

2. Devon HLC Methodology

The following sections describe the methodology developed for the Devon HLC project. They explain the way decisions were taken on what character type any given area should be assigned to and what combination of attributes should be recorded for each area or 'polygon' ('polygon' is the term that was current amongst archaeologists undertaking HLC projects in the late 1990s and early 2000s; GIS practitioners may prefer 'geometry').

The digitising for the project was carried out using ESRI ArcView 3.2, and the attribute data was initially recorded in a purpose-built Microsoft Access 98 database ('hlc db.mdb'). The mapping took place between July 2001 and December 2004 (The dates each polygon was created are recorded in the project database).

Data Sources

The main data sources for the project were provided through Devon County Council's corporate GIS. Three principal sources were used:

- Ordnance Survey Landline mapping
- Ordnance Survey 1st edition 25inch mapping (late C19th)
- Getmapping vertical colour air photography (taken 1999-2000)

Unless otherwise indicated, all interpretations of Historic Landscape Character recorded in the project database are based on these sources.

Other data was provided by DCC as part of its corporate GIS data and by other bodies under separate agreements. Where datasets other than the three noted above have been used to provide or clarify the interpretation of a polygon's landscape history, this is recorded in the project database. The principal supplementary datasets included:

- Archaeological field survey data of transects of Dartmoor National Park (at 1:10,000) – RCHME/English Heritage (Date)
- Archaeological air photographic sketch transcription of Dartmoor National Park (at 1:10,560) – RCHME (1989)
- Indicative fluvial and coastal floodplain datasets – Environment Agency/Devon County Council Corporate GIS (Date)
- Ancient woodland digital map – English Nature/Devon County Council Corporate GIS (Date)

2.1 Defining Polygons

Three main characteristics were used to decide what area to include in each polygon.

- a. The whole area must have the same *Pattern* (see below), i.e. ‘regular’, ‘irregular’, or none. In practice, ‘none’ was not entered as a value in the project database and in these instances the field was left blank).
- b. The whole area must have the same *Dominant Boundary Morphology* (see below), i.e. ‘sinuous’, ‘straight’, ‘erratic’ or none.
- c. The whole area must have the same *historic character type* (see below) in the present and as far as known must have shared the same *historic character type(s)* throughout its history (i.e. the whole polygon will share the same sequence of *types*).

The only exception to these rules is that polygons do not cross parish boundaries (i.e. modern parish boundaries as defined by OS Landline map data).

Polygon Area

In theory, only polygons greater than 1ha. in area have been digitised. (In practice many polygons slightly smaller than this have been included, since it is not easy to estimate the exact area of a potential polygon before it is digitised). Areas of *historic character type* smaller than 1ha. are have been incorporated in a surrounding/adjacent polygon, on the grounds that they are too small to contribute decisively to historic landscape character. There was some experimentation at the beginning of the project with the use of smaller minimum polygon sizes in the area of the Tamar Valley AONB, but it was decided that deliberately using sizes below 1ha was too time consuming.

The area of each polygon has been calculated in the GIS using the calculation ‘shape.returnarea’ in ArcView 3.2

2.2 Recording Polygon Data

Each polygon has a number of attributes which are recorded in the project database (fields *a.* – *n.*, below. They are here given the names they appear with in the *Descriptn* form of the project database (hlc db.mdb – see 2.2.4 (below) for an introduction to its structure)). These include information about the polygon’s location (2.2.1, below), ‘interpreted’ information about present and historical landscape character (2.2.3, below) and more ‘objective’ morphological observations of polygon features (2.2.2, below).

2.2.1 Location

a. Polygon ID No.

Unique identifier. Provides link between ArcView shapefile and attribute data in MS Access database.

b. Parish

Modern parish as defined by OS Landline mapping.

2.2.2 Morphological Observations

c. Pattern

The organisational pattern within each polygon:

Regular

Irregular

None

Pattern refers to the boundaries and divisions within each polygon (see Aldred 2001: 9). It is useful for landscape history since organisational pattern can refer to processes of change such as planning (or a lack of it).

(Note that following *historic character types* were generally assigned no pattern:

settlement, industrial complex, industrial (mining), military complex, public civil complex, airfield, mud, sand, mud and sand, marsh, water, outcrop/scree/cliffs).

d. Dominant Boundary Morphology

Describes the morphology of the majority of boundaries within the polygon (and refers only to internal boundaries):

Sinuuous: Includes all sinuous boundaries, i.e. those that are not *straight* or *erratic*.

Straight: Perfectly straight boundaries, the result of post-medieval and modern surveying techniques.

Erratic: Wildly erratic boundaries, found (rarely) in prehistoric field systems (e.g. Combeshead Tor, Dartmoor: SX 585 688).

None: Shows there are no internal boundaries in the polygon. (In practice this value was not used and the field in the database has been left blank)

(see Aldred 2001: 8)

e. % Dominant

Approximation of proportion of boundaries within the polygon in the 'dominant' category.

f. Secondary Boundary Morphology

Describes the morphology of the minority of boundaries within the polygon as one of:

Sinuuous

Straight

Erratic

(none)

g. Number of Fields in Polygon

A count of the number of subdivisions in the polygon shown on the modern OS (Landline) map (e.g. number of fields in a polygon of *historic character type* 'enclosures').

h. Number of C19 Fields

A count of the number of subdivisions in the polygon shown on the OS 1st ed 25in map.

Note that these will not necessarily represent areas divided by the same boundaries as the fields counted under (g.); in some cases the area within polygons has been completely or partially re-organised with new polygons. Thus a count of '5' under 'No. of fields' and '5' under 'No. of C19 fields' does not necessarily refer to the same 5 fields; they could have been re-organised.

Where the polygon is not bounded or formed a part of a larger whole under either heading, no entry has been made in the field concerned.

i. Boundary Characteristics

This field refers to characteristics of the boundaries encompassed by a polygon. Not all boundaries must exhibit the characteristic for it to be recorded in the database. There are two classes of information, referring to (a) internal and (b) external boundaries.

(Internal Boundary Characteristics)

Dog leg: indicates presence of dog-legs. In practice, this term was commonly used in the project database.

S curve: indicates presence of boundaries showing ‘reversed s’/‘reversed j’ curves. Commonly used.

Following watercourse: indicates that one or more boundaries follows a watercourse. Useful for interpreting e.g. presence of one sinuous boundary within polygon with otherwise straight-sided boundaries of post-medieval date. Commonly used.

Agglomeration: Only used to identify agglomerated prehistoric field systems. In practice this term was rarely used.

Coaxiality: Identifies polygons consisting of blocks of coaxial fields of either prehistoric or medieval date. In practice this term was rarely used.

(External Boundary (Boundary of Polygon) Characteristics)

Wavy edge: Indicates an external boundary forming an irregular sinuous line. In practice this term was rarely used.

Settlement edge: Indicates that one or more external boundaries of the polygon is delimited by a modern settlement. In practice this term was rarely used.

Roadside/canal side: Indicates that an internal or external boundary follows a road, canal, **or a railway**. Commonly used.

2.2.3 Interpretations of Landscape Character

Present and Previous Historic Characters

The categories of ‘historic character’ are those used in the project’s database (see section 3 (below) for brief definitions of the principal *historic character types*).

The information in the ‘period’ field shows that the polygon in question was exhibiting the characteristics of that ‘historic character’ type in that period. The ‘period’ indicated is therefore normally the period when the character type indicated originated (although not necessarily, particularly in the case of the earliest *character type* recorded).

A different Historic Character (in a higher stratigraphic position) is assigned for each major change in the landscape history of the polygon (that is, each time the ‘Historic Character’ (based on the list of *historic character types*) changed in the past).

Also note that the ‘Confidence’ indicator refers to the ‘Period’ field (see below) and NOT to the ‘historic character’ type (i.e. it represents the level of confidence that in the period indicated the polygon exhibited the characteristics of the ‘historic character’ type shown).

Example 1:

(Historic Character Stratigraphic Position 1)

Historic Character: **Strip Fields** *Period:* **Medieval** *Confidence:* **Probable**

In the above example, there is a strong likelihood (‘probable’) that in the medieval period (i.e. AD c.600-1600: ‘medieval’) the polygon contained strip fields. Since this data appears in Stratigraphic Position 1, it can be assumed that Strip Fields exist in the present, since Stratigraphic Position 1 always describes the current historic landscape character type. There is therefore also a strong likelihood (the same chance or greater as for the medieval period) that strip fields existed in this polygon during the post-medieval period.

The Devon HLC project aims to record basic information about the landscape history of each polygon where this is possible based on the modern and historic OS maps (and exceptionally on other special sources, e.g. RCHME survey of Dartmoor). This information is recorded in the *Previous Historic Character* sections of the database.

Example 2:

(Current Historic Character Stratigraphic Position 1)

Historic Character: **Recreation** *Period:* **Modern** *Confidence:* **Certain**

(Previous Historic Character Stratigraphic Position 2)

Historic Character: **Strips (enclosed)** *Period:* **Medieval** *Confidence:* **Probable**

(Previous Historic Character Stratigraphic Position 3)

Historic Character: **Strip fields** *Period:* **Medieval** *Confidence:* **Probable**

In this example, it is very likely (‘probable’) that in the medieval period the polygon contained enclosed strips (data in *Stratigraphic Position 2*).

The land-use stratigraphically above, *Stratigraphic Position 1*, shows that the use of the land for *recreation* is certain for the *modern* period.

This database entry implies that the post-medieval landscape character was the same as that in the medieval period. Any substantial change in landscape character would be indicated by a

new record referring to the post-medieval period. So if the polygon had been turned into (e.g.) a racecourse in the C19th (and was still one in the present), Stratigraphic Position 1 would read as follows:

Historic Character: Recreation *Period: Post-medieval* *Confidence: Certain*

So if no new 'Landscape Character/Stratigraphic Position' entry is made, then the character type of later periods must be assumed to be the same as that of the previous period for which an entry was made. (Note that in the case of Example 2 no interpretation has been offered about the prehistoric landscape. This is normally the case, and commonly no interpretation has been offered for the medieval period either).

j. Period

The 'periods' for this project are defined as indicated below:

- *Modern* AD c.1900 – present
- *Post-medieval* AD c.1600 – AD c.1900
- *Medieval* AD c.600 – AD c.1600
- *Prehistoric* neolithic – AD c.600

The imprecise nature of the data and the speed of interpretation required means these periods are to be regarded as a rough guide only.

k. Confidence

As noted above, 'confidence' relates directly to 'period'.

- *Certain*
- *Probable*
- *Possible*

Quantifying these terms is very hard. In general 'certain' means there is no doubt that during the period indicated, the polygon had the given landscape character. However, 'certain' has only rarely been used in the project database.

'Probable' indicates a strong degree of likelihood – perhaps over 80% chance.

'Possible' indicates a reasonable degree of likelihood – perhaps over 50% chance.

Interpretations which are thought less likely than 'possible' have not been made.

Miscellaneous Information

l. Active

Present Historic Character only. Y/N answer for use only with the following *historic character types*:

Industrial (Mining); Industrial complex; Quarry; Military complex; Airfield

m. Relict?

Y/N. *Previous Historic Character* only. Indicates data based on archaeological surveys (e.g. RCHME survey of Dartmoor).

n. Special Source

Previous historic character only. Records where information is based on sources other than modern OS maps, these sources are recorded here.

2.2.4 The Project Database

The project database ('hlc db.mdb') consists of 7 principal tables. These are:

- (a) **Descriptn** – fields discussed above under 2.2.1 and 2.2.2 (except (*i.*) *Boundary characteristics*), plus (*l.*) *Active* from 2.2.3
- (b) **Chrctrs** – for data discussed above under (*i.*) *Boundary characteristics*
- (c) **Histcharacter** – fields discussed above under 2.2.3 (except *l. Active*); = Current Historic Character Stratigraphic Position 1 (see 2.2.3, above)
- (d) **History1**– fields discussed above under 2.2.3 (except *l. Active*); = Previous Historic Character Stratigraphic Position 2
- (e) **History2** – fields discussed above under 2.2.3 (except *l. Active*); = Previous Historic Character Stratigraphic Position 3
- (f) **History3** – fields discussed above under 2.2.3 (except *l. Active*); = Previous Historic Character Stratigraphic Position 4

(A table called History4 was also created but was not used in practice. A table called Intpret was also created initially and remains in the database, but was not used).

Data is entered into all these tables through the 'Descriptn' form (see screenshot below, Fig. 1). All the other tables in the database have been used to provide drop-down lists of terms (as discussed above) to speed up data-entry.