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The MARS Project – an interface with England's past

1 Introduction

The full title of the MARS Project is the Monuments at Risk Survey. This project is funded by English Heritage, the national body responsible for archaeology in England. In response to a number of studies carried out during the 1980s which underlined the need for quantified, nationwide information (Darvill 1987; English Heritage 1991; IAM 1984; RCHME 1993), this three-year project was commissioned to undertake a large-scale, but rapid, survey of the condition and potential of England's archaeological resource. The purpose is to establish a baseline for the future. The results may stimulate work on national and regional scales to identify further the threats to England's archaeology, and to develop cultural resource management techniques. MARS is not an attempt to identify particular monuments under extreme threats, nor is it an attempt to identify particular areas under special risk. MARS is attempting to understand the national picture, the range of threats, the impact on groups of monument classes; for example, what proportion of upland sites are threatened by changes in agricultural activity; and whether prehistoric sites are being greatly affected by urban growth.

The history of MARS dates back to a pilot study, also funded by English Heritage, undertaken in the county of Wiltshire during 1989-90, in which methods of data collection and techniques of data analysis were tested. The project designs of both the pilot study and MARS have been open to consultation by professional archaeologists, and a considerable period of review and discussion was allowed between the presentation of the results of the pilot study and the commencement of MARS (Darvill 1991).

One aim of MARS is to provide information about the state and potential of England's archaeological resource. This includes identifying the scale and nature of the resource; the range of methods of recording archaeology, and the levels of recording for single monuments, archaeologically defined landscapes, and historic urban areas. This kind of information is not routinely gathered on a national scale, the last attempt was in 1984 (IAM 1984), but it is essential in order to develop any strategy for the future management of sites and monuments on a national scale. The simple questions MARS is aiming to answer

include identifying how many monuments are recorded in England, and which periods they are from. Some of the problems relating to the concept of a national database for England are discussed by Fraser (Fraser 1993).

MARS has three main research and data collection areas. The most labour intensive is the combined efforts of field survey and aerial photographic teams which are examining the current and previous condition of the recorded sites and monuments within a 5% random sample of the land area of England. This is an area of 6500 km² which is thought to contain around 20,000 known archaeological sites. A 5% sample was chosen after analysis of the results of the Wiltshire-based pilot study (Darvill 1991: 123-126). A 5% sample is needed to obtain a sufficient number of sites with information from aerial photographs from the last 50 years. The efforts of the aerial photographic team are concentrated on the last 50 years because the aerial photographs from before the 1940s are not widespread enough to give a coherent picture of change to the archaeological resource. These two strands are supported by a survey of the recorded resource, generating data to support the sampled part; and by case study research into the effects of monument and landscape type on the value of data retrieved by archaeological methods. This section is best described as a national survey of sites and monuments records.

Enough has been suggested above to indicate that MARS is utilising the computerised resources of many bodies; the individual county, district, borough, and city sites and monuments records (SMRs), and the resources of the Royal Commission on the Historical Monuments of England (RCHME). MARS makes extensive use of computers for the manipulation, analysis, and the recording of data. All of the MARS computers run Windows for Workgroups as the operating system. The data generated by each part of MARS is stored in a Paradox for Windows database. The relational nature of Paradox is essential to allow recording of information from different SMRs in the same database. The information about sites is held in a variety of ways by the various SMR databases. The data from SMRs is organised to a standardised Paradox format so that the field surveyors can enter data directly into laptop computers, saving time and rewriting. Being part of a university has advantages and

disadvantages: large discounts are available for some types of hardware and software, but there are some restrictions as to the packages we may use, and in-house technical support is not necessary targeted towards areas which concern the project.

2 The National Survey: an 'audit' of the recorded resource

The National Survey is attempting to understand the development of England's recorded resource. The first public records were those of local societies and museum indexes. However, the most important as a national record was the data systematically collected by the Ordnance Survey after 1948. The Ordnance Survey material later formed the backbone of many of the SMRs in England. The report of the Walsh Committee recommended that 'A consolidated record of all known field monuments should be held by the County Planning Authorities so that they may be aware of all such monuments in their areas.' (Walsh 1969: § 7). As a result of this report registers and records have been developed since the 1970s on a local scale by counties, districts, boroughs and cities to index archaeology (Burrow 1985). Fifty-six were identified in 1994 as being the current holders of definitive records for specific areas; whilst it was recognised that some museums and private bodies hold extensive archaeological indexes these have been excluded, largely because the information they contain is included within the local authority managed systems. A pro-forma questionnaire was developed to 'audit' the contents of these public records. The first question is to ask how many records are held by each organization. MARS acknowledges that records are generated in a variety of forms which do not necessarily reflect archaeological sites and monuments as such; the majority of records are in the form of information relating to land parcels, archaeological events, and archaeological entities, this does not affect the gross counting of records (see Fraser 1993 for further discussion). This is perhaps the most useful measure of how much change has occurred within the record since 1984 (IAM 1984). In 1984 an average of 2.32 per km² was recorded, by the end of March 1995 MARS had identified that this density had risen to around 5.20 per km², although not all results had been processed. The number of records may have almost doubled, but has the quality of the records changed? The National Survey is also studying the monuments sampled for the field survey in an attempt to understand the kinds of changes which have occurred within the records held in SMRs and whether measures to control quality are evident within these individual records.

Whilst the form of the record may vary, the information held may be of several types. MARS is asking questions

about major types of record; monuments, archaeological landscapes, archaeological urban areas, stray finds, and miscellaneous records. Currently there is a ratio of two records referring to monuments to one record of another type. In the future this may change, perhaps towards more archaeologically-defined landscapes which combine monument records; or towards record systems which combine archaeological and environmental data. There are some issues of consistency to be raised when discussing record types because data-standards are always subject to some interpretation by the individual compiling the record or curating the systems. The ratio of monuments to other records, and sub-groups of buildings records, and the numbers of records per period are being used as a comparison to the information retrieved for the field survey and aerial photographic work. These data-fields appear to be fundamental to all systems, and if not completed consistently between systems, are at least completed on most. There is a wide degree of variation for information on more complex issues, for example condition and survival appear to be recorded solely for monuments which have been examined as part of the Monuments Protection Programme (MPP) of English Heritage in many counties, although there are rare exceptions which can generate data for most, if not all, of their recorded monuments. The MPP is the overhaul of the list of scheduled monuments throughout England and it includes the collation of information on the condition of these monuments of national importance so that the resource requirements for future preservation, and the priorities for action can be assessed (Darvill *et al.* 1987).

3 Field Survey: the challenge of the data

England supports 56 SMRs, all using slightly different computerised systems, all interpreting data standards to suit their individual needs. All 46 counties now have SMR databases, the remaining 10 included in the MARS survey are district, borough or city records. This is not a static position, and new databases, particularly those for urban areas are continually being developed in England. Funding for SMR activities comes from a number of sources, the majority currently being funded by the local authorities and supported by English Heritage and RCHME for particular enhancement projects or activities. It is expected that this situation will change as the effects of local government review are felt in England (see also Fraser 1993). Information from the SMRs is exchanged with RCHME who curate the National Archaeological Record (NAR), but because of the diverse methods of record accumulation, the information held by the RCHME is now simply an index to more widely held information. One of the most challenging problems MARS has faced is the extraction of data from

SMRs. One county record is still based on record cards with supporting maps and bibliographic materials, several others are semi-computerised, the computer acting as an index to cards or other materials. One mainframe computer still figures in the curation of archaeological records; while the remainder use a diverse range of software and hardware configurations (table 1 lists the software systems identified). The provision of information about the archaeological remains recorded in the sample for the field survey thus varies from photocopies of handwritten cards, to computer print-outs, to partial and full data sets. The format of information supplied on disk file varied from ASCII text to various database file formats. Thankfully, the dBASE file format has become an accepted standard, easing data transfer between database packages. All of these data sets have to be manipulated to fit into the Paradox database developed for MARS. This has involved hand-typing, some optical character recognition scanning, and the writing of bespoke programs to manipulate data. Supplementary information, for example the location of sites known from aerial photographic evidence, has been gathered from the SMRs by MARS staff. A lot of knowledge is in the form of ‘wetware’, stored in the heads of SMR officers. This is a very volatile form of storage because people leave jobs, retire, or forget things. It is, however, very important for connecting the basic information held on computer with the written sources and other indexed material that all SMRs hold in addition to their basic list of sites and monuments.

Table 1. Frequency of software programs used for SMR databases in England.

| Database system | Frequency of use |
|---|----------------------------|
| Superfile | 18 |
| (Paper index) | 6 |
| | (1 county and 5 districts) |
| Oracle (various versions) | 6 |
| dBASE IV | 4 |
| dBASE III+ | 4 |
| File Tab | 2 |
| FoxPro (2 versions) | 2 |
| Monarch | 2 |
| PI Open | 2 |
| Other software (one each of 13 systems) | 13 |

MARS has learned by experience a lesson it had hoped to avoid, that SMRs can be difficult to use as analytical tools. Currently they are collections of sometimes ambiguous data, which is of varying quality, almost all of which is forced into flat file structures which are not suitable for storing information about archaeological sites and monuments. However, it is complex questions that

professional archaeologists, researchers, students and other individuals want answered. We are eager to know how many sites exist in certain types of landscape, and estimates of their condition. These questions were first posed in the 1980s (Burrow 1985: 10), but in many cases we are no closer to having answers. The answers may still be compiled through accumulation of data and site visits, but not yet at the touch of a few buttons. MARS will begin to show the national trends, but local research will be needed to identify sites most in need.

4 Field Survey: methods and results

Field survey teams record measurements and descriptions of the recorded sites as they appear in the field today. In total some 26 key variables are being recorded for each site. These range from monument form and class, through to assessments of survival and decay and perceived threats to monument condition. Each team is provided with summary information about each site from the SMR sources in a database file on a laptop computer, together with printed reports and SMR 1:10,000 map information. Data generated in the field is directly input into the computer system, except during bad weather when laminated paper is used instead. The technological challenge of MARS is to reassemble this information into a central database where it can be related to the information recorded by the aerial photographic team. Computer training has played an important element in MARS, even people with previous experience need time and support to learn and understand new systems.

Results from one of the first areas to be surveyed may be used to illustrate some of the questions which MARS is studying. The Isle of Wight is a small county, 380 km² in area, four sample transects were located on the island, and they contained 166 monuments. When the land type is identified it can be seen that the majority of monuments are on land classified as either agricultural buildings or as field crops. When classified by form, it can be seen that the majority of the monuments are standing buildings (fig. 1). This accords with the analysis of the SMR by the National Survey which identified that almost 80% of the monuments recorded within the SMR were buildings, that is, over 65% of the entire SMR. Major impact on the monuments is either widespread or localized, that is all over a monument, or only on a part of a monument. Little peripheral impact, that is around the edges or in the neighbourhood of a monument which may present a long-term threat, is recorded for sites on the Isle of Wight. Only 1% of sites are without any impact at all (fig. 2). The major causes of damage are agriculture and building alterations, (not surprising as most of the sites are buildings) (fig. 3). The significance of the data from the Isle of Wight will

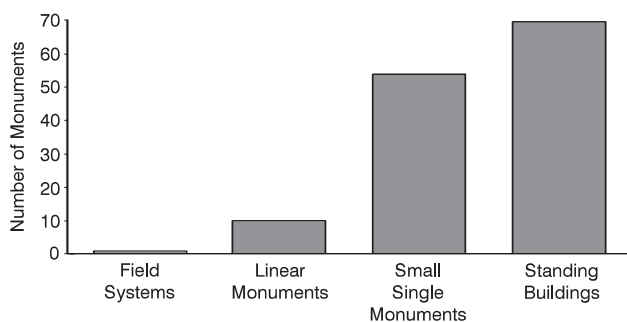


Figure 1. Isle of Wight - breakdown of monuments by form.

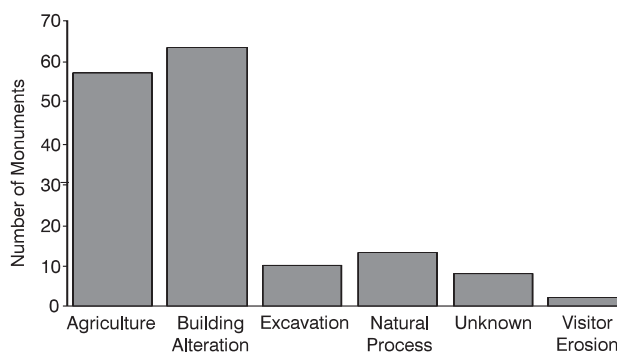


Figure 3. Isle of Wight - breakdown of monuments by cause of impact.

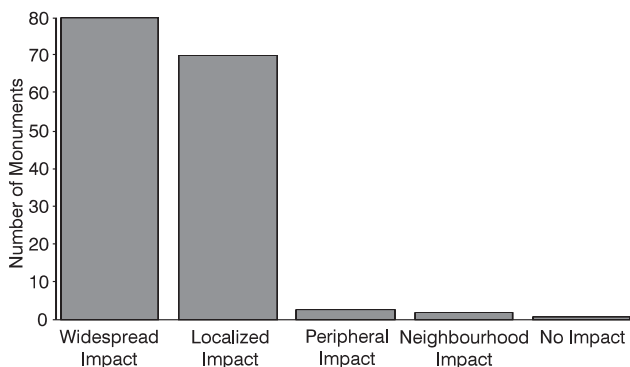


Figure 2. Isle of Wight - breakdown of monuments by impact.

only become apparent when it is analysed with data from other counties on a regional level, and with England as a whole.

5 The future of MARS

The project is aiming to complete data collection during 1995, after which will come a period of intense validation and analysis. The results of MARS will be made available during 1997, and it is hoped that a variety of publications will result, aiming to communicate these results to both professional archaeologists, and others in related disciplines, as well as to students and anyone with an interest in the future of archaeology in England.

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