Introduction

The power of the HLA dataset lies in its utility as both a quantitative and qualitative tool that can be used as a complete dataset, broken down into smaller units for analysis (such as by Local Authority or Landscape Character Areas) or queried to extract particular categories, periods or types of land use. The GIS dataset can be interrogated in a range of ways, which can be understood as follows:

• Location-based or Spatially, such as 'what are the land uses in this area?'

Data can be selected based on the spatial relationship of HLA polygons to features in any other dataset - for example, selecting all records within a given radius of a particular asset.

• Type-specific or Attribute-based, such as 'where are there occurrences of this particular type, category or period?'

This extracts information from the dataset based on the text stored in the GIS attribute table. Query statements can be developed to return entries based on type, category or period – or any combination of the three.

Using HLA data in GIS

If a user has an interest in a particular Type, as in this example which focuses on Designed Landscapes, there are a variety of approaches to gaining the fullest information that the HLA dataset can provide. Of course, how a query is carried out will differ depending on a range of specific requirements an individual user might have. However, the outline below may provide a useful starting point.

The basic functions of different GIS packages, including data querying, are largely the same. Nevertheless, the arrangement of each user interface and indeed sometimes even the names of the functions, do differ. For this reason this summary is a guide to general principles, and not a manual for any particular GIS package.

The view westwards across a typical landscape of Strathspey, with a variety of land uses evident, including agriculture, settlement and woodland, all part of Scotland's rich historic environment.
© RCAHMS DP067925

Starting a query

In the first instance it is advisable to consider whether the type of interest – in this case Designed Landscapes – has a longevity of use and, if so, whether it may have been subsumed by another land use since its establishment. Is it current (HIS_CODE in the attribute table) and/or is it of an age to have past forms (REL1_CODE, REL2_Code or REL3_CODE in the attribute table)? To find out, the obvious question is, how many 'tag' numbers does this Type have?

In the attribute table each record, or row, represents an individual polygon in the HLA dataset and each field, or column, contains the specific details, or attributes, for all the polygons. 777 indicates that there is no underlying land use type within that polygonised area.

A quick look-up in the Type Definitions pdf (available from the 'About HLA' page of this website) will provide the information. In this example there are three tags – 18, 122 and 204. They indicate that many areas of Designed Landscapes are in use today (18) but that some, while they are still visible in some way or other, are now used in a different way (122). Other parts of designed landscapes have disappeared from immediate view, although aerial photography has recorded evidence of their extent (204).

In addition, there may be other types that relate in some way to the main Type. As well as the Type Definitions pdf there is also a Glossary in 'About HLA' which may help identify them.

For Designed Landscapes, an obvious associated land use type is Cultivated Former Parkland. Perhaps a less obviously connected land use type would be Managed Woodland, which might pick out areas of trees where a former designed element has lost its association with the core of an area of parkland. As with the main type, these associated types should be checked for their various tags. For example, Cultivated Former Parkland occurs only as a current (HIS_CODE) type (17).

The designed landscape at House of Dun in Angus
© RCAHMS DP045473

Cultivated former parkland around the focus of the designed landscape at Galloway House in the south-west of Scotland.   © RCAHMS DP012474

Querying by type name

With the attribute table open for view on screen, an 'Options' feature will allow the user to select the attributes by using a dialog box into which a Boolean statement can be entered. It is important that any values entered into a query matches exactly how it occurs in the attribute table, otherwise no records will be found. In other words, the spelling and any capitalisation must be accurately entered. However, most GIS packages will allow the user to choose the value from a dropdown list, allowing for the correct form to be used automatically.

In the attribute table TYPE is the current land use, while REL1_TYP, REL2_TYP and REL3_TYP are those that have left traces in the landscape but underlie the features of a more recent land use type.

The fields in this extract of the HLA attribute table have been re-ordered to show the four fields that hold the land use Type names. If it is a current type that is of interest, the user must query on the 'TYPE' field; for a past (relict) type a query should be carried out on each of the three REL fields.*

In the following example, there are 3 different current land-use types being searched for: Designed Landscape, Cultivated Former Parkland and Managed Woodland. In the HLA attribute table these values occur in the TYPE field.

The user can enter a query that selects all the records where Designed Landscape occurs in the TYPE field. This will highlight all those records in the attribute table. When records are highlighted the user can save the relevant polygons as a new dataset, or layer, separate from the full HLA dataset. It should be noted that all the fields in the original attribute table are copied into a new attribute table that will be attached to the new layer. Using the same method, the polygons for Cultivated Former Parkland and those for Managed Woodland can be extracted.

Past (relict) types can occur in any of the 3 relict type fields in the attribute table (REL1_TYP, REL2_TYP or REL3_TYP) so it is important to query each of these fields for all the types of interest to ensure that all the relevant polygons are found. These fields can be queried in the same way as described above for the TYPE field, using, for this example, Designed Landscape, Cultivated Former Parkland and Managed Woodland.

The records for current type Designed Landscape are highlighted in turquoise. HISTORIC_L is the Category. Unusually for HLA data this title is the same as that for the type.

It should be noted that the outline above describes how to query each of the types of interest separately. However some GIS packages will allow the user to perform multiple queries at the same time – within the same SQL statement, or to add the results from each query to the results of a previous query. The advantage of this is that all the polygons of interest can be saved as a single digital file rather than many.

In this example, the type names have been used as the criteria to query the data. However, the tag numbers allocated to each type could be used instead.

A user can also query the Periods and Categories by means of the same process as that described for the types.
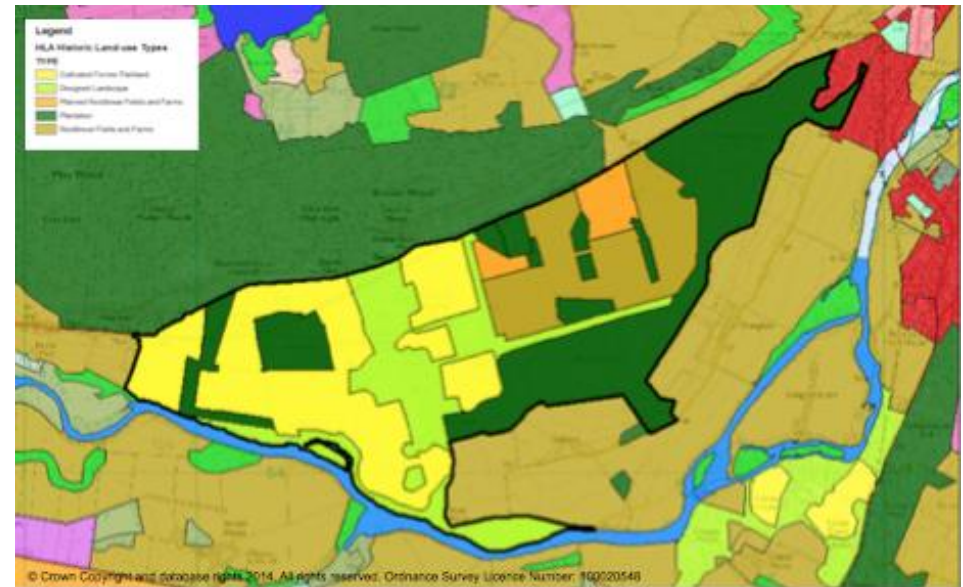
The period for each type is held in the PERIOD field and in the REL1_PER, REL2_PER and REL3_PER fields for past (relict) types.

Categories are held in the HISTORIC_L, REL1_CAT, REL1_CAT and REL1_CAT fields.

It should be stressed that the user should always consider whether to query the current (historic) or past (relict) fields or both. Where the past forms are being queried, all three of the REL fields should always be included.

Here the result of the Designed Landscape query is outlined in black. The line encloses all the types that lie within the area where there is surviving evidence that it was once all part of one designed landscape. The different current types (such as Plantation and Planned Rectilinear Fields and Farms) include evidence of this previous land use.

In summary

This GIS example reveals the potential of HLA data. By interrogating it at the same time as other forms of GIS data the relationships between the historic environment and other facets of the landscape will become clear. Seeking even more information from those who work in this specialism can open further windows on Scotland's landscapes, enabling a fuller understanding of the interactions between land uses and the implications of change.

This version was produced in January 2014; corrections July 2014