The Waite Collection, Historic Environment Record and Pleistocene fauna of Leicestershire: A Critical Assessment by the National Ice Age Network

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The National Ice Age Network (NIAN), an Aggregates Levy Sustainability Fund (ALSF) funded initiative, aims to better understand the Ice Age in England through the recording and recovery of Pleistocene environmental and archaeological remains from aggregates quarries. To accomplish this, in part, NIAN have developed a regional Geographical Information Systems (GIS) Pleistocene theme for the Midlands by which existing and new Pleistocene/Palaeolithic data is included and validated against Quaternary geological data such as the British Geological Survey (BGS) maps. Prior to the inclusion of existing data on the GIS plot, however, the data are critically assessed so as to produce a high quality dataset. This paper focuses on the methods used by NIAN to assess the Pleistocene data sources for Leicestershire; the Waite Collection, Historic Environment Record and the New Walk Museum fossil mammal records.

INTRODUCTION

The National Ice Age Network (NIAN) is an Aggregates Levy Sustainability Fund (ALSF) funded initiative and has a principal objective of revealing new evidence for the Ice Age in England. It aims to achieve this through the recording and recovery of Pleistocene fossils and Palaeolithic archaeological remains mainly through discovery in aggregates quarries. NIAN has developed from its pilot the Shotton Project, also funded by the ALSF scheme, which covered the Midlands counties of Shropshire, Herefordshire, Worcestershire, Warwickshire, Staffordshire, Leicestershire and Rutland (Buteux and Lang, 2003). NIAN has similar aims to the Shotton Project and provides coverage of the whole of England through: 1) the assessment and monitoring of the Pleistocene resource in active and designated quarries, 2) the development of a Geographical Information Systems (GIS)-based predictive modelling tool for potential Pleistocene deposits, 3) the revision and updating of existing records and collections of Pleistocene remains from quarries in the light of new geological timescales developed in recent years, 4) raising the profile of the significance of Ice Age remains through outreach programmes and publications, 5) developing a network of specialists and enthusiasts and providing guidance and training for those working in quarried landscapes.

This paper focuses on the development of the NIAN GIS-based Pleistocene theme through the critical assessment of existing data (points 2 and 3 above). The development of such a theme began under the auspices of the Shotton Project, covering the county of Worcestershire. Under the aegis of NIAN this aspect of the project is expanded to cover a much wider geographic area and includes, in addition to Worcestershire, the counties of Warwickshire, Herefordshire, Derbyshire and Leicestershire.

The creation of a regional Pleistocene GIS theme is necessary so that it covers the major river terrace deposits of the region; the modern Anker, Soar and Trent rivers and their terrace deposits and the two major pre-Anglian (MIS 12) Midlands rivers, the Bytham and the Mathon. In this respect the GIS incorporates non-heritage data (e.g. British Geological Survey (BGS) digital maps) and literature sources (e.g. BGS memoirs and Quaternary Research Association field guides). Information from these sources is used to construct a theme comprising pertinent drift geological deposits, to which are added attributes detailing the Member, Terrace, Formation, Marine Oxygen Isotope Stage, minimum date and maximum date for each deposit.

This theme provides a model of pan-Pleistocene deposit survival within the area covered, and is used as a base to query Historic Environment Record (HER)/Sites and Monuments Record (SMR) data and other data collections provided to the project. In this way the project can refine HER/SMR data of this period and provide more precise dating, together with validation of deposit or artefact types.

Before we incorporated the data into the GIS plot, however, we critically assessed our data sources so as to produce a high quality Pleistocene theme. This paper explains the methods NIAN used to critically assess the databases obtained for Leicestershire.

BACKGROUND TO THE LEICESTERSHIRE DATABASES

Waite Collection

The Waite Collection is a very large collection of Palaeolithic artefacts, mostly flint, quartzite and andesite, from the Midlands of England (Graf, 2004). It is one of the most important collections of British palaeoliths to become available to study in recent decades (Saville, 1988), and is made all the more important since it derives from a region sparse in Palaeolithic finds (Lang and Keen, 2005). The Collection is owned by Mr Ron Waite who has been scouring ploughed fields for the past thirty years, mainly in the counties of Warwickshire and Leicestershire. Although the Collection is almost exclusively of surface finds i.e. a secondary context, such finds offer our only source of info on the extent and density of early occupation (Hardaker and MacRae, 2000; Graf, 2002).

Waite’s Palaeolithic finds continue to the present date with many donated to the Warwickshire and Leicestershire county museums, but a large number is retained in his private collection (Graf, 2004). Several of his Palaeolithic finds have been recorded and published over the years (see Graf, 2004, and references therein) and Anne Graf is currently examining, recording and publishing the remaining material to produce a full measured catalogue.
Ron Waite has a detailed recording system of finds labels and of maps at 1:10,000 scale which he has readily made available to Anne Graf, allowing almost all finds to be located to within a modern field or close group of fields, and sometimes to particular areas or exact findspots within the field (Graf, 2004).

**Historic Environment Record**

The HER for Leicestershire is a record of all known archaeology in the County of Leicestershire. It records the archaeology from the Palaeolithic to almost the present day. The HER is maintained by Leicestershire County Council with a computerised database which acts as an index to the rest of the HER.

For the purposes of NIAN, the Leicestershire HER can provide information on Palaeolithic finds other than those made by Mr Ron Waite for Leicestershire.

**New Walk Museum (NWM) fossil mammal records**

The NWM faunal database is derived from a collection of fossil mammal remains brought into the New Walk Museum in Leicester. Each find has: an accession number, identification (sometimes down to species level), a brief description, measured dimensions, notes on condition, location information (often including the national grid reference, NGR), notes on the horizon it was found in and who it was collected by. Fossil mammals can be very important environmental indicators and can also be useful biostratigraphic markers in order to date river terrace sequences (e.g., Schreve, 2001).

**METHODS OF ASSESSMENT**

**Waite Collection**

Artefacts were observed in the hand and classified into various morphological types such as core, chopper-core, flake, handaxe, sidescraper, pick, roughout and transverse scraper. Identification of an artefact as being “definite” was made based on three or more removal scars and through agreement with the lithics experts present. Using three or more removal scars is a slightly more conservative criteria for acceptance than the two or more removals used by Saville (1988).

**Historic Environment Record**

The Palaeolithic records of the HER database for Leicestershire were filtered so as to remove any records that were suspected to be non-Palaeolithic. We again opted for a conservative approach and removed any records that had doubt attached e.g. those with “maybe”, “probably”, “possibly”, “apparently” Palaeolithic. We also removed those records where the context could have produced removal scars i.e. those objects found on garden paths.

In addition, the Leicestershire Palaeolithic HER database was cross-checked with the Waite Collection so as not to duplicate the records.
New Walk Museum faunal database

The first step in assessing this database was to filter records based on the location of the finds. Thus, all non-Leicestershire records were removed along with those records where the location of the find is unknown and where there is doubt attached to the exact location e.g. “possibly...(place name)”. As with the Waite Collection and Leicestershire HER records we took a conservative approach so as to include good quality Pleistocene/Palaeolithic data. Our second filter of this database was thus to include faunal remains that are known to have occurred in the Pleistocene only. This decision was based on the absence of radiometrically-dated finds coupled with our lack of confidence in the horizon attribution of the database. For example, it appears that some finds are attributed to the Pleistocene based on their depth below surface in the gravels and no account has been taken for Holocene palaeochannels.

PRESENTATION AND DISSEMINATION OF DATA

This work will be incorporated in a GIS-based HER ‘Pleistocene theme’ for the Midlands counties of Worcestershire, Warwickshire, Herefordshire, Leicestershire and Derbyshire. The ‘Pleistocene theme’ is MIDAS compatible to facilitate incorporation into SMRs and HERs. It will be transferred onto the Internet as an IMS (Internet Mapping Server) and will facilitate access to the data by a wide range of groups and individuals.

The main benefit of developing such a Pleistocene record is that it can be used as a planning and conservation tool by geologists and archaeologists with curatorial responsibilities and interests (e.g. for SSSIs, RIGS and archaeological sites). Not only will it incorporate information relating to known sites and finds but it can be used as a predictive tool. The mapping of geological deposits for both current and past river-scapes combined with past archaeological and palaeontological finds allows the prediction of future sites that may lie within these deposits. This is one of the most important aspect of developing a Pleistocene HER theme as it will inform strategies for designated or future extraction areas, as well as the building of future road schemes and housing developments, which also rely on the aggregates industry for specific types of sands and gravels as raw materials.

While the development of a GIS-based Pleistocene theme for incorporation into HERs/SMRs will only be achieved for the Midlands counties listed above, there is scope to extend this aspect of the work through collaboration with other ALSF projects concerned with Pleistocene landscapes such as the Trent valley project.

ACKNOWLEDGMENTS

The greatest thanks go to Anne Graf for her assistance, cooperation, and patience in enabling us to access, study and assess the Waite collection. Many thanks also go to Mark Evans for providing the New Walk Museum faunal database. Gratitude is shown to Helen Wells (HER officer, Leicestershire County Council)
for providing the Leicestershire HER material. Thanks are also due to Mark Kincey for advising and incorporating the Leicestershire data into the GIS plot. The National Ice Age Network would like to thank English Heritage and English Nature for their continued support.

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