and the extraction of minerals accounted for a loss of 45% (15) of the 33 farmsteads with the major period of loss being during the 1920's growth period. The greatest area of loss occurred in the south and is a reflection of the major changes that took place in the first half of the twentieth century in this area.

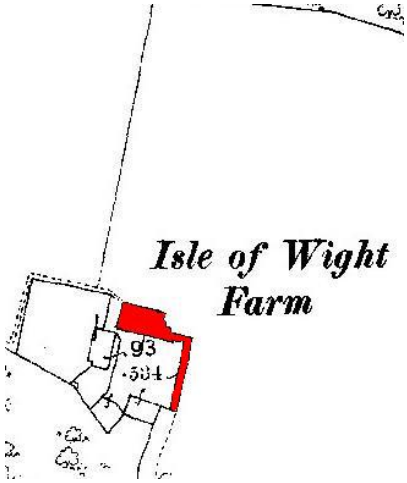
Figure 59: Causes for loss of farms in the Colne Valley Park



Examples of typical Colne Valley farms

A growing farm: Isle of Wight farm

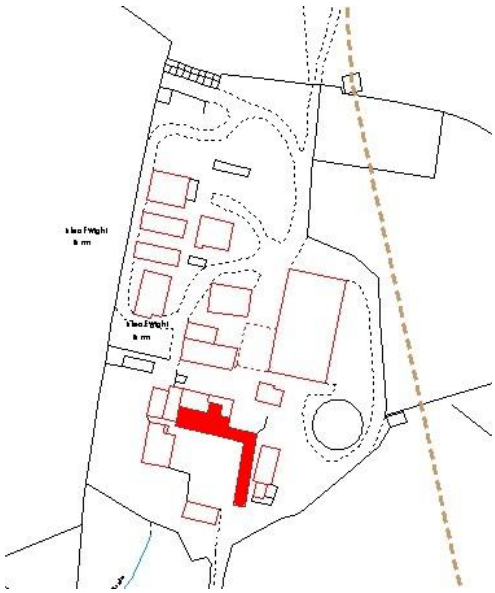
Figure 60: Isle of Wight farm, Denham parish



a)© OS 1st edition 1880

The Isle of Wight farm lies just north of Denham Marsh Wood in the parish of Chalfont St Giles in Buckinghamshire. It is an historic working farm dating back to the enclosure awards, morphologically, this farm exhibits an L plan courtyard layout. This farm has grown through the addition of a number of buildings as well as some silos. It is listed as an arable farm in business directories.

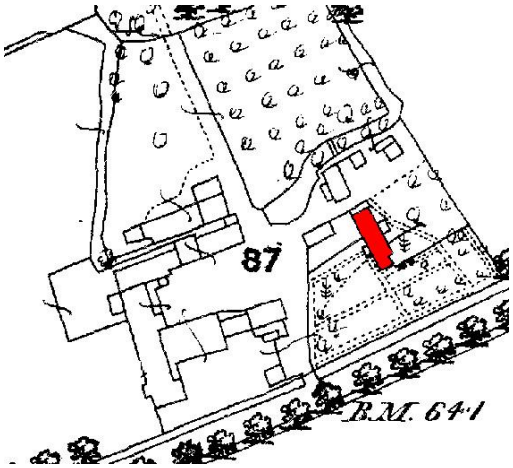
b) © OS Mastermap 2005



A shrunken farm: Mildridge farm.

Figure 61: Mildridge farm

a) © OS 1st edition 1880.

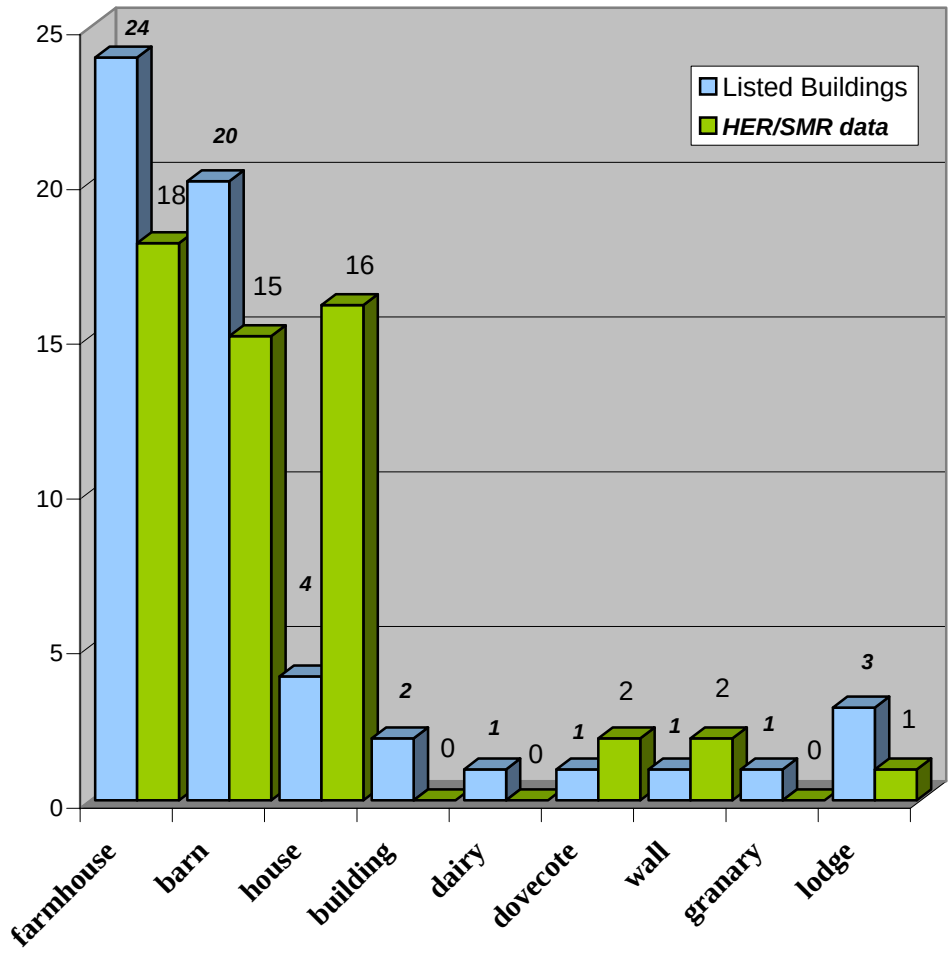


Mildridge farm is in the parish of Horton and lies near the Wraysbury reservoir. In is no longer a working farm having been converted into a residential property. Figure 61b shows the loss of all associated farm buildings along with the garden and orchards with only the main house and immediate land surviving, its current morphology is that of a linear farm.

b) © OS Mastermap 2005

A total of 57 listed buildings relating to farmsteads have been recorded within the Colne Valley Park, Figure 62 illustrates the general descriptions of listings. These 57 listings, however, only apply to 38 of the 89 pre-1950's farmsteads with separate listings for farmhouses and farm buildings. The vast majority of these listings are at grade II, with only Savay farmhouse near Denham listed as grade I and King John's Hunting lodge at Place farm in Wraysbury listed as grade II*. The majority of listings fall under the category of either farmhouse or barn with a significantly lesser number of historic houses and lodges recorded at farmstead sites.

Figure 62: Historic farms with listed building and HER/SMR records within the Colne Valley Park



In contrast, HER/SMR data for the same locations show some significant variations. Medieval and post-medieval farmhouses and barns are under-represented in the HER/SMR records in comparison to the listed buildings data whereas the former should in fact be much more numerous as a record of the full resource. This illustrates an area for enhancement if full HER coverage of built heritage is to be attained. Ancillary agricultural buildings are very poorly represented in both listing and HER data but it is not known without further survey if this reflects poor survival or, more likely, a lack of study.

Future Research

This dataset has a number of practical applications relevant to both the Partnership and to the local community; as a basis for further historical research on the farms and agricultural land within the Park through educational and community programmes to studies of lost farms, the level of preservation of surviving farms and their farm buildings. The data could also be used to examine the place of the farm within the landscape, focusing on the relationship between an historic farm and its surrounding landscape. For this, farms could be studied either on an individual basis or by parish to see how the farm unit and the landscape have changed over the past 200 years, focusing on outside influences such as the pressures of the twentieth century have altered their importance to the landscape and the community. Such studies may also be able to determine current landholdings attributed to each farm, one aspect of this dataset that could not be fully realised.

This database also has applications as an educational tool focusing on the local community; such projects could impact on a number of related subjects beyond history, such as maths and art. The following website details a short course designed by Middle Tennessee State University examining the importance of historic farms, their buildings and their place in the landscape:

http://www.mtsu.edu/~then/HistFarms/index.html. This is one example of how a historic farms database can be used and even improved through school projects, the addition of oral histories could enhance this study beyond a purely computer based database and a photographic and artistic archive of the historic farms could also be an important addition. Such studies carried out over several years could provide an ongoing record of changes to farmsteads within the Park and perhaps highlight areas where conservation might be a priority.

Further uses of this dataset might include pattern analysis of farmstead survival in relation to the landscape around them, whether, for example, isolation from farmland has resulted in changing of the farmstead status from working to other forms of use or whether the farmstead continues to function in isolation from the bulk of their farmland.

5. Boundary mapping

Aims of Study

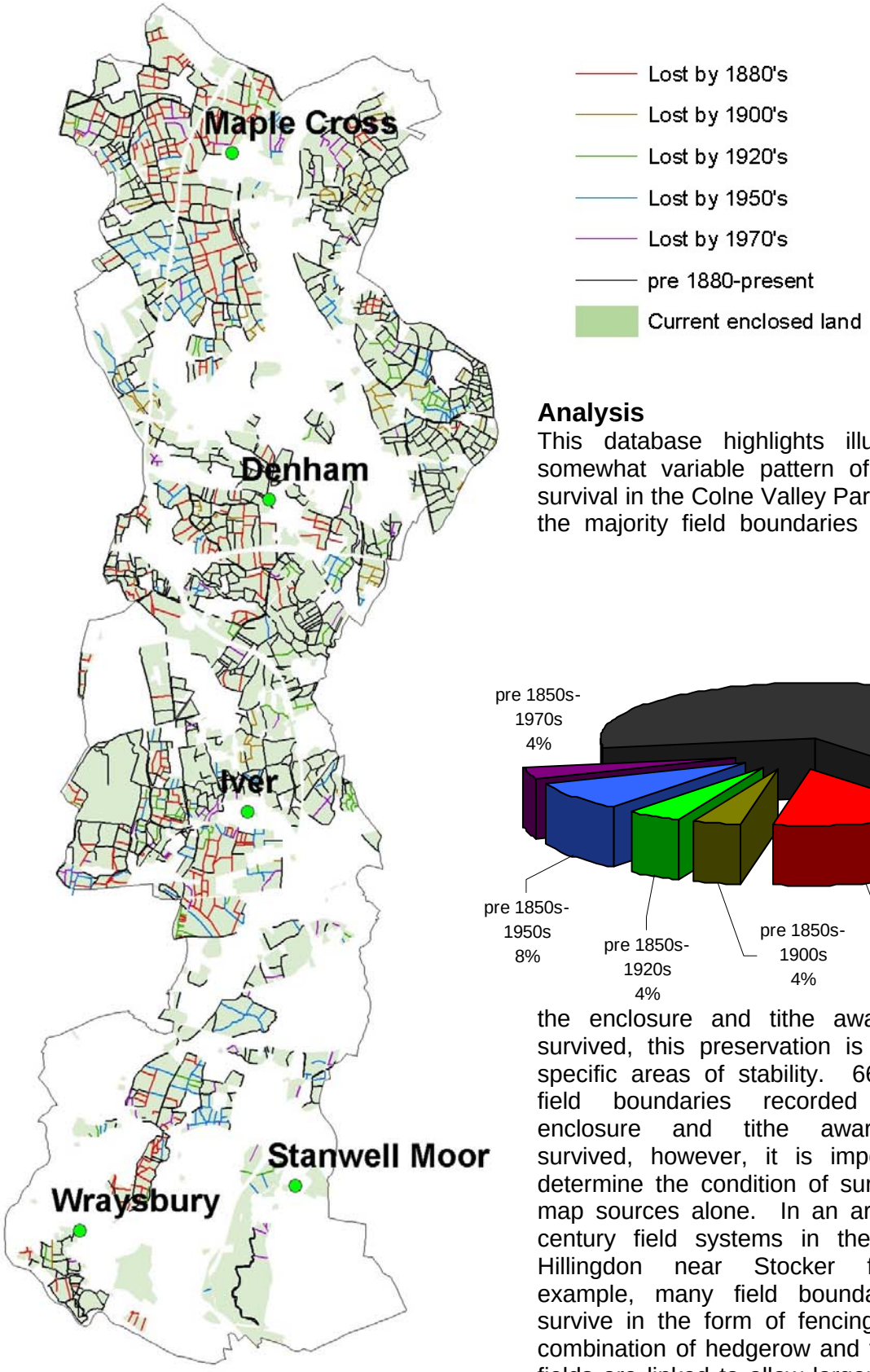
Another feature of this project was to carry out an analysis of field boundaries within the Colne Valley Park in order to identify areas of significant change and survival in the landscape. With the introduction of the Hedgerows Regulations in 1997 better provision has been made for the protection and conservation of important hedgerows, in consequence this, and future surveys, could provide an essential database to aide future planning decisions affecting boundary change. This database will be used as a basis for more detailed hedgerow surveys to be carried out on a parish level, this in turn can lead on to other projects including habitat and biodiversity surveys as well as conservation projects targeting areas under threat of total destruction.

Methodology

Initial research for this phase was carried out alongside the study of farmsteads and estates through the examination of field boundaries from the early 19th century. As this layer is based on line rather than area data an entirely new attribute table was created. This dataset focuses on historic boundaries present on the enclosure maps rather than modern additional boundary lines. Unlike the previous two layers created for the general HLC model and the farmsteads layer, this dataset required a more simplified attribute table. Appendix 4: Table 8 shows the attribute table for this layer. This layer includes information on the type - whether a current boundary line is made up of predominately hedgerows, tree lined or fenced, and the morphology of the boundary line. These fields are based on observation from aerial photographs.

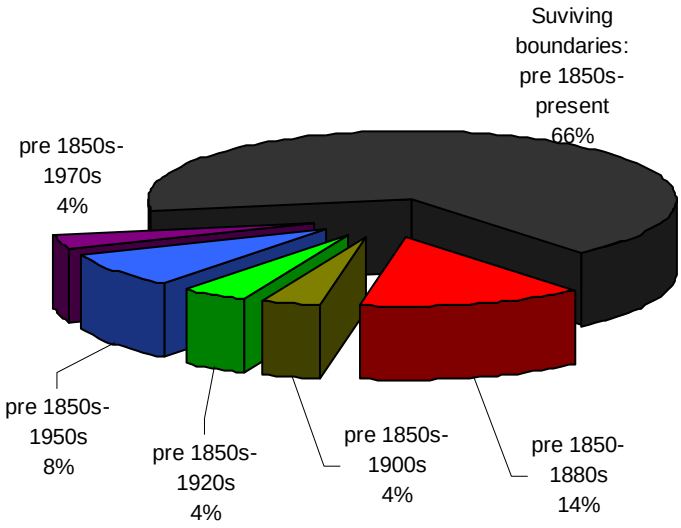
The source list for this layer was simplified so that individual OS map series were grouped together into several time slices in order to reduce the quantity of data; each field then indicates the presence of an individual field boundary during each time period. Two fields were used to examine the survival of individual boundaries. Firstly the end period of a given boundary line was recorded in much the same way as period data in the two previous layers using roman numerals to mark the period in which the boundary line disappeared. Secondly the boundary line was given a rating based on its survival from the enclosure maps up to the present day; Figure 63 shows the extent of boundary survival within the Park. Modern boundaries were recorded only when they separated field systems from different landscape characterisations such as settlement or motorways and have not been included in this image (see appendix 3: Figure 2 for full image).

Figure 63: Boundary survival and loss in the Colne Valley Park



Analysis

This database highlights illustrates a somewhat variable pattern of loss and survival in the Colne Valley Park as whilst the majority field boundaries shown on



the enclosure and tithe awards have survived, this preservation is limited to specific areas of stability. 66% of the field boundaries recorded on the enclosure and tithe awards have survived, however, it is impossible to determine the condition of survival from map sources alone. In an area of 19th century field systems in the north of Hillingdon near Stocker farm, for example, many field boundaries only survive in the form of fencing, or as a combination of hedgerow and fencing as fields are linked to allow larger areas for

grazing (Figure 64). It is also common for field boundaries to be a combination of types, such as on the Ankerwycke Estate in Wraysbury where the fields are enclosed by fences, hedges and tree line boundaries.

Figure 64: Fencing used to infill hedgerows, nr Fieldways farm, Harefield

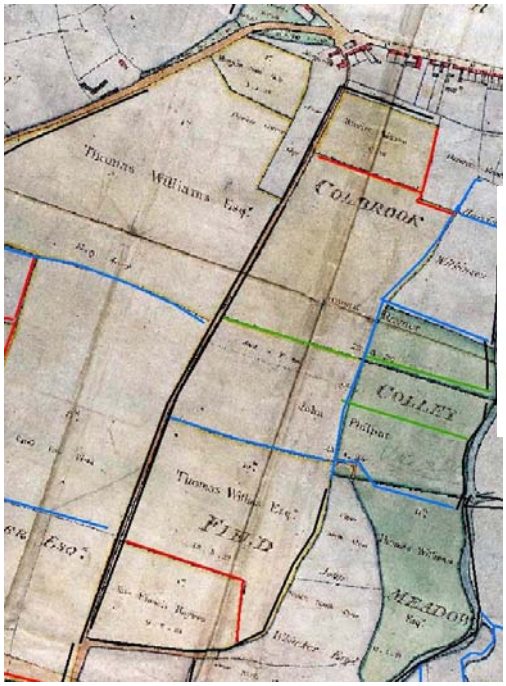
Figure 65: Ankerwycke Estate, combination boundary of older trees and more recent fencing

Berkin Manor estate boundaries: An altered landscape.

This small landscape lies just north of Berkin Manor and forms part of the Raynor family estate. Historically this landscape was used as pasture land but in recent years this has changed to arable. The focus area is bordered to the east by the Colne Brook and to the west by Wraysbury reservoir. It is currently characterised as modern prairie land.

Figure 66: Berkin Manor boundaries

a) Berkin Manor, Enclosure Map (1799)© BRO



b) Berkin Manor, present landscape

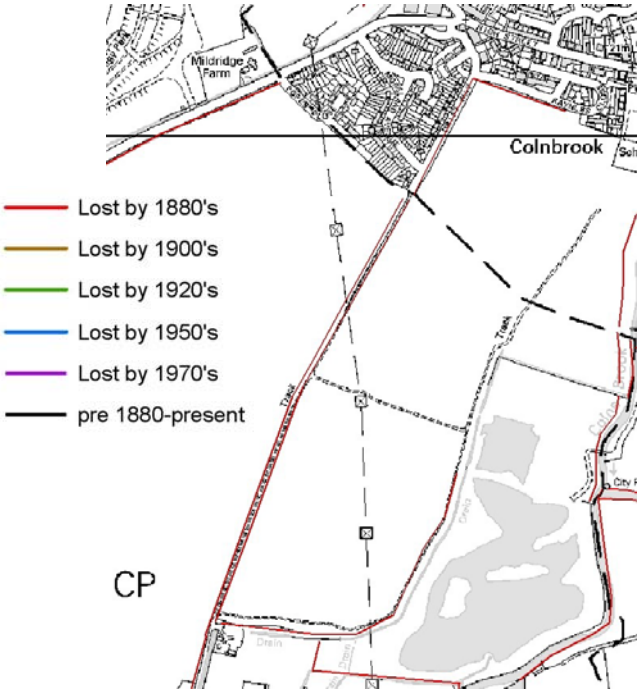
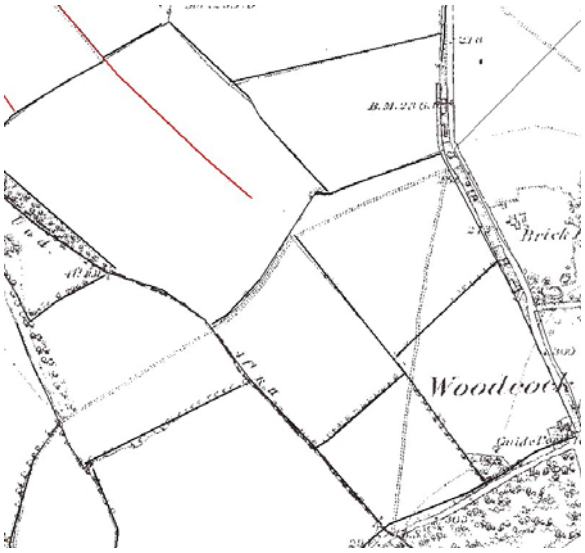


Figure 66 shows that the boundary loss in this area has been occurring gradually since the 1850s as the land use shifted away from the parliamentary enclosed field systems to arable prairie. The biggest period of loss occurred during the 1950s and it is at this point the landscape changed to arable land.

Stockers Farm Boundaries: A surviving landscape.

Figure 67: Stockers farm boundaries

a) Stockers farm, OS 1st edition 1880



b) Stockers farm, Present landscape.

This area of land lies just south of Batchworth in Rickmansworth in a largely open area; land use is predominately pasture and the field systems date to the 19th century. This area of land is essentially unchanged since the 19th century with almost no boundary loss.

Future Research

The data gathered from the boundary mapping stage has many applications outside of the historic environment. Community based and educational projects are an important part of the mission statement for the Colne Valley Partnership and this resource will be used to carry out community based surveys, this could include a map based survey as shown in the following website;

http://www.dswa.org.uk/Publications/Leaflets/field%20boundaries.htm

More active involvement at a practical level through biodiversity surveys is another option. The following website gives an example of a simple form that could be used for a community based survey;

http://www.leics.gov.uk/hedgerowform.pdf.

This resource will be used by the Colne Valley Partnership as a basis for more detailed studies of field boundaries on a parish level. Current proposals for this include biodiversity surveys of surviving hedgerows and their continued maintenance and to provide an assessment of the quality of hedgerow in an effort to identify areas in need of higher protection and conservation. It is envisaged that this survey will attempt to involve the local community both in the initial data gathering phase and in future monitoring and maintenance of hedgerows. The following website is an example of a volunteer conservation group that works to improve the condition of their local boundaries, they offer short courses in hedgerow maintenance and restoration as well as talks, practical outings for conservation of their local boundaries and opportunities for social occasions.

http://www.hants.org.co.uk/hev/index.html

The database can also be use to target areas of particular significance due to their preservation as well as areas under threat from farming processes, urbanisation or industrialisation. This information can then be used to drive conservation programmes within the Park focusing on how local communities could help with conservation practices. Seminars on hedgerow conservation and practical days are also an option.

This database also identifies a small number of areas where hedgerow reinstatement has been implemented following gravel extraction and could also serve to identify other areas and serve as a record of boundary information so that possible reinstatement could occur.

6. Route ways and watercourses

Aims of Study

The primary aim behind this stage of the project was to produce a dataset concentrating on the main historic lines of communication in the Colne Valley. This is separated into two broad categories - that of over land route ways such as historic roads and railways as well as watercourses both natural and artificial. This resource could then be used to assess changes to the network of routes across the Colne Valley.

Methodology

A primary basis for this part of the project was the methodology under development for the Chiltern HLC project using a simplified mapping form in order to focus on the main historical route ways. The only exceptions to this were modern route ways such as motorways and bypasses; these were included as they had a major impact on the structure of the Colne Valley. The same attribute table will be used for both route ways and waterways in order to minimise data. Preliminary mapping from the enclosure and tithe awards were carried out alongside the earlier phases (see Appendix 5: Table 9 for attribute table).

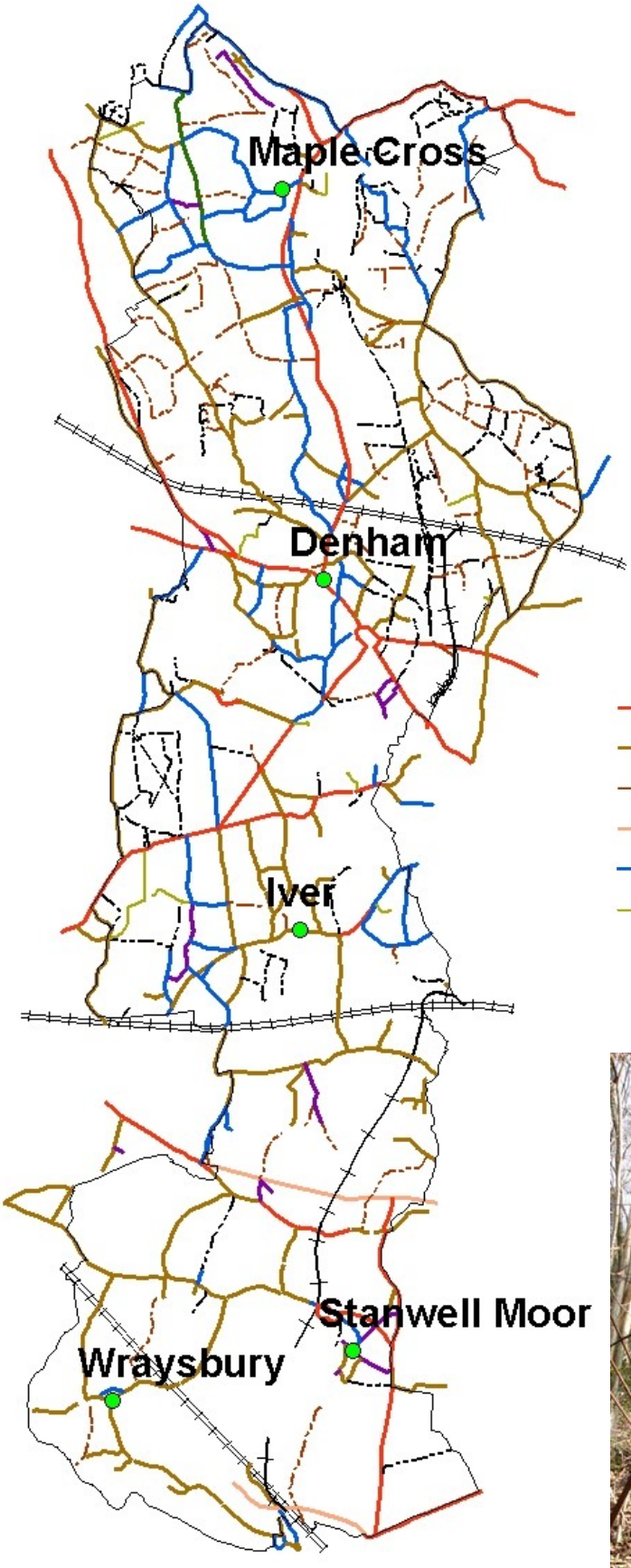
Mapping of road sections was based primarily on their characteristics; for example, motorways cover larger sections as their layout is fairly uniform and they date to the modern period. The possible Roman roads were also mapped in larger sections because again they are fairly uniform. Medieval and ancient roads, however, were broken down into smaller sections, as they tend to follow more convoluted paths. At least two major ancient paths are known to cross the Colne Valley Park into London following the paths of the modern A4020 to Buckingham and the A4 to Maidenhead (cf. Gough's map c1360; Ogilby's strip maps c.1675).

This project also included an in depth study of the watercourses within the Park. This involved mapping artificial watercourses such as leats, ditches and the canals as well as natural river channels. Secondary to this; watercourses that are no longer in existence were recorded (Figure 80). These lost watercourses primarily consisted of leats and ditches constructed in conjunction with watercress farming, the majority of which have been removed as a direct result of mineral extraction in the north of the Colne Valley Park. This database also records changes made to the natural river course through straightening of sections as well as modern deviations due primarily to the construction of the motorways. Finally, a number of artificial river channels were recorded in the London Borough of Hillingdon, the majority of which date to the 17th century and earlier.

An additional dataset was created as a support containing a rapid survey of weirs, sluices, locks and mills along with footbridges, fords and historic bridges. This layer uses evidence from the 1880 OS 1st edition as well as the OS mastermap series and records the type of site and its survival to the present day. Most of the mill sites also remain, albeit converted to other purposes such as youth centres or housing. It is the footbridges and fords that show the most loss since the 1880s as fords increasingly fell out of use as they became impractical for motor vehicles whilst the loss of footbridges can be strongly linked with the loss of watercress beds and in turn the leats that fed them.

6.2. Route ways

Figure 68: The present day route ways



Route ways in the Colne Valley have remained remarkably intact in comparison to the level of growth and urbanisation. The essential historic framework of roads and paths continue as a backbone to the modern transport network with the vast majority of old medieval and pre-map source roads are now used as modern B-roads. Some introductions have been made including the Colnbrook bypass, several historic railways and the motorways that dissect the Valley, while most of the modern A-roads also have historic roots as roman roads and toll roads. The greatest level of loss is recorded with the footpaths and trackways as a high number of these disappeared throughout the century.

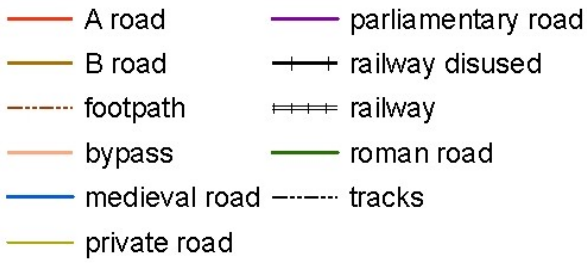
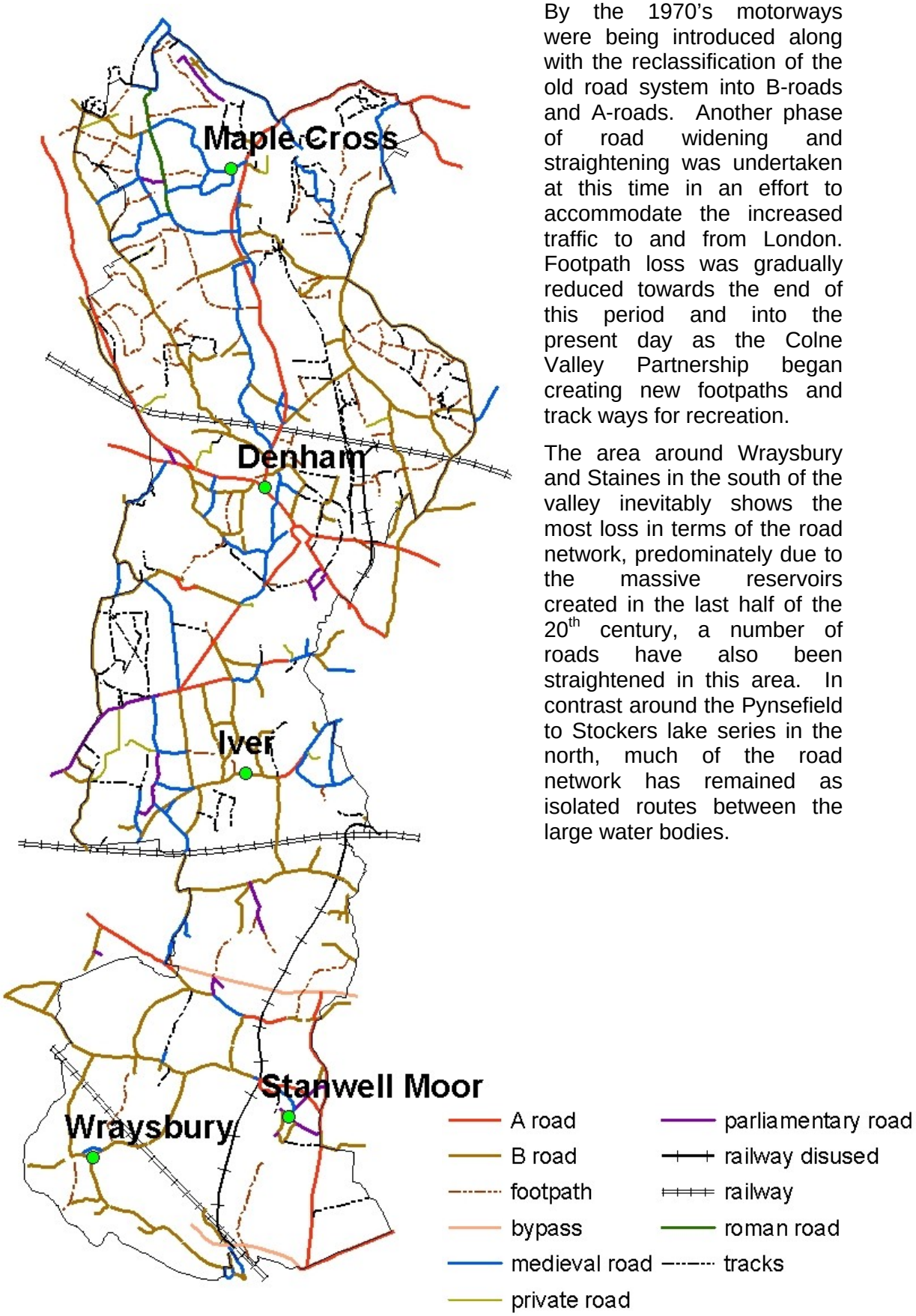


Figure 69: Footpath dating to mid 1950's through Old Park Wood, Harefield

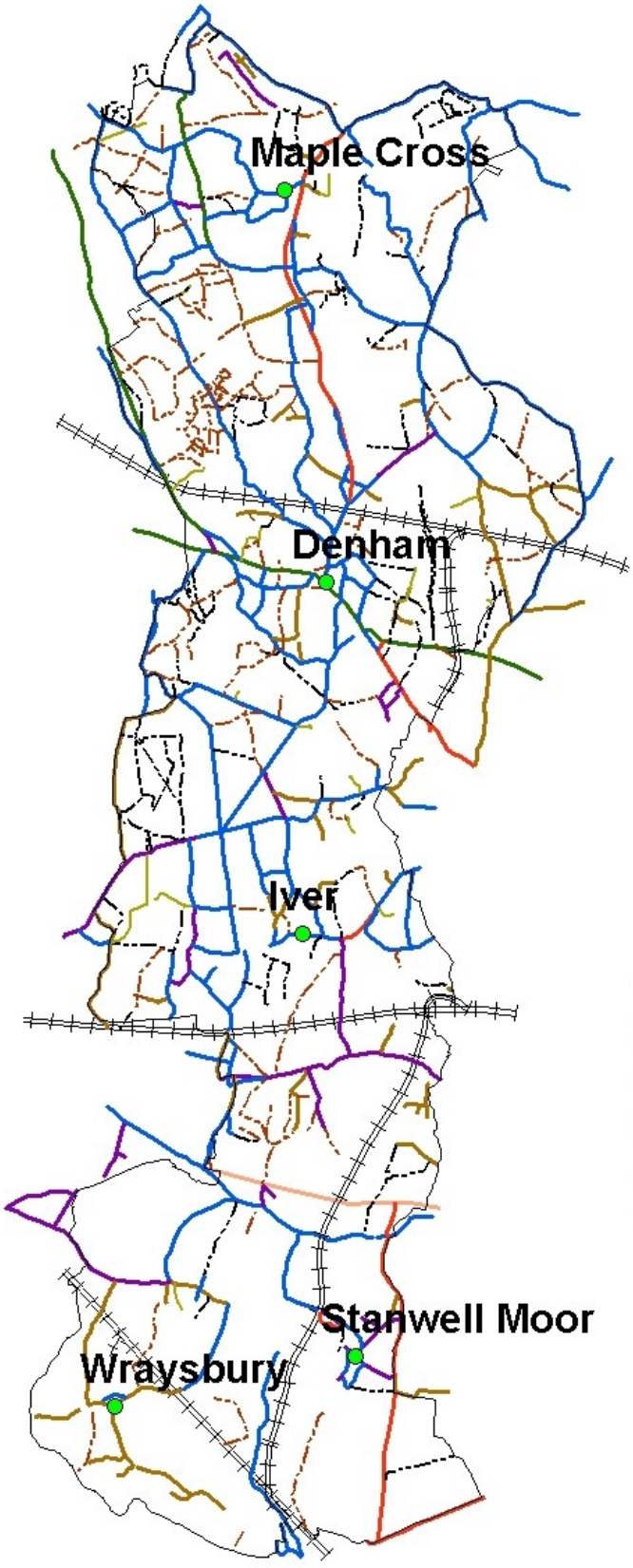
Figure 70: Routes network NG 10k edition (1972-1990)



By the 1970's motorways were being introduced along with the reclassification of the old road system into B-roads and A-roads. Another phase of road widening and straightening was undertaken at this time in an effort to accommodate the increased traffic to and from London. Footpath loss was gradually reduced towards the end of this period and into the present day as the Colne Valley Partnership began creating new footpaths and track ways for recreation.

The area around Wraysbury and Staines in the south of the valley inevitably shows the most loss in terms of the road network, predominately due to the massive reservoirs created in the last half of the 20th century, a number of roads have also been straightened in this area. In contrast around the Pynsefield to Stockers lake series in the north, much of the road network has remained as isolated routes between the large water bodies.

Figure 71: Routes network. NG 6" provisional edition (1955-1962)

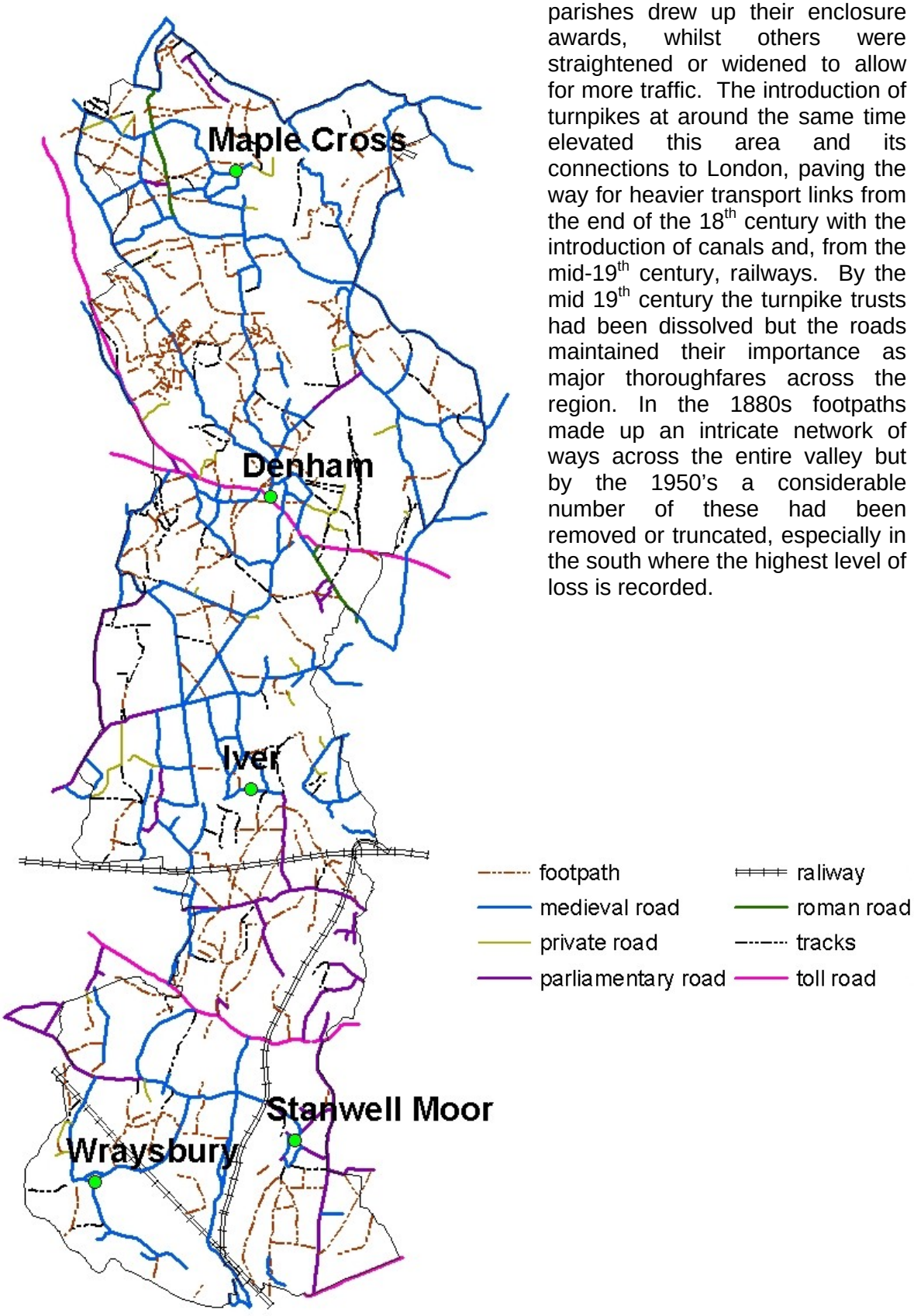


Although the fabric of the road network had been maintained, their condition and appearance differs greatly from their origins. The rise of the motorised vehicles along with metalled roads necessitated a great many changes to these old routeways including re-surfacing, widening, straightening and significant alterations to their course. As a result of this the footpaths that once served to link settlements and between wells, rivers, businesses and extractive sites no longer served a functional purpose and either fell out of use, or became recreational in function.

Railways were introduced by the mid to late 19th century and further increased the urbanisation of the area. Links between the major railway lines, settlements and other sites were provided by short sections of railways. Several sections of temporary tramways were also constructed between various extraction sites and the railways and canal ways

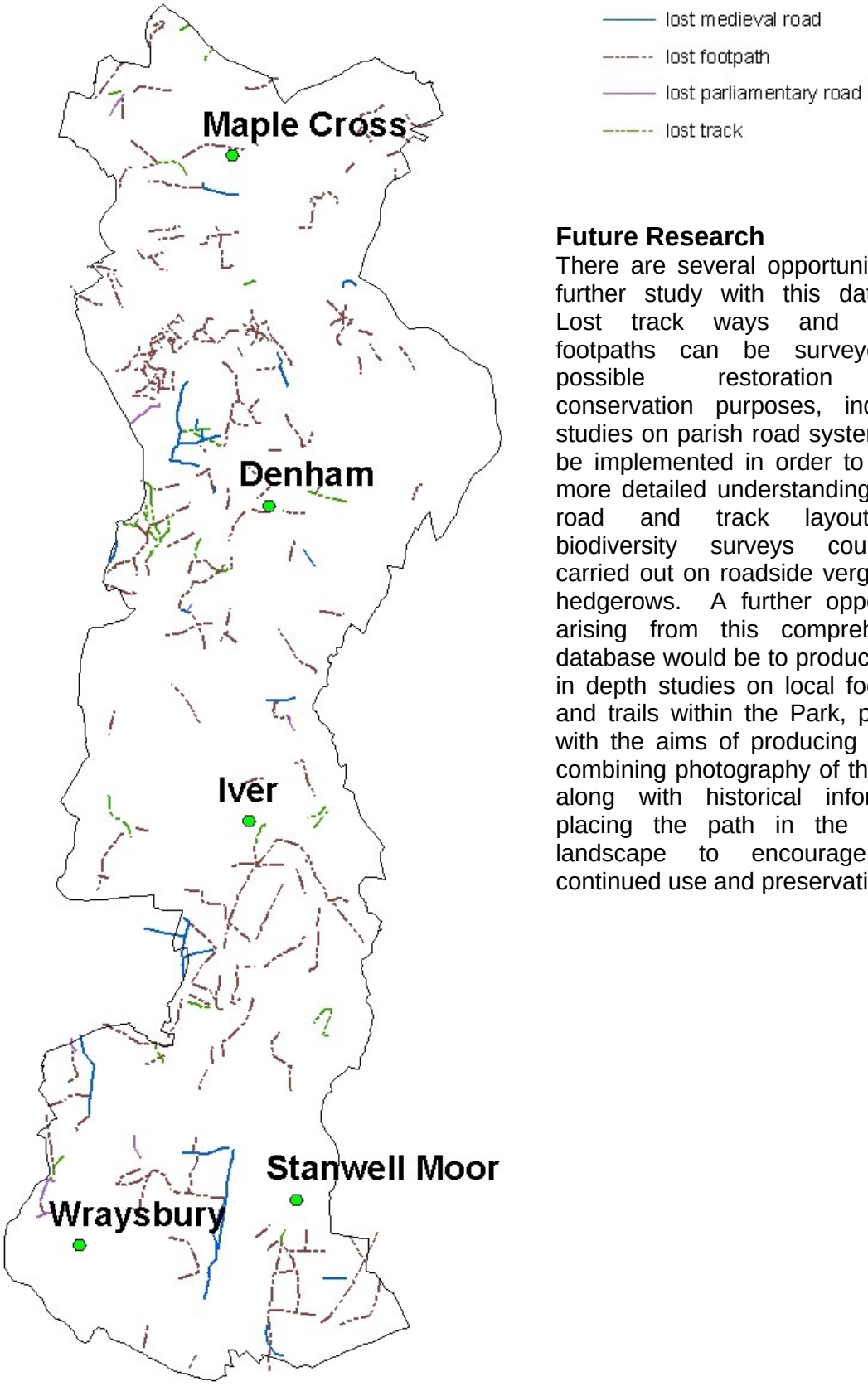
- A road
- B road
- footpath
- bypass
- medieval road
- private road
- parliamentary road
- railway disused
- railway
- tramway
- roman road
- tracks

Figure 72: Routes network. OS 6" 1st edition. (1876-1886)



Some roads were introduced as parishes drew up their enclosure awards, whilst others were straightened or widened to allow for more traffic. The introduction of turnpikes at around the same time elevated this area and its connections to London, paving the way for heavier transport links from the end of the 18th century with the introduction of canals and, from the mid-19th century, railways. By the mid 19th century the turnpike trusts had been dissolved but the roads maintained their importance as major thoroughfares across the region. In the 1880s footpaths made up an intricate network of ways across the entire valley but by the 1950's a considerable number of these had been removed or truncated, especially in the south where the highest level of loss is recorded.

Figure 73: Lost historic routes in the Colne Valley Park

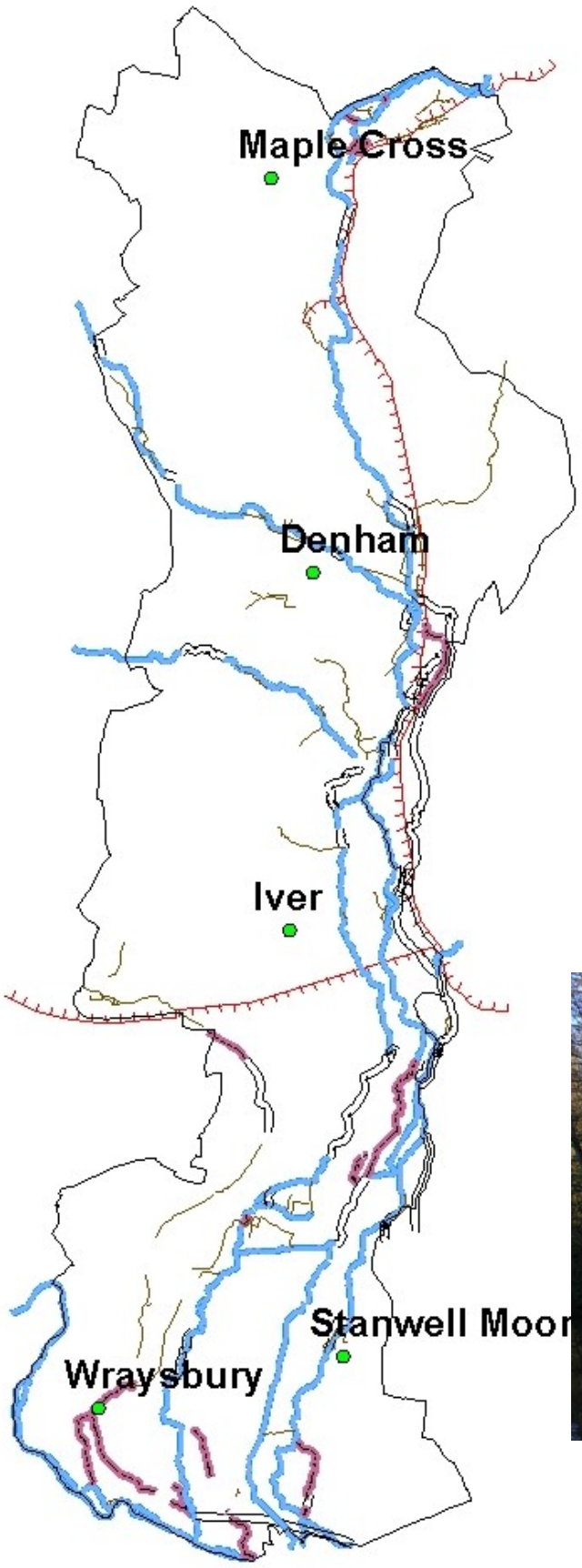


Future Research

There are several opportunities for further study with this database. Lost track ways and historic footpaths can be surveyed for possible restoration and conservation purposes, individual studies on parish road systems can be implemented in order to gain a more detailed understanding of the road and track layout and biodiversity surveys could be carried out on roadside verges and hedgerows. A further opportunity arising from this comprehensive database would be to produce more in depth studies on local footpaths and trails within the Park, perhaps with the aims of producing leaflets combining photography of the route along with historical information placing the path in the historic landscape to encourage their continued use and preservation.

6.2. Colne Valley River System

Figure 74: The present day water network

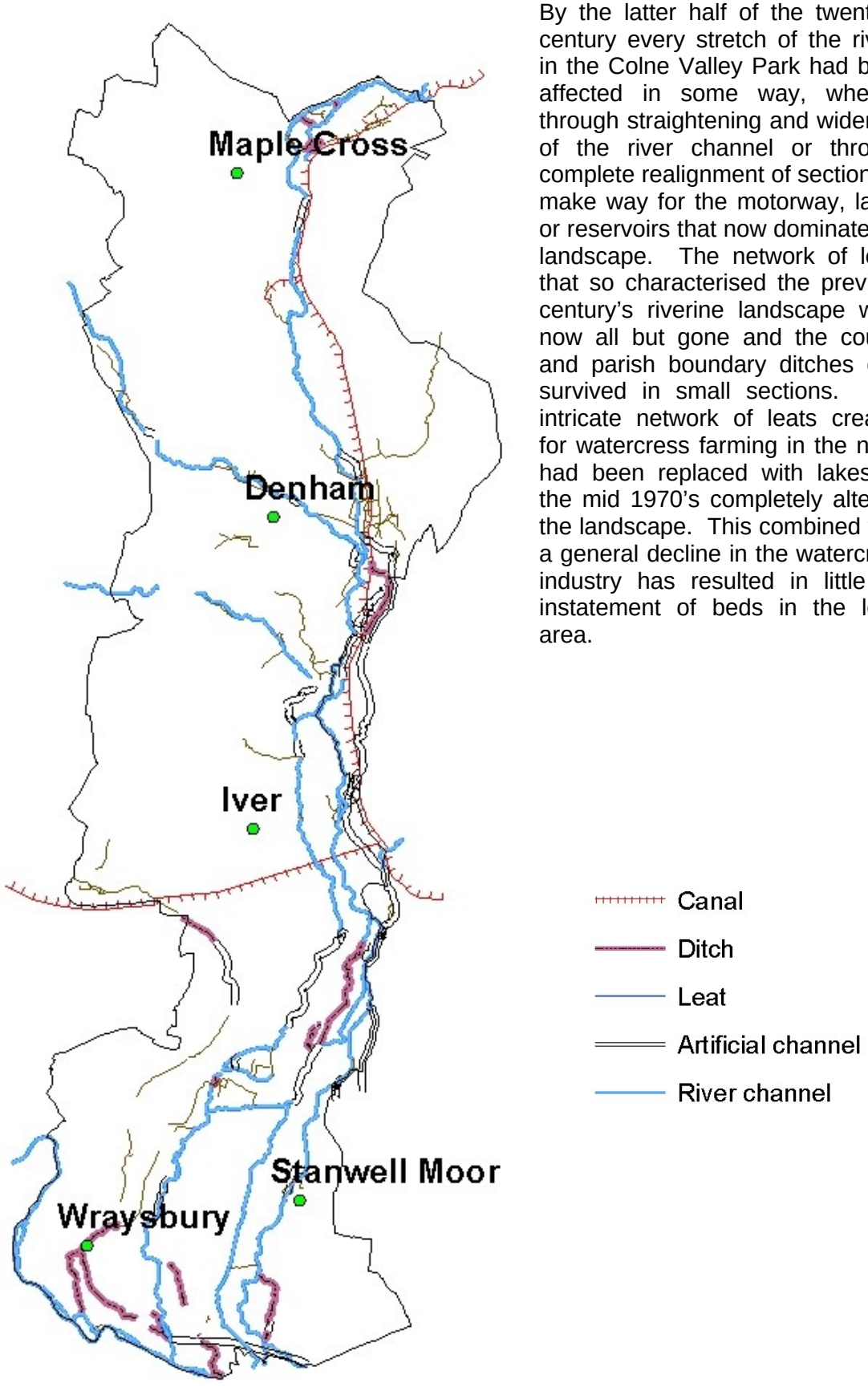


The Colne Valley river system shown in Figure 74 exhibits an intricate pattern of natural and constructed watercourses. Natural river channels for the purposes of this document are defined as stretches of the river course that have not been artificially constructed from the medieval period onwards. The courses of the waterways that run through the Colne Valley Park have been heavily altered over many centuries as new river stretches have been cut, channels straightened and widened and ditches and leats added to channel water for watercress farming and millworks. The present day network, shown in Figure 74, highlights the extent to which the river network has been altered through the addition of wholly artificial sections along the course of the river channel, surviving sections of medieval boundary ditches, modern canal ways as well as surviving sections of leats.

Canal
Ditch
Leat
Artificial channel
River channel

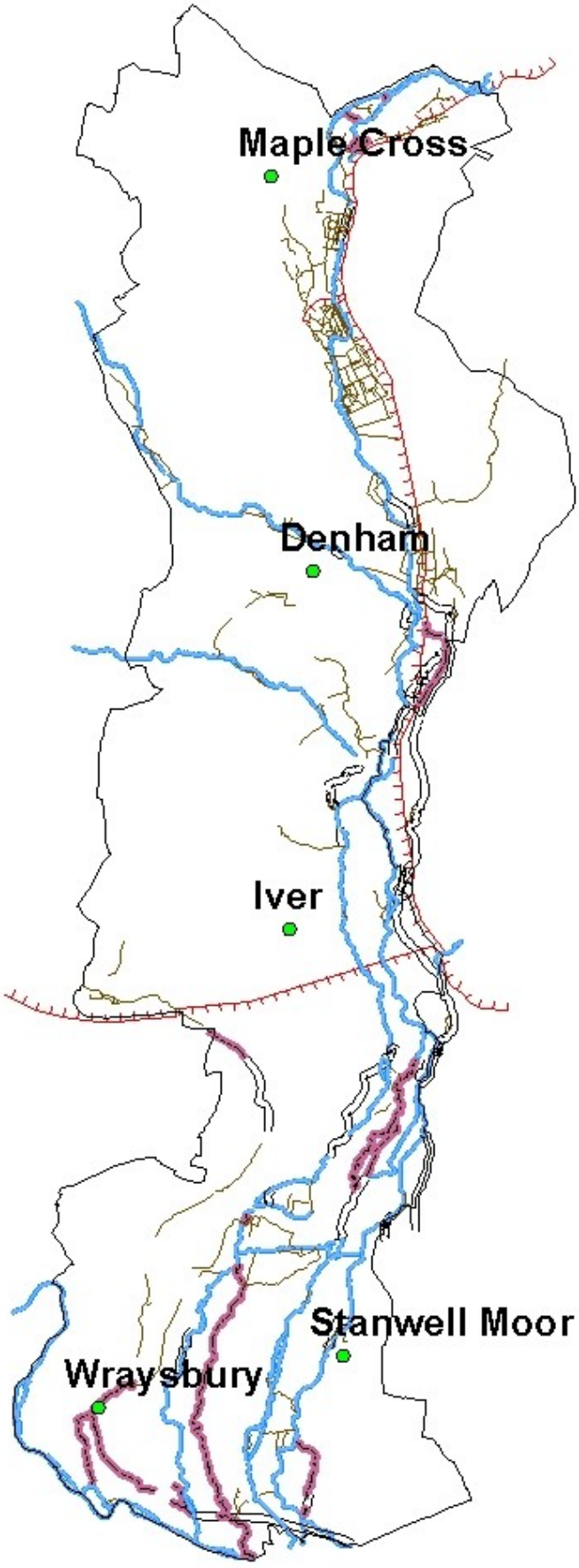
Figure 75: River Colne, nr Denham Park Visitor Centre

Figure 76: Water system. NG 10k edition (1972-1990)



By the latter half of the twentieth century every stretch of the rivers in the Colne Valley Park had been affected in some way, whether through straightening and widening of the river channel or through complete realignment of sections to make way for the motorway, lakes or reservoirs that now dominate the landscape. The network of leats that so characterised the previous century's riverine landscape were now all but gone and the county and parish boundary ditches only survived in small sections. The intricate network of leats created for watercress farming in the north had been replaced with lakes by the mid 1970's completely altering the landscape. This combined with a general decline in the watercress industry has resulted in little re-instatement of beds in the local area.

Figure 77: Water system. NG 6" provisional edition (1955-1962)



By the 1950's the pattern of water ways had already been greatly reduced as a great many of the previous centuries leats and ditches were no longer in use, in the Rickmansworth area, the mining and later construction of lakes in the Stockers farm area meant the loss of large areas of watercress beds. Around Wraysbury, also, there was extensive loss to ditches and leats as the large reservoirs were constructed. Figure 78 shows a highly intricate web of leats leading off from the river Colne, it is located under what is now the Pynesfield lakes. This area of the Colne Valley Park was intensively utilised for watercress farming until the early twentieth century.

Canal
Ditch
Leat
Artificial channel
River channel

Figure 78: Watercress beds, west of Mount Pleasant, Hillingdon. (OS 1st edition 1880)

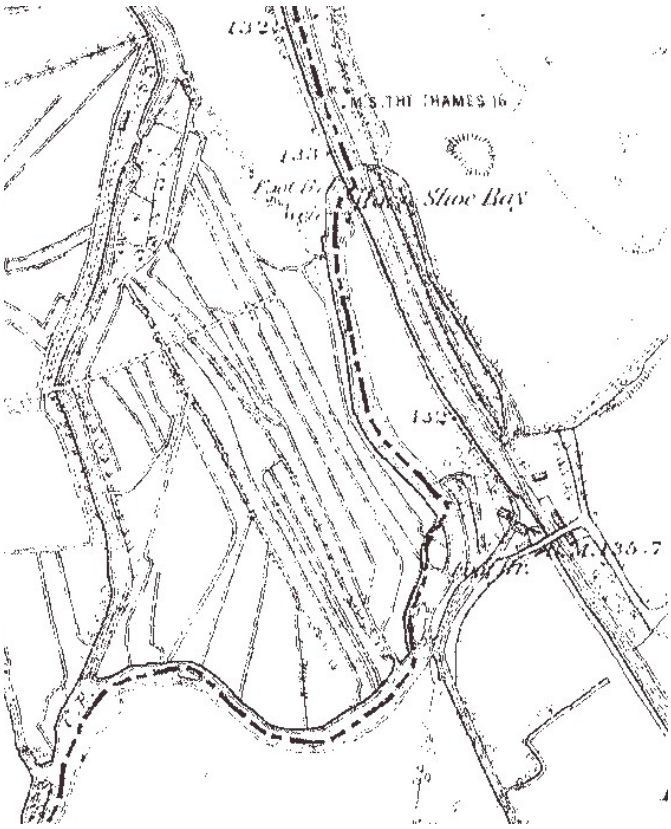
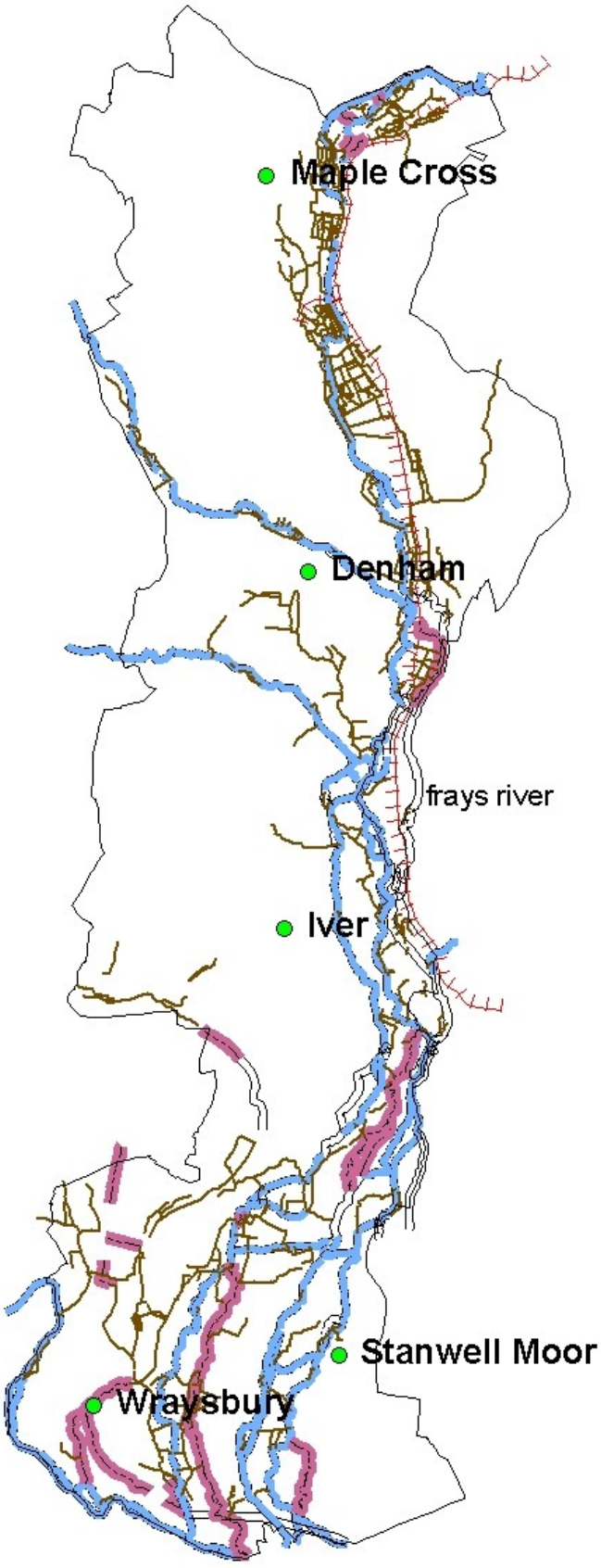


Figure 79: Water system. OS 6" 1st edition. (1876-1886)

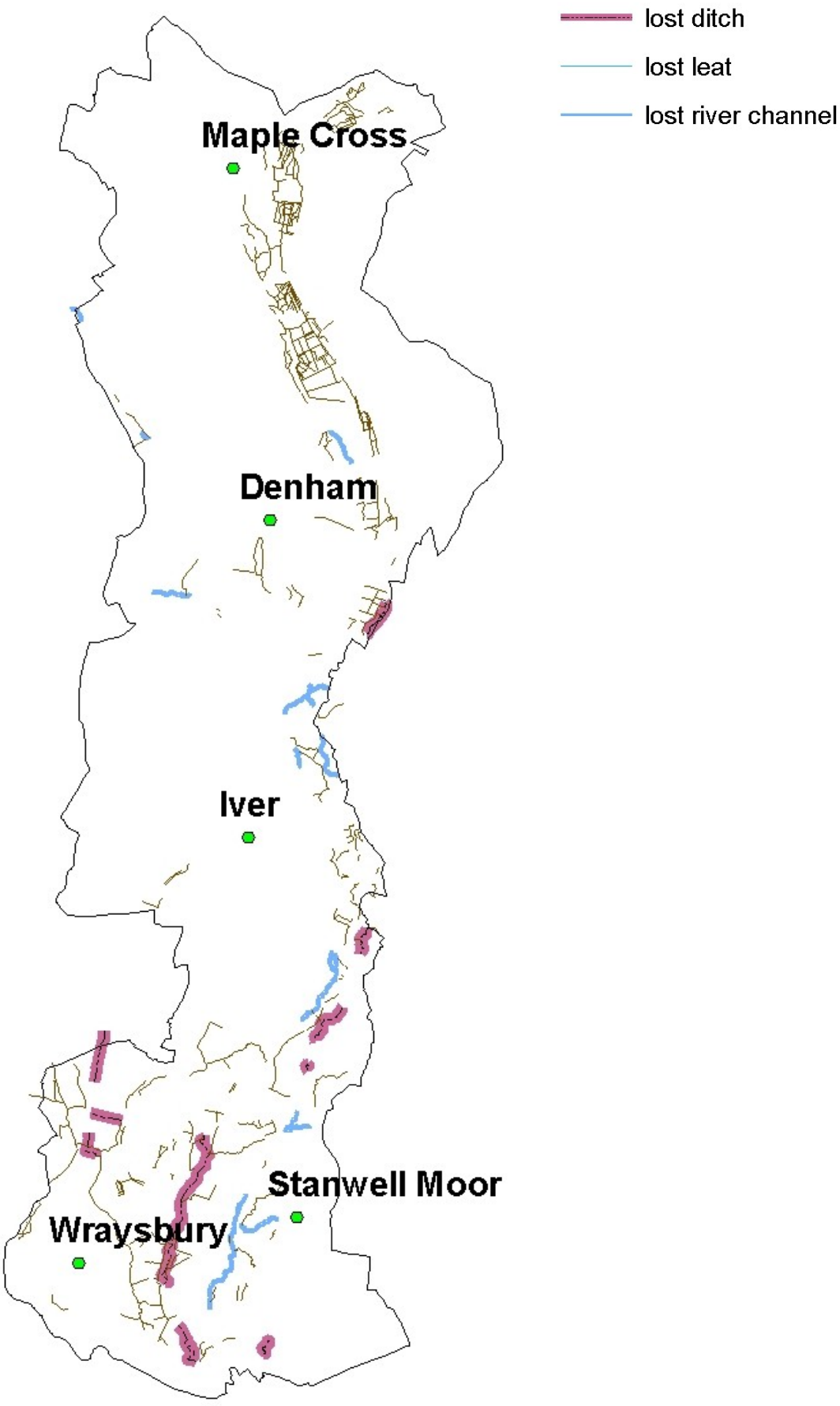


The most extensive addition to the historic river system was the cutting of Fray's river in the 15th century, although details of this remain scarce it is thought to have been cut by John Fray, the Baron Lord Chancellor to the Exchequer in order to power mills in the Uxbridge area. Further artificial branches to the Colne River include the Duke of Northumberland's river, cut in the 16th century and the Queens or Cardinals river dating to the 17th century (Baker et al: 1962). The early medieval county ditches only survive in small sections due to later construction of motorways, reservoirs and to some extent the extractive industry. Included in county ditches are fragments of Shire ditch, Bonehead ditch and the Bigley ditch. Trade along the Grand Junction canal was flourishing by the early 1800's with flour and coal as the main resources transported on the new canal. The late construction of the Slough branch of the Grand Union Canal in 1882 constituted one of the last canal ways in England with the aim of promoting the brick industry in the area and in particular the sites at Langley.

The myriad of leats built to divert water from the rivers through adjacent field systems in order to feed watercress beds indicate the importance of this industry to the inhabitants of the Colne Valley Park. The construction and management of the river system in the Park would have had a major impact on the landscape especially in the 19th century, Figure 79 shows the river system in the 1880's as a highly intricate, extensive system of rivers leats and ditches that would have been highly visible. The importance of the river would have been paramount to the local communities as a source of work as well as for survival.

- Canal
- Ditch
- Leat
- Artificial channel
- River channel

Figure 80: Lost water courses in the Colne Valley Park



6.2.i. Structures on the Water ways

Figure 81: Structures on the river network OS 1st edition 1880.

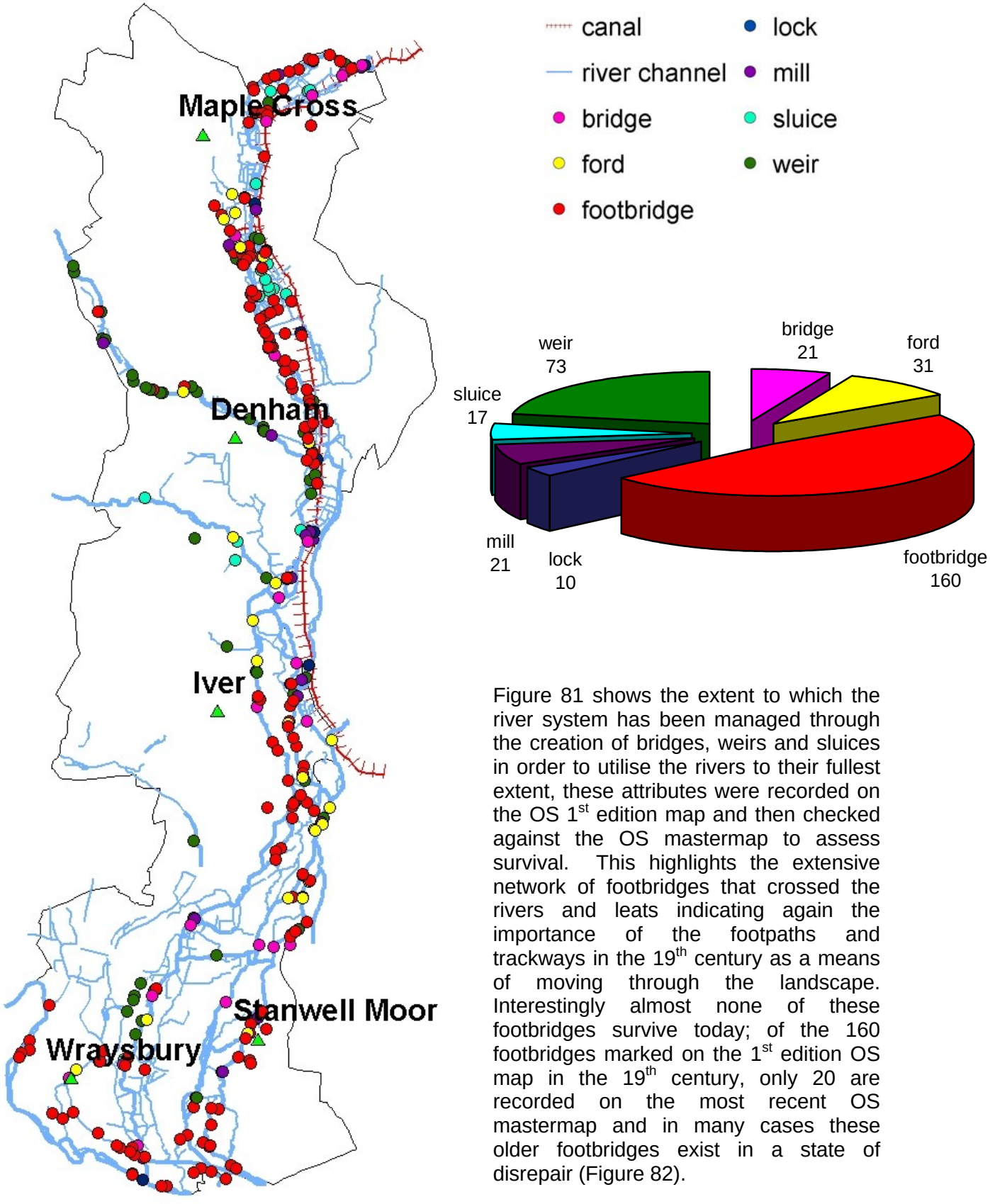


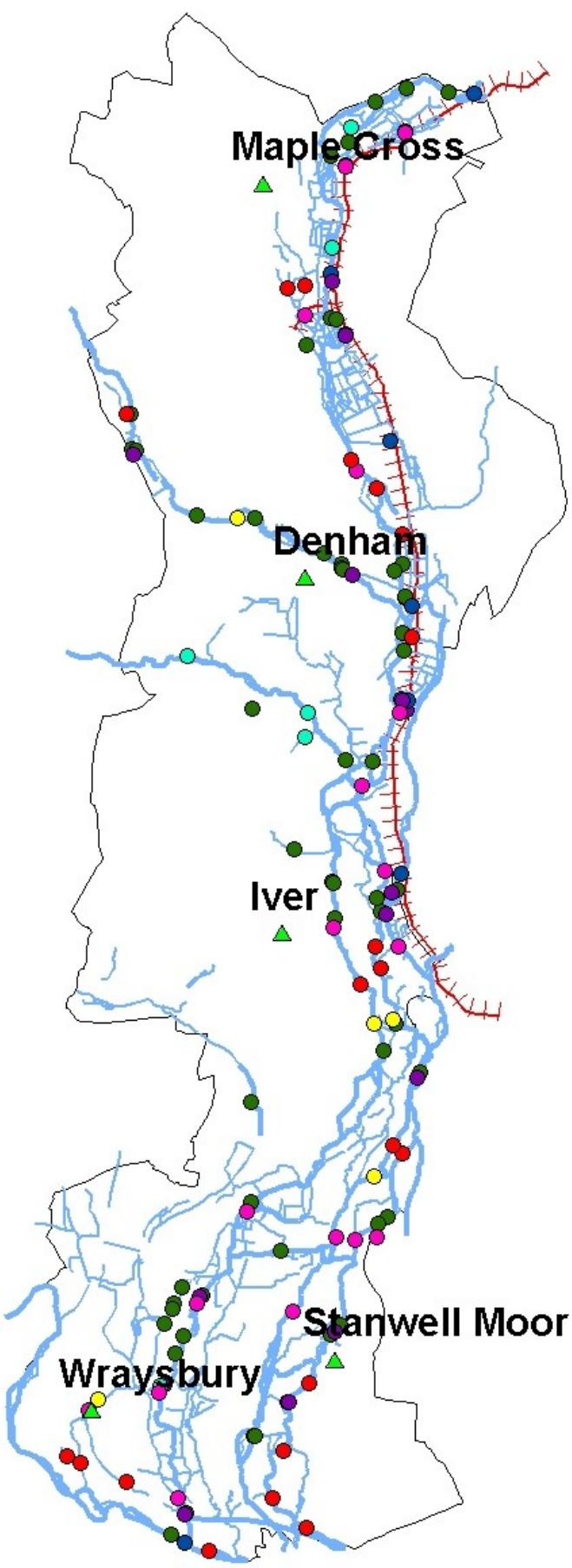
Figure 81 shows the extent to which the river system has been managed through the creation of bridges, weirs and sluices in order to utilise the rivers to their fullest extent, these attributes were recorded on the OS 1st edition map and then checked against the OS mastermap to assess survival. This highlights the extensive network of footbridges that crossed the rivers and leats indicating again the importance of the footpaths and trackways in the 19th century as a means of moving through the landscape. Interestingly almost none of these footbridges survive today; of the 160 footbridges marked on the 1st edition OS map in the 19th century, only 20 are recorded on the most recent OS mastermap and in many cases these older footbridges exist in a state of disrepair (Figure 82).

Figure 82: Disused footbridge over the river Colne

In the 18th and 19th centuries the river was heavily utilised for a number of industries. Weirs and sluices concentrated the force of the river in order to power a number of mills built along the course of the river, many of which were corn mills built to process the produce from the local farms. Entire river channels were also constructed to power even more mills in the Uxbridge and Hillingdon areas, use of the river for mill power was primarily concentrated in this area. Leats and ditches were also cut in order to feed a significant industry in watercress farming in the north of the Colne Valley. This database also records a myriad of footbridges, fords and bridges crossing and re-crossing water channels at all point along the course of the rivers.

Figure 83: Two surviving weirs on the river Colne

Figure 84: Extant waterway structures



canal
river channel
bridge
ford
footbridge
lock
mill
sluice
weir

The creation of so many weirs and sluices give an indication of the level of management of the rivers for industrial purposes as most often they were used to divert and channel the water towards mills and fish farms. In the 1880's 19 mills were recorded on the OS 1st edition map as being on or near the river Colne whilst a total of 90 weirs and sluices were recorded. Weirs were most commonly used to direct and increase the power of the river over short distances in order to increase the function of a nearby mill whilst sluices were more commonly found at the point where a leat coincided with the main river.

A high number of fords also indicate the level of wheeled traffic using the road network in the area; some 31 fords were recorded on the OS 1st edition map in comparison to 21 bridges, but while 18 bridges remain today, only 3 of the fords have been converted into bridges in their own right.

Future Research

This database highlights some areas that may benefit from further study either through a community based project or a professional one. Habitat and biodiversity surveys on the rivers and canals may provide useful information on species diversity, which in turn can help inform planning decisions. A more detailed survey of the waterway structures may also be useful in order to assess the historic interest of those that do survive, better understand the reasons for loss of the footbridges with a further possibility of restoration of those that survive in a derelict state such as in Figure 82.

A more detailed study of the river features could also be used to further enhance HER/SMR databases as while mills and locks are well represented, comparatively few footbridges and bridges are listed. In Buckinghamshire, of the 45 footbridges and four bridges identified in this survey as being entirely within or on the borders of the country, only four footbridges are listed in the SMR database, although all bridges are included and in fact more mills are listed in the SMR than are shown in this survey as they predate the OS 1st edition map. The Greater London SMR, in contrast, lists five footbridges out of a 35 in this survey and three out of four bridges in their database. Finally, the Three Rivers segment within the Colne Valley Park lists only one footbridge out of 31 but 3 bridges out of five.

7. Local Historic Landscape Characterisation Zones

Aims

Another feature of this report was to produce a preliminary assessment of the landscape at a wider scale through the production of a series of local historic character zones (local HLZ). These zones have been defined using criteria developed in Buckinghamshire (Green and Kidd, 2006, 18) and can be used as a basis for informing strategic planning, development control and land management. HLZ can also be used to inform Landscape Character Assessment (LCA) which combines topography, landscape, cultural heritage and the natural environment into a balanced assessment. Each local zone can serve as a reference tool for the general landscape in a much more accessible format than through the individual character types. They can therefore help formulate general management strategies relevant to the historic dimension of the landscape as well as assisting in the ongoing monitoring of conservation areas. At a higher level local zones can be nested into county-level HLZ for which a preliminary map has been defined for Buckinghamshire.

Methodology

Local HLZ are defined by areas of historic landscape types that display a homogeneity of character. For example an area of primarily twentieth century characterisation that may include field systems as well as modern settlement and woodland would be characterised as one discrete zone while an area of distinctively ancient historic landscape types would be another.

Individual polygons drawn into an HLC map represent an area of homogeneity at a small scale of perhaps 10ha such as the area of meadowland bordering a river shown in Figure 85. Their boundaries are defined by their individual characterisation.

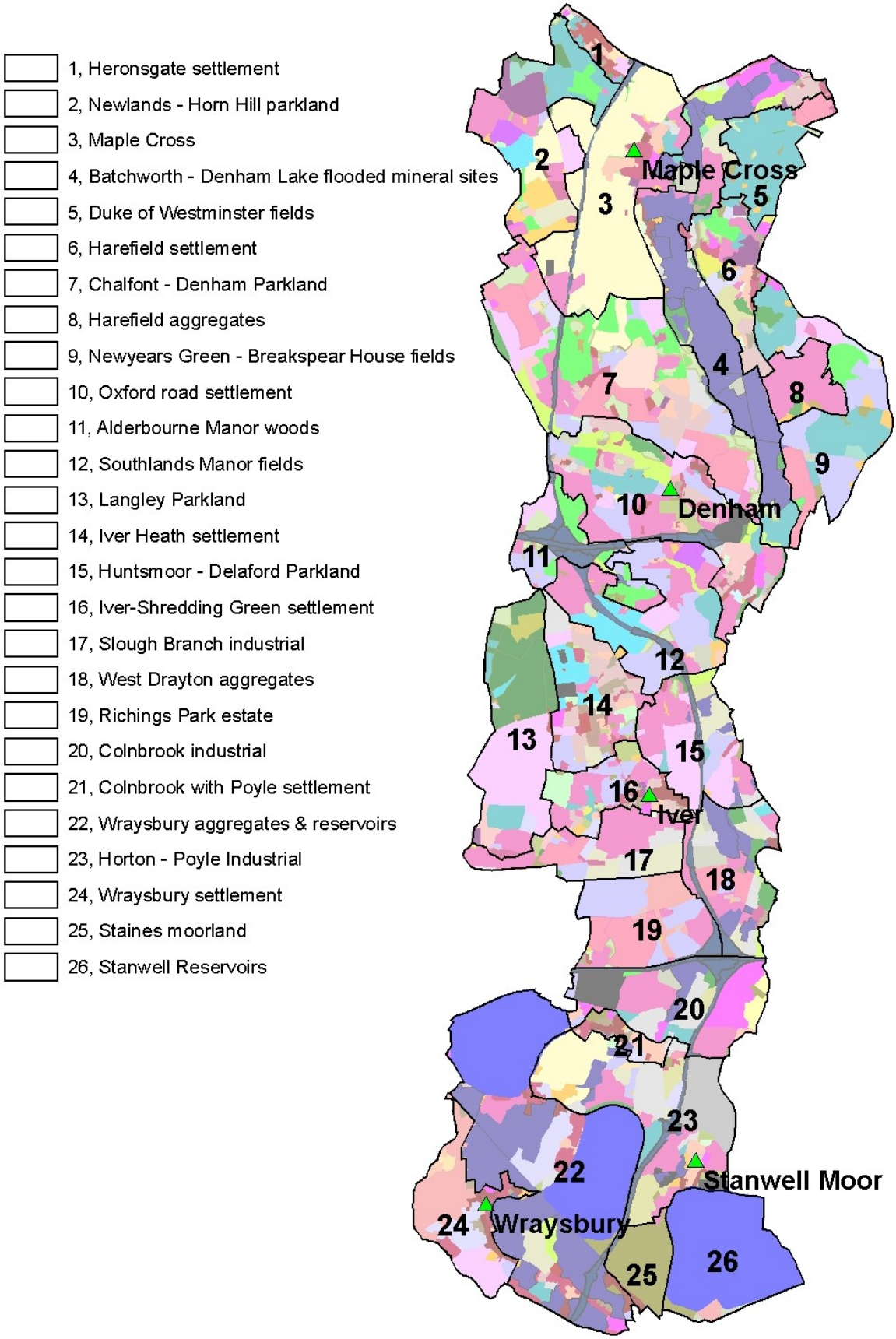
Figure 85: Example HLT. Modern area of housing, Denham village.

Polygons drawn into an HLZ map, however, can represent much larger areas and aim to characterise the relationships between HLT which together form a landscape with common characteristics. These polygons can include several distinct but similar HLT's and can be much larger dependant on the scale of the study area. In the case of the Colne Valley Park, these zones range between 66 and 1200ha. As zones are based primarily on HLC information they do not directly conform to the topography, geology or biodiversity of an area, however, they can be used to identify the boundaries and characterisation of the zone.

The boundary of a zone is defined by a combination of factors: they can follow the historic boundary of parkland areas; a river that serves to separate distinct areas of landscape; linear constructions such as motorways, railways and canals from the modern era or historic linear features such as medieval or pre-medieval county ditches or constructed river channels.

A total of 26 zones have been identified in the Colne Valley Park (Figure 86). The character of each zone is based on the HLC whilst individual boundaries were determined using a combination of naturally occurring lines such as rivers as well as constructed features where they served to delineate significant change in the landscape.

Figure 86: Local Historic landscape Zones in the Colne Valley Park



Analysis/Results

1. Heronsgate settlement

This zone, although small, illustrates a highly distinctive characterisation that separates it from the surrounding countryside. The community of Heronsgate was originally called O'Connorville after it's founder the Chartist leader Feargus O'Connor. The entire town of around 30 houses was built in the late 19th century on previously enclosed land after Chartist beliefs and it was supposed to represent the idyllic lifestyle separated from the industrialisation of the time. Although the ideals of Chartism failed in this community, as in many others, Heronsgate survived almost intact. The village is protected by double status as it both lies within the Metropolitan Green Belt and it is a conservation area, both of which have curtailed development leading to the addition of only ten or so houses. However, little is known about the archaeology of the area and, despite the unique character of the settlement, only five of the houses are Grade II listed. The potential for archaeological remains in this area is difficult to determine as although there is some evidence for past human occupation in the area, they tend to be isolated find spots rather than sites.

Area	66ha
Principal historic landscape	19th century detached housing historic parkland 19th century fields
Listed Buildings	5
SMR Records	0
Designations	Green Belt Conservation Area

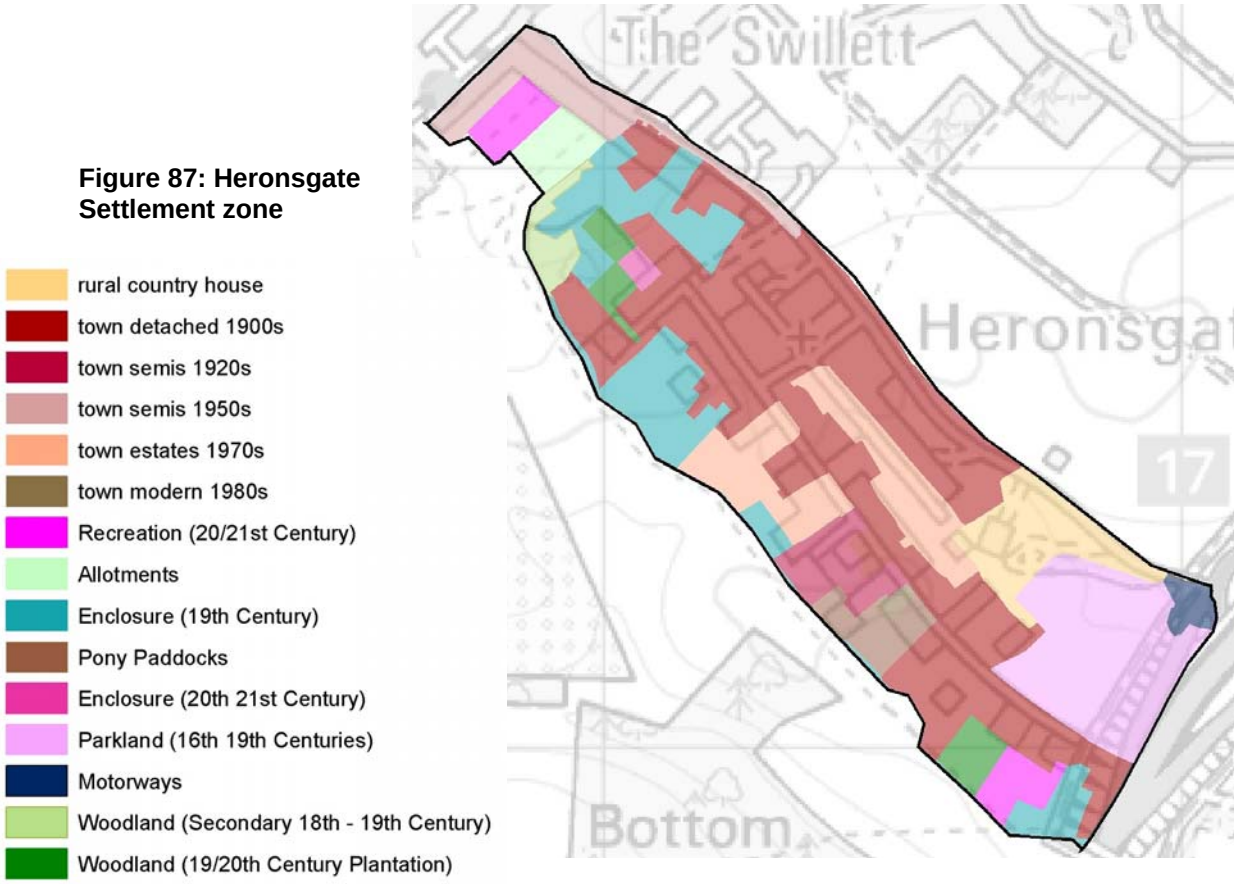


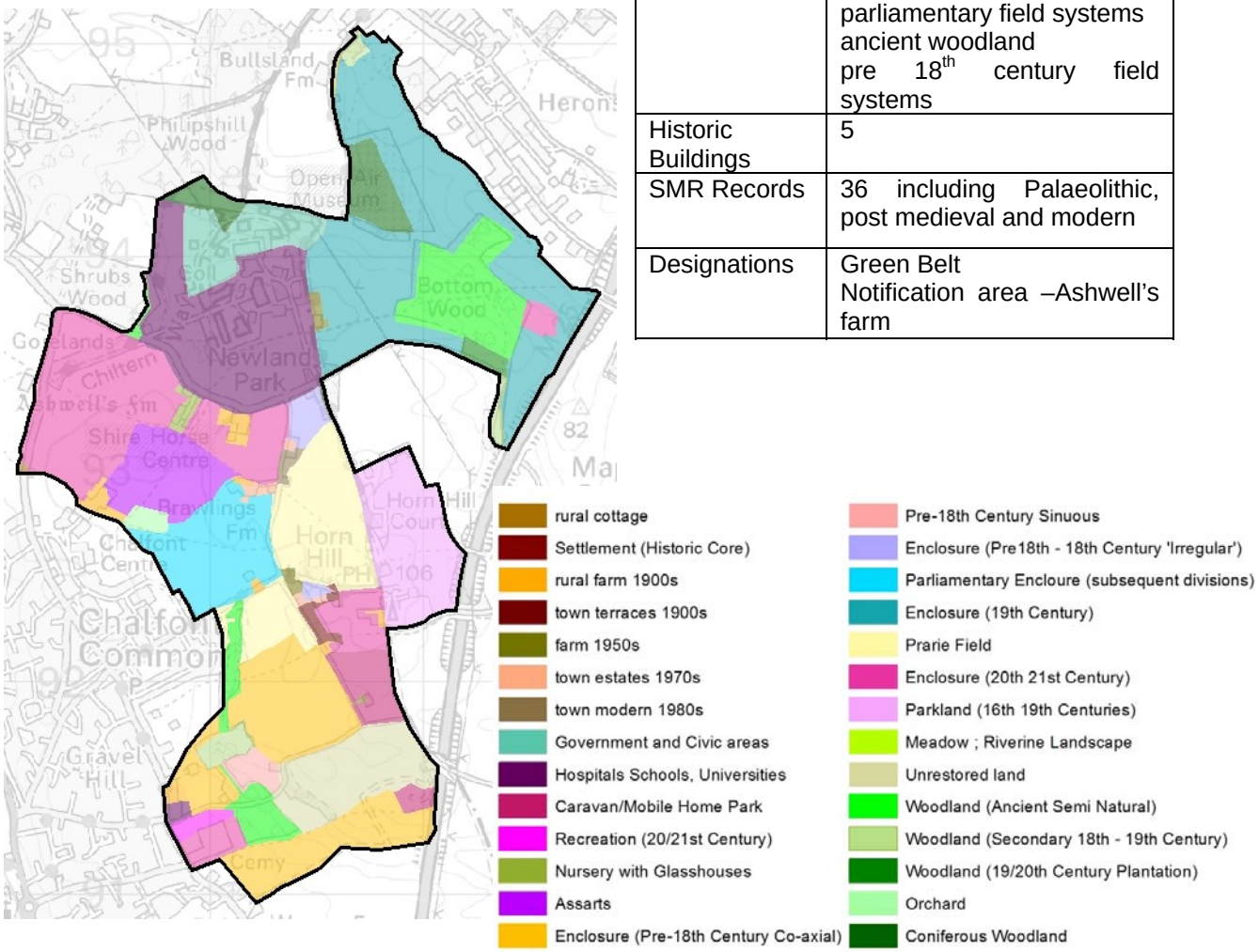
Figure 87: Heronsgate Settlement zone

2. Newlands – Horn Hill parkland

This landscape consists primarily of field systems dating to a number of periods including large open 19th century fields around Heronsgate; twentieth century enclosed field systems, probably pony paddocks, around Newland Park; and small areas of prairie fields, Parliamentary enclosed fields, pre 18th century enclosed fields and assarted (ancient) fields around Chalfont common. There are two distinctive historic parks in this zone in the form of Newland Park, now in use as a college and the site of the Chiltern Open Air Museum, and the grade II listed Horn Hill. These two parks are built along the path of the old Roman road now called Shire lane. There are also several areas woodland, both ancient and modern plantations. Overall the area has moderate historic landscape value. SMR data for this zone is primarily medieval with some Neolithic find spots in Chalfont St Giles parish and some Palaeolithic finds in Three Rivers near Heronsgate. The proximity of significant Neolithic finds at Mopes farm indicate that this area may have been in use during that period and the potential for further remains is quite high, however, this must be balanced with the level of development and the affects of agriculture in the area.

Area	488ha
Principal historic landscape	19th century field systems hospitals 20th century field systems parliamentary field systems ancient woodland pre 18th century field systems
Historic Buildings	5
SMR Records	36 including Palaeolithic, post medieval and modern
Designations	Green Belt Notification area –Ashwell's farm

Figure 88: Newland to Horn Hill parkland zone

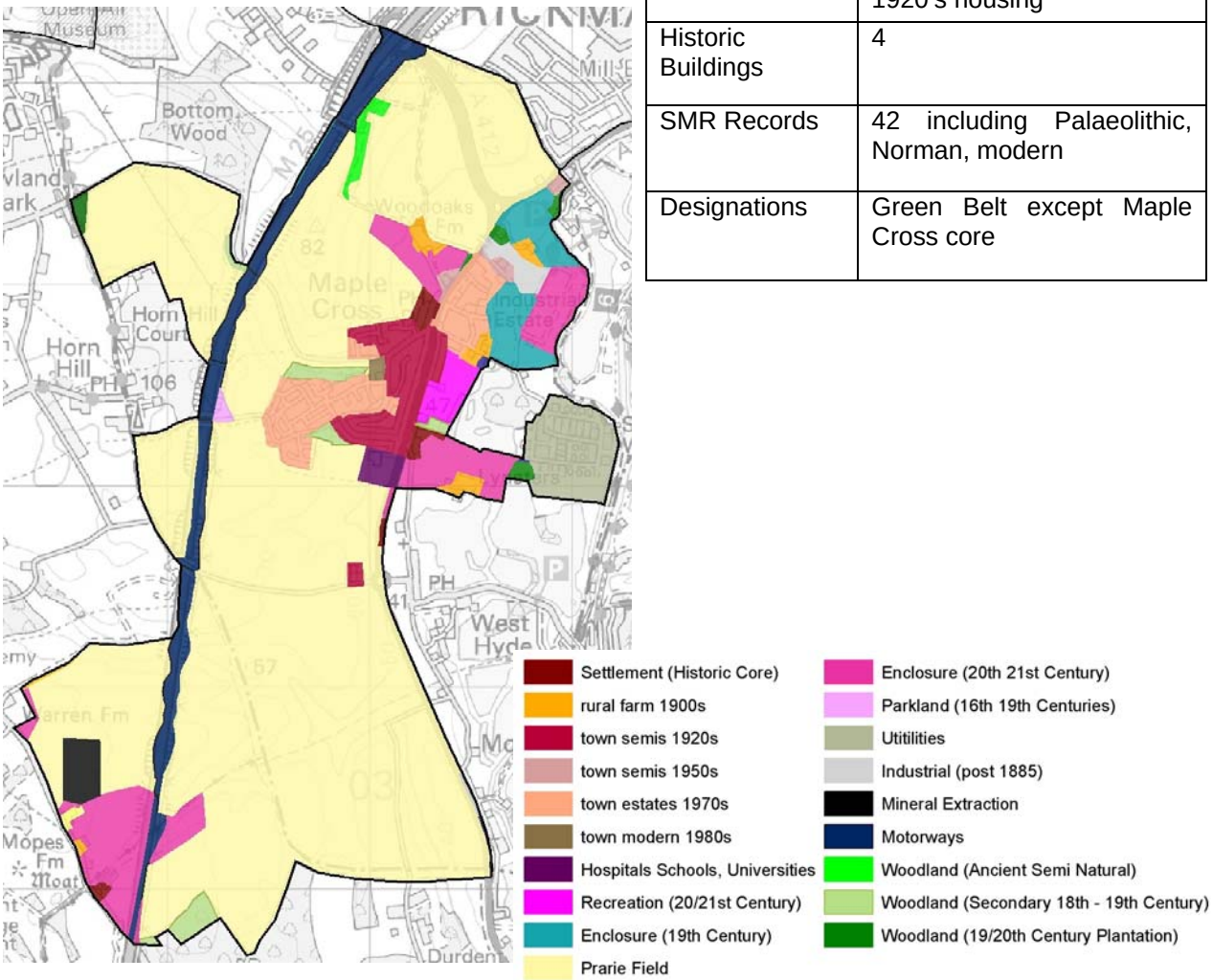


3. Maple Cross

This zone represents an essentially twentieth century landscape incorporating the extended prairie fields surrounding the village of Maple Cross that date to the first half of the twentieth century, and the village itself. The historic core of Maple Cross consisted of little more than a few houses that predate the OS 2" Surveyors maps encircled by four or five farms but development has steadily increased throughout the twentieth century with significant jumps in housing development during the 1920's and again during the 1950's after which point development all but stopped. Parallels between development in the area and aggregates extraction might be drawn as by the 1950's extraction had moved away from the Maple Cross area and into the London Borough of Hillingdon around Harefield. The four grade II listed buildings in this zone correspond to the historic farms while the historic houses are not listed. This zone has the potential for further archaeological finds, although probably truncated by the extensive mechanised arable cultivation.

Area	135ha
Principal historic landscape	Modern prairie fields 1950's semi-detached housing 1920's housing
Historic Buildings	4
SMR Records	42 including Palaeolithic, Norman, modern
Designations	Green Belt except Maple Cross core

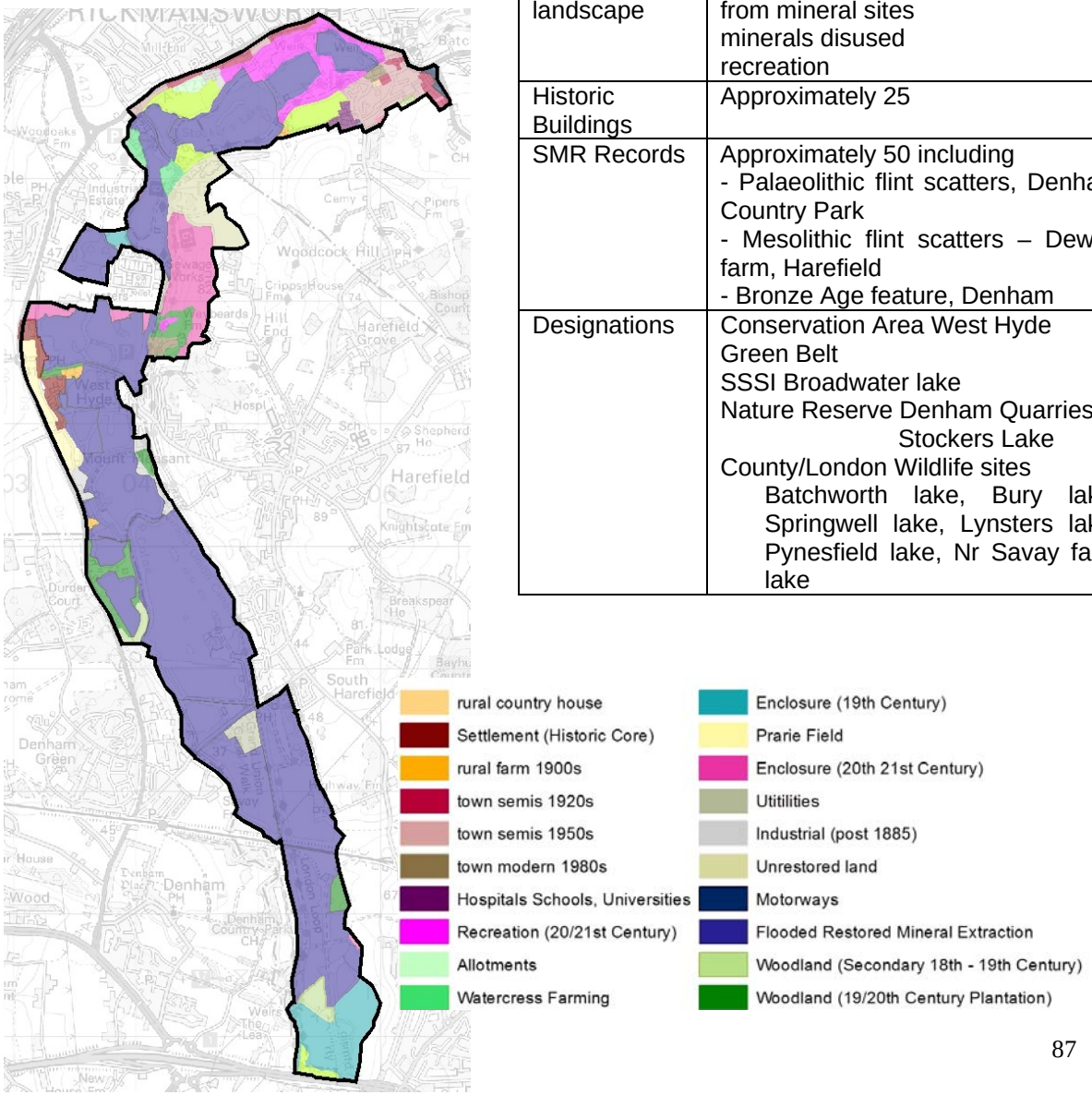
Figure 89: Maple Cross zone



4. Batchworth-Denham Lake flooded mineral sites

This landscape zone is characterised by the long period of aggregates extraction that has taken place within it and irrevocably altered the landscape, large areas of recreational land now border the lakes around Batchworth while modern settlement lie just to the south of the lake. Starting in the very north of the zone at what is now Batchworth Lake it follows the low-lying alluvial floodplain of the river Colne down as far as Denham. Prior to extraction much of this zone was in use as watercress beds with an extensive series of leats running off from the river Colne and often also the canal. The first aggregates sites were extracted by the 1920's with Batchworth Lake already recorded on the OS 1920-1926 map while extraction continued south down the path of the river Colne until the 1980's at Denham Quarries site, the predominant mineral extracted was gravel although large chalk pits exist to the west of Hill End, Hillingdon. Due to the extensive extraction this zone is comparatively wealthy in terms of SMR information including early Palaeolithic to modern sites. However, much now has low archaeological potential due to the extent of extraction and development. This landscape also includes the hamlet of West Hyde, now protected as a conservation area; it comprises just a few houses following a linear morphology along the old road into Denham parish.

Figure 90: Batchworth-Denham lake zone



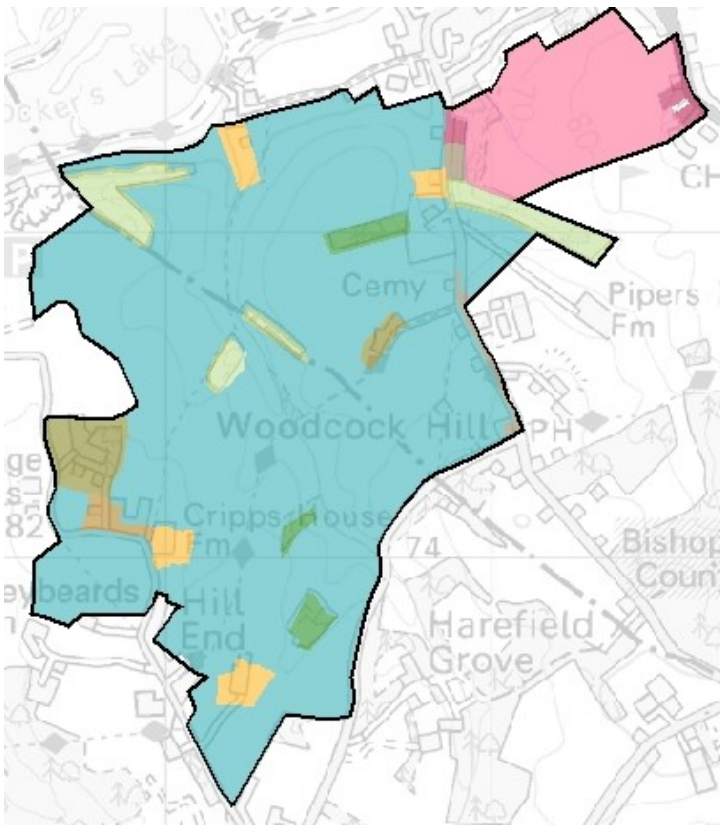
Area	770ha
Principal historic landscape	Flooded mineral sites 20th century enclosure, regenerated from mineral sites minerals disused recreation
Historic Buildings	Approximately 25
SMR Records	Approximately 50 including - Palaeolithic flint scatters, Denham Country Park - Mesolithic flint scatters – Dewes farm, Harefield - Bronze Age feature, Denham
Designations	Conservation Area West Hyde Green Belt SSSI Broadwater lake Nature Reserve Denham Quarries Stockers Lake County/London Wildlife sites Batchworth lake, Bury lake, Springwell lake, Lynsters lake, Pynesfield lake, Nr Savay farm lake

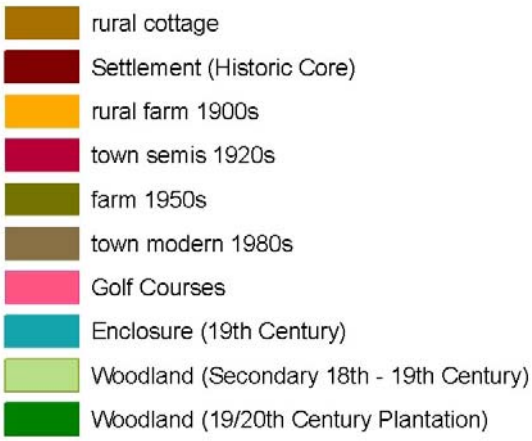
5. Duke of Westminster fields

This distinct landscape dates primarily to the 19th century and includes areas of Moor Park, now a golf course, and an extensive area of 19th century field systems originating from previous enclosed land around Stockers farm; it spans the Three Rivers segment of Hertfordshire into the borders of the London Borough of Hillingdon. It also includes several small areas of 18th and 19th century woodland. According to enclosure and tithe awards for the area, much of the land belonged to the Duke of Westminster of Moor Park. This area has historically been used as pasture land with only a small number of arable fields. There are five Grade II listed buildings in the area, most of which are associated with farmsteads. It thus represents one of the better preserved historic agricultural landscapes in the Colne Valley Park and is worthy of conservation. Archaeological sites for this area are mostly limited to find spots including several Palaeolithic flint scatters and a Roman pot. The archaeological potential for further discoveries would be moderate for this area based on past discoveries and potential for survival.

Area	236ha
Principal historic landscape	19th century field systems golf course woodland
Historic Buildings	5
SMR Records	10 including Palaeolithic, Roman, Medieval and modern.
Designations	Green Belt except Batchworth settlement area Conservation area Stockers Lock

Figure 91: Duke of Westminster fields zone



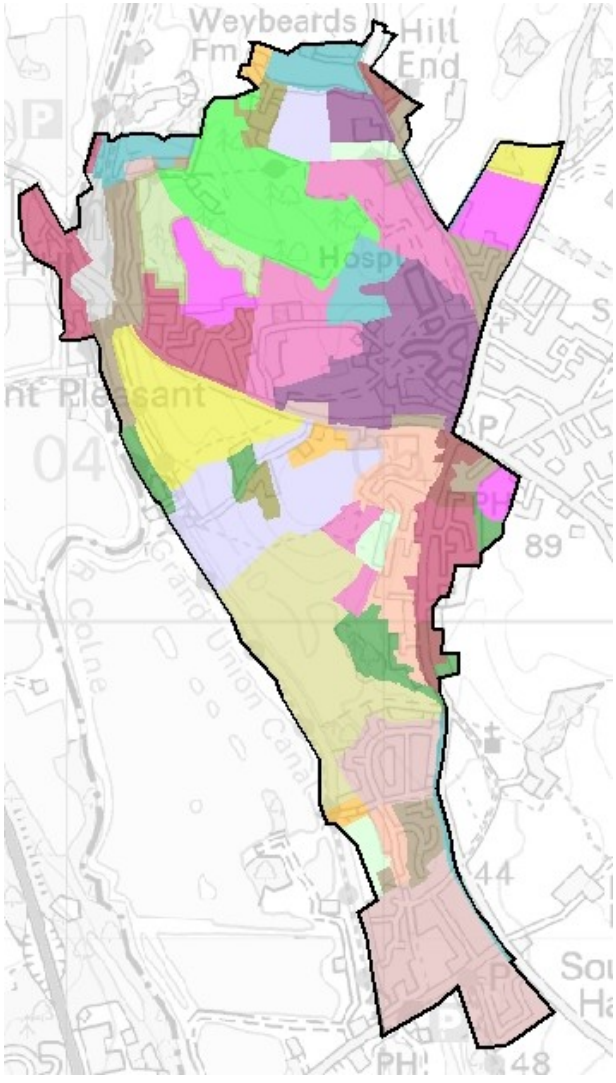


6. Harefield settlement

This landscape is one of the most varied in the London Borough of Hillingdon's section of the Colne Valley Park. There are areas of ancient moor land at Mount Pleasant; 19th century woodland at Old Park wood as well as a highly varied settled landscape. The historic core of Harefield consisted of small clumps of housing and isolated farmsteads fringing the old Harefield common – in the modern landscape approximately the area of Old Park wood down to Harefield hospital – before following the medieval path of Harefield road down to Newyears Green. In the 18th and 19th century this area was the location of the original Harefield Place on the site of the hospital. The twentieth century saw the development of the hospital along with some significant areas of housing in the 1950's and 1970's. Overall the area has significant historic landscape value which is worthy of conservation. This landscape has a comparatively wealthy dataset of HER/SMR information including several Palaeolithic and Mesolithic flint scatters as well as early medieval mills and some areas of ridge and furrow south of Park wood. There is a moderate-high potential for below ground archaeological deposits based on the number of find spots and sites in the area.

Area	250ha
Principal historic landscape	1950's settlement secondary woodland hospitals commons
Historic Buildings	17
SMR Records	55 including Mesolithic, Neolithic, post medieval and modern
Designations	Green Belt except hospital

Figure 92: Harefield settlement zone

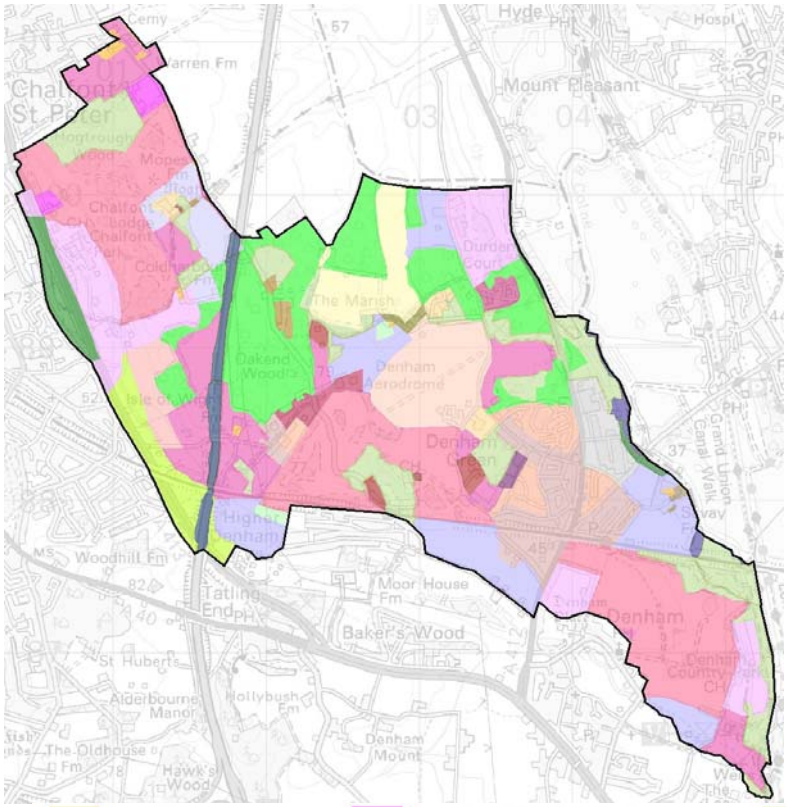


7. Chalfont – Denham parkland

This landscape belonged to a number of estates in the 18th and 19th century including the Way family of Denham Place and the Drummond's of Tile House. These historic estates have since become highly fragmented with areas of primarily modern landscape character including the 1950's settlement of Denham Green and Denham airfield, interspersed with small areas of pre 18th century field systems and historic parkland. This zone also contains significant areas of ancient and 18th century woodland in Denham parish. There are several historic parks still surviving including Chalfont Lodge and Denham Country Park, both of which are now golf courses as well as Denham Durdent Court and Denham Place. The combination of assets indicates significant historic landscape value. SMR data for this zone reveals a long period of human occupation in this area with finds and sites dating to the Palaeolithic, Mesolithic, Neolithic, Bronze Age, Roman, Norman, medieval and modern periods plus the potential for good preservation within parkland and woodland indicating a high potential for further archaeological remains.

Area	971ha
Principal historic landscape	Ancient woodland Secondary woodland Golf courses Historic parkland airfield
Historic Buildings	23
SMR Records	144 including Palaeolithic, Neolithic, bronze age and post medieval
Designations	SAM moat NW of Chalfont Lodge SAM Mound near Savay Farm Green Belt except Denham Green Village Notification Area – Denham village; north of Denham Green Village EH Parks Denham Place Conservation area – Denham, 1970.

Figure 93: Chalfont to Denham parkland zone

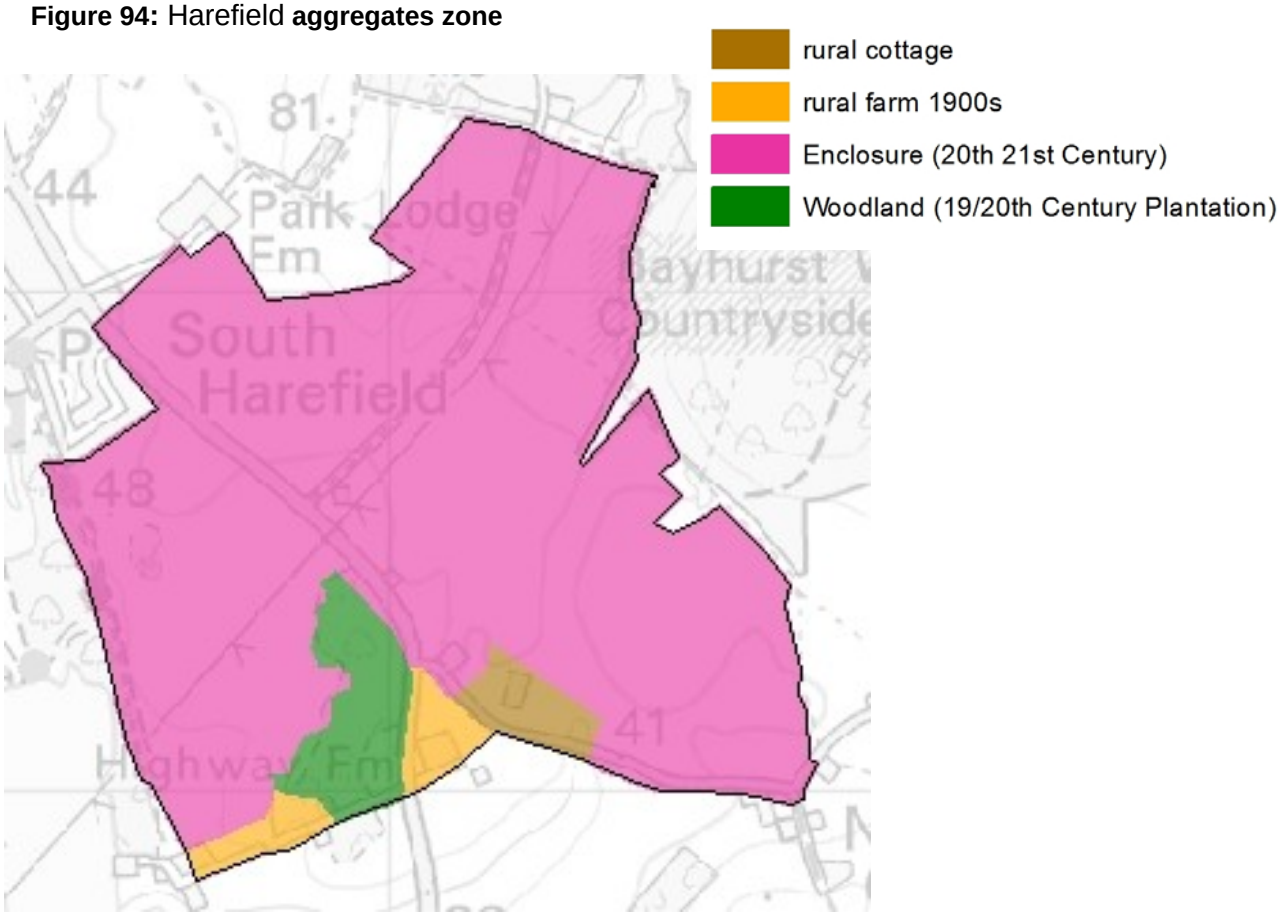


8. Harefield Aggregates

This discrete zone differs greatly from the surrounding countryside and consists of an extended area of extraction dating to the 1940's and 1950's. Unlike other areas of the Colne Valley Park, however, this landscape was probably unsuitable for the creation of lakes due in part to the underlying geology. During the 1970's it was used as landfill and is currently characterised as 20th century fields in use for the grazing of livestock which are not of significant historic landscape value. There are several SMR records for this landscape, primarily medieval and post-medieval in date and also some isolated prehistoric flint scatters but the archaeological potential for this area would be low due to the extraction and landfill process affecting below ground deposits.

Area	141ha
Principal historic landscape	20th century field systems disused mineral sites
Historic Buildings	3
SMR Records	11 including Palaeolithic, Mesolithic, Neolithic and modern
Designations	Green Belt

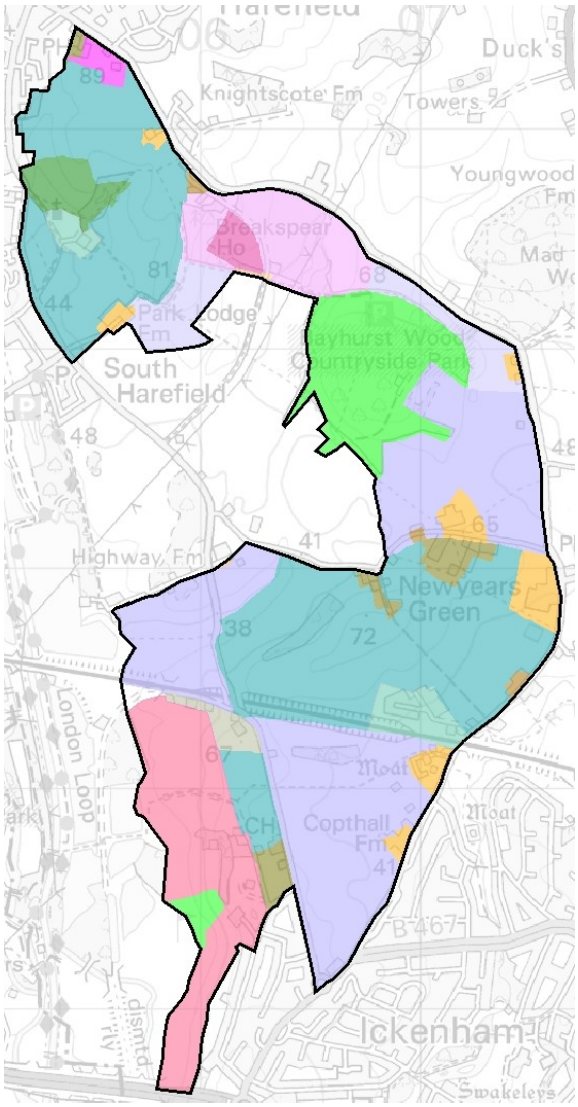
Figure 94: Harefield **aggregates zone**



9. Newyears Green – Breakspear House fields

This landscape primarily consists of pre 18th and 19th century field systems and is one of the best preserved areas in the Colne Valley Park. This zone also contains some ancient woodland at the highly distinctive Bayhurst Country Park, which forms part of the Ruislip Woods National Nature Reserve consisting of four woods separated by modern landscapes and is a SSSI in itself. Bayhurst once formed part of the Great Forest of Middlesex but by the 12th century it had been granted to the Hospitallers. In the 16th century it became part of the Newdegate estate of Moorhall and remained under their ownership until the 1950's when it became part of the Nature Reserve. There are also two surviving historic parks in this zone – the 14th century site of Breakspear House and the 19th century Harefield Place, now used as a golf course. SMR records for this zone are predominately medieval and modern with several examples of Mesolithic flint scatters. The archaeological potential for this area is moderate to high for below ground deposits. The significant numbers of find spots indicate the possibility of one or more sites in the area. There are also several medieval manors and historic houses in this zone and the surrounding areas indicating the potential for further remains from the historic period.

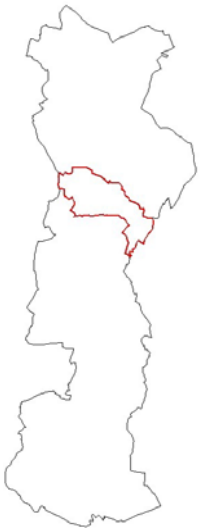
Figure 95: Newyears Green-Breakspear House fields zone



Area	489ha
Principal historic landscape	Pre 18th century field systems 19th century field systems ancient woodland historic parkland golf course
Historic Buildings	12
SMR Records	25 including Mesolithic, Norman, modern
Designations	SAM Brackenbury moat Green Belt SSSI Bayhurst Wood

- rural cottage
- rural country house
- Settlement (Historic Core)
- rural farm 1900s
- town semis 1920s
- farm 1950s
- Government and Civic areas
- Recreation (20/21st Century)
- Golf Courses
- Enclosure (Pre18th - 18th Century 'Irregular')
- Enclosure (Pre-18th Century Regular)
- Enclosure (19th Century)
- Enclosure (20th 21st Century)
- Parkland (16th 19th Centuries)
- Utitilities
- Woodland (Ancient Semi Natural)
- Woodland (19/20th Century Plantation)

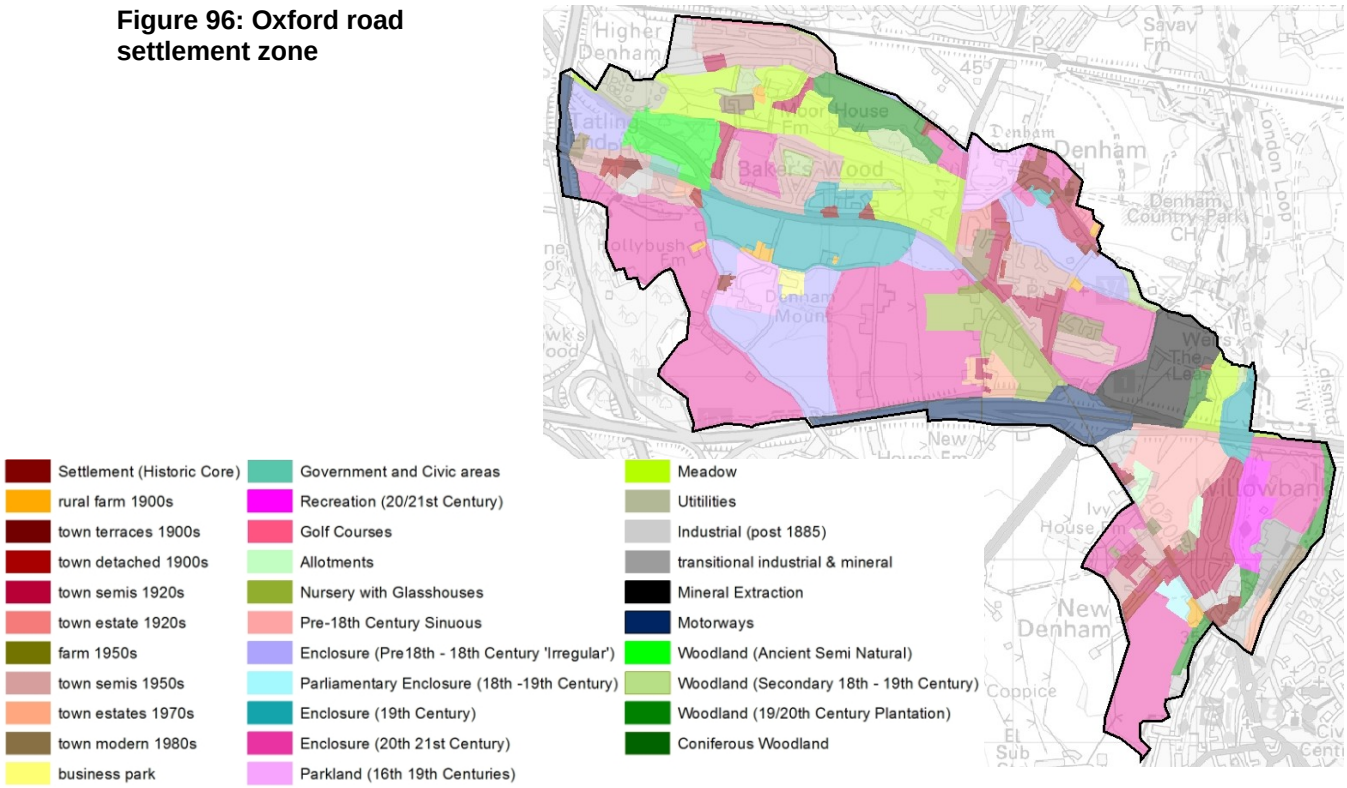
10. Oxford Road settlement



This zone incorporates a corridor of landscape along the Oxford Road, the major highway through the Park from medieval and perhaps Roman times. Included in this zone are the small settlements of Tatling End, Higher Denham, Denham Village and New Denham all of which border the road. It is primarily a twentieth century landscape bordered by relics of older field systems and the historic core of Denham village. The only historic parkland in this zone is Denham Mount. There are, however, some significant areas of surviving meadowland along the river Misbourne. Apart from these isolated areas the zone's historic landscape significance is limited. There are a high number of HER/SMR records for this area reflecting the amount of development for housing as well as evaluation prior to the construction of the motorway indicating a prolonged period of human habitation in the area. The vast majority of these records date to the medieval and post medieval period, especially around Denham village while other records include the path of the Roman road, several Palaeolithic flint scatters, a Mesolithic flint working site and a Bronze Age funerary site at the Lea quarry site. Although there is significant amount of modern development in this area the majority are modern field systems, it is unlikely that it would seriously affect below ground deposits and the excavations at the Lea quarry site indicate the high potential for prehistoric and Roman remains in the area.

Area	670ha
Principal historic landscape	Meadows 20th century field systems pre 18th century field systems mineral sites settlement
Historic Buildings	72
SMR Records	114 including Mesolithic, post medieval, modern
Designations	Green Belt except Higher Denham Conservation area Denham village Notification areas Denham Mount; Willowbank area EH Denham Place

Figure 96: Oxford road settlement zone

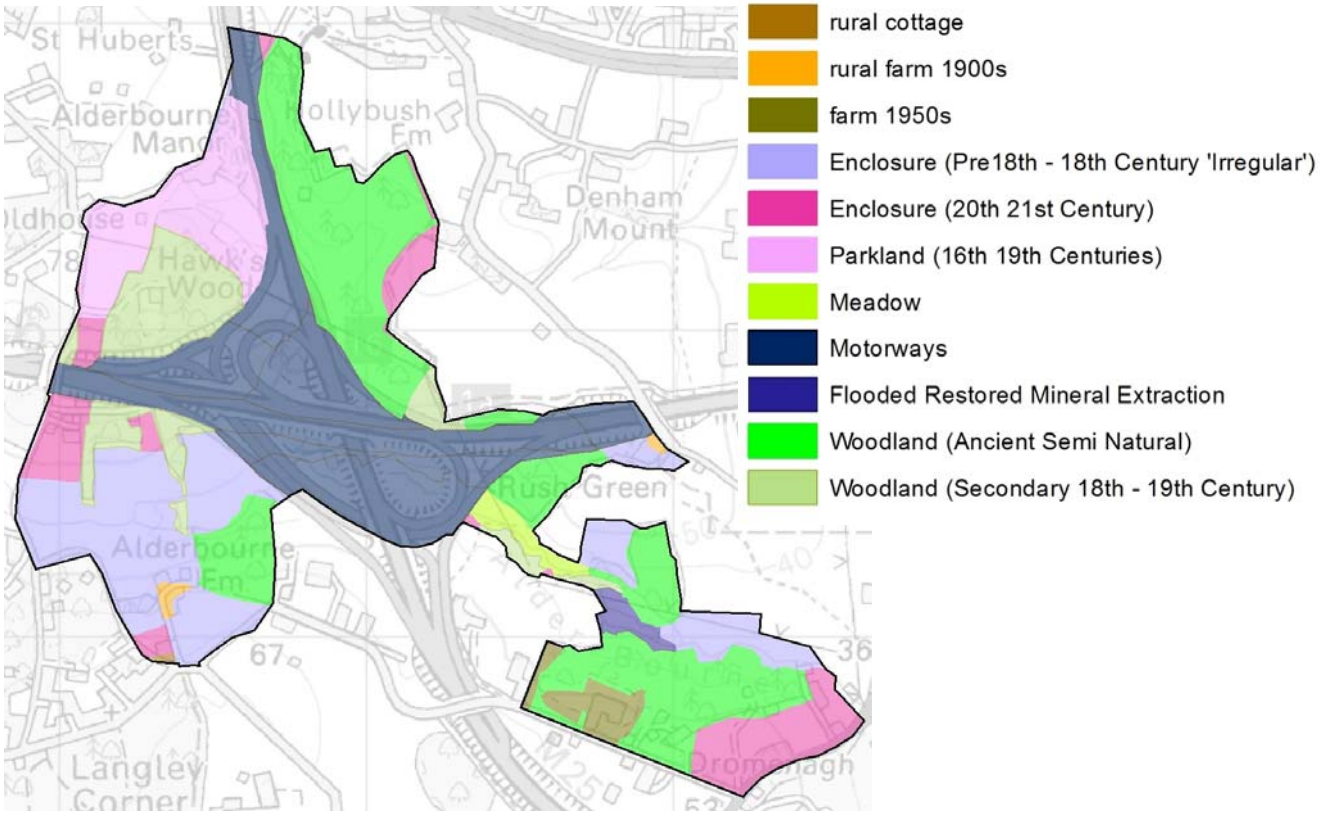


11. Alderbourne Manor woods

Although sub-divided by the M40/M25 junction this zone is characterised by the significant areas of ancient woodland surrounding Alderbourne Manor that reach down into Iver parish. Alderbourne Manor was granted to the Benedictines along with Ankerwycke in the 12th century and remained in their hands until the dissolution of the Monasteries when it changed hands several times over the next two centuries before becoming part of the Way estate in the late 18th century. This zone can be characterised primarily by the areas of pre 18th century field systems bordering ancient woodland. Small areas of twentieth century fields and the large motorway junction intrude on this landscape detracting from an otherwise significant historic landscape. The majority of HER/SMR records for this zone are located under the path of the motorway and include several Palaeolithic and Neolithic sites as well as several medieval pottery kiln sites. Overall, this landscape should be considered of moderately high potential for further archaeological finds.

Area	248ha
Principal historic landscape	Ancient woodland Historic parkland Motorway
Historic Buildings	2
SMR Records	11 including Palaeolithic. Neolithic, post medieval and modern
Designations	Green Belt Notification area Alderbourne manor

Figure 97: Alderbourne Manor woods zone

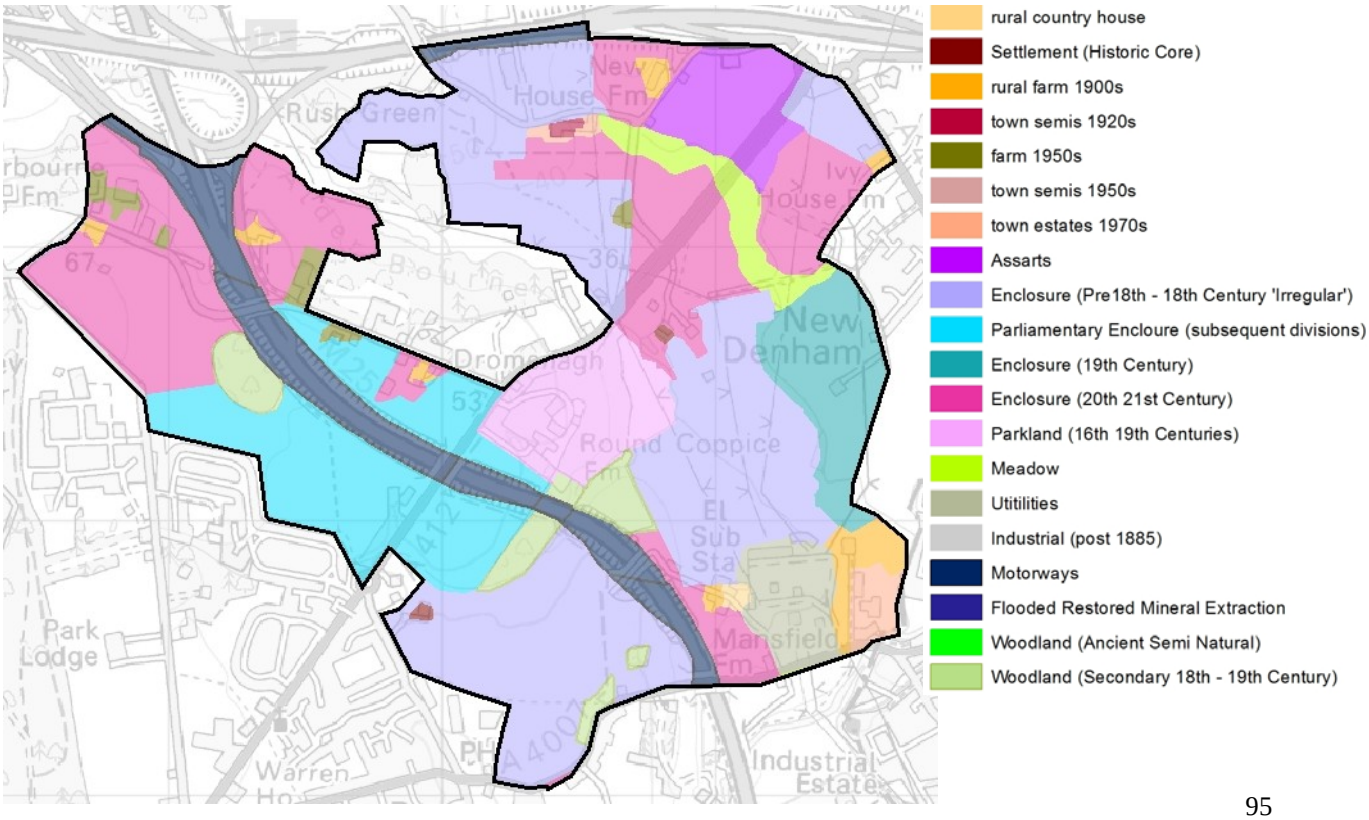


12. Southlands Manor fields

This landscape is defined in part by the boundaries of the Colne Valley Park as well as areas of settlement and primarily comprises of older field systems. There are several large areas of pre 18th century field systems defined by irregular boundary lines as well as a significantly large area of Parliamentary enclosure bordering the path of the M25. These field systems date to the early 19th century enclosure awards for Iver parish and are characterised by ruler straight field boundaries dividing previously open areas across Iver Heath. There are also a number of medieval drove roads running through this landscape that were straightened as a result of Parliamentary enclosure. Overall the area has low/moderate historic landscape significance. The majority of HER/SMR records for this landscape are located in the pre 18th century field systems and include several Mesolithic and Neolithic find spots and a possible Mesolithic flint working site at Sandstone, Iver. There is a moderate potential for medieval archaeological finds based on the proximity to several important medieval manors. The presence of Upper Palaeolithic and Mesolithic artefacts and in-situ sites on the eastern edge of this zone and the proximity to the nationally important Three Ways Wharf indicate the potential for further important archaeological finds from this period in the area.

Area	501ha
Principal historic landscape	Pre 18th century field systems Parliamentary field systems Historic parkland 20th century field systems
Historic Buildings	7
SMR Records	32 including Mesolithic, Neolithic, Norman and modern
Designations	Green Belt Notification area Mansfield farm area; Round Coppice farm area

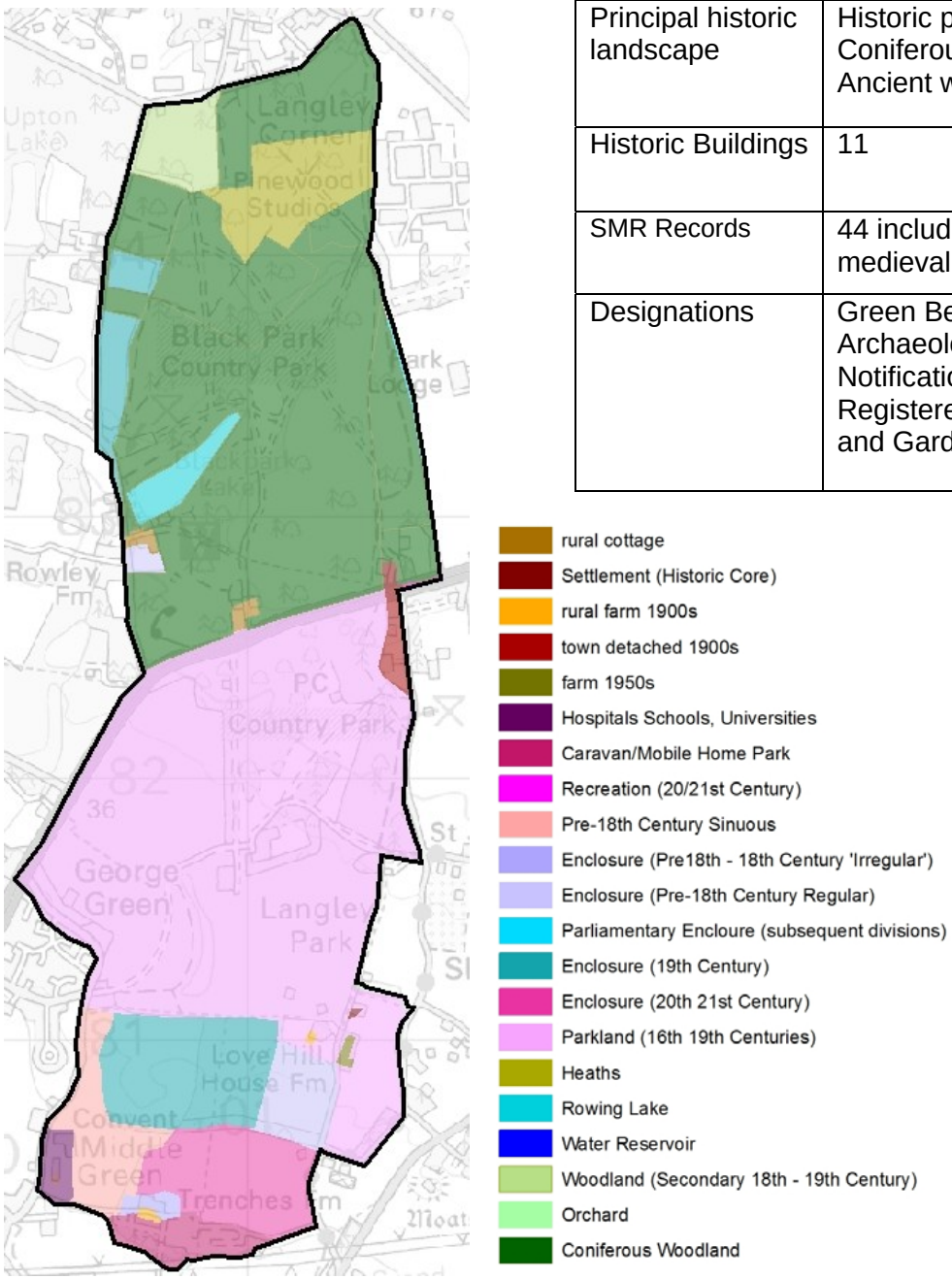
Figure 98: Southlands Manor fields zone



13. Langley parkland

This landscape is defined by the extent of the historic Langley Park boundaries including Black Park. Langley park originated as a medieval and Tudor deerpark. The Harvey family owned Langley in the 18th and 19th centuries, the gardens are laid out in the 18th century landscape style similar to Stowe and Stourhead with sweeping vistas interspersed with classical structures. The area is now managed as two country parks; Black Park is a primarily forested area with a number of avenues running through it while Langley comprises the historic house and gardens. The majority of records for this area relate to the current house and gardens with its associated classical structures. The zone is of high historic landscape sensitivity. The potential for further medieval and modern remains would be high for this area principally regarding the possibility of earlier park and gardens beneath the current landscape.

Figure 99: Langley parkland zone

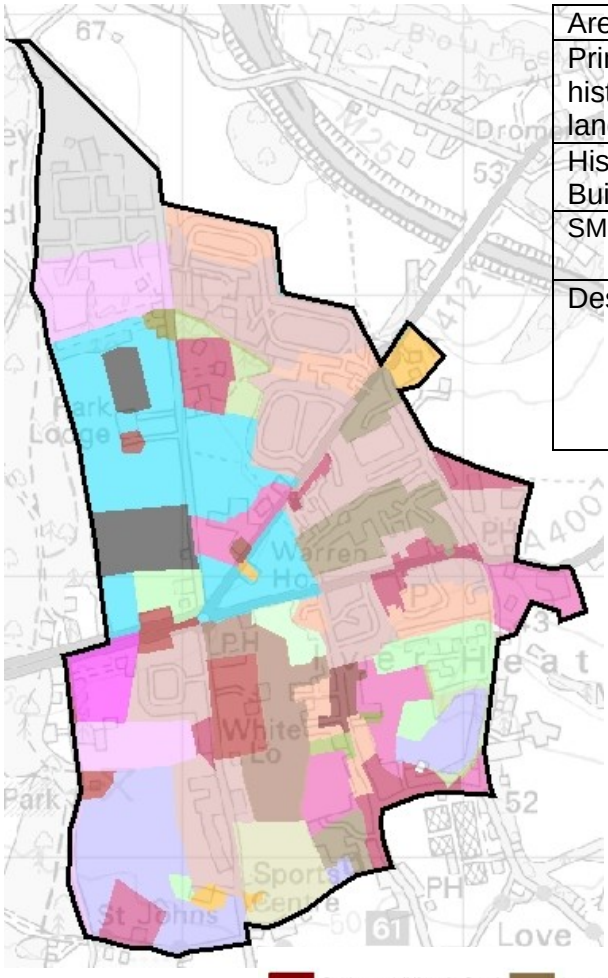


Area	507ha
Principal historic landscape	Historic parkland Coniferous woodland Ancient woodland
Historic Buildings	11
SMR Records	44 including post medieval and modern
Designations	Green Belt Archaeological Notification area Registered Historic Park and Garden

14. Iver Heath settlement

This landscape comprises of primarily twentieth century settlement built on the site of Iver Heath. There are significant areas of 1950's development radiating out from the Five Points roundabout with later infilling of smaller open areas during the 1970's and modern periods resulting in a series of housing stretching down from Pinewood Studios to Love Green. There is a small area of Parliamentary enclosure in the centre of the zone currently divided by aggregates sites. The historic landscape significance is low. HER/SMR records for this landscape are almost exclusively medieval and modern in date and correspond to a number of historic farms and houses in the area as well as Pinewood Studios itself. The ancient borders of Iver Heath and the limits of Langley Park in the west define this landscape. Medieval and modern remains primarily represent this zone but the potential for further archaeological finds is low to moderate due to the level of development in the area.

Figure 100: Iver Heath settlement zone



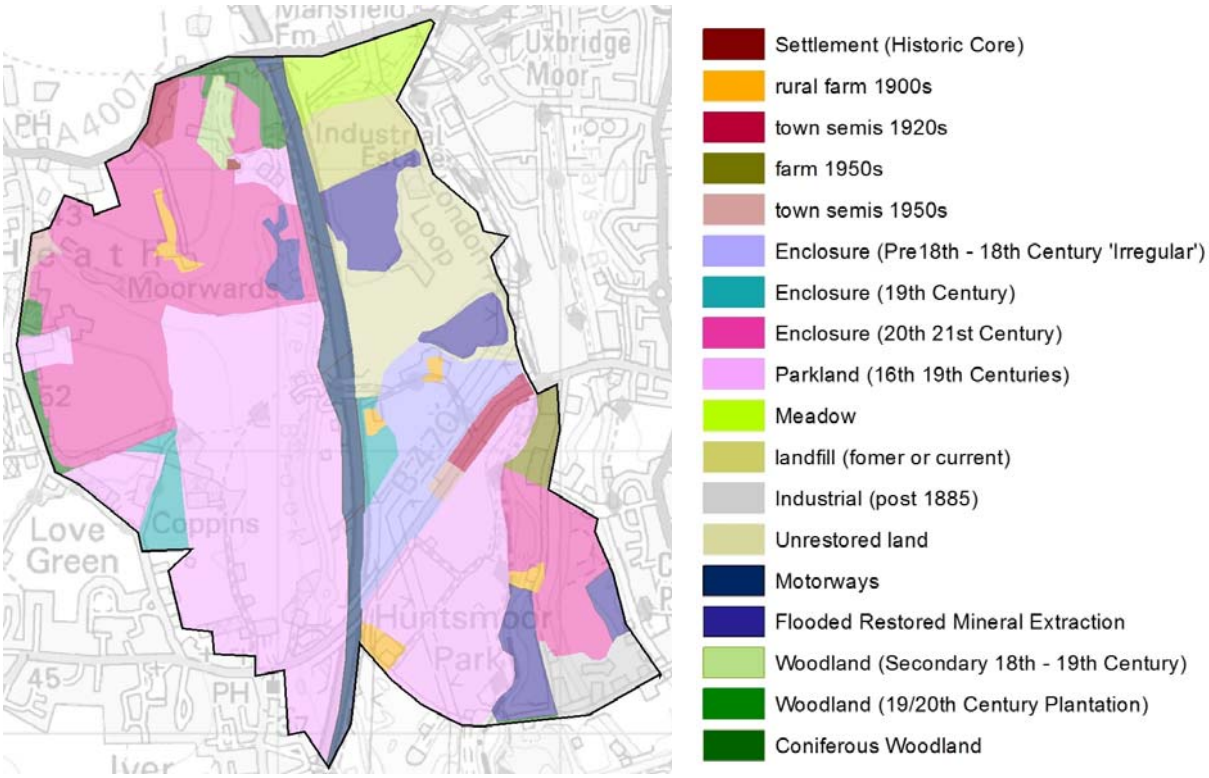
Area	344ha
Principal historic landscape	1950's housing modern housing parliamentary enclosure
Historic Buildings	3 Grade II
SMR Records	19 including roman, post medieval and modern
Designations	Green Belt except Iver Heath town, Notification area Pinewood studios; warren house, white lodge

15. Huntsmoor – Delaford parkland

This landscape zone is defined primarily by the two historic parks that survive today and their historic origins, the landscape is largely based on 18th and 19th century characterisation types. Delaford Park, lying just north of Iver is the site of an 11th century manor, while the present house and garden date to the 19th century. The present park is somewhat fragmented. Huntsmoor Park, on the other hand, survives relatively intact from the 19th century at least. Like Delaford it stands on the site of an older manor, the present house was probably built around the 18th century. Victoria County History lists it as the property of Christopher Tower, a major landowner in the area. These two parks lie in relative isolation in a largely modern setting consisting of current and flooded mineral sites and 20th century enclosure in the north derived from the division of older field systems. The zone is divided by the M25, the only characterisation type that does not follow older boundary lines. Isolated areas of woodland also survive in this zone dating back to the 18th century. The historic landscape is significant and their potential for further archaeological sites is moderate to high, in particular for Mesolithic finds in relation to the sites at Iver and Mansfield Farm.

Area	347ha
Principal historic landscape	Parkland 20th century enclosure mineral sites
Historic Buildings	10
SMR Records	Approximately 50 Mesolithic occupation site, Mansfield farm Mesolithic occupation site, Iver Delaford Park Huntsmoor Park
Designations	County/London Wildlife Site Huntsmoor Park

Figure 101: Huntsmoor to Delaford parkland zone



16. Iver – Shredding Green settlement

This landscape is characterised by the linear settlement of Iver and includes Shredding Green to the west and Love Green to the north. The boundaries for this zone are defined primarily by the extent of the settlement areas. There was already an established core to the three villages by the 1820's OS 2" Surveyors maps while Iver itself was mentioned in Domesday. The name 'Iver' originates from the Saxon 'Evreham' further indicating its origin was earlier than the 11th century, and the parish church contains Saxon fabric. The twentieth century saw rapid expansion in Iver along the path of the road towards Shredding Green during the 1920's while in the 1950's development began to move away from the main road. Modern development has largely been confined to infilling of areas between earlier housing estates or through small additions to the outskirts of the town. There is also a significant area of orchard to the west of the zone not linked with Langley Park. Overall the historic landscape is rather fragmented but with some significant survivals. The majority of HER/SMR records are medieval and modern and are largely confined to Iver itself although there are a small number of Saxon find spots in Iver churchyard. There is a moderate-high potential for further medieval and Saxon remains in this area, which may help to inform about the Saxon period in the Colne Valley Park.

Area	238ha
Principal historic landscape	Historic settlement 1950's housing pre 18th century field systems 20th century field systems orchard
Historic Buildings	15
SMR Records	30 including post medieval and modern
Designations	Green Belt except Iver core Conservation area – Iver, 1982.

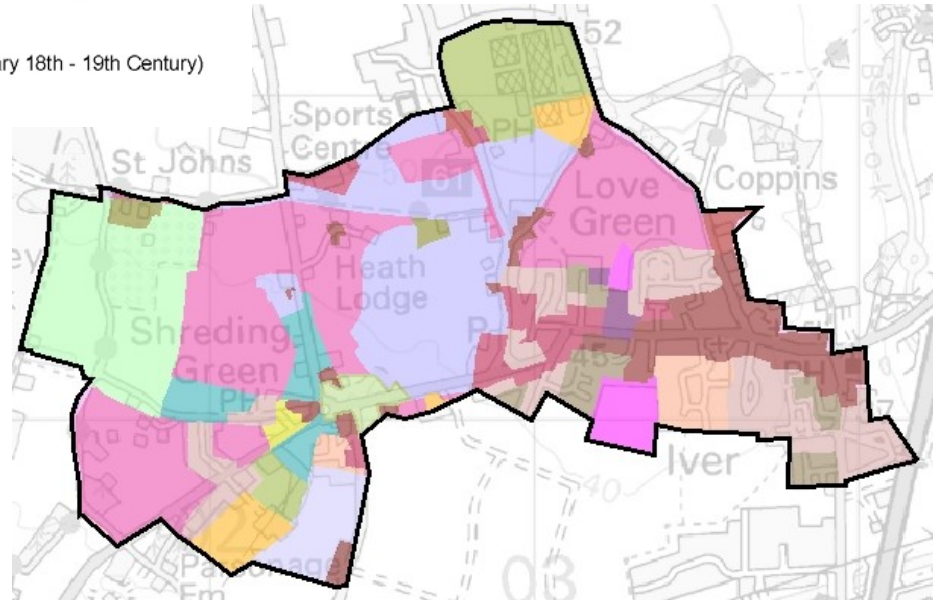


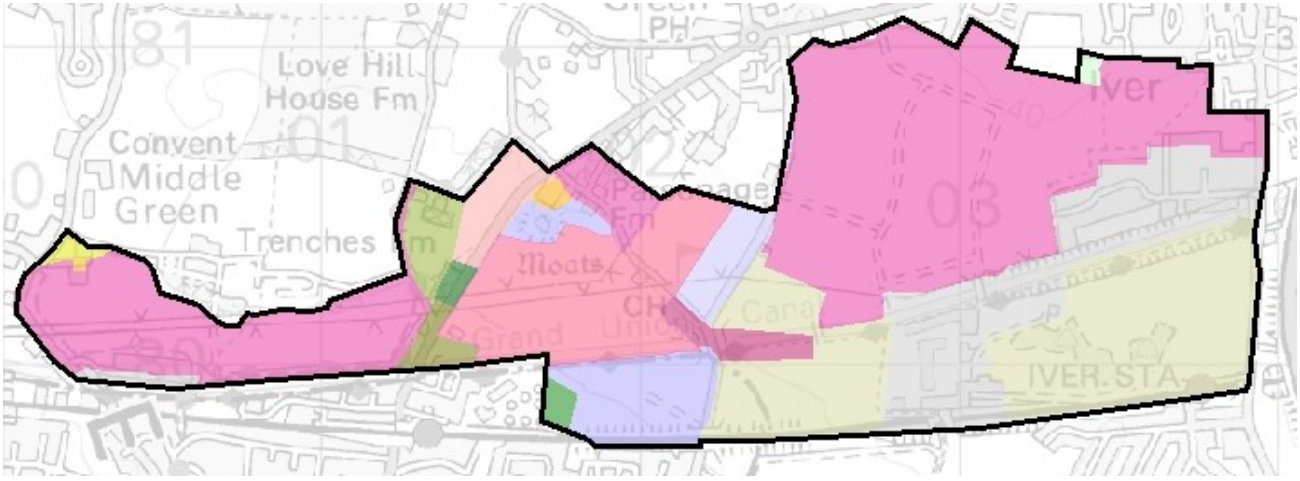
Figure 102: Iver-Shredding Green settlement zone

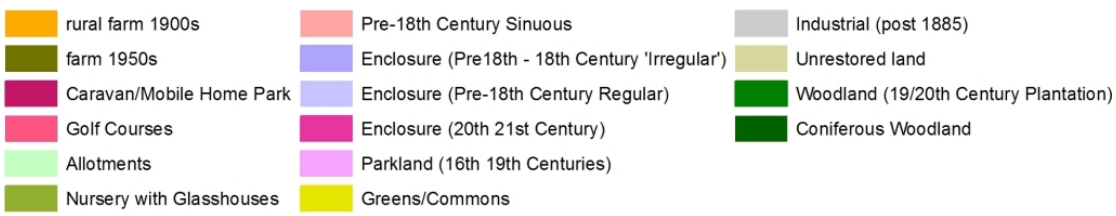
17. Slough Branch industrial

This landscape is defined by the industrialisation that has developed along the path of the Great Western railway (1880's) and the Slough Branch of the Grand Union Canal (1900's). A number of former extraction sites are recorded for the extraction of clay for Langley Brick works. This is an essentially twentieth century constructed landscape with modern field systems and a golf course in the north of the zone acting as a buffer between the industrial area and the historic zones of Iver and Langley Park. It has little historic landscape significance other than the canal and railway running through it. There are several Palaeolithic and Neolithic sites recorded along the paths of the railway and canal but the potential for further archaeological discoveries for this zone may be quite low due to the level of extraction that would have affected much of the below ground archaeology.

Figure 103: Slough branch industrial zone

Area	289ha
Principal historic landscape	20th century field systems industrial golf course disused mineral sites
Historic Buildings	3
SMR Records	80 including Palaeolithic Neolithic, post medieval and modern
Designations	Green Belt except Ridgeway estate



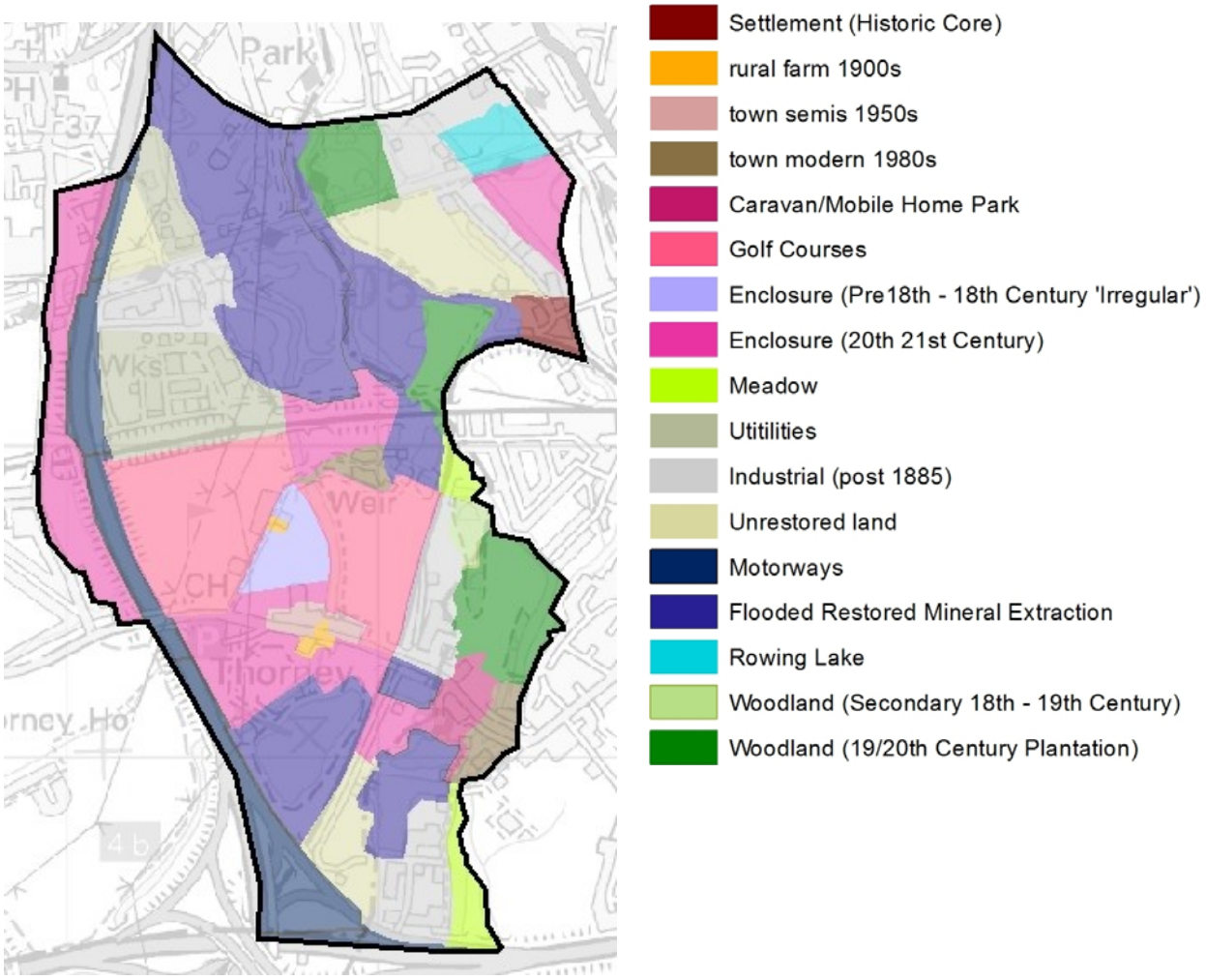


18. West Drayton aggregates

The Colne Valley Park boundary and the existing road network comprising of the modern M25 and the medieval Packet Boat lane, define the boundaries for this landscape. This zone is primarily twentieth century in character consisting of large area of flooded mineral sites, industrial zones, motorways and modern field systems of little historic significance. There are several significant archaeological sites in this zone including several prehistoric ditches and Mesolithic and Iron Age sites at Thorney Farm and a possible Saxon battlefield at Thorney Island. The potential for further archaeological evidence will be limited by the high level of extraction and industrialisation in this area.

Figure 104: West Drayton aggregates zone

Area	337ha
Principal historic landscape	Flooded mineral sites Industrial sites Modern woodland Golf course 20th century field systems
Historic Buildings	3
SMR Records	70 including Mesolithic, Neolithic, post medieval and modern
Designations	SAM Two ditches at Thorney Green Belt

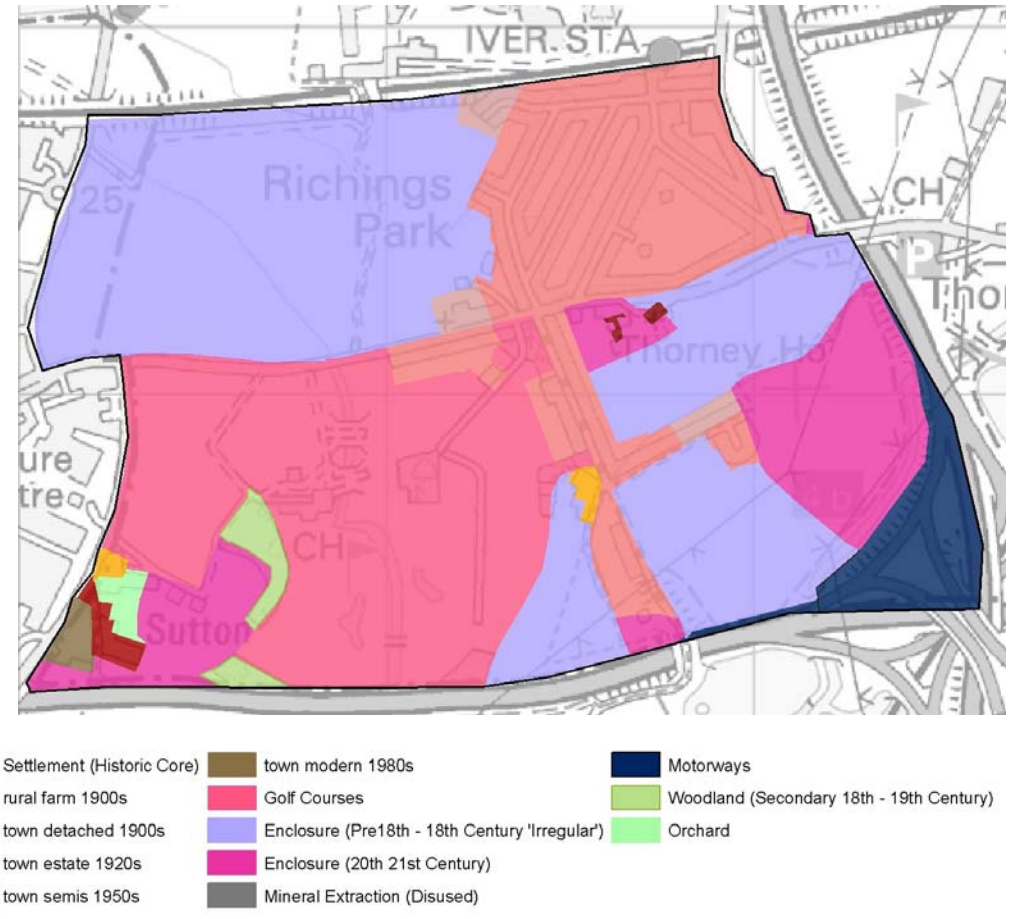


19. Richings Park estate

This landscape is defined by the historic boundaries of Richings Park estate. Since the 1920's the estate has been gradually broken down into the large 1920's housing estate, the 1950's golf course at Richings Park itself and several small areas of surviving pre 18th century field systems reducing the area's historic landscape interest. The potential for surviving archaeological finds is moderate. Previous finds include Palaeolithic, Mesolithic and Neolithic flint scatters and to the east of this zone lies one of the few known Saxon sites at Thorney, suggesting the potential for further archaeological finds. Only a small number of buildings are listed in this landscape including sites at Sutton and Thorney.

Area	341ha
Principal historic landscape	Pre 18th century field systems Golf course 1920's large housing estate
Historic Buildings	4 Grade II
SMR Records	55 including Mesolithic and post medieval
Designations	Green Belt Notification area Richings golf course

Figure 105: Richings Park estate zone

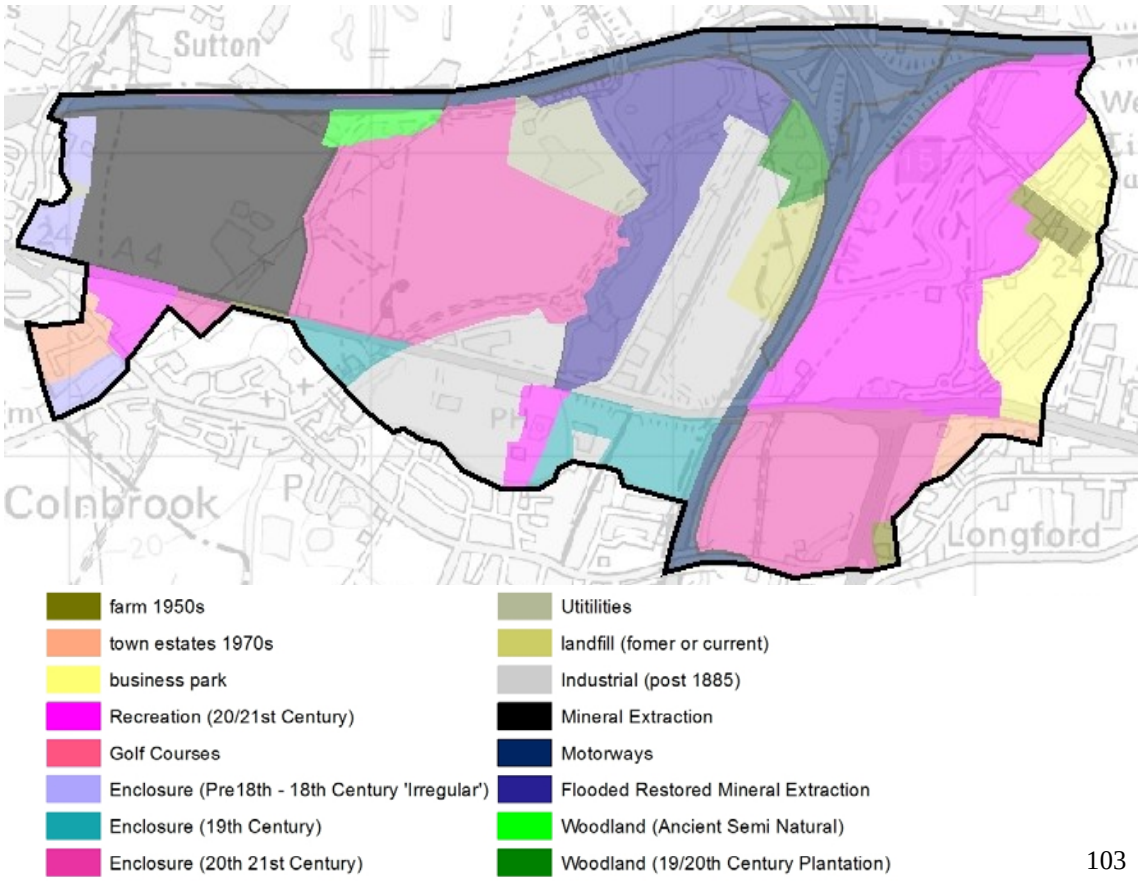


20. Colnbrook Industrial

This landscape has been significantly altered through aggregates extraction and the construction of the motorway network in the 1970's and 1980's. It has nothing of historic landscape significance .To the east of the M25, the landscape primarily consists of modern field systems and a large area of recreational ground over what was the last areas of Harmondsworth Moor. To the west of the M25 the landscape comprises large areas of current and former aggregates sites as well as industrial areas. The landscape was easily accessible via the motorway, the Colnbrook bypass and the now disused railway. This landscape contains comparatively few recorded archaeological sites but the Neolithic Stanwell Cursus and associated finds are present within this zone. The importance of this Cursus to the surrounding landscape indicates a high potential for further archaeological finds in this area east of the M25.

Area	437ha
Principal historic landscape	Recreation Motorways Mineral sites Disused mineral sites industrial
Historic Buildings	-
SMR Records	32 including Palaeolithic, Mesolithic and Neolithic - Stanwell Cursus
Designations	Green Belt

Figure 106: Colnbrook industrial zone

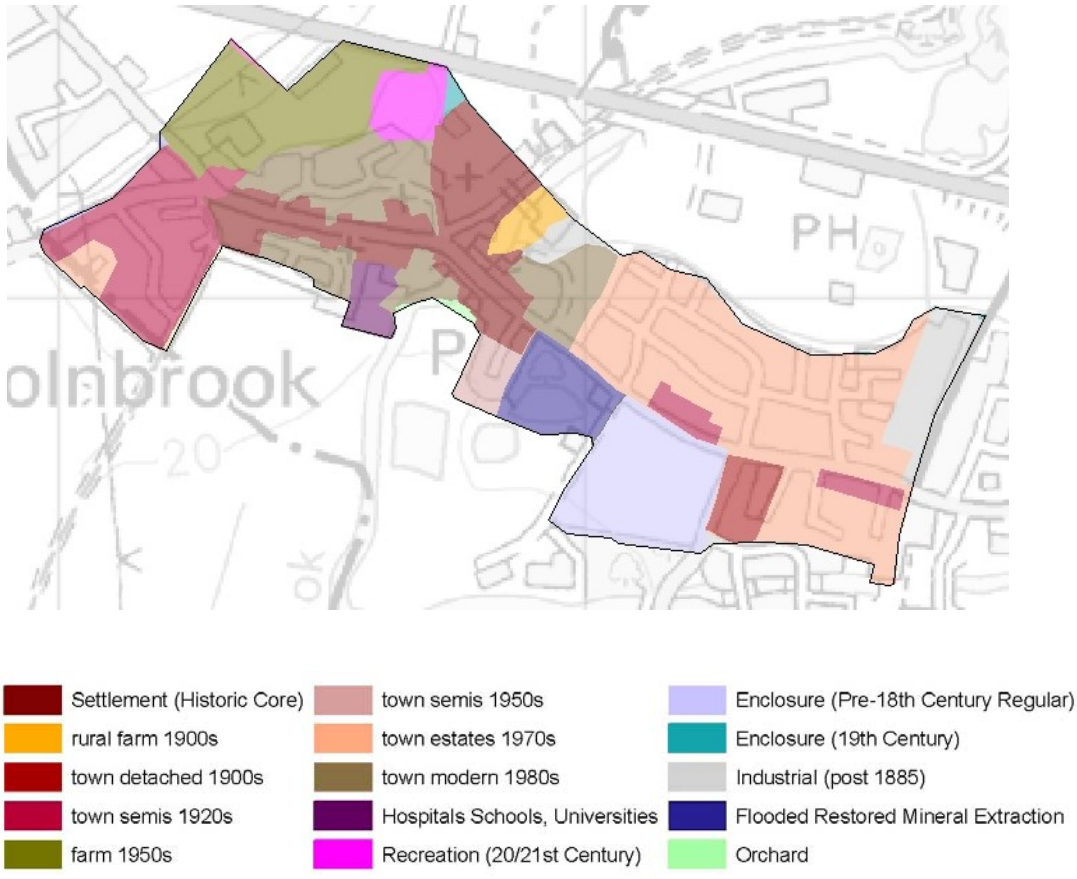


21. Colnbrook with Poyle settlement

The settlement area of Colnbrook and the northern end of Poyle defines this landscape from the surrounding open and industrial character zones. The settlement of Colnbrook dates to the late 18th century with the granting of the Colnbrook Turnpike Trust. The increased traffic along this road then led to the growth of this settlement. Modern settlement areas around Poyle are also included, although the large industrial trading estates are not. There are numerous medieval and post medieval records for this period including over 30 grade II listings, however, records dating to earlier periods are scarce despite recent development in the area. The lack of prior archaeological knowledge and the size of the zone would indicate a low to moderate potential for prehistoric finds in the area.

Area	73ha
Principal historic landscape	Historic settlement 1970's housing modern housing
Historic Buildings	31
SMR Records	23 post medieval
Designations	Green Belt

Figure 107: Colnbrook with Poyle settlement zone

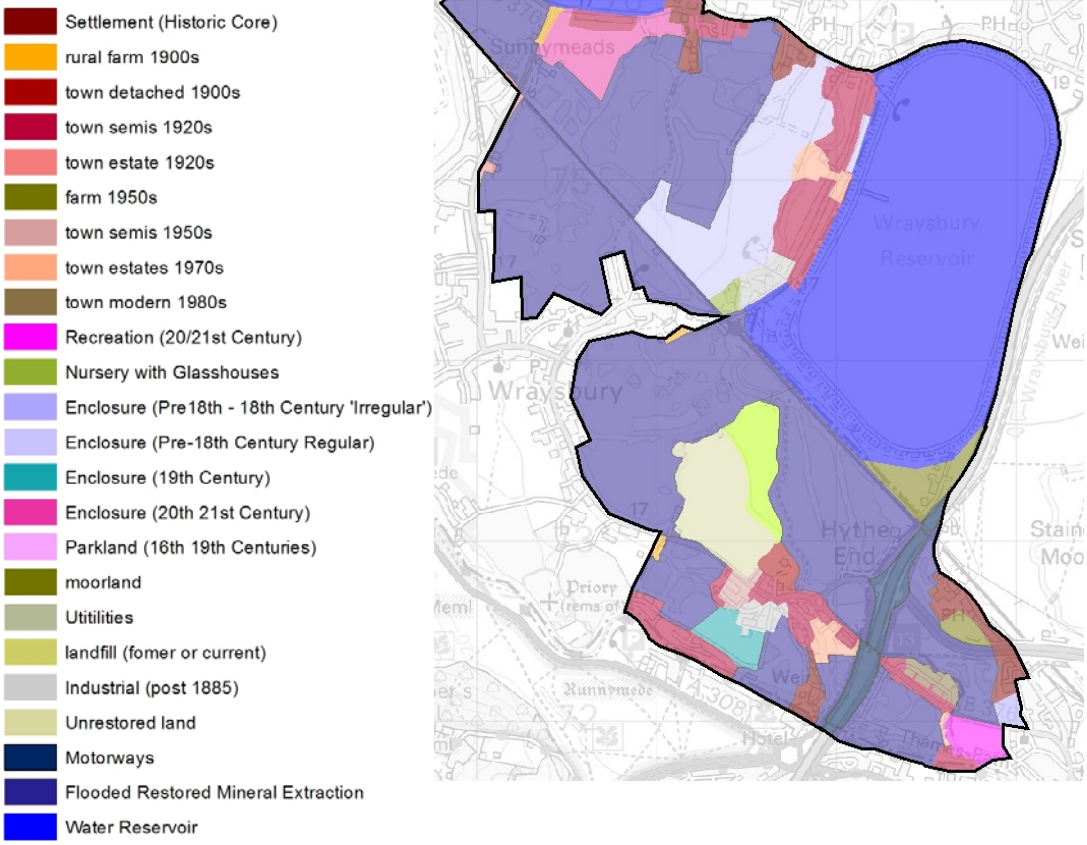


22. Wraysbury aggregates and reservoirs

This landscape is defined by the extensive series of reservoirs and flooded mineral sites that cover most of Wraysbury and Horton parishes. Although modern, arguably these are of significant historic landscape value in relation to the development of London's metropolitan infrastructure. Prior to extraction much of this landscape was characterised as pre 18th century field systems with small areas of historic settlement around Horton, Hyde End and Staines. Mesolithic finds in this area are rare, however there are a number of later finds dating to the Neolithic and the Bronze Age. The site of the Neolithic causewayed camp at Yeoveney is included in this zone where the present Wraysbury reservoir is situated. However, the potential for further archaeological discoveries is quite low for this area due to the extent of aggregates extraction combined with the two large reservoirs that cover the majority of the zone.

Area	1201ha
Principal historic landscape	Reservoirs Flooded mineral sites
Historic Buildings	13
SMR Records	75 including roman, post medieval and modern
Designations	SAM Ankerwycke Priory (SAM No. 9) Green Belt

Figure 108: Wraysbury aggregates and reservoirs zone

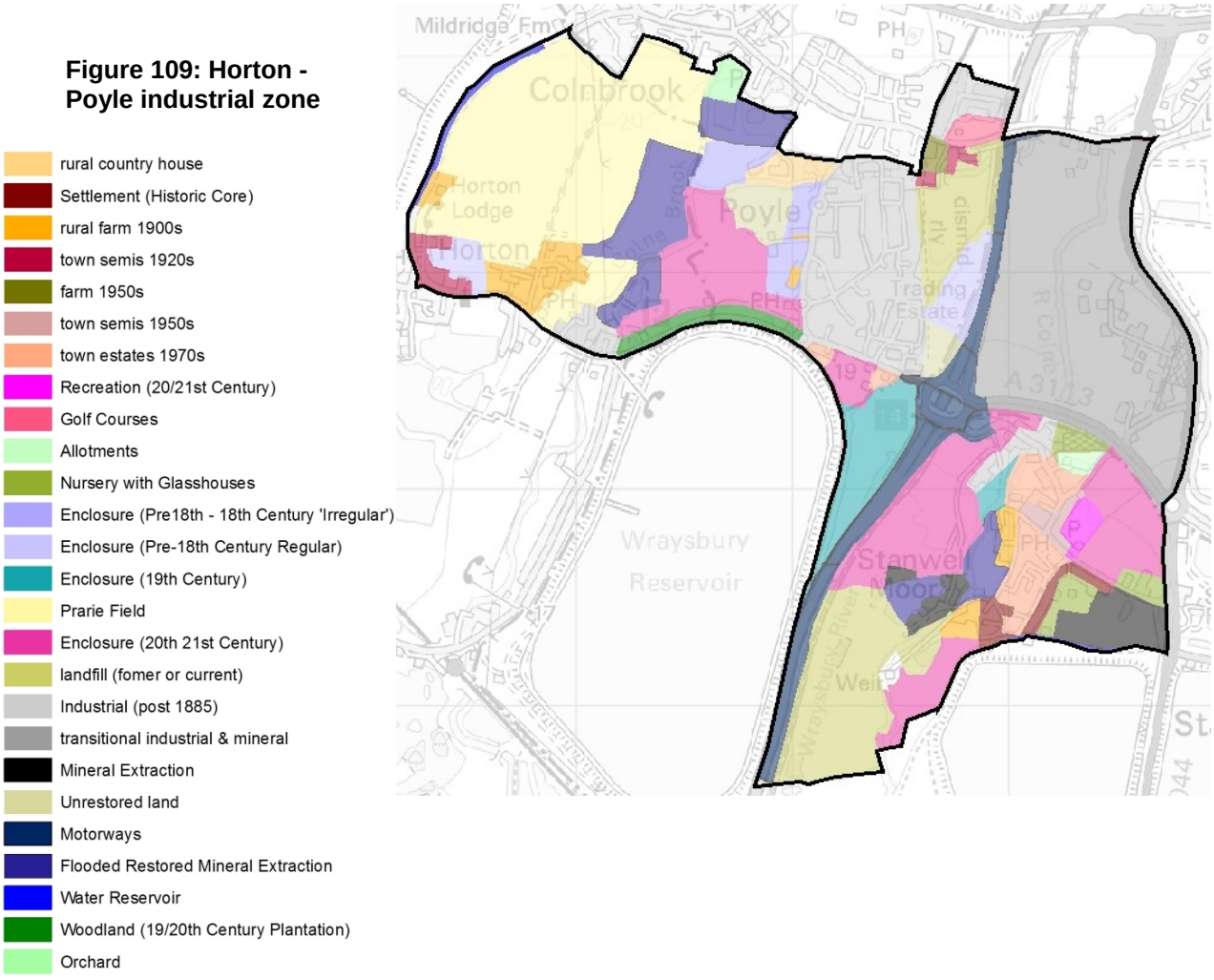


23. Horton – Poyle Industrial

This zone is defined by the high industrialisation and development that has been undertaken in this area, it is bordered in the south and west by the line of reservoirs and lakes and in the north by the settlement zone of Colnbrook. To the west of the zone there is a large area of prairie fields used as arable land while the east is comprises of industrial sites along with current and former aggregates sites. The location of Heathrow just to the east of this zone has no doubt had an affect on the increased development. It has little historic landscape significance. Previous archaeological records indicate that this area has been in use since the Palaeolithic times, and the potential for further discoveries is moderate, particularly in the west of the zone where development may not have affected below ground deposits.

Area	633ha
Principal historic landscape	mineral sites Industrial Motorway 20th century field systems
Historic Buildings	12
SMR Records	55 including Palaeolithic Mesolithic Neolithic and modern
Designations	Green Belt SSSI County/London Wildlife sites

Figure 109: Horton - Poyle industrial zone

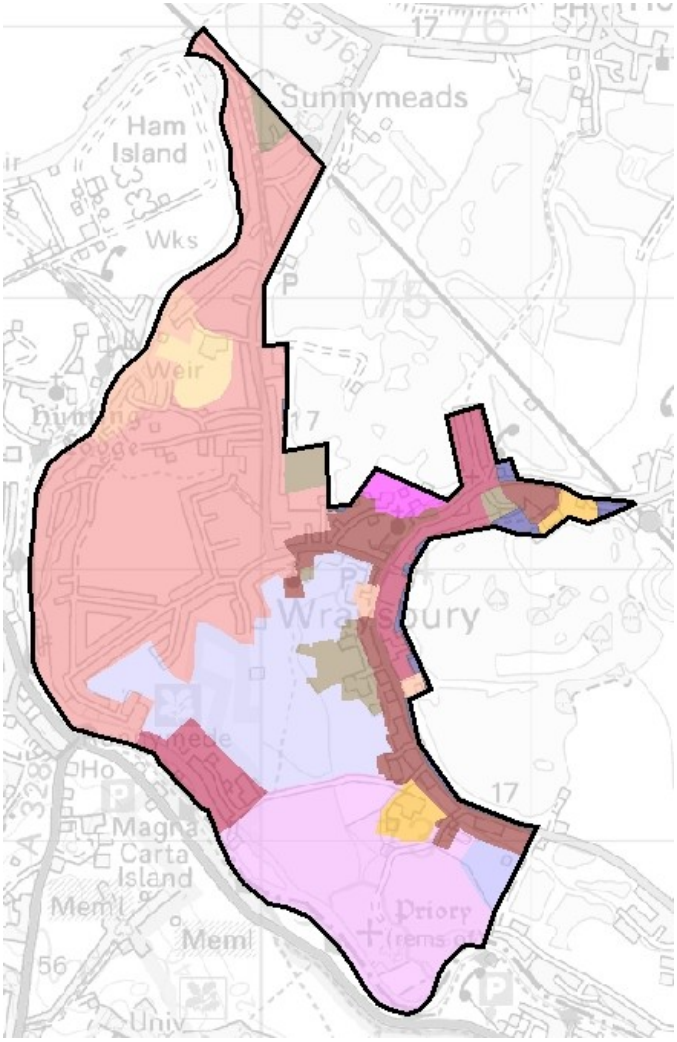


24. Wraysbury settlement

This landscape is defined by the extent of settlement around the historic core of Wraysbury with its associated fields and parkland which together are of significant historic landscape value. The location of this landscape between the fertile river Thames and its tributaries have made this area a prime location for settlement for thousands of years with settlement evidence for the Wraysbury area dating to the Neolithic, Roman, Saxon and medieval times. This zone also includes the historic park of Ankerwycke, once part of Ankerwycke Priory, the remains of which still survive. The highly distinctive medieval linear settlement following the curving Staines road has been extended west with areas of housing estates added in the 1920's along the path of the river Thames around Remenham house. The potential for further archaeological remains in this area should be high as the extended period of settlement from the Neolithic through to the modern day makes this landscape one of the oldest continuously settled areas in the Colne Valley Park.

Area	291ha
Principal historic landscape	1920's estates pre 18th century field systems historic parkland
Historic Buildings	12
SMR Records	6 including Neolithic and Bronze Age
Designations	Green Belt

Figure 110: Wraysbury settlement zone

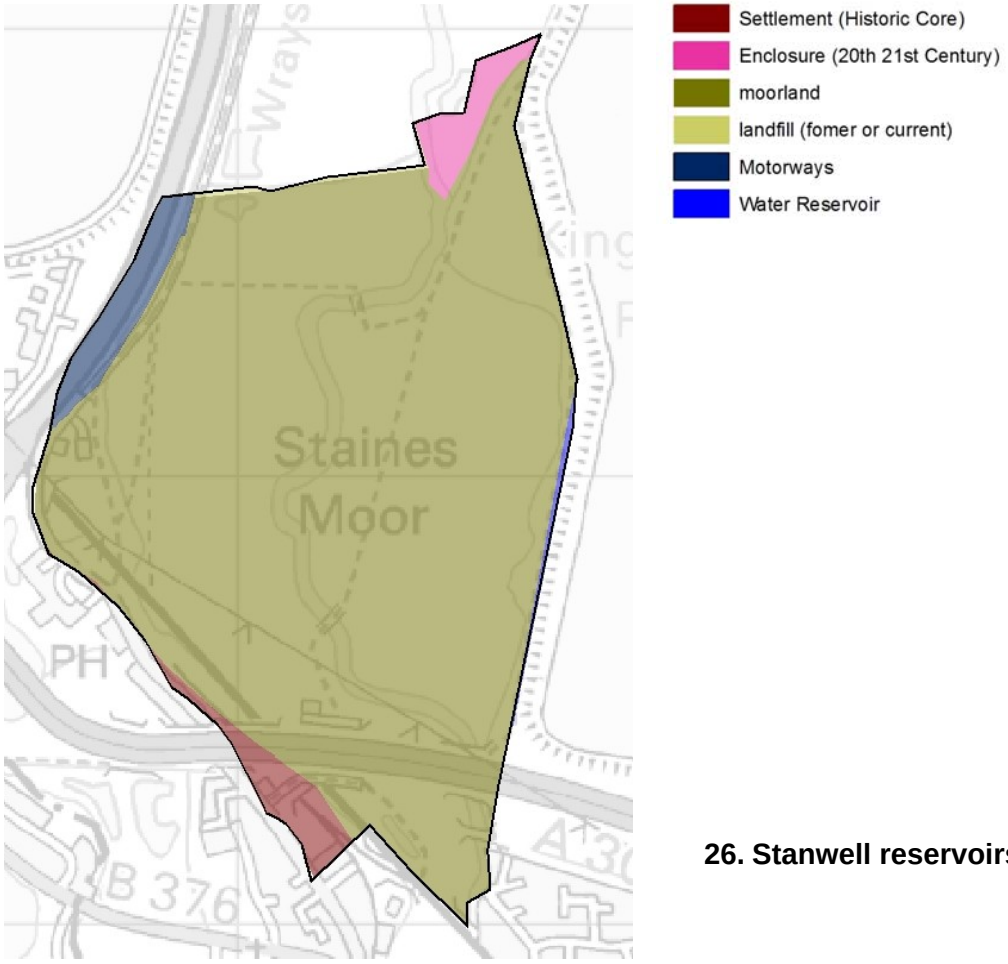


25. Staines moorland

The boundaries for this small landscape zone are defined by the surviving extent of Staines Moor. The 19th century extent of this moor continued north as far as Stanwell Moor settlement and extended both east and west to a small degree. As the main surviving fragment of the ancient and once extensive Lower Colne moors this area is accorded high historic landscape significance. Just outside the Colne Valley Park boundary to the south lies the site of Caesar's Camp (SAM 146), an important Roman site. To the south of this zone runs the path of the Staines turnpike and the modern A30. This road was highly significant in the development of Staines and the local area in the early 19th century. The moor itself is crossed by numerous tracks and aerial photographs show evidence of crop marks and enclosures indicating the high potential for archaeological remains in the area.

Area	414ha	142ha
Principal historic landscape	reservoirs	Moor-land
Historic Buildings	-	-
SMR Records	-	1
Designations	Green Belt Special Protection Area	Green Belt SSSI

Figure 111: Staines moor land zone



26. Stanwell reservoirs

This landscape is defined by the three large reservoirs near Stanwell Moor. All three reservoirs were built in the 1920's over parliamentary enclosed field systems, at the same time the roads were straightened. Although modern, arguably these are of significant historic landscape value in relation to the development of London's metropolitan infrastructure. The 19th century Staines Turnpike, now the modern A30, borders it in the south, which would have been highly significant in the development of this area during the 19th and early 20th centuries. The reservoirs are listed as a Special Protection Area and are a popular destination for bird watching. The potential for further archaeological discoveries in this area is low due to the impact of the reservoirs on the below ground archaeology during construction. Management of the zone should, however, be a high priority due to its status as a Special Protection Area and its potential as a wildlife habitat.

Figure

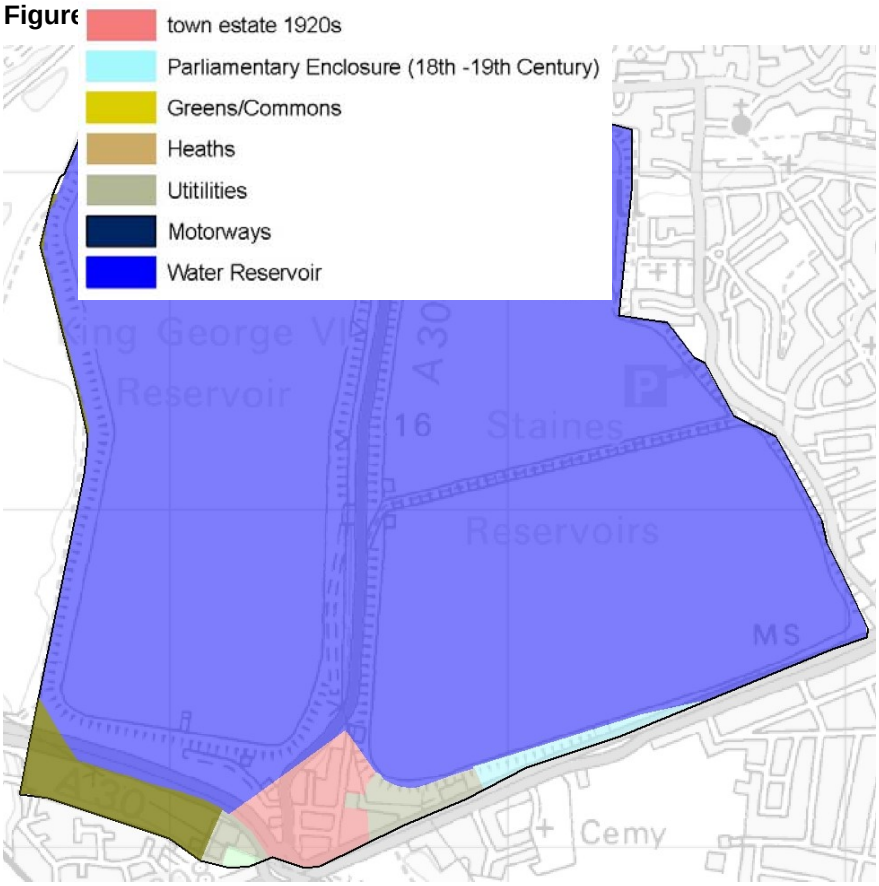
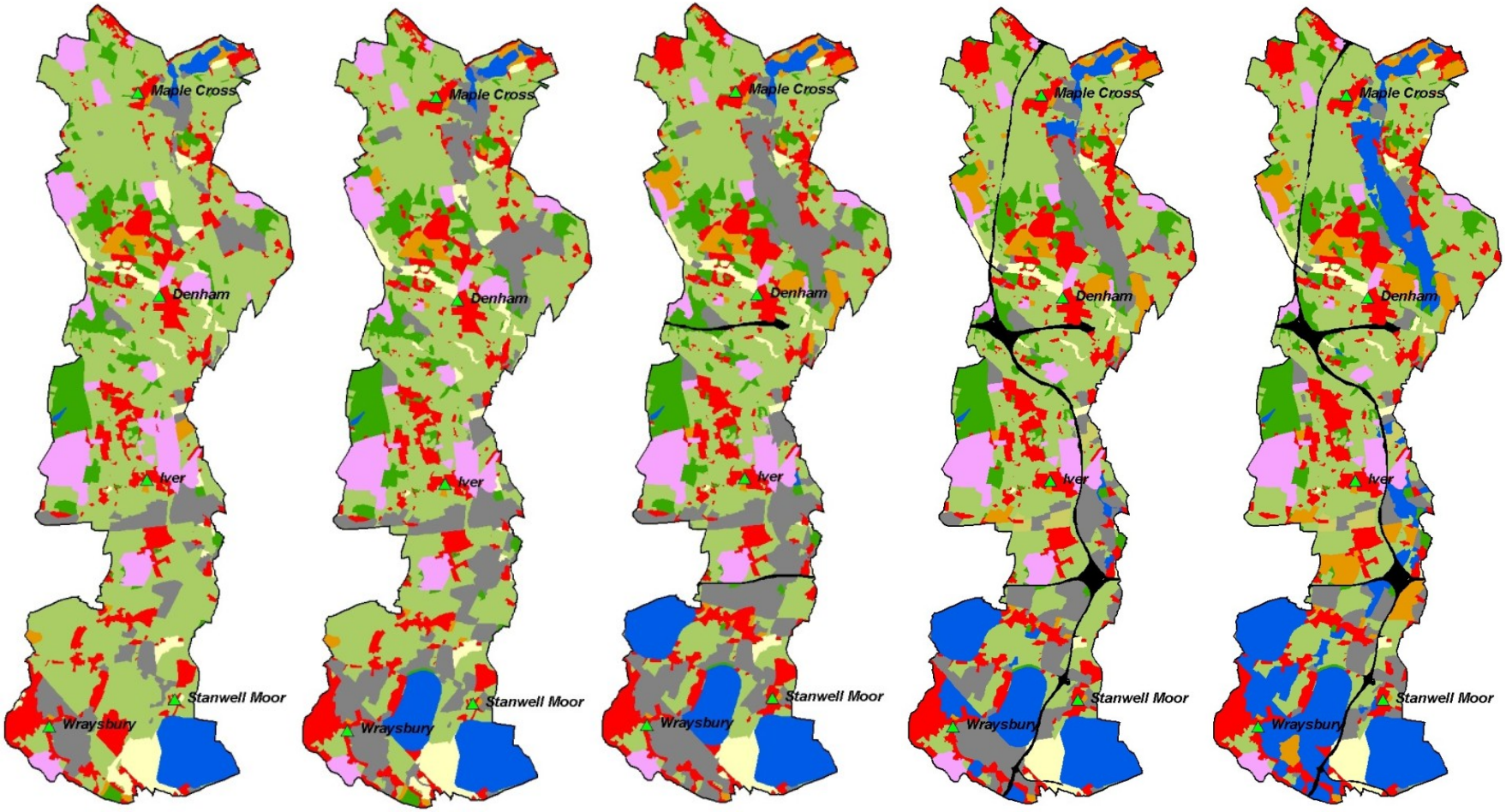


Figure 113: Landscape changes 1955-2005

a) 1955-1962 b) 1969-1970 c) 1972-1990 d) 1983-1996 e) 2005


Maple Cross
Denham
Iver
Stanwell Moor
Wraysbury
Maple Cross
Denham
Iver
Stanwell Moor
Wraysbury
Maple Cross
Denham
Iver
Stanwell Moor
Wraysbury
Maple Cross
Denham
Iver
Stanwell Moor
Wraysbury
Maple Cross
Denham
Iver
Stanwell Moor
Wraysbury

8. Conclusion

8.1. Future management prescriptions

Impact of the Colne Valley Regional Park

Figure 113 illustrates changes to historic landscape character from the 1950's before the Colne Valley Regional Park was created until the present day. This charts the expansion and decline of aggregates extraction landscapes following the creation of the Metropolitan Green Belt and the Park. A significant number of extraction sites were already in progress by 1955 while by the 1980's aggregates sites were increasingly being regenerated as lakes for recreational use and, in the south, reservoirs. It is also clear from this illustration that very little change has occurred to woodland and parkland areas while settlement growth has been minimal in the later twentieth century. Several conservation areas, two registered historic parks and many listed buildings as well as numerous special designation areas for nature reserves and the waterscapes have also been added since the 1970's adding a further layer of protection to the Park. The most significant increase has been to waterscapes in the Colne Valley Park through the regeneration of the vast majority of aggregates sites to lakes and reservoirs, now heavily used for a variety of recreational purposes. Another major landscape-scale impact has been from the construction of motorways, particularly motorway junctions. From an historic landscape perspective alone it is difficult to identify the direct impact the CVRP has had – this would require consideration of the outcomes specific Park initiated projects beyond the scope of this study.

Future Management

In the previous section, each HLZ summarises the historic landscape and built heritage significance and archaeological potential that can be used to provide an overall set of management principles. The following table summarises the significance of each of these elements that make up the historic environment of each HLZ and provides a **preliminary** management prescription for each area based on its historic environment interests. In practice further detailed local studies and consideration of wider factors (e.g. the natural environment, recreation and access, economic viability) would have to be factored in.

The prescription terms used are as follows:

- **Conserve** – encourage the conservation of distinctive historic features (hedgerows; buildings; parkland; townscape etc)
- **Enhance** – undertaken measures to enhance the character and appreciation of an area (e.g. conservation area improvement; improved access and interpretation)
- **Restore** – undertake measures to reinstate lost historic features (e.g. hedgerows; watercourses)
- **Repair** - undertake measures to repair damaged historic features (e.g. hedgerows; buildings)
- **Create** – an area with potential for creation of new landscapes without significant loss of historic interest.

- **Survey** – undertake further study to better understand and manage the resource.

This assessment can be used to inform the Colne Valley Regional Park Management Plan and other relevant plans and strategies; notably Local Development Frameworks, Minerals & Waste Development Frameworks, the Colne Local Environment Agency Plan (LEAP).

Colne Valley Park HLC local HLZ: Summary of Historic Environment significance and management prescriptions

	Local Character Area	Historic landscape	Historic Buildings	Archaeological sites/potential	Preliminary Zone Management Prescriptions
1	Heronsgate	Medium	High	Medium	Conserve
2	Newlands – Horn Hill	Medium	Medium	Medium	Restore & Enhance
3	Maple Cross	Low	Low	Medium	Create
4	Batchworth-Denham flooded mineral sites	Low	Medium	Low	Create
5	Duke of Westminster estates	Medium	Medium	Medium	Conserve & Survey
6	Harefield urban	Medium	Medium	High	Conserve, Enhance & Survey
7	Chalfont-Denham Parkland	Medium	Medium	High	Conserve, Enhance, Restore & Survey
8	Harefield aggregates	Low	Low	Low	Create
9	Newyears Green – Breakspear House landscape	High	Medium	Medium	Conserve & Enhance
10	Oxford Road settlement	Low	High	High	Conserve, Create & Survey
11	Alderbourne woods	Medium	Low	Medium	Conserve
12	Southlands Manor	Medium	Medium	High	Create & Survey
13	Langley Park	High	High	High	Conserve, Repair, Survey & Enhance
14	Iver Heath	Low	Low	Medium	Restore
15	Huntsmoor – Delaford Parkland	Medium	Medium	High	Survey, Restore & Enhance

	Local Character Area	Historic landscape	Historic Buildings	Archaeological sites/potential	Preliminary Zone Management Prescriptions
16	Iver	Medium	Medium	Medium	Conserve & Enhance
17	Slough Branch Industrial	Low	Low	Low	Create
18	West Drayton modern aggregates	Low	Low	Medium	Create
19	Richings Park	Medium	Low	Medium	Conserve & Repair
20	Colnbrook Industrial	Low	Low	Medium	Create & Survey
21	Colnbrook with Poyle	Medium	High	Medium	Conserve
22	Wraysbury extracted	Medium	Medium	Low	Conserve
23	Horton – Poyle Industrial	Low	Medium	Medium	Create
24	Wraysbury	Medium	Medium	Medium	Conserve, Survey & Enhance
25	Staines moorland	High	Low	High	Conserve
26	Stanwell Reservoirs	Medium	Low	Low	Conserve

8.2. Future projects

This table lists some possible future historic environment-related projects which could be taken forward by the Colne Valley Partnership, along with a guide to relevant databases and whether each could involve local schools or the local community.

Table 2: Short summary of possible future projects

Project title	Description	Relevant database	Community involvement	Education possibilities
Prehistoric landscapes and archaeology	A geo-morphological study of the early prehistoric settlement in the Colne Valley in relation to geology, landscape and environment to inform future mineral extraction. Link to the National Ice Age Network? Possible community links to development-led archaeological projects.	HER/SMR Geological and quarry records	Y	Y
Farmsteads and the landscape	A short course aimed at 9-16 yr olds, assessing the impact of farms and farmland in their community. Can include changes to the landscape since the World Wars.	Whole HLC	N	Y
Historic Farms Survey	Survey of historic farm buildings to record historic buildings.	Farmsteads	Y	N
Village Design Statements	As promoted by Natural England. A way of involving the community in the planning process and of gaining an understanding of the landscape through local importance.	Whole HLC	Y	Y
Boundary Mapping	In depth study of local, parish and county boundaries, identifying areas under threat and possible areas of boundary reinstatement	Boundaries	Y	Y
Local Industries	Pamphlets, short books on the local industries of the Colne Valley, e.g., watercress beds, mills on the Colne. Possibility of extending to restoration.	HLC	Y	Y
Local produce promotion	Promotion of local produce from farms/orchards of historic interest.	Farmsteads HLC	Y	N
Habitat surveys	Assessment of the ecology of hedgerows and boundaries. Could also be extended to river habitat surveys to provide comparable data-sets for the natural environment	Boundaries Routeways	Y	N
Conservation practices	Short courses available to the public on hedgerow conservation	Boundaries	Y	N
Historic tracks and	Parish level. Assessment of current footpaths to inform Rights	Routeways	Y	Y

paths	of way Improvement Plan linking to promotion of historic routes and possibility of reinstatement of lost routes			
Water ways	Assessment of the current nature and condition of historic river structures to inform future management, maintenance and restoration. Link to Environment Agency Colne LEAP.	Routeways	Y	N