Managing archaeological resources at the landscape scale

Richard Hewitt

The widespread adoption of desktop GIS throughout the public and private sector in the United Kingdom since the late 1990's means that regional and national archaeological datasets are becoming increasingly available to a wide range of user groups. Archaeology became a material consideration in the determination of planning applications after 1990 with the advent of Planning Policy Guidance Note 16 (PPG 16) and the archaeological resource now receives significant protection at a local and national level. A number of landscape-scale impacts on the archaeological record can be identified, such as infrastructure development, agriculture and minerals extraction, the last of which provides the focus of this paper. Managing the archaeological impact of extractive industry is a challenging task. Regional archaeological datasets such as the Sites and Monuments Records (SMRs) tend to be disparate, inadequate at a landscape scale and often only incompletely available in accessible digital formats. However, taxation levied on minerals operators under the remit of the Aggregates Levy Sustainability Fund (ALSF) has allowed large areas of the landscape to be more fully assessed. Recent ALSF funded projects such as the Till Tweed Geoarchaeology Project in Northumberland and the County Durham Archaeological Assessment Project in Durham have utilised modern computer-based techniques, such as large-scale digital aerial photographic transcription to produce archaeological information of a quality and resolution hitherto unavailable. Key to this work is the adoption of a landform element approach, as advocated by Passmore, Waddington and Houghton (2002). By partitioning the landscape into its constituent ‚landform elements', mapped and assembled in a GIS environment, areas of particular archaeological sensitivity and potential can be identified. All components of the work, such as landform element mapping, fieldwalking data, and archaeological features transcribed from aerial photographs are united in a single GIS-based system using ESRI ArcGIS. GIS data layers are then distributed, together with a detailed user manual, to key aggregate stakeholders, such as mineral operators, consultants, contracting units, planning authorities and academics. In the context of this recent work, this paper explores the following themes:geoarchaeology and landscape-scale study, mineral planning and heritage management, and GIS uptake and distribution.

contact

Archaeological Research Services Ltd
Department of Geography
UK
richard.hewitt@ncl.ac.uk

Thinking outside the search box

Stuart Jeffrey/Julian Richards/Stewart Waller

Whether we are interrogating a library catalogue to find a particular reference or searching a computerised National Monument Record or Historic Environment Record, the majority of archaeological research is now carried out on computer. However, how do we find what we are looking for, without the aid of a librarian or information scientist looking over our shoulder? Once upon a time, someone who understood the vagaries of their catalogue or database would be there to help us tweak our enquiries to locate what we were after. However, as more and more archaeological resources can be searched online an increasing proportion of such queries are now conducted remotely, without the benefit of expert human assistance. Invariably we are presented with an empty search box and invited to second guess the right combination of words to allow the database to do its magic. Even if the database has been constructed using a carefully controlled vocabulary this can be problematic if the user does not understand how the vocabulary is structured, or if there are internal hierarchies of related terms. If the search combines records drawn from several resources, each with their own vocabularies, then it becomes almost impossible to be confident that all the relevant items have been found. In the context of archaeological research that will be damaging to say the least; in a development control context it could be disastrous.
The ADS catalogue, ArchSearch, now contains just short of one million records, drawn from a variety of sources, and we recognise that using the search tools to find precisely those sites one is looking for demands a higher level of search skills than many users possess. Over the last eighteen months we have therefore been working with various partners to develop a 'geospatial demonstrator' for the Common Information Environment. Rather than being faced with an empty search box, users are invited to navigate their own pathway through a million records which have been pre-indexed according to the three key variables of 'When', 'What' and 'Where'. Our goal is to enable users to 'Point and Click' not 'Type and Hope'. The paper will also discuss a number of enhancements to the existing search system that captures user behaviour and potentially uses Natural Language Processing to populate the classification system from a broad array of unstructured archaeological data.