

## View from the Chair

Glenn Foard, Northamptonshire Heritage.

Geographical Information Systems (GIS) was the main theme for the SMR UserGroup meeting at Sheffield, just as GIS formed an important element of the previous meeting in Swindon. This is a reflection of the importance of the integration of GIS into SMRs and it was heartening to see figures that showed about 20 SMRs already have GIS in place and that most other SMRs are actively involved in the acquisition of a system. Even more important was the news that it will be available as an integrated module for the new SMR software being developed by RCHME in partnership with ExeGesIS Spatial

Data Management and ALGEO.

Archaeological data, particularly at the level of landscape interpretation, which is central to the work of SMRs, is very much a map based and visual thing. It is therefore not surprising to see SMRs taking to GIS with such enthusiasm, for it opens up so many opportunities for the effective management, analysis and presentation of our data.

In doing so we must keep in mind the lessons of the 1980s and the original uncoordinated computerisation of SMRs without agreed standards. We must ensure that this doesn't happen again with GIS. To this end it is pleasing to see, given the speed with which GIS is becoming an integral part of most SMRs, that the RCHME working party on GIS Standards has been established and will represent a collaboration with all the other

interested parties including ALGEO and the Archaeology Data Service (ADS).

To move to an ALGEO perspective very briefly, there has been some comment following the SMR User Group meeting at Sheffield that the meetings and SMR matters generally are being dominated by County Archaeologists.

In some respects I suppose ALGEO ought to take this as a complement in that two years ago, when ALGEO was being formed, there was a wide ranging complaint from SMR Officers that County Archaeologists did not take SMR matters seriously! A brief summary of the ALGEO approach is presented elsewhere in this issue of SMR News. If you feel the balance is still not right then let the ALGEO SMR Sub-Committee know what you think.

## CALENDAR

28 April 'GIS in Archaeology & History Workshop' for users of Idrisi. James Everett, CTI Centre for History, University of Glasgow, G12 8QQ

7 May 1997 'GIS and Geography: Separate or Integrate?' John Castleford at CTI Centre for Geography, University of Leicester, University Road, Leicester, LE1 7RH

12-14 May 'Pot in use: the study of material culture of consumer sites' Hereford & Worcs Archaeol Service.

16-18 May, Neolithic Studies Group meeting, Chichester. Prof. Tim Darvill, Bournemouth University

19 May Heritage Coordination Group conference, Museum of London, contact group secretary on 01276 25615.

9-11 September, IFA '97, Manchester

September 1997, GIS Archaeology Workshop hosted by the ADS & AGI Tel (01904 433954)

September 1997, Introduction to resource discovery tools for the Internet' workshop hosted by ADS and CTICH.

**1 October, 1997 SMR Software Users Group** meeting at Crissing Temple, Essex. 11 am - 4.30 pm.

## INTERNET

Archaeology Data Service Homepage - <http://ads.ahds.ac.uk/ahds/welcome.html>

CBA Briefing pages - <http://britac.ac.uk/cba/briefing/conf.html>

## MOVES

Durham County Archaeologist and Sites and Monuments Record have moved from the Bowes Museum to:

Archaeology Section, Durham County Council, County Hall, Durham, DH1 5TY (phone) 0191 383 4212 (fax) 0191 384 1336

## PEOPLE

Jane Isaac has left the Gloucestershire SMR to take a teacher training course. Louise King has taken over as SMR Officer and Anna Morris as SMR Assistant.

Jim Hunter has also left Gloucestershire; Charles Parry has been appointed Archaeology Officer - planning & development in his place.

# Current implementation of Spatial Data Systems in SMRs

Results of the recent questionnaire survey to all SMRs. Kate Fernie

Before the meeting at Sheffield, we circulated a questionnaire about spatial data systems in SMRs to members of the group. Thanks to the 44 respondents we can present this review of current implementation.

Twenty-five SMRs reported that they have access to GIS systems, 20 SMRs to mapping software or CAD systems and 15 SMRs have both. The survey reveals that the most popular systems are Wingz, MapInfo and ArcView. Systems in use:

	GIS	Mapping
ArcInfo / ArcView	6	1.
Deskmapper	1	1
Fastmaps	1	2
Genasys	1	1
GGP	2	2
MapInfo	6	3
Wingz	5	3

Other applications in use include Axis, Datamap, Visual Dbase, AutoCad and Catalogue Lite. In most cases, software selected for SMRs is the result of a corporate decision.

The majority of the GIS which are currently operational do not have a

fully interactive link with the SMR database. Twelve SMRs reported some kind of link between their GIS and the SMR, in 6 cases this is through a periodic download of data from the SMR database to the GIS. Four SMRs have access to the SMR database from the GIS to read data. Eight SMRs reported that they currently have no link at all.

The table below shows the data sets currently being captured into GIS systems. Both the percentage of the data set currently captured and future SMR intentions (flat bars) are shown.

Perhaps not surprisingly, the majority of SMRs intend to capture statutory data sets: SAMS, Listed Buildings, Registered Parks, Conservation areas, etc. Surprisingly few SMRs have made use of SMR point data (which can be derived from grid references in text databases), AP transcriptions and monument boundaries. Fewer still plan to capture historical maps or geology data.

Discussion at the Sheffield meeting suggests that programmes of data capture are influenced by the

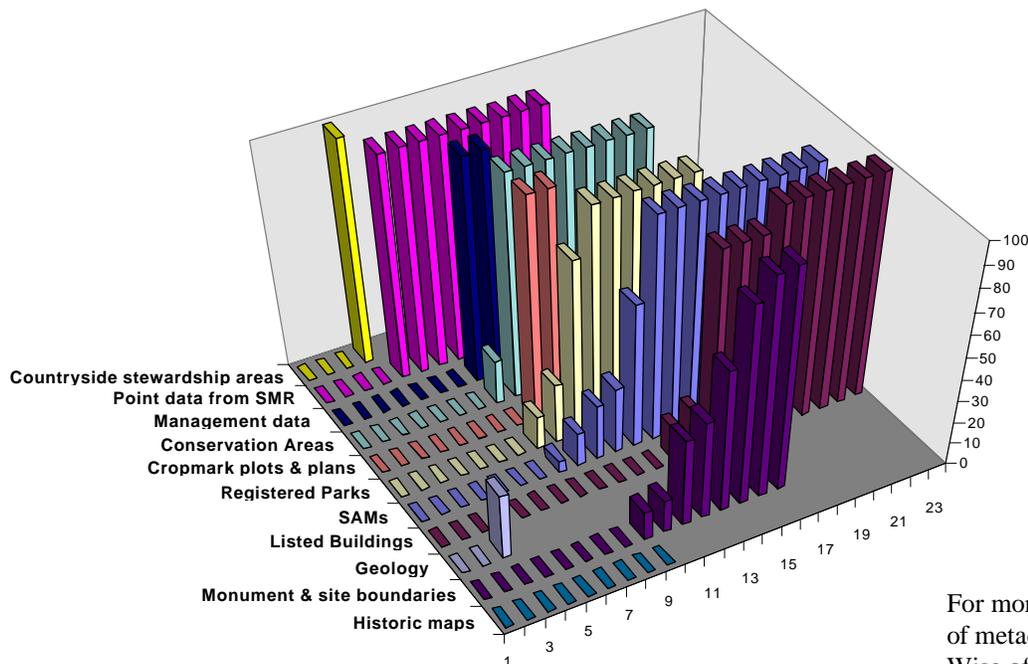
accessibility of data sets within local authorities, cost and staffing levels.

Various techniques are being used to capture data with approaches varying according to source material. The scale of data capture reported varies from 1:1250 to 1:10560 with 1:10000 being the most common. Scanning techniques are being used largely for historic maps and cropmark plans.

The majority of respondents reported that limited staff and other resources were restricting both data capture and data validation.

## Metadata

Only 3 SMRs reported that they are currently capturing metadata. Metadata is information about data and is comparable to the details in a library catalogue. Recording metadata is strongly recommended because it will help you to find and manage the data sets in your system. Most importantly, metadata describes the quality of data and allows other users to make informed decisions on whether data is appropriate for their particular purpose. This is particularly true in corporate systems.



For more information about the uses of metadata see the article by Alicia Wise of ADS in this issue.

# Geographic Information Systems in SMRs

## MapInfo in Northamptonshire

Glenn Foard

We have been using MAPINFO in Northamptonshire Heritage for over five years now, having been one of Northamptonshire County Council's pilot projects for GIS. We have 5 workstations running MAPINFO under Windows 3.1 and all team members have access to MAPINFO, even if it is not running on their own computer.

In the not too distant future, as part of a corporate NCC initiative, SMR users should also have access. The intention is that access will be provided to users, in our office to selected SMR mapping online using a tailor made menu driven front end to MAPINFO produced by our IT people.

MAPINFO has proven a very user friendly software package which puts you in charge of your own system. However, we have found it essential to have someone within our team who has developed detailed knowledge of MAPINFO to provide immediate support. It has also been important to have access to a MAPINFO specialist, who serves our whole Planning & Transportation Department, to sort out technical problems and to write small routines in mapbasic to do specialist tasks.

Although MAPINFO does not have all the fancy analytical facilities of ARC/INFO, in our experience it has almost everything that the general SMR / Curatorial team will need. It is a mainstream package with a good track record of development of facilities with the issue of new versions. At under £1000 per copy it is good value in the GIS stakes.

The one problem we have encountered is in relating MAPINFO

directly to the SMR database. This however is more a limitation of ORACLE than of MAPINFO. Whatever package you are using any seamless link between an existing SMR database and MAPINFO (or I would imagine any other GIS package) will have to be developed by an IT specialist. However, we have found it very easy to employ the inbuilt linkage between MAPINFO and Dbase, something we have used to good effect for our Planning Database. This database is soon to be transferred to Access, which we are assured will function just as well with MAPINFO.

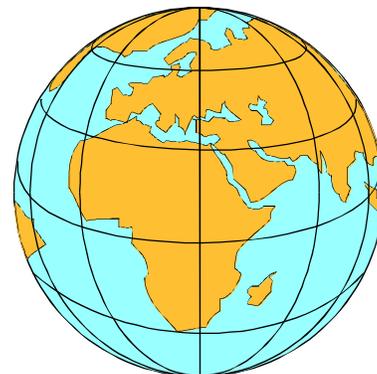
However, perhaps the most important lesson I am sure we have all learned by now is a healthy scepticism about anything an IT specialist says is 'easy' - believe it when you see it!

Data capture is the most expensive issue in GIS, whatever software you use. Don't underestimate the time involved, we did at first. Once you have a system running you are likely to find that the number of layers you develop increases dramatically to a stage where you begin to lose track of what is what and where.

Our experience points up the crucial role of a well structured system of directories and sub directories to hold your layers, a structure which is logically organised so that it is a matter of 'common sense' to know where a particular type of data will be found. We have, for example, directories for background data, management data, SMR sites and SMR monuments and so on. Within each are sub directories: for example the 'background' directory includes sub directories for geological layers, OS early editions, the latter in turn having sub directories for each edition and then for 6" and 25" respectively, and so on.

The second essential is adequate metadata files to accompany every layer or group of layers. Without such 'information about information' you will quickly lose track of who produced what, when, from what sources, to what standards and so forth. Recovering this situation later is major headache, as we are now discovering!

One of the great success stories of our GIS work has been with the first, second and third edition OS maps. We have had almost all the 1st edition 6" maps held at our County Record Office scanned and registered in MAPINFO. Selected 25" maps, generally project related, have also been taken from this and other editions. Scanning cost us less than £4 per sheet, but don't forget the time and software needed to register the maps. We got the first batch done commercially but are now probably purchasing ER Mapper so that we can do the job ourselves. It will also hopefully enable us to register all the earthwork surveys which we have scanned and also to rectify air photos for mapping purposes. You will also need to buy the corner point coordinates from the OS if you want to do the job efficiently.



# ArcInfo and ArcView in Essex County Council Archaeology Section

Paul Gilman

Within Essex County Council GIS is being progressed as a corporate project based on ArcInfo and ArcView software. In 1991, a corporate budget was set up for five years to develop the basic infrastructure to run GIS. A key feature of this was a 'map management system' to allow users to display and print Ordnance Survey digital data. This forms the core of the GIS and individual Departments and Sections can use this to build their applications.

The Archaeology Section's Archaeology Advisory Group (AAG) recognised the potential value of GIS to its work but the difficulty lay in obtaining the funds (the County Council operates an internal charging policy including IT development). This began to be overcome when GIS was recognised as forming an essential component of a Historic Towns survey project, funded by English Heritage. The project design included a user requirements study for a GIS, to be based on ArcInfo (Version 7). However, by the time work commenced on the project itself and a design for the GIS was prepared, ArcView version 2 had become available. Therefore, the design recommended that ArcInfo be used for digitising with ArcView for analysis and printing.

The GIS application was built during 1995-96 and is in regular use by the historic towns project. The GIS is being used to bring together various classes of information about the towns being studied, including the Sites and Monuments Record, Listed Buildings, excavations and watching briefs as well as cartographic and documentary information. ArcView, now on to Version 3, provides a flexible,

Windows-based approach to display and analysis. A particular strength is the ability to bring in and link data from a wide variety of sources, including Oracle and Access databases. The user can then work with this information through a simple, spreadsheet-type tabular interface. As an example, it is relatively easy to link information about digitised SMR features held in ArcInfo's own Info tables to details about these features held by the Oracle-based 'Monarch for SMRs' system.

ArcView also contains easy to use and yet powerful tools for display and analysis. Recent work has included the display of taxation and estimated population figures for the towns based on statistics gathered by the project's documentary historian, Dr Chris Thornton of the Victoria County History for Essex.

The corporate approach used in Essex has provided clear benefits, not least that of cost, since the GIS infrastructure, which cost a considerable amount to develop, is effectively available free to specific applications. The downside is that at times such applications, including our own, have had to wait for corporate project developments to be completed.

However, in practice a flexible approach has been adopted to scheduling work and some items were brought forward at the request of the AAG. Another advantage of corporate working is that a great deal of spatial data are now becoming readily accessible throughout the authority. These include a number of relevant constraints including Historic Parks and Gardens, Conservation Areas, SSSI's, and many more.

Following the successful use of GIS within the Historic Towns project, consideration is being given to the rest of the Sites and Monuments Record. This can already be displayed as point data from the main database but what is really needed is the digitising of all the SMR site boundaries. In a relatively short time, the AAG has made real progress with GIS. Nevertheless, there is still much to do before the full benefits of this powerful system can be realised!