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# PopulationsPast: an Interactive Atlas of Victorian and Edwardian Population

Cambridge Group for the History of Population and Social Structure

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Members of the Cambridge Group for the History of Population and Social Structure (CAMPOP) unveiled a new interactive, online resource at the recent Local Population Studies Society conference in Cambridge. Aimed at school, college and university students; the research community and the general public, it will be of particular interest to those interested in and working on local population studies. Constructed as part of an Economic and Social Research Council and Newton Trust funded project entitled *An Atlas of Fertility Decline in England and Wales* carried out jointly by the Universities of Cambridge and Essex, the website allows users to interrogate interactively maps of a variety of social, demographic and economic variables for the registration sub-districts (RSDs) and registration districts of England and Wales from 1851 to 1911.

The figures have been derived using the individual-level census data contained in the Integrated Census Microdata (I-CeM) database held at the United Kingdom data archive. I-CeM was created by Kevin Schürer (now at the University of Leicester) and Eddy Higgs (University of Essex). The team based at CAMPOP; led by Alice Reid and in collaboration with Schürer and Higgs, undertook additional cleaning, coding and enhancement of the I-CeM data before calculating series of variables for each of the census years available within I-CeM: 1851, 1861, 1881, 1891, 1901 and 1911. In addition, certain measures, such as infant and child mortality rates—which could be estimated from the Registrar General's *Annual* and *Quarterly Reports*—and population density, calculated using acreages derived using Geographical Information Systems (GIS) software, are provided for each RSD in 1871.

Figure 1 reproduces a grey-scale version of the one-page User Guide which should enable most first-time users to quickly find their way around the website. A more colourful version can be found at: <https://www.populationspast.org/resources/> or by pressing the 'Resources' tab found in the blue title banner running across the top of page of the website. As the website is still being constructed and suggested improvements and modifications are being acted upon the User Guide will be updated as new features are added to the website. Please see the website for the latest version.

Due to computing constraints the first map a user sees displays infant mortality rates at the registration district level, with selected places named to allow users to orientate themselves. Zoom in to an area of interest, either using the mouse wheel, or the '+' button in the top left-hand corner of the map however and the registration districts are replaced by RSDs, offering a much more detailed picture of the distribution of infant mortality rates in

Figure 1 The PopulationsPast one-page User Guide

## www.PopulationsPast.org - Interactive Atlas of Victorian and Edwardian Population

**Home: Map:**  
Click here to return to map, when you have been at another tab.

**Search box:**  
Enter place name or postcode and press return to get the map to centre on that place.

**Zoom buttons:**  
Use these buttons to zoom in and out.

**Full screen:**  
Fill the screen with the map.

**Find me:**  
Click to zoom straight to current location.

**Key:**  
Short description of the data shown, and value range shown by each colour.

**About:**  
Information about the data, and the information also found using the [?] buttons (see More information).

**Contact us:**  
How to contact us, and a feedback form.

**Resources:**  
Worksheets, related websites, and readings (to follow).

**Acknowledgments:**  
Information about funders, institutions, and datasets.

Populations Past – Atlas of Victorian and Edwardian Population

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**Compare side-by-side:**  
Click to see two maps. Choose different variables on each, or the same variable and a different year. Keep maps in sync (only seen in side-by-side view) means they will always show the same area. Uncheck to move maps independently.  Keep map positions in sync

**Export:**  
Click this button to export the data for each Registration Sub-District shown in the currently selected window.

**Year selection tool:**  
Slide to choose the year to display on the map.

**More information:**  
Click on the [?] to give an overview of time trends and patterns in the variable.

**Variable selection:**  
Shows variable list. Click to choose a variable to display.

**Map layer button:**  
Click here to choose other background map layers (visible when zoomed in). There is a choice of two historic and two modern maps.

**Value display box:**  
Hovering over an area the exact value of the data for that place.

**Infant Mortality Rate Legend:**  
The number of babies out of 1,000 born who died before their first birthday

Unknown
≥ 180
160 - <180
140 - <160
120 - <140
100 - <120
80 - <100
<80

78

the area selected. By zooming in as far as possible users are also able to see maps outlining the communities contained within each RSD. Four map series are offered through the ‘Map Layer’ button; two historic: the Bartholemew Half inch 1897–1901 Series and the Ordnance Survey Inch Series 1885–1900, and two modern: OpenStreetMap and Ordnance Survey Open Data. Switching between the map layers is a good way to observe some of the changes which took place in housing and infrastructure during the late Victorian period, and how the geography of cities, towns and areas has altered over the intervening century or more.

To observe change from one census year to the next users can use the Year Selection Tool, sliding a pointer from one year marker to the next. If data are not available for a year, as is unfortunately often the case for 1871, then only the underlying map layer can be seen. This also occurs in other years when data are missing for a particular variable at the registration district or RSD level, or if the population numbers in that registration district or RSD are too small for the calculation of that variable to be considered sufficiently robust.

The variables which can be viewed are listed in the black ‘Variable Selection’ panel to the right of the screen. They are divided into sections, so if one selects ‘Mortality and Health’ a choice of maps of the Infant Mortality Rate, the Early Childhood Mortality Rate, or ‘Doctors’ is offered. While it may not be immediately clear what the ‘Doctors’ maps show, by hovering the cursor over that choice a pop-up text box appears to inform the user that it displays ‘the number of doctors per 10,000 people’. There is also a ‘More Information’ button (marked ‘(?)’) beside each variable listed. If one clicks that next to ‘Doctors’, for example, one is taken to a page which re-iterates the definition of the variable, lays out how it was calculated and then presents an overview of the trends and patterns which it shows at the national level and over space and time.

In addition to Mortality and Health, users of the website will find variable categories covered by the titles: Population Density, Type of Place, Fertility (under which the variables listed are: Total Fertility Rate, Total Marital Fertility Rate, Legitimate Birth Rate, Illegitimate Birth Rate and Illegitimacy Ratio), Marriage, Households, Age Structure, Migration, Socio-economic status (status as measured using the HISCLASS classification system), Social Class – RG (social and occupational status the laid out by the Registrar General for use in the analysis of the 1911 ‘Fertility Census’), Women’s work and Children’s work and schooling. It is intended that further categories and measures will be added in the future as they become available.

The *Atlas of Fertility Decline* project used ‘Types of place’ to compare and contrast the evolution of, and the interaction between, various demographic, economic and social variables in eight different types of setting within Victorian and Edwardian England and Wales. The definitions of the ‘types of place’—which are loosely categorised by the relative frequency of certain occupations followed in a particular RSD—can be accessed through the ‘More information’ button beside the ‘Type of place’ category on the variable selection panel (<https://www.populationspast.org/#10/53.8161/-1.7008>). This indicates that:

For each RSD, all economically active men and women (excluding general labourers) aged between 15 and 64 were identified. The percentage of these who worked in each of the following occupational orders was calculated: mining, metal work/manufacture, textiles, agriculture, pottery, professions, services, and transport. These percentages were then used to allocate each place as follows:

- If  $\geq 25\%$  work in textiles then the place was designated TEXTILE
- Otherwise if  $\geq 30\%$  worked in mining or metals then the place was designated MINING
- Otherwise if  $\geq 7.5\%$  worked in the professions AND  $\geq 30\%$  worked in services then the place was designated PROFESSIONAL
- Otherwise if  $\geq 5\%$  worked in agriculture AND population density  $< 1$  person per acre then the place was designated AGRICULTURE
- Otherwise if  $\geq 5\%$  worked in agriculture then the place was designated SEMI-RURAL
- Otherwise if  $\geq 15\%$  worked in transport then the place was designated TRANSPORT
- Otherwise if  $\geq 7.5\%$  worked in the professions then the place was designated SEMI-PROFESSIONAL
- Otherwise the place was designated OTHER URBAN

This exercise was carried out separately for each year, allowing places to change character as economic development took place.

The ‘Other Information’ sheets for each variable offered on the website compare and contrast the trends in the latter for each of ‘Type of Place’ over time. In this way those interested in particular communities can situate ‘their’ community either within the national picture, or in comparison to other communities of a similar type.

Users interested in comparing values of the same variable for different parts of the country, or for the same locality over time, or to compare different variables for the same place can use the ‘Compare Side by Side’ function. When comparing maps ‘side by side’ one is offered the option to ‘Keep map positions in sync’, so that, when one map is moved using the mouse or the zoom in or out button, the other map moves in exactly the same way. If the ‘Keep map positions in sync’ option is not chosen the second map will move independently of the first.

Finally, for those who wish to pursue their own research questions, or to apply more sophisticated statistical or mapping techniques to the data underlying the maps, it is possible to use the ‘Export’ button to download the RSD data underlying each map in .csv format which can be easily imported into various statistical packages. It is hoped that the option of downloading data in GeoJSON format for use in GIS applications will be added to the ‘Export’ button very shortly. To download the values of a particular variable in a chosen year for every RSD in England and Wales users have only to zoom out until they

can see the total extent of both countries on the map screen and then indicate their chosen format on the 'Export' Button. If data for a smaller, local area are required then zooming into the RSDs covering that restricts the values exported to those for the RSDs visible on the screen.

The 'Resources' page of the website provides links to other websites which users might find useful and there is also a section for teachers, which will include a series of example worksheets which might be incorporated into lesson plans, either wholly or in part. Links to articles arising from the *Atlas of Fertility Decline in England and Wales* Project will be added to the 'Resources' page in due course. The 'Resources' page also holds a sequence of maps showing each variable mapped for every year for which it is available from 1851 to 1911 inclusive for the whole of England and Wales, at the RSD level. These maps cannot, unfortunately, be produced interactively through the PopulationsPast website, but may be downloaded individually and reproduced, as long as the 2018 copyright notice referencing 'PopulationsPast.org' is retained on the map. Additional suites of maps will be added as they become available.

At the LPSS conference in Cambridge a brief overview of and introduction to the PopulationsPast website was given and Reid and her colleagues, who are eager to receive feedback, invited members of the audience to try it out for themselves. Some took advantage of the computers available in Cambridge, while others waited to explore the website on their home computers and then send in their thoughts and comments. The project team members would like to invite readers of *Local Population Studies* who may not yet have discovered the website to visit [www.populationspast.org](http://www.populationspast.org) and add their comments, criticisms and requests for further variables to be made available to those already received via the 'Website Feedback' box on the 'Contact Us' tab, or through the short questionnaire which will shortly be added to the website. These communications will be very gratefully received by members of the *Atlas of Fertility Decline* team and help to us to improve, expand and update the website, making it as interesting, accessible and as useful as possible to everyone who visits it.