Chapter 2: Methodology

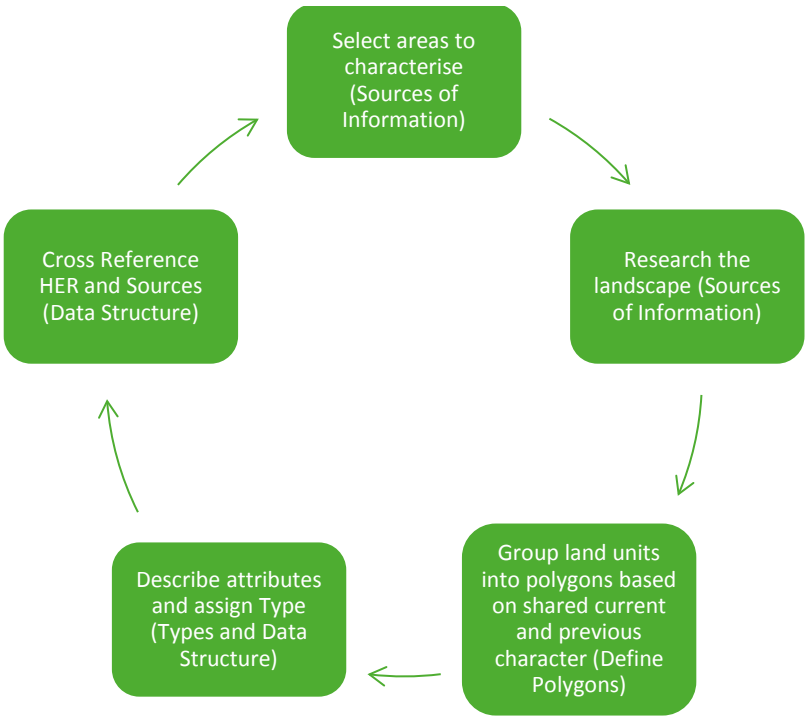
And for each cell,
she weighs the values of its attributes
stretches the sources
of the past to interlock
through time and space,
holds in balance the then and the now,
and fills them one by one
with the condensate of centuries

From 'The Queen of Polygonia' by Dr Romola Parish, Poet in Residence.

This chapter explains the methodology employed to create the Oxfordshire HLC dataset. It sets out the sources of evidence used, in particular the maps consulted, before going on to describe how polygons were defined and recorded. This process is illustrated using a worked example. Fifteen Broad Types and 109 narrower HLC Types were defined and are listed in this chapter. The structure of the HBSMR database is then explained, using the same worked example. The initial pilot study is described and its results discussed. The integration of existing HLC datasets is also presented: the North Wessex Downs AONB and Chiltern Hills AONB HLCs and the Oxford City HLC.

2.1 Introduction

The aim of the Oxfordshire HLC project was to identify and record evidence of the processes which have shaped the character of the current landscape. To achieve this, polygons, units of land that share predominant characteristics, were mapped across the whole of the county. For each spatially distinct polygon, data were recorded in an Access database. This included information on the dominant attributes common to the polygon, the Broad and HLC Type those attributes assigned the polygon to, the date of origin of the current landscape type, previous landscape types, associated monuments, and sources of evidence used. This methodology was primarily desk-based, using maps and aerial photographs as the primary sources. A photographic survey was conducted in the field to enhance the understanding of different HLC Types. All mapping was carried out within MapInfo, a GIS program, and the linked database was created within the HLC module of HBSMR, an Access database developed and managed by Exegesis. This module created a direct link between the mapped polygon in MapInfo and the textual data record created in HBSMR, ensuring consistency and permitting detailed analyses during the later phases of the project. Furthermore, as the database used by Historic Environment professionals, the use of HBSMR by the HLC project promotes compatibility between these two datasets.



After Sunley, T. 2016. Wiltshire and Swindon HLC Project.

2.2 Sources of Information

Type	Source	Date	Coverage	Format	Use
Modern Maps	Ordnance Survey MasterMap, 1:2500	2012-2016	Full	GIS Layer	Used as base map. Polygons snapped to or traced this layer. Primary source of information for current landscape character.
	Ordnance Survey 1:25000	2012-2016	Full	GIS Layer	Additional source of information for current landscape character.
Historic Maps	Ordnance Survey 3rd Edition, 6"	c.1920	Full	GIS Raster Image	Primary source of information for early 20th century landscape character.
	Ordnance Survey 1st Edition, 6"	c.1881	Full	GIS Raster Image	Primary source of information for 19th century landscape character.
	Ordnance Surveyors Drawings	c.1810	Full	Digital Image	Draft survey across study area. Used to supplement evidence from the late 18th century maps and the 1st Edition Ordnance Survey map.
	Davis' Map of Oxfordshire, 2"	c.1797	Historic County of Oxfordshire	Hard Copy	Primary source of information for 18th century landscape character.
	Rocque's Map of Berkshire	c.1761	Historic County of Berkshire	Hard Copy	Primary source of information for 18th century landscape character.
Aerial Photographs	Vertical Aerial Photographs	2009-2010	Full	GIS Layer	Supplementary source of information for current landscape character.
	Vertical Aerial Photographs	1999-2000	Full	GIS Layer	Supplementary source of information for current landscape character.
	Bing and Google Maps Aerial Photographs	2012-2016	Full	Digital Map	Supplementary source of information for current landscape character.
LiDAR (Light Detection and Ranging)	Environmental Agency LiDAR 50mm, 1 metre, 2 metre	2013-2016	Partial	GIS Layer	Supplementary source of information for previous landscape character. Particularly used for the identification of ridge and furrow and open field systems.
Ancient Woodland Mapping	Natural England's Ancient Woodland Inventory Mapping	2012-2016	Full	GIS Layer	Primary source of information on the location of ancient woodland in the current landscape.
Textual	A History of the County of Oxfordshire. Victoria County History. Vols 1-18	1907-2016	Partial	Text	Supplementary source of information for previous landscape character. Particularly useful for parish field systems in the later medieval and early post-medieval periods.
	A History of the County of Berkshire. Victoria County History. Vols 3 and 4	1923-1924	Full	Text	Supplementary source of information for previous landscape character. Particularly useful for parish field systems in the later medieval and early post-medieval periods.
	The Enclosure Maps of England and Wales 1595-1918. A Cartographic analysis and Electronic Catalogue. Kain, R.J.P., Chapman, J., and Oliver, R. R	2004	Partial	Text	Supplementary source of information on post-medieval Parliamentary Enclosure in Oxfordshire.

2.3 Defining Polygons

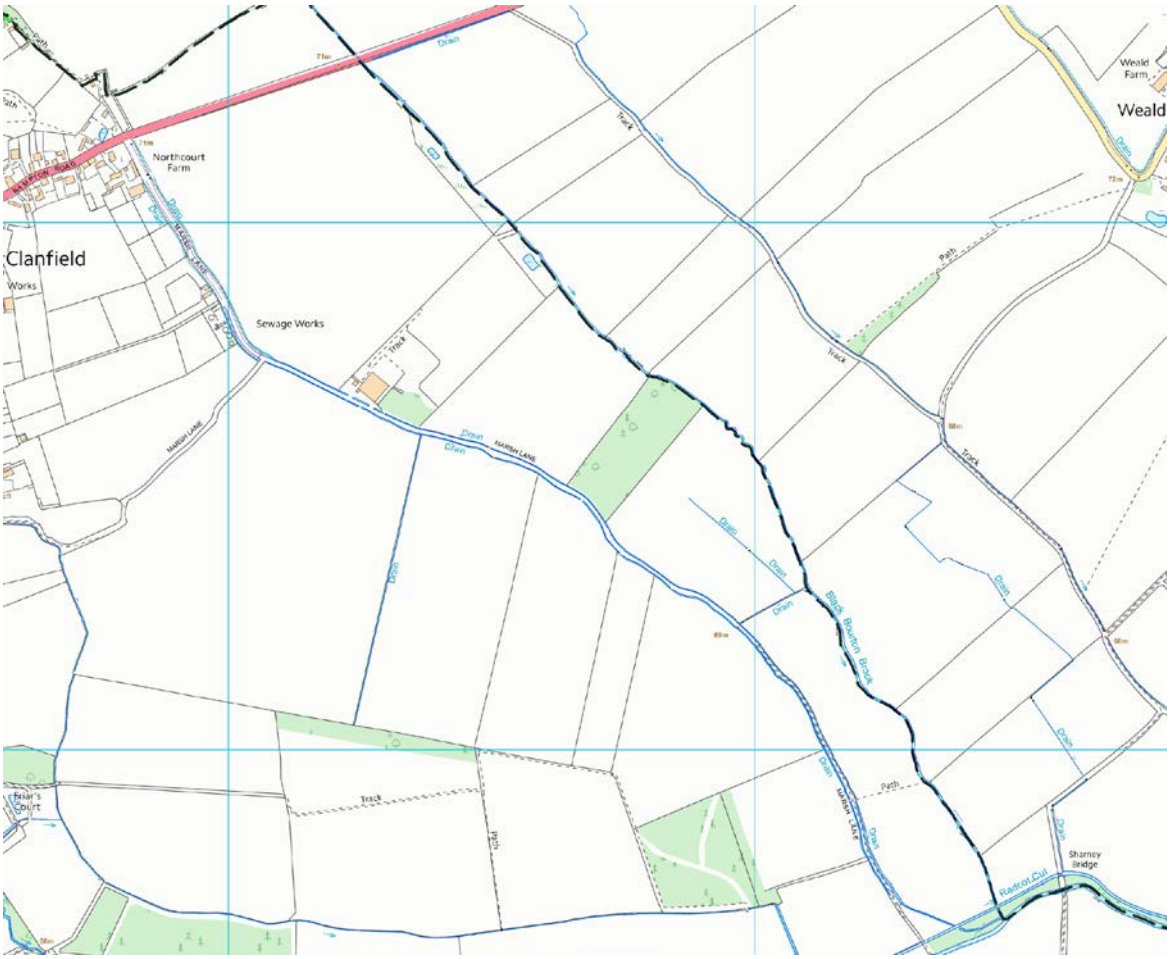
The basic unit of characterisation is the polygon, a discrete spatial unit. Polygons were defined by grouping together individual units of land shown on the OS MasterMap on the basis of common current landscape character, previous landscape character, and morphology. In order to create units of a suitable size for the scope of this project and to allow county-wide analysis, a minimum polygon size was set: two hectares in rural areas and one hectare within settlements. This minimum size meant that some generalisation had to occur as it was the *dominant* landscape character which was recorded in each polygon. Polygons were digitised in MapInfo.

This method of grouping resulted in polygons with a particular combination of attributes; these were then used to assign the polygon to specific Broad and narrow HLC Types.

2.3.1 Worked Example

The example of land between Clanfield and Weald is given to illustrate the methodological process used.

Stage 1: Select area



OS MasterMap

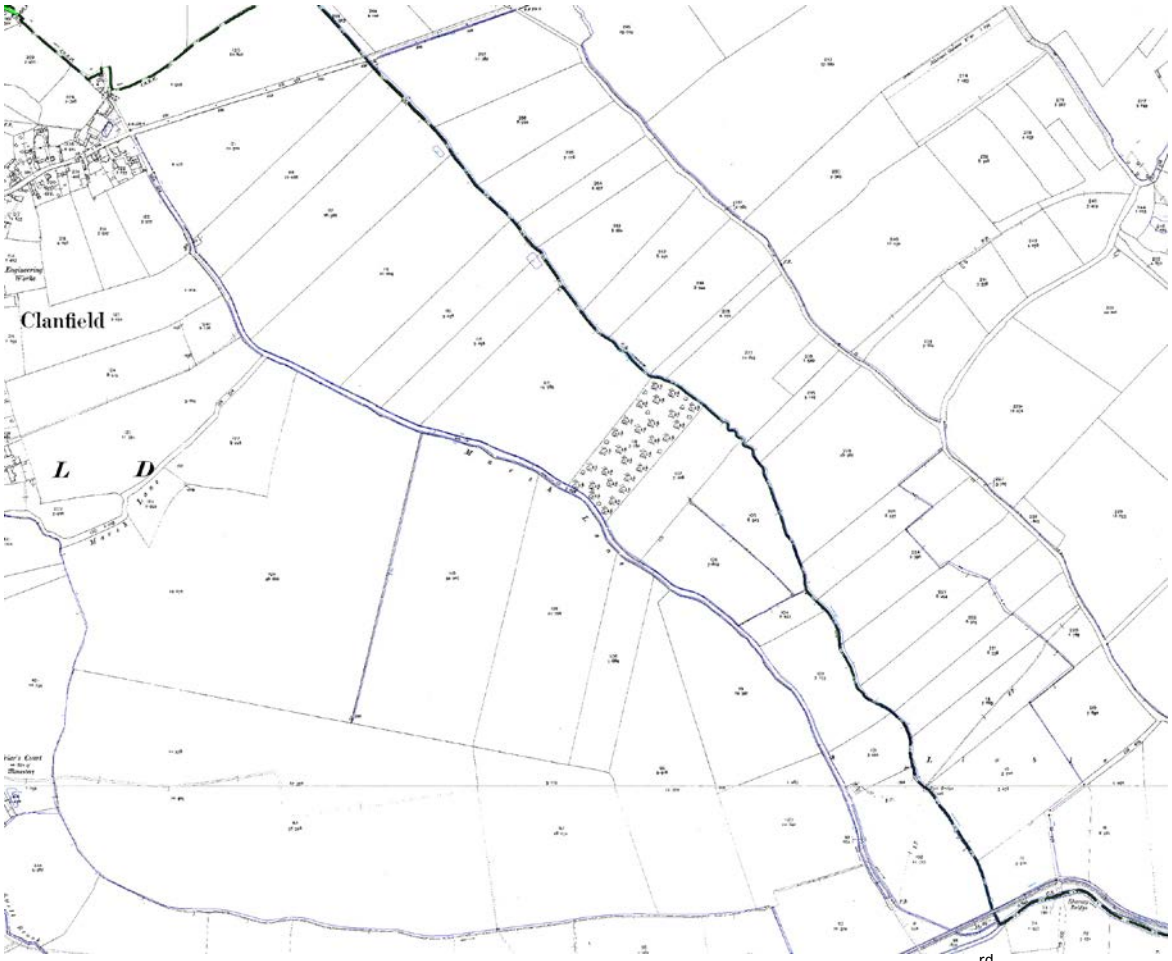
The area selected for characterisation includes fields with various morphologies, some woodland, and a few isolated buildings. The buildings individually are too small to characterise and were, therefore, included with the surrounding character types. The Enclosures appear to form discrete blocks characterised by particular morphologies and sizes. These suggest shared current HLC Types.

Stage 2: Research the landscape

To understand how and when the current HLC Types have formed and to ensure that the shared characteristics apply to both current and previous types, historic maps, aerial photographs, LiDAR, and textual sources were consulted.

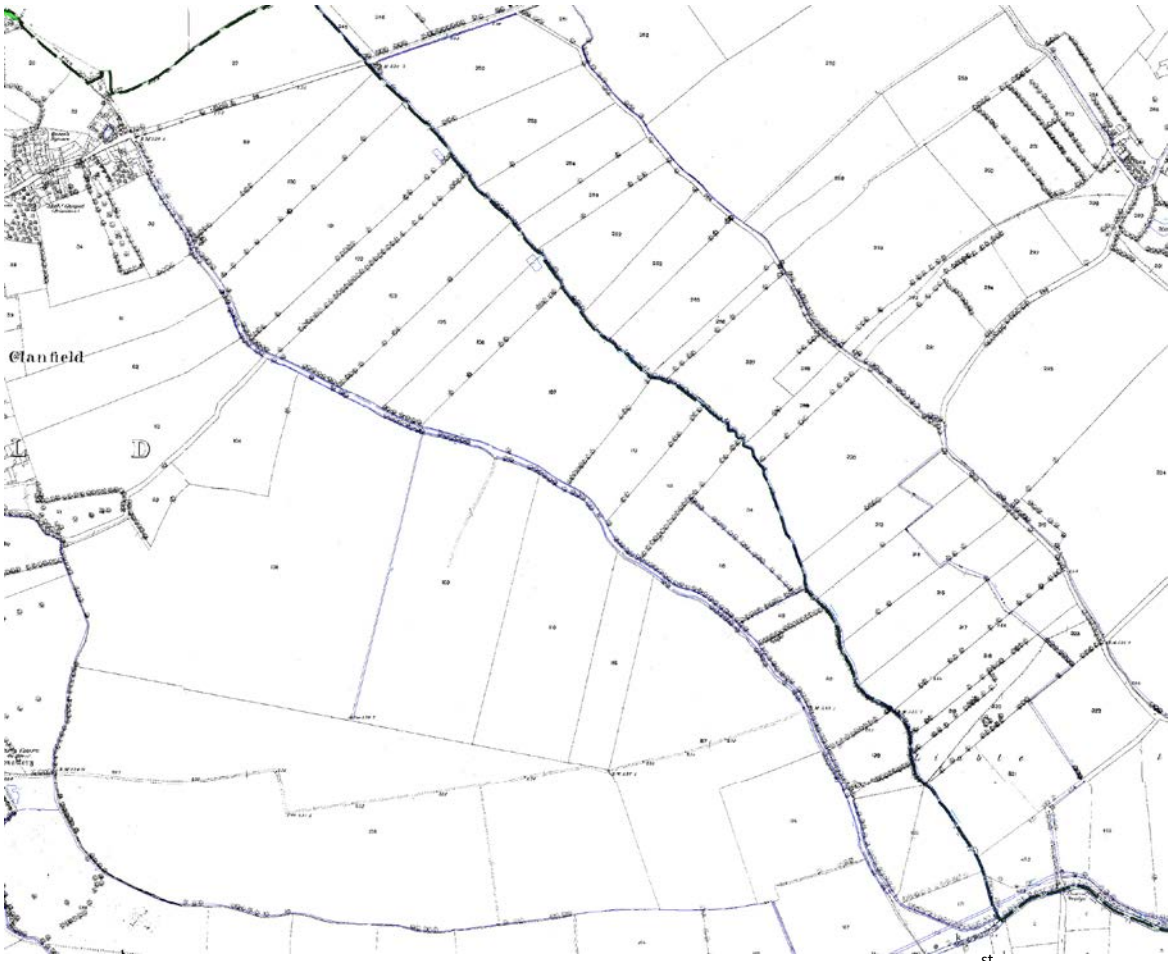
Aerial Photograph, 1999-2000

This aerial photograph shows that the Enclosures are consistent with those shown on the current MasterMap. The roughly square area of Woodland in the south, however, appears newly created with the trees being young saplings in this photograph.



OS 3rd Edition, c.1920.

In the early 20th century, the triangular area of enclosures south-east of Clanfield was broadly consistent with those apparent in the later 20th century, with the exception of some boundary loss. The wooded area to the south, however, does not appear on this map. Either side of Black Bourton Brook there were a series of long, narrow strips. Many of the boundaries of these fields had been removed by the later 20th century.



OS 1st Edition, c.1881.

The 1st Edition OS of this area is similar to the 3rd Edition map; this suggests a degree of stability between the late 19th century and the early 20th century. It also implies that these fields predate 1881. In contrast, the woodland that was shown in the central part of this area in 1920 does not appear on this map, indicating that it was probably planted between 1881 and 1920.

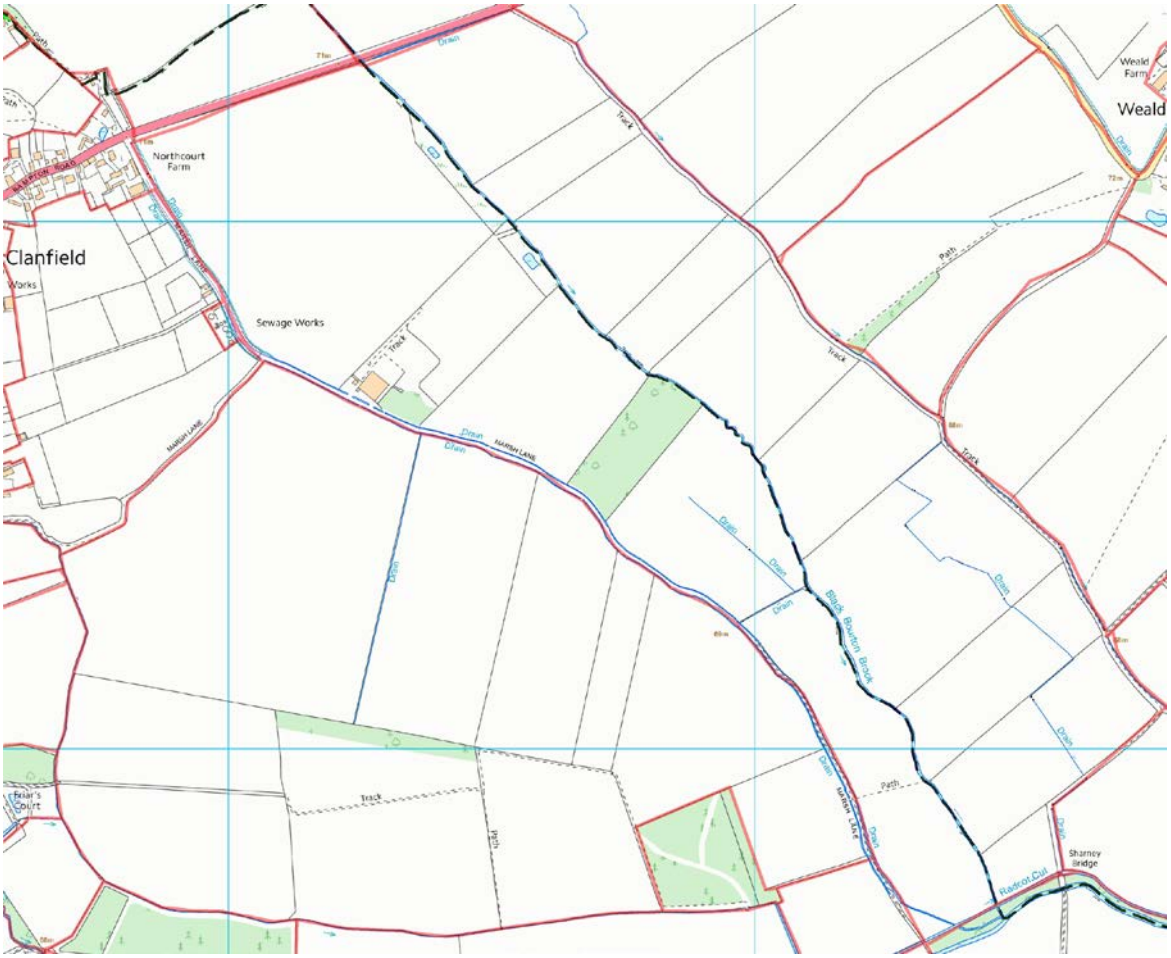
Davis' Map, c.1797.

Davis' Map looks quite different and shows the land divided between Enclosures south of Clanfield and Open Fields, labelled "Bampton Fields", towards Weald. This suggests that there was extensive reorganisation in the early 19th century.

LiDAR.

Interestingly, LiDAR data demonstrates that the later triangular area of fields corresponds with an area marked by an extensive earthwork system demarking predominantly square fields. The pattern of these fields may indicate organic growth and their form may suggest a prehistoric date. These earthworks are absent from the land either side of the brook. To the east, near Weald and corresponding with Bampton Fields shown on Davis' Map, there are traces of Ridge and Furrow.

Stage 3: Define Polygons



Polygons Defined

Using information from the various sources, it was possible to define polygons which had shared current and previous characteristics. The large triangular unit of fields formed one polygon and the fields either side of the brook formed another, for example. The former is characterised by fields with straight internal boundaries and a curvilinear perimeter. It appears to have been created by some reorganisation of the fields shown on Davis' Map in 1797. These earlier fields enclosed the land south of Clanfield at a time when the open fields near Weald were still in use to the east.

This worked example is returned to below in the section on Data Structure.

2.4 Broad Types and Historic Landscape Character Types

Each polygon was assigned to a Broad Type, a higher level category such as “Enclosure”, and a narrower HLC Type, a subdivision of the Broad Type, such as “Planned Enclosure”. The definition of types initially drew from Historic England’s historic characterisation thesaurus and existing HLC projects, particularly the Chilterns and North Wessex Downs AONB, and was adapted to best capture Oxfordshire’s landscapes.[1]

Fifteen Broad Types were identified and were subdivided into 109 HLC Types. Information about the definition, occurrence, distribution, age, and change over time of each of these types can be found in Chapter 3. A photograph of an example of each type is, where possible, also included.

[1] Historic England’s Historic Characterisation Thesaurus can be downloaded from this webpage.

Broad Type	HLC Type
Civic Amenities	Reservoir
	Utilities
	Sewerage Treatment works
	Waste Disposal
Civil Provision	Educational Facility
	Oxford College
	Health Care Facility
	Religious and Funerary
	Gov Office and Civic Centre
	Immigration Detention Centre
	Police station
	Prison
	Park and Ride
Commercial	Bank
	Business Park
	Fish Farm
	Office/Commercial
	Offices
	Shops
	Retail park
	Shopping Centre
	Road Side Service Centre
Communication	Road
	Main Road
	Major Road Junction
	Bridge
	Motorways
	Bike Path/ bridleway
	Ridgeway
	Car Park
	Rail transport sites
	Canals and Locks
	Airfield (Commercial)
	Telecommunications
Enclosure	Open Field System
	Ancient Enclosure
	Closes
	Crofts (medieval & Post Medieval)
	Ladder Field System
	Squatter Enclosure
	Assarted Enclosure
	Piecemeal Enclosure
	Planned Enclosure
	Prairie / Amalgamated Enclosure
	Reclaimed land
	Reorganised Enclosures
	Paddocks and Stables
Industry	Processing industry
	Manufacturing
	Mill / Mill Complex
	Energy Industry
	Extractive Works
	Flooded Extractive pits
	Depot
	Industrial Estate
	Scrap Yard
	Timber Yard

Broad Type	HLC Type
Military	Castle
	Hillfort
	Defence Site
	Base
	Airfield
	Barracks
	Shooting Range
	Communications
Orchard and Horticultural	Allotment
	Orchard
	Vineyard
	Nursery/ Garden Centre
	Urban Garden
Ornamental	Parkland / Designed Landscape
	Deer Park
	Ornamental water body
	Domestic Garden
Recreation	Sports Facilities
	Racing Sports Sites
	Other Leisure facilities
	Community Centre
	Country Park
	Public Park
	Golf Course
	Hunting Site
	Nature Reserve
	Managed Archaeological Site
Rural Settlement	Village
	Hamlet
	Dwelling
	Hotel
	Caravan/Chalet/ Camping site
	Country House
	Farmstead
Unenclosed Land	Green
	Rough Ground
Urban Settlement	Historic Urban Core
	City
	Town
	Dwelling
	Hotel
	Public House
	Market
	Caravan/Chalet/ Camping site
Water and Valley Floor	River
	Fresh Water Body
	Water Meadow
	Watercress Beds
Woodland	Ancient Woodland
	Secondary Woodland
	Plantation
	Woodland Pasture

2.5 Data Structure

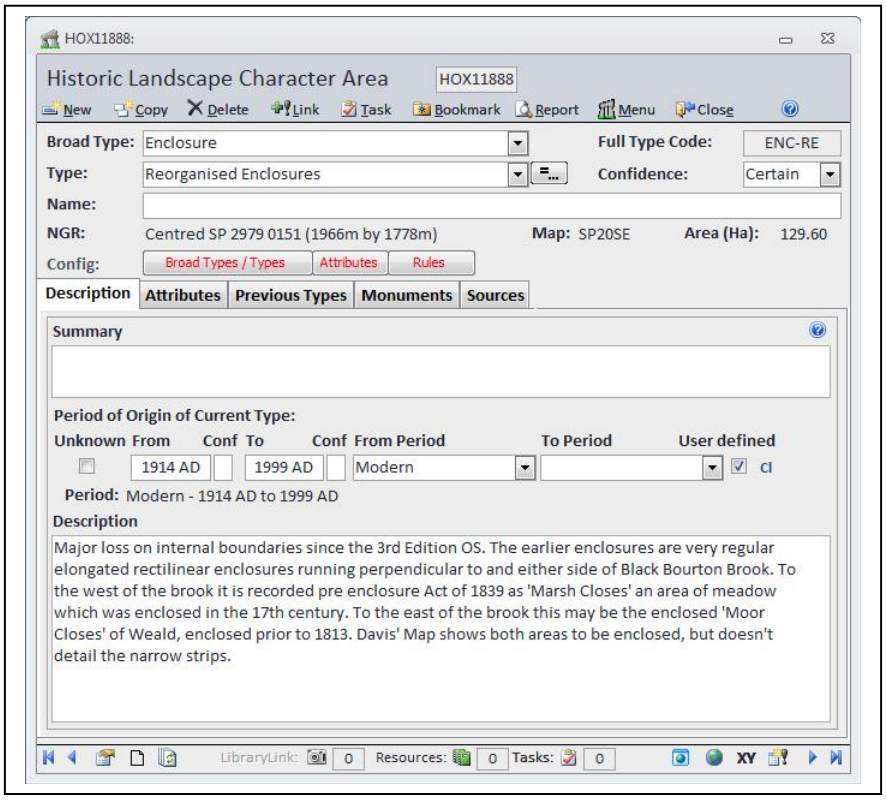
For each polygon created in MapInfo a corresponding database record was created within the HLC module of HBSMR. Each record comprised fields arranged over five data tabs:

- Description
- Attributes
- Previous Types
- Monuments
- Sources

This structure was defined by the HLC module, but HLC Types (current and previous) and attributes were customised so as to best capture the landscape of Oxfordshire. Within the HLC module, new HLC Types and attributes could be added as the project progressed and new landscape types were identified. It is also possible to return to existing records and update or enhance these. This has not formed part of the current project, but the data structure does permit this.

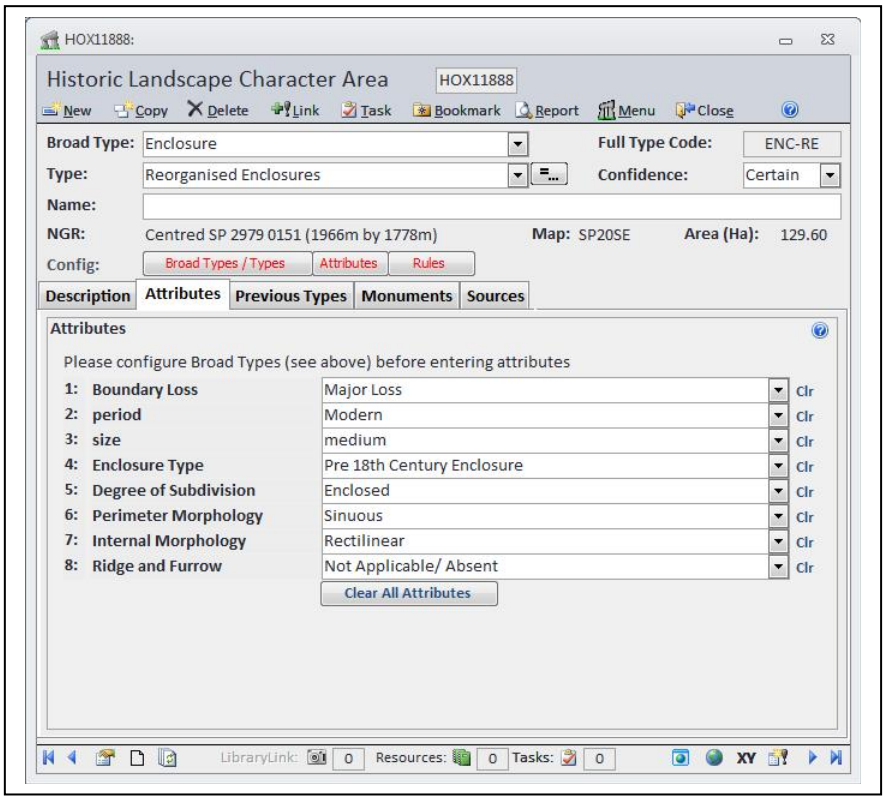
The example record used to illustrate the data stored within HBSMR continues the worked example used above.

2.5.1 Description



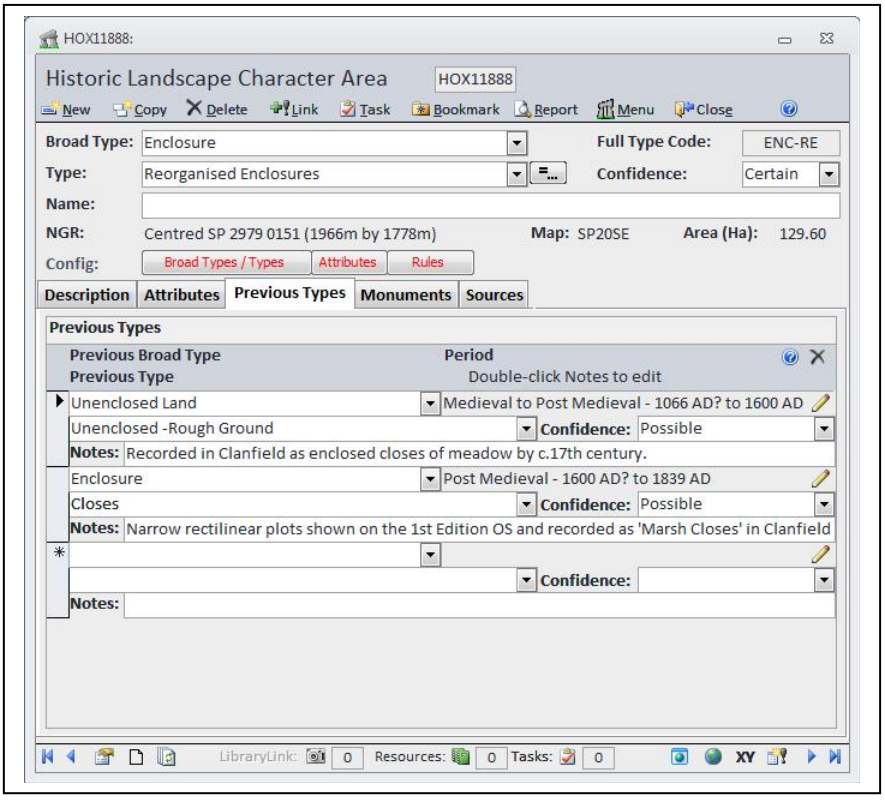
This tab records key information about each polygon and its current landscape type. The information stored is detailed in Appendix 2.

2.5.2 Attributes



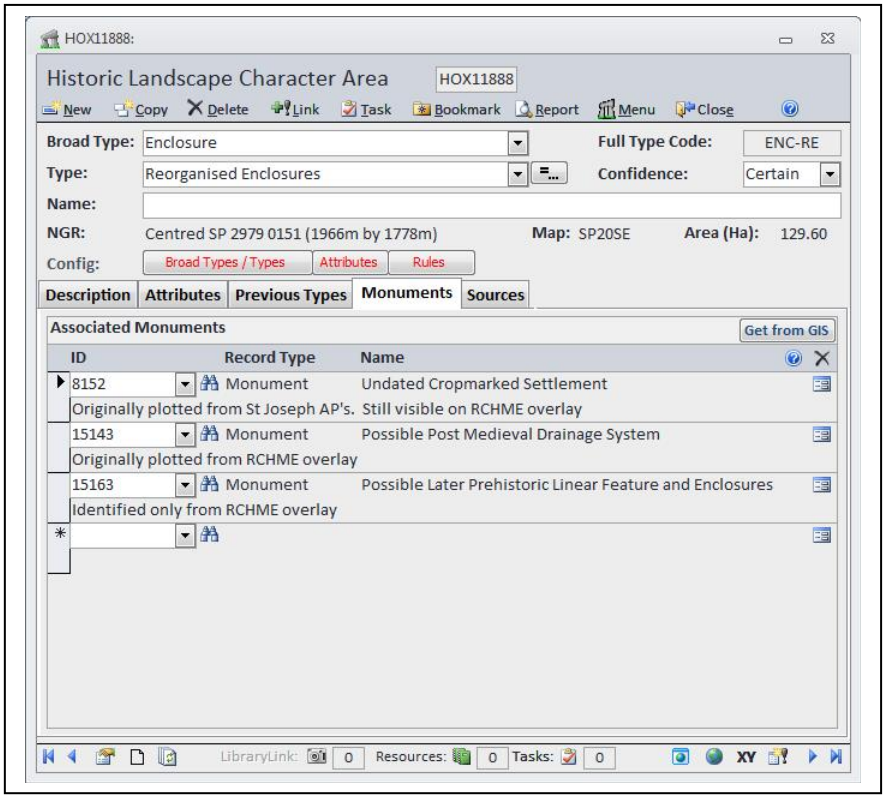
The attributes tab records detail about the characteristics of each polygon from a series of drop-down menus. These attributes are Broad Type specific. See Appendix 2 for Data Structure and Appendix 3 for a list of possible attributes recorded for each polygon.

2.5.3 Previous Types



This tab records any information about previous Broad and HLC Types identified on historic maps, LiDAR, or from textual sources. In the same manner as the Description tab, it records: Broad Type, HLC Type, Year From/To, Confidence, and a brief summary or description.

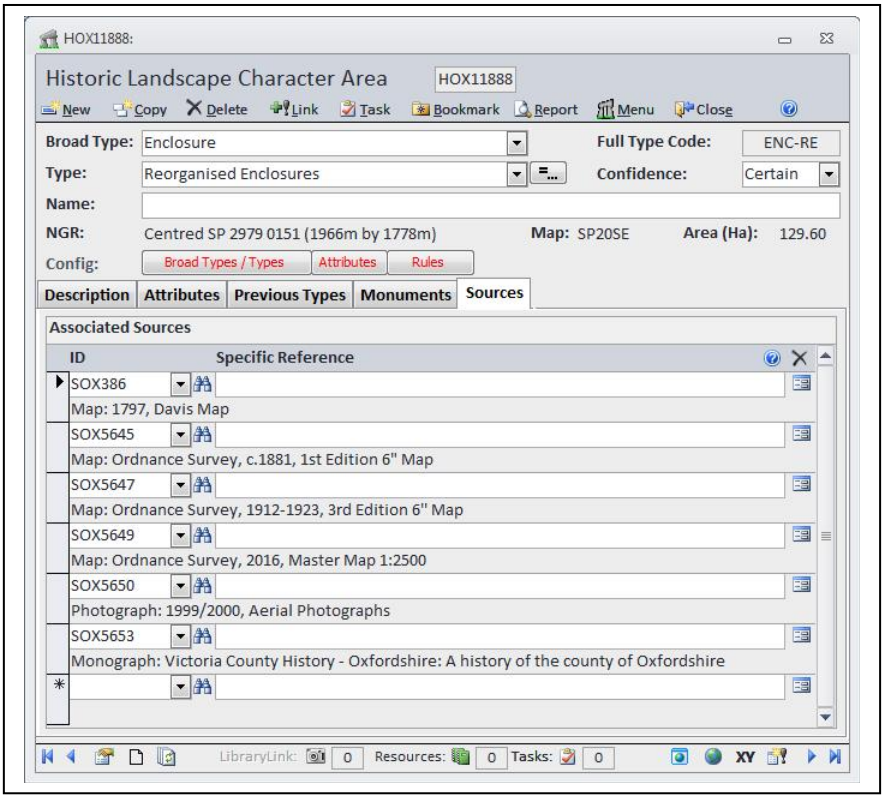
2.5.4 Monuments



Using information from MapInfo, this tab links to any Historic Environment Record assets which fall within the defined polygon. It records the asset/Monument Identity Number, Record Type, Name, and Notes.

Please note: these links were only routinely populated in the later phases of the project and anyone wishing to explore HER assets within a specified HLC polygon should also consult the HER Officer.

2.5.5 Sources



The Sources tab lists all of the sources used to define and describe each polygon. These sources are part of the Oxfordshire HER and can be cross-referenced, by using their Identification Number, with any other information held on that database. Along with the ID Number, the source type, date, and name are also given.

2.5.6 Metadata

In addition to the data recorded by the user, certain pieces of information were automatically populated by the HLC module in HBSMR. These were: Created By (name) and Last Modified (date). These provide an audit trail for the creation of each individual record in the HLC database.

2.6 Pilot Study

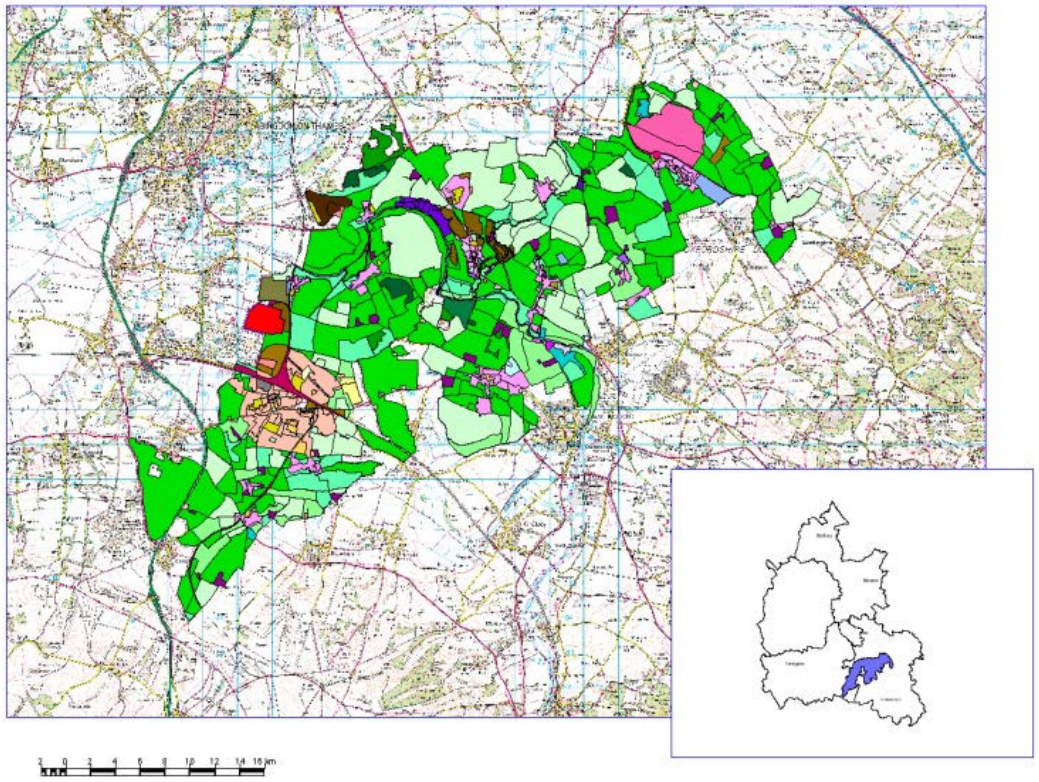
The pilot study aimed to test the methodology set out for the HLC project and to highlight where amendments were necessary.[2] The pilot was intended to cover approximately 10,000 hectares of the county; however, defined polygons did not conform exactly to the shape of the pilot study area and, consequently, a slightly larger area was analysed – 11,440 hectares, amounting to 4% of the total area of the county.

The area covered by the pilot lay primarily within South Oxfordshire District, but extended in to the Vale of the white Horse District near the village of Harwell. The study area included the settlements of Didcot, Brightwell-cum-Sotwell, Dorchester, Long Wittenham, and Chalgrove.

The pilot study was an exercise in data collection and no analysis or interpretation of the data was carried out. The images below show the preliminary findings and indicate a way in which the data can be displayed to show not only the current character of the landscape but also how the landscape has changed over time (see Appendix 4 for Pilot Study Full Report)

[2] Malone, C. 2014. Oxfordshire Historic Landscape Characterisation Project Summary Results of the Pilot Phase. Oxfordshire County council Historic and Natural Environment Team. See Appendix 4.

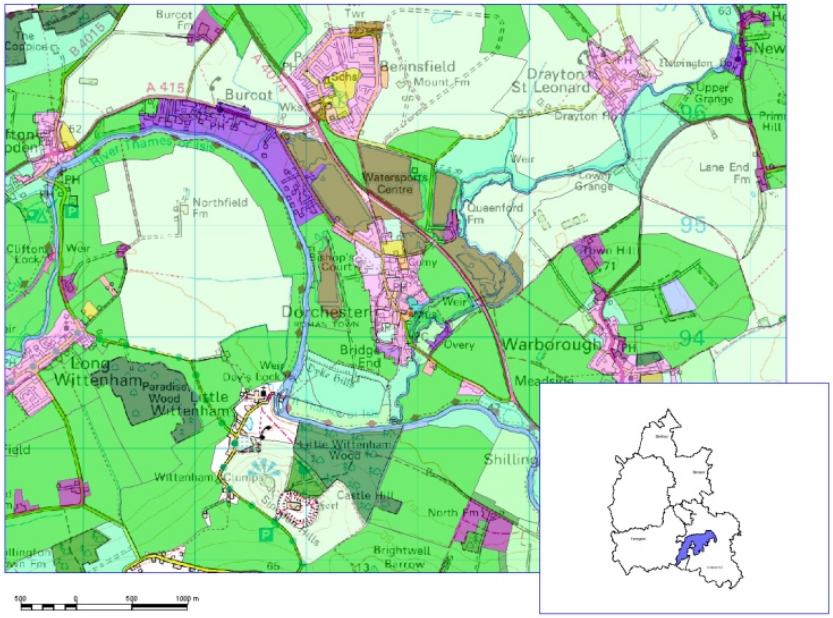
Oxfordshire HLC Pilot- Historic Landscape Types



HLC by HLT

- Waste Disposal
- Resevoir
- Sewargage Treatment Works
- COM-
- Bike Path/Bridleway
- Airfield (Commercial)
- Canals and Locks
- Major Road Junctions and Roundabouts
- Rail Transport Sites
- CP-
- Educational Facilitys
- Government Office and Civic Centre
- Religious and Funerary
- Buisness Park
- Shopping Centre
- Prarie/Amalgamated Fields
- Planned Enclosure
- Peicemeal Enclosure
- Re-organised Fields
- EnergyIndustry
- Flooded extractive Pits
- Industrial Estate
- Extractive Works
- Mill/Mill Complex
- AncientWoodland
- SecondaryWoodland
- Plantation
- Militarybase
- Allotment
- Nursary/garden centre
- Orchard
- Parkland/Designed landscape
- CountryPark
- GolfCourse
- Other Leisure Facilities
- Sports Facility
- RSt-
- Burgage Plots
- CountryHouse
- Caravan, Campsite, Chalet site
- Hamlet
- Hotel
- Farmstead
- Village
- Historic Urban Core
- Town
- Caravan, Campsite, Chalet Site
- Green
- Rough Ground
- Fresh Water Body

Oxfordshire HLC Current Landscape Type - Dorchester



HLC by HLT

- Waste Disposal
- Resevoir
- Sewargage Treatment Works
- COM-
- Bike Path/Bridleway
- Airfield (Commercial)
- Canals and Locks
- Major Road Junctions and Roundabouts
- Rail Transport Sites
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- GolfCourse
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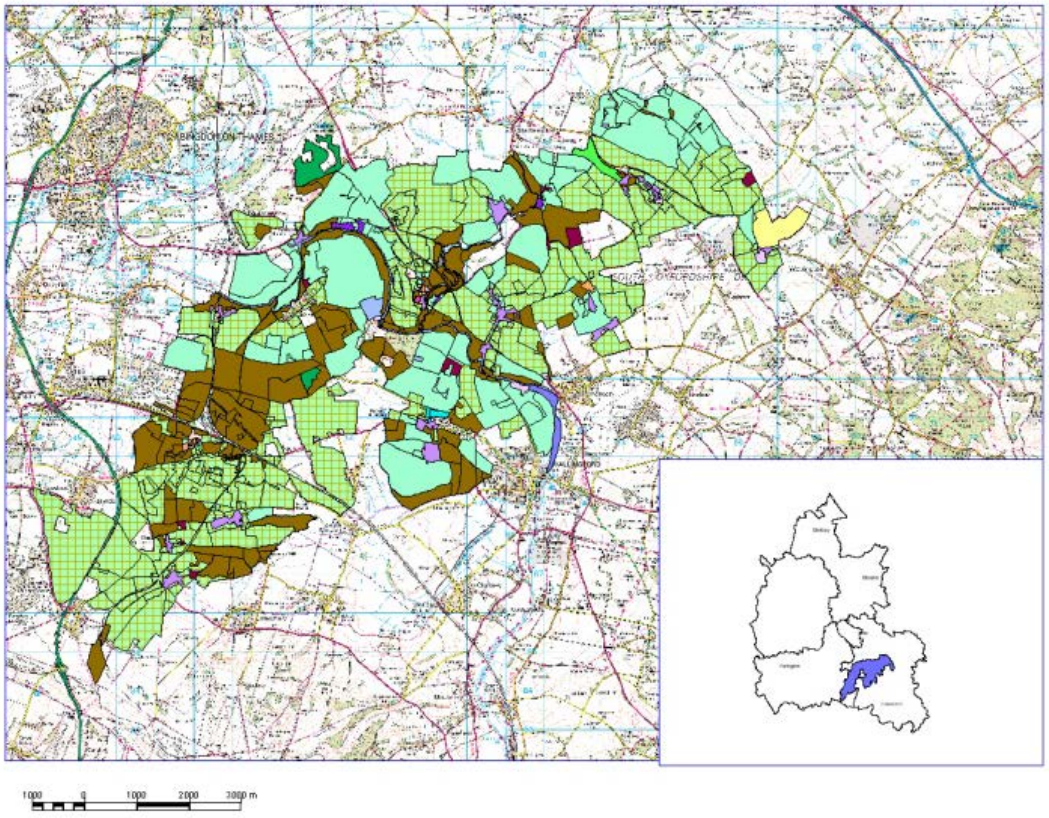
- Sports Facility
- RSt-
- Burgage Plots
- CountryHouse
- Caravan,Campsite,Chalet site
- Hamlet
- Hotel
- Farmstead
- Village
- Historic Urban Core
- Town
- Caravan,Campsite,Chalet Site
- Green
- Rough Ground
- Fresh Water Body

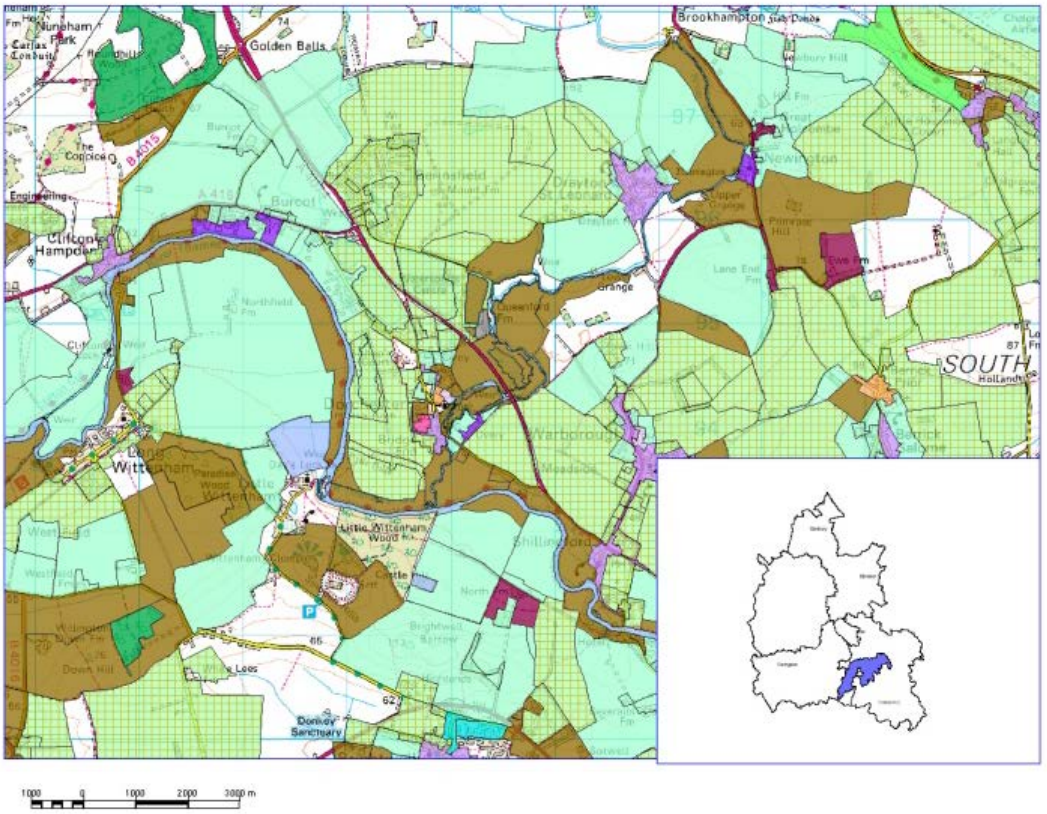
Oxfordshire HLC Pilot 1750



HLT 1750

- Religious and Funerary
- Allotment
- Ancient Woodland
- Assarted Enclosure
- Burgage Plots
- Country House
- Deer Park
- Farmstead
- Fresh Water Body
- Green
- Hamlet
- Historic Urban Core
- Mill / Mill Complex
- Open Field System
- Orchard
- Ornamental water body
- Parkland / Designed Landscape
- Pelcemeal Enclosure
- Planned Enclosure
- Reorganised Fields
- Rough Ground
- Secondary Woodland

Oxfordshire HLC Pilot - Dorchester 1750



HLT 1750

- Religious and Funerary
- Allotment
- Ancient Woodland
- Assarted Enclosure
- Burgage Plots
- Country House
- Deer Park
- Farmstead
- Fresh Water Body
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- Pelcemeal Enclosure
- Planned Enclosure
- Reorganised Fields
- Rough Ground
- Secondary Woodland

Updates to Methodology

The pilot study highlighted a need to revise the approach to urban areas if the digitisation rate estimates set out in the Project Design were to be met. To achieve the target of 250 hectares a day within urban areas it was necessary for digitisation to be done at a larger scale, creating a more generalised characterisation of these areas than had been intended.

The pilot study also covered part of the North Wessex Downs and Chilterns AONBs. It demonstrated that, in general, there had been little change in interpretation of landscape character between the time of the AONB HLC projects and this, the Oxfordshire HLC project. Due to this it was possible to use a simple concordance table to relate the HLC types used in the two AONB projects to the HLC types used by the Oxfordshire project. Polygons defined by the AONB HLC projects were retained and assimilated into the Oxfordshire HLC. It should be noted, however, that the Oxfordshire HLC project used fewer sources of evidence than the AONBs and used a higher minimum digitisation size. Consequently, the resultant dataset was coarser grained. In some cases this meant that polygons recorded by the AONB were amalgamated within the Oxfordshire HLC and assigned to a predominant type.

2.7 Integration of AONB HLC data

A key aim of the pilot study was to explore the relationship between the HLC projects conducted by the AONBs and to develop a process by which their data could be incorporated into the Oxfordshire HLC project. From the outset, the project intended to re-characterise the area of the Cotswolds AONB, subject to a particularly early HLC project, and to utilise the existing data from the North Wessex Downs and Chilterns AONBs.[3]

AONB	Date of Completion	Approx. Area of Oxfordshire (Hectares)	Task
Cotswolds	1999	24,825	Re-characterised to update and fit within the model of the Oxfordshire HLC
Chilterns	2009	23,160	Reviewed and integrated into the Oxfordshire HLC
North Wessex Downs	2007	18,650	Reviewed and integrated into the Oxfordshire HLC

The pilot study highlighted a general level of agreement between the current landscape character as defined by the Oxfordshire HLC Officer and the landscape character assigned by the earlier HLC projects carried out by the North Wessex Downs and Chilterns AONBs. It was possible, therefore, to use the polygons created by the AONBs and to convert them to the character types used by the Oxfordshire project. This was achieved using a concordance table which related the North Wessex Downs and Chilterns HLC types to the newly defined Oxfordshire HLC types.

Attributes and dates were defined using the Oxfordshire HLC methodology at the time of integration.

[3] Hoyle, J. 1999. Historic Landscape Characterisation: Cotswolds AONB. Gloucestershire County Council and English Heritage; Goodacre, Melissa 2006 North Wessex Downs AONB HLC; Green, D. 2009. Chilterns Historic Landscape Characterisation Project: The Changing Landscape of the Chilterns

2.8 Integration of Oxford City HLC data

A further HLC project had been conducted within Oxfordshire prior to the commencement of the Oxfordshire HLC project: the Oxford City HLC.[4] As with the North Wessex Downs and Chilterns AONBs, this HLC was integrated into the Oxfordshire project.

A concordance table which related Oxford City HLC types to Oxfordshire HLC types was created and agreed with the Oxford City Council Archaeologist, David Radford (Appendix 1). Those Oxfordshire HLC Types highlighted yellow were types created for the integration of the city's data. These types are, therefore, only found within the district of Oxford City.

Polygons defined by the Oxford City HLC were copied into the Oxfordshire HLC dataset, preserving them in their entirety. It was decided that, given the extraordinary detail captured by the city's project, no amalgamation of polygons would occur to meet the minimum digitisation size used elsewhere in the county. Consequently, polygons are frequently smaller than one hectare in the district of Oxford City. The polygons were then assigned to a current HLC type as defined in the concordance table above.

The Year From/ Year To field and the Period fields for current types were also populated using concordance tables. These rectified the data recorded by the city into a format compatible with the Oxfordshire project.

Oxford City Source Code (for date)	Oxford City Source Description	Oxfordshire HLC Year From / Year To
HUT_Mastermap	On Current map	<2012
HUT_1950s	On OS 1950s map	1881-1950
OS 1st Edition	On OS 1st Edition 1880 Map	1826-1880
OS 2" Surveyors	On OS 2" 1825 map	<1825
Enclosure	19th century enclosure	<1899
HUT_SALTER*	Simplified urban character recorded by Salter	1066-1539

Oxford City Period	Date	Oxfordshire HLC Period Date	
ii	Late Saxon	410	1066
iii	1066-1200	1066	1200
iv	1200-1500	1200	1500
xi	1500-1650	1500	1650
v	1650-1800	1650	1800
vi	1800-1850	1800	1850
vii	1850-1900	1850	1900
vii(b)	1900-1914	1900	1914
viii	1914-1945	1914	1945
ix	1945-1980	1945	1980
x	Post 1980	1980	2010

[4] Beckley, Ruth 2011 Historic Landscape Characterisation: Oxford City. English Heritage and Oxford City District Council

In the Summary field of each polygon record an instruction to consult the Oxford City HLC dataset was recorded alongside the Unique Identity number (UID) used by the city's project. This allows users to access further information about each polygon.

Unfortunately, due to different methods of recording previous types it was not possible to translate this information automatically into the Oxfordshire HLC dataset. This could be done manually at a later date, but there was not the scope to do this within the constraints of this project. As a result, the data held for the Oxford City District in the Oxfordshire HLC only refers to the current type. For information on previous types users should refer to the Oxford HLC dataset, quoting the UID recorded in the Summary field.