DATADAPTIVE
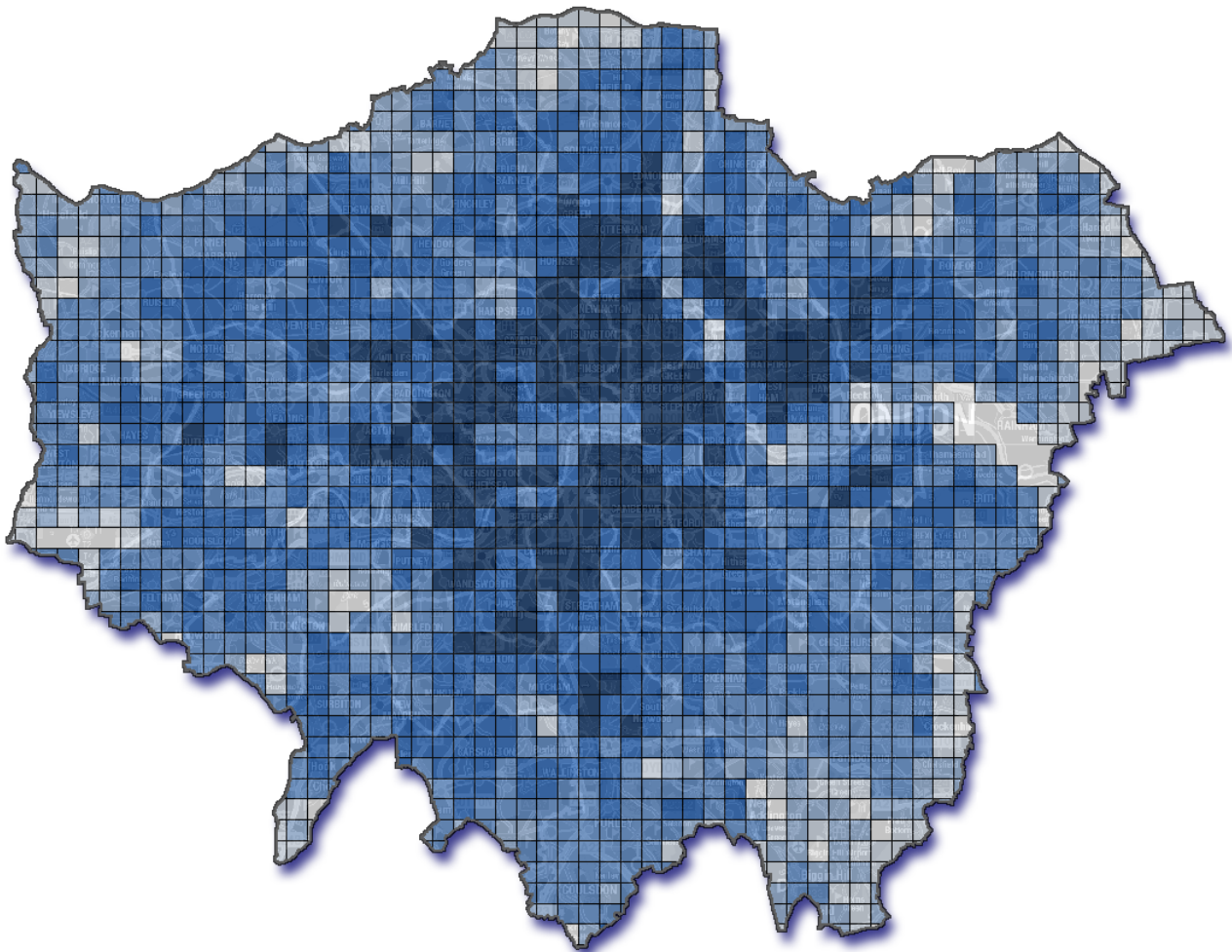
Product Summary

Population Grid GB 1x1 Km is a dataset that contains estimates of resident population within a grid of 1 km x 1 km cells covering all of Great Britain. The population figures are calculated from postcode headcounts at the time of the 2011 Census.

Open data from the Office of National Statistics (ONS) and National Records of Scotland (NRS) was used in the development of this product. Please see the Underlying Data Products List for more details.

Method statement

A list of Census 2011 postcodes units for Great Britain with resident population headcounts was produced by combining an ONS table containing that data for England and Wales and a NRS table containing that data for Scotland. A small number of records were merged because the NRS table contains multiple records for postcode units that bridge Output Areas and because several postcode units on the border between England and Scotland are included in both tables.

Postcode unit centroids were geocoded with coordinates from the ONS Postcode Directory (ONSPD). 1,454,403 postcode units (99.98% of the total list) were geocoded from the May 2011 release of ONSPD; the remaining 302 postcodes units were geocoded from the August 2011, February 2012 and May 2012 releases of ONSPD.

A grid of 1km x 1km cells based on the British National Grid coordinate reference system was calculated programmatically within a bounding rectangle that contained all of Great Britain. The grid was then trimmed to remove all grid cells that are completely outside the full extents of Great Britain as defined by an ONS boundary dataset.

Point-in-polygon analysis was used to match each postcode unit to the grid cell that contains its centroid. The estimated population for each grid cell was calculated by summing the population of all postcode units with centroids within the grid cell.

Data quality statement

The data in this product has been compiled and/or calculated from Census data published by ONS and NRS for re-use under an open licence. Datadaptive has taken reasonable care in preparing the data. However the accuracy and currency of the underlying data is dependent on the input sources and on judgements made in the design of the product. It is a matter for the user to decide whether this data product is suitable for the user's purposes.

The population estimates for 1km x 1km cells in this data product will be less accurate than population estimates for other small geographies available as official Census outputs, as those outputs have been built up from household-level headcounts that are not openly published for reasons of privacy.

There is a wide variation in the geographic size of postcode units, and some units will contain households that are located in a different grid cell than the postcode centroid. Some of the headcount in those postcodes will have been misallocated between grid cells. Generally speaking population estimates for grid cells in urban areas are more likely to be accurate than those in rural areas because postcode units in urban areas tend to cover a smaller geographic area.

Data formats

Tabular data is supplied in CSV format. Spatial data is supplied in unstyled ESRI Shapefile format with the National Grid (OSGB36) projection.

Licensing

The Population Grid GB 1x1 Km dataset may be re-used under the Creative Commons Attribution License 4.0 (CC-BY). CC-BY is an open data licence that allows almost unrestricted re-use of the data. CC-BY is perpetual, royalty-free, non-exclusive, and interoperable with the Open Government Licence.

Attribution

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File Specifications

Population Grid GB 1x1 Km

File name:	POPGRID1KM_GB and POPGRID1KM_GB_NN
Record count:	242,929 and 120,037
Geographic coverage:	England, Scotland and Wales
File format:	CSV

This file is a table of British National Grid references for 1 km x 1 km grid cells covering all of Great Britain, each attributed with centroid coordinates and an estimate of the resident population at the time of the 2011 Census.

The POPGRID1KM_GB version of the table includes a record for every grid cell completely or partially within the geographic extents of Great Britain, including grid cells that do not contain centroids of any Census 2011 postcode units. The POPGRID1KM_GB_NN ("not null") version of the table contains only grid cells that contain centroids of one or more Census 2011 postcode units.

Following is a table of the fields provided for each grid cell.

Field	Type	Description
GRIDSQ	Text	British National Grid reference (format AANNNN)
CTRX	Integer	X coordinate of the grid cell centroid (National Grid easting)
CTRY	Integer	Y coordinate of the grid cell centroid (National Grid northing)
RESPOP11	Integer	Census 2011 resident population headcount (estimated) [1]

[1] In the POPGRID1KM_GB CSV file this value is empty i.e. null for grid cells that do not contain centroids of any Census 2011 postcode units. Please bear in mind that some software does not allow null values in fields with the integer data type and may insert a nil value.

Population Grid GB 1x1 Km Polygons

File name: POPGRID1KM_GB and POPGRID1KM_GB_NN
Record count: 242,929 and 120,037
Geographic coverage: England, Scotland and Wales
File format: SHP

This file is a spatial dataset containing polygons for 1 km x 1 km grid cells covering all of Great Britain, each attributed with a British National Grid references, centroid coordinates, and an estimate of the resident population at the time of the 2011 Census.

The POPGRID1KM_GB version of the dataset includes a polygon object for every grid cell completely or partially within the geographic extents of Great Britain, including grid cells that do not contain centroids of any Census 2011 postcode units. The POPGRID1KM_GB_NN ("not null") version of the table contains polygon objects only for grid cells that contain centroids of one or more Census 2011 postcode units.

Following is a table of the fields provided for each grid cell.

Field	Type	Description
GRIDSQ	Text	British National Grid reference (format AANNNN)
CTRX	Integer	X coordinate of the grid cell centroid (National Grid easting)
CTRY	Integer	Y coordinate of the grid cell centroid (National Grid northing)
RESPOP11	Integer	Census 2011 resident population headcount (estimated) [2]

[2] In the POPGRID1KM_GB shapefile this value is -9999 for any grid cell that does not contain centroids of any Census 2011 postcode units. This value is a null indicator.