New £1/4m. ESRC grant for British Isles Historical GIS

The Economic and Social Research Council has awarded £260,360 to a new project linking the Historical GIS Group at Queen Mary & Westfield College with the Historical Databases team at the Queen’s University Belfast, led by Paul Ell.

The Belfast team use a specialised ProLector Optical Character Recognition system with a proven ability to scan in 19th century tabular data. They have already converted large parts of the Irish census reports for the 19th and 20th centuries into a database of c. 32 m. data values.

Meanwhile, the historical GIS for England and Wales being built at QMW will be extended to cover Scotland and Ireland, and linked to the statistical data input in Belfast.

This very large resource will then be exploited in three ways:

- The statistics and digitised boundaries will be made available via on-line services (see box).
- The GIS is intended to form the basis for a major new historical social atlas, to appear in March 2001 to mark the bicentenary of the first census. This part of the project, which is not funded by the ESRC, is being led by Daniel Dorling (Bristol).
- Our methodologies for converting datasets from one set of reporting units to another are forming the basis for a series of more analytical sub-projects (see back page). For example, this map comes from a study of geographical trends in poverty over the last century and uses 1931 census data for local government districts, but transformed onto 1898 Registration Districts. We have also transformed the base map into a cartogram, in which the area of each district is made proportional to its population while preserving relative locations as far as possible, using software developed by Dr. Dorling.

The new project runs from the 1st of April 1998 to the 30th of September 2000. However, all the elements are up and running now:

- The QMW team have almost completed digitising the parish boundaries of England and Wales as they were in 1911, and adding changes back to 1871. Once this is complete, priority shifts to changes between 1911 and 1981.
- The Belfast team have delivered a full transcript of the 1801 parish-level data to QMW and are now working on 1851 and 1951 for England & Wales, and 1871 for Scotland.
- Prototype on-line services already exist, and our Edinburgh collaborators are mapping Scottish civil parishes for 1881.

On-Line Resources for Historical GIS

The QMW and Belfast teams are concerned with resource creation, not dissemination. However, all resources created are being made available to the UK higher education community via national service providers with long term funding:

- Census data and other statistical resources will be available from the History Data Service at Essex, part of the Arts and Humanities Data Service. For details, see their prototype web site: http://hds.essex.ac.uk/gbhdemo.htm
- The UKBORDERS census unit at Edinburgh University already provide modern digitised boundaries and are extending their system to provide historical boundaries for areas, dates and types of unit specified by users: http://edina.ed.ac.uk/ukborders

We also have a wider role disseminating GIS-based tools and expertise among UK historical researchers through courses, workshops and conference sessions. For news of our activities, subscribe to: history-gis@mailbase.ac.uk

For more information, contact Humphrey Southall (0171-975-5413):

H.R.Southall@qmw.ac.uk
Mapping the Ancient Parishes of England & Wales: A Pilot Project

The QMW team has received a new grant of £9,993 from the Pilgrim Trust for a pilot project on mapping the Ancient Parishes of England and Wales. This is centrally concerned with mapping a range of statistical sources, starting with the early 19th century and working backwards through the Hearth Tax and the Compton Census of the 17th century to the medieval Poll Tax and possibly the Domesday Book.

The aim of the project is to assess firstly how well they map on to a base map constructed from 19th century sources, and secondly what if any earlier sources can be used to enhance the base map to more accurately represent earlier administrative geographies, both civil and ecclesiastical.

The pilot study will be limited to certain counties:
- Kent, Surrey, Sussex.
- Cambridgeshire, Huntingdonshire, Northamptonshire and the Soke of Peterborough, possibly Warwickshire.
- Durham, Westmorland, the Furness district of Lancashire and possibly Cumberland.

As ever, much of our work will be collating the research of others. In particular:
- We are already in contact with various researchers who have studied particular sources and have agreed to provide us with access to their transcriptions, often already in machine-readable form.
- We will be extending our GIS into the early 19th century by adding information gathered by a research project currently being undertaken at Exeter University by Roger Kain and Richard Oliver.
- In most of the counties covered by the pilot project, we will be working with local collaborators; in Sussex and Cambridgeshire, with existing county atlas projects; in Kent and Northamptonshire, with the county archaeologists. We would be pleased to hear from other researchers with interests in the counties covered by the pilot project.

The Pilgrim Trust grant includes modest funding for a workshop meeting to be held in London on July 4th, to which we aim to invite a wide range of researchers concerned with mapping pre-1800 boundaries and associated data. Attendance will be free of charge and by invitation only, but we would be pleased to hear from people interested in attending.

For details contact Chris Bennett: C.I.Bennett@qmw.ac.uk.

Surrey Hearth Tax, Lady Day 1664
Percentage of One Hearth Houses per Parish

Data provided by the Hearth Tax Project at the Roehampton Institute
Towards an Electronic Historical Atlas of Britain

One component of the historical GIS research at QMW is a project investigating ‘Authoring methods for low-cost electronic atlases of change and the past’. This is funded by the Joint Information Systems Committee as part of their JISC Technology Applications Programme.

Partly because of the prices charged by firms such as Chadwyck-Healey, many historians assume that electronic publications are necessarily very expensive. In fact, CDs cost well under £1 to manufacture in batches of a thousand, while publishing on the World Wide Web can be essentially free if your institution already runs a web site. Further, electronic publishing provides additional features: hyperlinked text, full colour, zoomable maps, etc.

For maximum flexibility we are concentrating on tools for publishing over the web, as the contents of a web site can easily be placed on a CD and still read with a conventional web browser. There is, however, one basic problem with the web as a medium for atlas publishing: a basic browser can display bit map graphics, where an illustration is stored as a pattern of dots, but not zoomable vector graphics, where the actual structure of the map is stored as point symbols, lines and polygons.

Up to now, our work has concentrated on graphics formats supported by plug-ins, additional pieces of software which extend what a web browser can do. We looked at Adobe Acrobat, but decided it was better suited to distributing documents which were to be printed out before reading; and at Virtual Reality Modelling Language (VRML), which is currently too underdeveloped and too demanding on your computer hardware.

We then made extensive use of Tcl/Tk, a language and toolkit for graphical visualisation. This has many strengths and forms the basis for much of our work on a prototype atlas, which is drawing on the existing Atlas of Industrialising Britain (Langton & Morris, 1986), with the support of the original editors.

However, it has become clear that using plug-ins will limit the usefulness of our atlas because you need a different version of any particular plug-in for each type of computer and operating system, making us very dependent on the developers, and because system managers are often unhappy about installing them on undergraduate networks.

We are therefore now shifting our emphasis to the Java language, which is supported by all up-to-date web browsers. We will be collaborating with James Macgill of Leeds University who has already developed a set of Java-based mapping tools, and are seeking to enlist other collaborators through a new Internet mailing list: java-mapping@mailbase.ac.uk

A sample page from our Electronic Atlas of Industrialising Britain can be seen at:

http://www.geog.qmw.ac.uk/aib

For more details of this work, contact Ben White:

B.M.White@qmw.ac.uk

A sample page from the Electronic Atlas of Industrialising Britain.

The controls down the left hand margin permit readers to obtain additional information or go back to the contents page and move to another chapter. The top half of the screen contains the original text with added hyperlinks which control which map is displayed in the lower half of the screen. The electronic map is of course in colour and, thanks to Tcl/Tk, clicking on a circle displays its name and the data. NB evaluation samples are available now.
Research Opportunities

The body of data we have assembled and our analytical methods create many new directions for research:

- **Age- & Gender-specific net migration flows**: By comparing sizes of age/sex cohorts at successive censuses, and adjusting for deaths and boundary change, we can estimate net flows. The GIS permits recasting data for 1851 to now (see graph).
- **Long-run trends in sub-county mortality**: Based on computing full life tables for consistent geographical units at 10 year intervals from 1851 to the present.
- **‘100 Years of Poverty’**: Has the country become more or less unequal? Studied using data on unemployment, infant mortality and housing.
- **Electoral Geography**: The relationship between voting behaviour and socio-economic structure in late C19 and early C20 Britain has been neglected because little socio-economic data is available for constituencies, but with the GIS we can recast data for other units.
- **The Geographical Consequences of Franchise Reform**: Studying the work of the Boundary Commissions following the Reform Acts of 1832, 1867 and 1884: how well did the resulting sets of constituencies represent the country as a whole?

Some of these examples are already being researched, generally with collaborators; others are waiting for someone with time to study them! We are especially keen to hear from potential research students wishing to develop substantive research themes linked to the GIS.

Topics might well combine quantitative and qualitative approaches.

QMW has been awarded category A status by the ESRC, enabling all stages of a Ph.D. to be studied here, and the project itself has received over £310,000 from the ESRC in four awards — an unusual achievement for a historical project. Internally funded studentships may also be available.

To discuss the possibilities, contact Humphrey Southall on 0171-975-5413:
H.R.Southall@qmw.ac.uk

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**Historical GIS Course: June 29-July 3**

We are pleased to announce our fourth training course, to be held at QMW from Monday June 29 to Friday July 3, 1998.

**Target Audience**

Historical researchers who have geographically located data to map and analyse. Those studying Britain will be able to draw on our historical GIS during and after the course, but it covers basic principles and the specific practical skills needed for historical GIS research in any context.

Attendees must be broadly computer literate but **NO** previous experience with GIS software is assumed. What you gain from the course will of course partly depend on yourself, but our aim is to help you complete your project and, within reason, we expect to continue providing advice and access to facilities once the course has finished.

**Content**

The course focuses on the well-established Arc/Info GIS system and the specifically historical GIS that we have built using this software.

This year’s course has been revised and extended, combining material from the standard introductory course developed by Arc/Info’s creators with specifically historical material:

- Coverage of historical sources for GIS: Ordnance Survey maps, boundary change & census data.
- How to generate and download a base map for a specific area, date and type of unit from our GIS.
- Structure of our database of historical statistics; intro to SQL.
- Methodologies for building, analysing and representing a time dimension within a GIS.
- Introductions to additional software: the MapInfo ‘desktop GIS’; the simple mapping tools in MS Excel; using Adobe Illustrator for tidying up and captioning.

All participants will have sole use of a large-screen network station, limiting total numbers to six or seven.

**Cost**

The course fee for academic institutions is £550 (other organisations £750). This covers coffee, tea and all documentation, including a copy of the official Arc/Info tutorial volume, ‘Understanding GIS’. The course is non-residential and will be time-tabled to permit commuting, but on-site accommodation can be arranged.

For more information contact Ian Gregory on 0171-975-5397:
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