Chapter 3 - MODES OF CHARACTERISATION

Introduction

Dividing projects into broadly chronological waves (generations) was useful to identify trends and isolate which differences were historic and obsolete, and which were still active. To emphasis similarities between methods, the Review also grouped projects into "families", defining these by how they collected and used the data and by their methods of interpretation, ie the input and output mechanism at the heart of the HLC process. The "families" were defined from a series of criteria. The first set of these were based on the assumptions and decisions used to create the maps and database of each HLC (eg whether classification-led or attribute-based - see later in this chapter); and second, on its products and results (eg whether "time-slice" or "time-depth" – see later in chapter).

20 projects were assessed in this way: 16 *completed* projects and 4 *in progress* or *commissioned* projects. Where projects displayed aspects of more than one mode, its predominant approach decided its position in the categorisation, but secondary components were sometimes identified as well.

Modes of Input (Table 1)
Input modes, or how HL Character is determined, were defined using these criteria:

- Whether areas are allocated to HL types on the basis of
  - prescriptive criteria (ie predefined classification) or
  - descriptive (ie recording attributes that later are used to create types), or
  - a mixture of both.

- Is the primary source of interpretation
  - historic maps or
  - morphological analysis?

- Method of input to GIS (manual, computer display, computer manipulation).

- Is HL character reconstructed from
  - historic maps or
  - interpretation (modelling) from the HLC?

- Degree of transparency – is the way data is used for HLC
  - implicit or
  - explicit?

Modes of Output (Tables 2 and 3)
The output modes concern ways of presenting interpretations and results. A series of factors were examined:

1. Functionality (the ease with which the same data can be used to produce different outputs, usually facilitated by GIS and relational databases);

Project	Wave	Starting point	Criteria used	Classif.ication Approach	Data source usage	Data structure	Input type	Parts of
Cornwall	1	Field Morph	Prescrp	1	Model	Implicit	Class-led	
Avon	1	Field Morph	Prescp	2	Model	Implicit	Class-led	
Axholme	1	Hist. Maps	Prescrp	1	Reconstruction	Implicit	Document-led	
Peak District NP	1	Hist. Maps	Prescrp	2	Reconstruction	Implicit	Document-led	Class-led
Derbyshire	1	Hist. Maps	Prescrp	2	Reconstruction	Implicit	Document-led	Class-led
Cotswolds	2	Field Morph	Prescrp	2	Model	Implicit	Class-led	Attribute-based
Kent	2	Field Morph	Prescrp	2	Model	Implicit	Class-led	Attribute-based
Gloucestershire	2	Field Morph	Prescrp	2	Model	Implicit	Class-led	Attribute-based
Nottinghamshire	2	Field Morph	Prescrp	2	Model/Reconstr	Implicit	Class-led	Document-led
Hampshire	2	Field Morph	Prescrp	2	Model	Implicit	Class-led	
Suffolk	2	Field Morph	Prescrp	2	Model	Implicit	Class-led	
Lancashire	3	Field Morph	Descrp	3	Model	Explicit	Attribute-based	
Somerset	3	Field Morph	Descrp	3	Model	Explicit	Attribute-based	
Herefordshire	3	Field Morph	Descrp	3	Model	Explicit	Attribute-based	
Surrey	3	Field Morph	Prescrp	2	Model	Implicit	Class-led	Attrib & Doc
Hertfordshire	3	Field Morph	Both	3	Model	Implicit	Multi-mode 1	
Essex	3	Field Morph	Both	3	Model	Implicit	Multi-mode 1	
Cumbria	4	Field Morph	Both	3	Model	Explicit	Multi-mode 2	
Devon	4	Field Morph	Both	3	Model	Explicit	Multi-mode 2	
Shropshire	4	Field Morph	Both	3	Model	Explicit	Multi-mode 2	

Table 1: Input method type for 20 projects.
[Classification approach: 1, manual, 2, computer display, 3, computer manipulation]

2. Classification method (determined by the approach taken during characterisation) – manual, computer display, computer manipulation.
3. Project Classification: (time depth, documentary, combination).
4. Data source usage (is data used to produce models or reconstruction of HLC).

Two main types of output mode, one subdivided into three, were defined,
mainly on the basis of Project Classification and Data source usage.

These output types are:

Time-slice: these projects reconstruct historic landscape at different periods in time, eg by period maps that may show landscape features that no longer exist, or that do not necessarily have connections to the present-day landscape. Prime amongst such projects are Axholme, Peak District National Park and Derbyshire, while Nottinghamshire has some time-slice elements. They tend of course also to rely heavily on historic maps, and three of them are the primarily document-led methods.

Time-depth: these projects find ways to identify the historic depth of the present day landscape from morphological analysis, general understanding or extrapolation. By definition they identify still surviving visible HL character and features, but the method does not often allow reconstruction of past environments at particular dates. They are closest to the basic guiding principles of HLC, rather than

trying to achieve landscape archaeology.

Time-depth is divided into three sub-groups, mainly distinguished by differences in their approach to Classification, Functionality and Classification methods (Sub-group A uses Manual analysis, B Computer display and C Computer manipulation).

- A Manual Analysis - Cornwall, and Axholme partly so.
- B Computer Display - Avon, Cotswolds & Gloucestershire, Hampshire, Kent, Suffolk and Surrey, whilst Nottinghamshire (mainly Time Slice) also has some aspects of B type time depth.
- C Computer Manipulation - Cumbria, Devon, Essex, Lancashire, Herefordshire, Hertfordshire, Shropshire and Somerset. In terms, of evolution, Time-depth C is the most advanced.

Project	Wave	Function-ality index	Classif. type	Project Classif. Type	Data source usage	Output type
Cornwall	1	1	1	Time-depth	Model	Time-depth A
Avon	1	2	2	Combination	Model	Time-depth B
Axholme	1	1	1	Document	Reconstruction	Time-slice
Peak District NP	1	2	2	Document	Reconstruction	Time-slice
Derbyshire	1	2	2	Document	Reconstruction	Time-slice
Cotswolds	2	2	2	Combination	Model	Time-depth B
Hampshire	2	2	2	Combination	Model	Time-depth B
Suffolk	2	2	2	Combination	Model	Time-depth B
Nottinghamshire	2	2	2	Combination	Model/ Reconst	Time-slice/ Time-depth B
Gloucestershire	2	2	2	Combination	Model	Time-depth B
Kent	2	3	2	Combination	Model	Time-depth B
Surrey	3	3	2	Combination	Model	Time-depth B
Essex	3	3	3	Combination	Model	Time-depth C
Lancashire	3	4	3	Combination	Model	Time-depth C
Herefordshire	3	3	3	Combination	Model	Time-depth C
Hertfordshire	3	3	3	Combination	Model	Time-depth C
Somerset	3	4	3	Combination	Model	Time-depth C
Cumbria	4	5	3	Combination	Model	Time-depth C
Devon	4	5	3	Combination	Model	Time-depth C
Shropshire	4	4	3	Combination	Model	Time-depth C

Table 2: HLC Output type for 20 projects [Functionality Index: 1 Low, - 5, High; Classification Index: 1, Manual, 2, Computer display, 3, Computer manipulation]

Output	Wave 1	Wave 2	Wave 3	Wave 4	Total
Time-slice	3	-	-	-	3
Time-depth A	1	-	-	-	1
Time-depth B	1	6	1	-	8
Time-depth C	-	-	5	3	8

Table 3: Relationship of Wave and Output type

The families (Table 4)

Four "families" were defined:

- Classification-led
- Document-led
- Attribute-based
- Multi-mode

Classification-led:

- Use *prescriptive* criteria: areas assigned to a pre-defined classification of types;
- Map-based field morphological analysis is a starting point;
- Relatively straightforward interrogation and analysis;
- Tend to build *models* from the HLC data, rather than recording what documentary or map sources suggest;
- Date structures tend towards being *implicit*.

Classification-led approaches belong predominantly to Waves 1 and 2. Some (Cornwall, Avon, Hampshire and Suffolk) tended to be wholly classification-led. Their immediate successors (Cotswolds AONB, Kent and Gloucestershire) in addition developed some elements of attribute-based modes. Surrey added elements of both attribute-based and document-led approaches into its essentially classification-based approach and is close to being multi-modal. Nottinghamshire has elements of the mixed approach, being classification-led with elements of document-led.

Document-led:

- use *prescriptive* criteria (pre-defined classification);
- very firmly have as their starting point use of historic maps;
- characterise by manual means, with simple GIS;
- draw *reconstruction* from their data;
- have an *implicit* data structure.

This is an approach of early (but not the very first) projects: Axholme, Peak District and Derbyshire. It represents an experiment to underpin the Cornwall and other classification-led approaches, perceived by some as overly interpretative, with historical certainty rather than archaeological interpretation.

Attribute-based:

- Record attributes (ie use *descriptive* criteria) rather than attributing areas to predefined types;
- Use field morphology as a starting point;
- Use computer analysis of attributes in HLC to create models and types;
- Tend to build *models* from the HLC data, rather than simply recording data from documentary or map sources;
- Tend to have open, transparent, *explicit* data structures.

Attribute-based methods represent a different answer to the need to underpin interpretation with greater "objectivity". Lancashire, Herefordshire and Somerset (all wave 3) are considered attribute-based. Other wave 3 projects, and some earlier projects, such as Cotswolds, Gloucestershire, Kent and Surrey, began to demonstrate elements of the attribute-based approach.

Multi-mode:

- use both *descriptive* and *prescriptive* criteria;
- use morphology as their starting point;

- base their characterisation on manipulating computer data;
- aim to create *models* of landscape character.

Multi-mode projects include the most recent. They use interpretation, but their subjectivity is framed, controlled and made transparent by the use of attribute-based approaches within advanced GIS. They draw on aspects of all the other families, creating a fusion of the best techniques but drawing most powerfully on attribute-based methods.

There are two types of multi-mode approach, type 2 being more advanced, and more attribute-based, than type 1. The two types differ for example in terms of data structure (in type 1, data structures are *implicit*, in type 2 they are *explicit*). They are also distinguished in respect of their transparency. In type 1, source information determines the polygons on 4 or more levels and this information is included for each polygon. Type 2 uses more attributes than type 1, which includes source-recording and cross-referencing, whilst morphological interpretative descriptions also justify the decision-making with an increased range and scope of analysis. Hertfordshire and Essex are type 1, Cumbria, Devon and Shropshire are type 2 (and since the review, Cheshire has followed the same path).

The sequence of the families

Although the families were not defined by chronology, each occupies a distinctive place in the HLC story. Early HLC methods were classification-led, a number then experimented with document-led approaches in support of classifications, while the attribute-led mode, evolving in part as a response to perceived limitations of classification-led ways, fed later projects. The most recent projects, and new projects at the end of 2002, adopt a hybrid, multi-mode approach that incorporates the best of all previous methods.

Input	Wave 1	Wave 2	Wave 3	Wave 4	Total
Classification-led	2	6	1	-	9
Document-led	3	-	-	-	3
Attribute-based	-	-	3	-	3
Multi-mode Type 1	-	-	2	-	2
Multi-mode Type 2	-	-	-	3	3

Table 4: Number of projects in each family and waves. Multi-mode are the most advanced in terms of HLC evolution

Summary (Table 5)

Table 5 summarises the input/output attributes of each project, and thus the family groups defined by the review, including the likely character of some projects about to start.

Project	Wave	Input	Output	Adapt-ability
Cornwall	1	Classification-led	Time-depth A	1
Axholme	1	Document-led	Time-slice/Time-depth A	1
Peak District NP	1	Document-led	Time-slice	2
Derbyshire	1	Document-led	Time-slice	2
Avon	1	Classification-led	Time-depth B	2
Cotswolds	2	Classification-led	Time-depth B	3
Hampshire	2	Classification-led	Time-depth B	3
Suffolk	2	Classification-led	Time-depth B	3
Kent	2	Classification-led	Time-depth B	3
Gloucestershire	2	Classification-led	Time-depth B	3
Surrey	3	Class-led/Attribute	Time-depth B	3
Nottinghamshire	2	Class-led/Document	Time-depth B	2
Herefordshire	3	Attribute-based	Time-depth C	3
Lancashire	3	Attribute-based	Time-depth C	3
Somerset	3	Attribute-based	Time-depth C	3
Essex	3	Multi Mode Type 1	Time-depth C	3
Hertfordshire	3	Multi Mode Type 1	Time-depth C	3
Cumbria	4	Multi Mode Type 2	Time-depth C	4
Devon	4	Multi Mode Type 2	Time-depth C	4
Shropshire	4	Multi Mode Type 2	Time-depth C	4
Cheshire	4	Multi Mode Type 2	Time-depth C	/
Buckinghamshire	New	Multi Mode Type 2	Time-depth C	/
Bedfordshire	New	Multi Mode Type 1	Time-depth C	/
Cambridgeshire	New	Multi Mode Type 1	Time-depth C	/
Staffordshire	New	Type 2	Time-depth C	/

Table 5: Summary of the families, showing Input and Output modes, and indication of Ease of Adaptability (1: Hard; 2: Difficult; 3: Easy; 4: Very easy)

It seems clear that the core method is now Multi-Mode, and essentially type 2 combined with Time depth B and C. This represents the best foundation for a future common (but nevertheless still evolving) methodology. It is the method that forms the heart of the Template Project Design.

Table 5 also assesses how easily each project could in future (eg when updating, or in regional overview projects) be adapted to this model (1 difficult, 4 easy). Resources needed to adapt projects at level 2 will be significantly more than needed for those with 3 scores. In level 2 projects, a time-consuming re-distribution of attributes into distinctive data fields may be needed. Level I projects (Cornwall and Axholme) might need
major rebuilding, but neither are in GIS, and Cornwall at least has already begun the creation of a new generation HLC and when this is fully underway is likely to adopt Multi-Mode type 2 and Time depth C.