Office for National Statistics

Population estimates by output areas, electoral, health and other geographies QMI

Quality and methodology information for national population estimates broken down into small geographical areas (Super Output Areas, health geographies, electoral wards, Parliamentary constituencies and National Parks) in England and Wales. Details the strengths and limitations of the data, methods used, and data uses and users.

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To be announced

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1 . Output information

- Statistical designation: accredited official statistics, official statistics in development and supporting information depending on geography and age disaggregation
- Data collection: based on third-party data
- Frequency: annual
- How compiled: based on third-party data
- Geographic coverage: England and Wales
- Related publication: Population estimates by Output Areas, electoral, health and other geographies
- Last revised: 7 November 2025

2 . About this QMI report

This quality and methodology report contains information on the quality characteristics of the data (including the five European Statistical System Dimensions of Quality) as well as the methods used to create it. The information in this report will help you to:

- understand the strengths and limitations of the data
- learn about existing uses and user of the data
- reduce the risk of misusing data
- help you to decide suitable uses for the data
- understand the methods used to create the data

3 . Important points

- Population estimates by Output Areas, electoral, health and other geographies (formerly known as small area population estimates (SAPE)) are the official source of population estimates between census years for Output Areas, Super Output Areas, health geographies, Parliamentary constituencies, electoral wards and National Parks; for the purpose of this QMI, we will continue to refer to these estimates under the SAPE acronym.

- Output Areas and Super Output Areas are designed as a "building block" geography and so part of the purpose of this release is to allow users to build estimates for customised areas using official population estimates.

- The estimates use the census definition of people who are "usually resident" in the UK for 12 months, excluding short-term migrants and counting students at their term-time addresses.

- The estimates roll forward the population found by the previous census, one year at a time by using the ratio of change in consecutive GP Patient Register data (the Personal Demographics Service from mid-2020 onwards) and changes to special populations to account for population changes; estimates for small areas are constrained to local authority level estimates.

- SAPE have accredited official statistics status for: Middle layer Super Output Areas for five-year age groups by sex, Lower layer Super Output Areas for broad age groups by sex, and health geographies.

- On 25 November 2024, a rebased set of SAPE for mid-2012 to mid-2020 was published; this rebasing made SAPE consistent with the rebased local authority mid-year estimates published in November 2023.

4 . Quality summary

This report relates to the set of small area population estimates (SAPE), which includes population estimates for Lower layer Super Output Areas (LSOA), Middle layer Super Output Areas (MSOA), electoral wards, Parliamentary constituencies, health geographies and National Parks. Estimates are available annually by age and sex, from mid-2001 onwards.

Estimates for LSOAs by broad ages and MSOAs by five-year age groups (quinary age) hold accredited official statistics status. Estimates at a greater level of disaggregation by age including quinary age for LSOAs and single year of age for both SOAs are supporting information only. However, we intend to conduct analysis to assess whether the LSOA (and Output Area (OA)-level estimates) by five-year age groups are of suitable quality for accredited official statistics status.

Electoral wards, Westminster Parliamentary constituencies and National Parks all hold official statistics in development status. Estimates for health geographies are aggregated directly from LSOAs and hold accredited official statistics status. From mid-2012 onwards, the SAPE can be broken down into two main types: the Super Output Area (SOA) estimates (both middle and lower layer), produced using a "Ratio Change" methodology and the estimates for other geographies produced using an "Output Area Apportionment" methodology. The rationale behind both of these approaches is to use information held in administrative datasets to update estimates of the population year-on-year, until results from the next census can be used to rebase the data.

Rebased backseries of estimates, mid-2012 to mid-2020

A rebased set of population estimates for mid-2012 and mid-2020, on Census 2021 Lower layer Super Output Areas (LSOAs) and Middle layer Super Output Areas (MSOAs) were published in November 2024. They are consistent with our rebased local authority estimates published in November 2023. The rebased population estimates make the inter-censal estimates for all geographies consistent with the 2011 and 2021 Censuses.

In addition, estimates for mid-2022 were revised to be consistent with our local authority level estimates published in July 2024.

Correction to rebased backseries of estimates, mid-2012 to mid-2020

Following publication of the revised backseries of estimates for mid-2012 to mid-2020 in November 2024, an error with the Output Area data, and products derived from Output Area data was discovered. This error does not impact the accredited official statistics for LSOA, MSOA or health geographies. For a comprehensive description of the different methods used to create these estimates please see our Methodology guide.

The error was because of a faulty lookup, which was used to split OA (2011) estimates to OA (2021). The faulty lookup meant that many newly created Output Areas from the 2021 Census were allocated zero share of their "parent" OA (2011) population. As part of the issue, population increases for new Output Areas between mid-2020 and mid-2021 were quite large. We corrected this error on 12 March 2025 across the ONS website and Nomis. Table 1 shows the impact of these changes for different levels of geography.

Table 1: Impact of correction on previously published estimates aggregated to geographical area for mid–2020

	Total areas	Changed by more than +1%	Changed by between 0 and 1%	No change	Changed by between 0 and -1%	Changed by more than -1%
MSOA (Accredited official statistic)	7,264	0	0	7,264	0	0
LSOA (Official statistic in development)	35,672	0	0	35,672	0	0
National Parks (Official statistic in development)	13	0	1	6	4	2
Parliamentary constituencies (Official statistic in development)	575	7	59	444	58	7
Wards (Official statistic in development)	7,608	483	72	6,474	66	513
Output area (Supporting information)	188,880	5116	53	170,396	47	10,655

Source: Population estimates from the Office for National Statistics

Uses and users

Assessment of user needs and perceptions

(The processes for finding out about uses, users and their views on the statistical products.)

Local area users are consulted through the Central and Local Information Partnership (CLIP) Population Subgroup. The aim of the CLIP Population Subgroup is to improve communication between the Office for National Statistics (ONS) and some users of population statistics produced by the ONS. Further information on this user group is available on the Knowledgehub website.

Users are encouraged to email feedback and suggestions regarding the population estimates to pop.info@ons.gov.uk.

Strengths and limitations

Main strengths:

- the estimates provide timely, official data on the size, age and sex of the population between censuses
- methods are held as consistent as possible; major changes are accompanied with a backseries allowing users to understand any changes
- these estimates are coherent with local authority level population estimates.

Main limitations:

- the estimates only cover the usually resident population and so do not include "workday" populations or short-term visitors
- the ratio change method used to produce these estimates assumes that change in administrative data is a good proxy for change in the population of an area; while this assumption holds reasonably well for the majority of areas, administrative processes (such as list cleaning) can cause issues
- the methods used mean that the smallest geographical entities for which populations are available are Output Areas and estimates for many geographical areas are only available on a best-fit basis

Information on the methods used to produce these components of population can be found in the methods guides:

Methodology note on production of population estimates by output areas, electoral, health and other geographies, England and Wales.

Review of population estimates and projections

In May 2021, the Office for Statistics Regulation (OSR) published a review into population estimates and projections. This highlighted that at the national level, the approach taken by the ONS is fit for purpose and is supported by expert advice from demography and academic partners but that at the subnational level, the accuracy of estimates is variable because of factors such as the size and mobility of the population in a given area.

The review also identified the need to keep methods current and responsive, especially at some lower levels where there is more variability in the data. We are already progressing work in this area as we consider how best to meet these recommendations, and we will report back to the OSR about our plans while continuing to gather feedback on them more broadly. We recognise the need for:

- development work to keep these sources current and responsive
- developing how we work and engage with users of our statistics, particularly at a local level
- planning how we move to Census 2021-based estimates, and take on board improvements from the population and migration statistics transformation programme

While the review did not explicitly discuss population estimates below local authority level, quality issues at the national and local authority levels will also have an impact on population estimates at all levels. Further, the methodology used to produce estimates for census, electoral and health geographies is less sophisticated than for higher geographies and there is likely to be pockets of uncertainty in these estimates.

5 . Quality characteristics of the data

This report provides a range of information that describes the quality of the data and details any points that should be noted when using the output.

We have developed Quality in official statistics; these are based upon the five European Statistical System (ESS) Quality Dimensions. This report addresses these quality dimensions and other important quality characteristics, which are:

- relevance
- accuracy and reliability
- output quality
- coherence and comparability
- concepts and definitions
- geography
- accessibility and clarity
- timeliness and punctuality
- why you can trust our data

More information is provided about these quality dimensions in the following sections.

Relevance

(The degree to which statistical outputs meet users' needs.)

The small area population estimates (SAPE) provide annual estimates of the population at mid-year (30 June), by age and sex.

Enquiries and requests show that the main users of SAPE are central government, local authorities, the health sector and academics. Main uses of the estimates can be classified into two broad groups:

- use of the absolute numbers (for example, for planning purposes)
- use of the estimates in a variety of rates and indicators

Discussions with users have identified that their priorities for the quality of the estimates are: that the data are timely; that they provide sufficient detail (by geography and age group); and that they are consistent with the Office for National Statistics' (ONS's) other population estimates.

From mid-2011, the estimates are published by single year of age and sex in order to meet user needs for more detailed information and allow users to create estimates for bespoke age categories. Users are made aware of the limitations of estimates at this fine level of age detail.

To meet user needs for more detailed geographic information, mid-year estimates have been published for wards and Parliamentary constituencies on a Census Output Area best-fit approach in line with the ONS geography policy. Estimates for the underlying Census Output Areas are also available, which can be aggregated to produce Output Area best-fit estimates for any other geography. This gives users the flexibility of being able to obtain population estimates for locally-defined or bespoke areas. Mid-2002 to mid-2022 Output Area estimates have also been published. Users are made aware of the limitations of estimates at the Output Area level. For mid-2002 to mid-2011, Output Areas are based on the 2011 Census; for mid-2011 onwards, Output Areas are based on the 2021 Census.

For consistency, all SAPE are constrained to the local authority mid-year population estimates. The revised mid-2012 to mid-2020 SOA estimates are constrained to the revised mid-2012 to mid-2020 local authority estimates.

Accuracy

(The degree of closeness between an estimate and the true value.)

Population estimates for Lower layer Super Output Areas (LSOAs) by broad ages and Middle layer Super Output Areas (MSOAs) by five-year age groups (quinary age) and health geographies hold accredited official statistics status. The remaining estimates for other geographies are published as official statistics in development. This means that they have not yet demonstrated the quality criteria for accredited official statistics status, but are being published to involve users in the development of the methodology and to help build quality at an early stage. More information on official statistics in development is provided in the UK Statistics Authority Code of Practice for Statistics.

The reliability of the estimates is difficult to quantify because of the range of information used in the construction of the estimates. We quality assure the administrative data used for these statistics to ensure that they are suitable for this purpose. To gain further insight on data quality issues and the impact on statistics, please see the Quality Assurance of Administrative Data reports for the Patient Register, UK armed forces, US armed forces and prisoners.

Every 10 years, the national census provides a benchmark for population estimates. Other than comparisons with the census, there are no benchmark population counts against which the SAPE can be compared. Some elements of the population are more difficult to estimate, such as migrants (internal and international) and students. It is therefore expected that estimates for areas with a large proportion of more difficult to estimate elements of the population are likely to have larger errors developing over time.

Analysis was completed comparing a set of "rolled forward" mid-2011 estimates produced using the ratio change methodology against the published census-based mid-2011 estimates. This analysis shows that the rolled forward estimate was within plus or minus 1% of the census-based estimate for mid-2011 in 5,222 LSOAs (15.6%) and within plus or minus 5% in 21,688 LSOAs (64.7%). This gives an initial indication of the likely impact of the errors that have occurred in the LSOA population estimates time series across the decade between censuses and was used to revise the mid-2002 to mid-2010 population estimates. More information can be found in Small Area Population Estimates Evaluation: Report on Accuracy Compared to Results of the 2011 Census.

Impact of the coronavirus (COVID-19) pandemic

The accuracy of these estimates is likely to have been negatively impacted by the coronavirus (COVID-19) pandemic. Estimates for census, electoral and health geographies all make use of a ratio change method that assumes that changes in administrative data (specifically the GP patient register) are a good proxy for changes in the population. However, the pandemic disrupted both the movement of people and their ability to access services.

Evidence from several sources suggests that some population groups - in particular students - made internal migration moves in March and April 2020 in response to the coronavirus pandemic and the closure of university halls of residence. The evidence is not easily quantifiable but one example, from the National Union of Students' Coronavirus and students survey from April 2020 suggests that pre-pandemic, around 24% of students lived with parents or guardians but this increased to 54% during the early part of the pandemic. It is quite likely that a high proportion of moves made during the first wave of the pandemic were not accompanied by a timely updating of administrative data. Consequently, population estimates for some student areas may be slightly overestimated while populations elsewhere may be slightly underestimated.

Output quality

(Trade-offs are the extent to which different dimensions of quality are balanced against each other.)

Revised mid-2012 to mid-2020 estimates

The production of the revised backseries for mid-2012 to mid-2020 followed a similar approach to the backseries for mid-2002 to mid-2010 and involved similar trade-offs between different dimensions of quality. Full details of the methods used to produce the backseries can be found in our Methodology note on production of population estimates by output areas, electoral, health and other geographies, England and Wales.

Revised mid-2002 to mid-2010 estimates

Research work undertaken prior to the publication of the revised mid-2002 to mid-2010 SAPE identified three possible methods to produce a backseries of population estimates.

A "full assessment method" using census and administrative data along with an individual consideration of each area, where required, would have resulted in more accurate estimates overall. However, the advantages of increased accuracy were weighed against the impact on timeliness — that is, how soon the estimates could be published. Here there was a trade-off between different aspects of the quality of the estimates.

The "distribution of the difference" method provided the best balance in the majority of small areas between producing a plausible backseries of population estimates for each individual area and using a relatively straightforward method to allow timely publication. The method was designed to identify the difference between the census-based and rolled-forward mid-2011 estimates for each Output Area (OA) and LSOA and distribute this difference across the backseries in order to remove any "jump" in the estimates between mid-2010 and mid-2011. As a consequence, the patterns of change identified in administrative data using the ratio change method may not be maintained in the revised mid-2002 to mid-2010 figures.

Limitations of this method are that it relies on making an assumption on how the difference between the two sets of estimates for mid-2011 has developed over time. This assumption will be particularly important for OAs or LSOAs where the 2011 Census estimates were very different from the "rolled-forward" estimates.

As the difference is distributed across the OA and LSOA backseries by age-sex cohort, an implicit assumption is also made that populations in mid-2011 would have been in an area in 2002 at a younger age (that is, a 19 year-old male in mid-2011 would have been in the same area in 2002 but aged 10 years). This was a particular issue in LSOAs with high student-aged populations. Constraining the LSOA estimates to the revised subnational mid-year estimates will have corrected for this to a certain degree: however, a minority of LSOAs show very small counts at younger ages as a result of this assumption. Care must be taken in interpreting age distributions for areas affected by this issue.

Coherence and comparability

(Coherence is the degree to which data that are derived from different sources or methods, but refer to the same topic, are similar. Comparability is the degree to which data can be compared over time and domain, for example, geographic level.)

The SAPE are consistent with the national and local authority mid-year estimates, whereby counts by age and sex all sum to higher geography estimates. Small cell adjustment, as part of the disclosure control in 2001 Census-published outputs, has been applied to the revised mid-2002 to mid-2003 estimates (which rely very much on census counts), in order to maintain that level of protection. Revised estimates for mid-2004 to mid-2010 have also been subject to disclosure control.

There are other producers of small area population estimates including a number of local authority producers. The estimates these local authorities produce are likely to differ from the ONS estimates as the data used by the ONS to produce our estimates are not generally available and some authorities may use local data sources, for example, information on housing completions and demolitions. Some analysis at ward and MSOA level has, however, been done comparing ONS estimates with local authority estimates produced by different methods and this has shown there to be broad consistency with all the estimates compared.

National Records of Scotland (NRS) and the Northern Ireland Statistics and Research Agency (NISRA) produce small area population estimates for Scotland and Northern Ireland respectively. These estimates are produced using different methodologies from those used by the ONS to produce the SAPE for England and Wales.

The published LSOA and MSOA population estimates provide a consistent time series, based on a stable geography, which is not subject to boundary change between censuses. The estimates are also consistent with published estimates for other geographies, for example, national (England and Wales) and local authority mid-year estimates. The published estimates for other geographies can be produced for all years on the latest boundaries to ensure that a consistent time series is available. In general, estimates are provided on the latest boundaries available.

A number of revisions have been made to the SAPE in order to reflect revisions made to the local authority mid-year population estimates:

- 2007 - revisions made to the mid-2002 to mid-2004 LSOA and MSOA population estimates to reflect revisions made to the local authority mid-year estimates in August 2007 incorporating some improvements made to mid-2001 estimates

- 2010 - revisions made to the mid-2001 to mid-2008 LSOA and MSOA population estimates to reflect revisions made to the local authority mid-year estimates (for mid-2002 to mid-2008) in May 2010, plus a few improvements to the mid-2001 estimates in a small number of areas

- 2011 - revisions made to the mid-2002 to mid-2007 population estimates based on the postcode best-fit (PBF) methodology to reflect revisions made to the local authority mid-year estimates in May 2010

- 2013 - revisions to the estimates for mid-2002 to mid-2010 for all geographies to provide a consistent time series from mid-2002 to mid-2011, given the results of the 2011 Census; a number of corrections for known issues were also made during the production of these revised estimates

- 2015 - revisions to the estimates for mid-2013 to correct for the processing error mainly affecting the local authority of Forest Heath and the small area estimates within it

- 2018 - revisions to the estimates for mid-2012 to mid-2016 in light of revisions to local authority population estimates made in March 2018; further details can be found under other output quality

- 2024 - revisions to the estimates for mid-2012 to mid-2020 for all geographies to provide a consistent time series from mid-2011 to mid-2021, given the results of the 2021 Census.

- 2024 - revisions to the estimates for mid-2022 to bring them in line with revised estimates local authority estimates for mid-2022

- March 2025 - corrections to the revised estimates for mid-2012 to mid-2020.

- November 2025 - revisions to the estimates for mid-2022 to bring them in line with revised local authority estimates for mid-2022 published in July 2025

These revisions are in keeping with the ONS revision policy for population statistics.

Concepts and definitions

(Concepts and definitions describe the legislation governing the output and a description of the classifications used in the output.)

The mid-year population estimates are consistent with the standard UN definition for population estimates, which is based upon the concept of usual residence and includes people who reside in the country for at least 12 months, whatever their nationality. Visitors and short-term migrants (who enter or leave the UK for less than 12 months) are not included.

Members of HM armed forces stationed in England and Wales are included at their place of residence but those stationed outside of England and Wales are excluded. Members of the US armed forces stationed in England and Wales are included.

Students are taken to be resident at their term-time address. For mid-2020 this is important to be aware of as there is evidence that a large number of students left their usual term-time address as student halls were closed during the first wave of the coronavirus pandemic. For the most part, students in mid-2020 will be estimated at their term-time address.

The figures for the UK do not include the population of the Channel Islands or the Isle of Man.

For a minority of people the concept of usual residence is more difficult; homeless people would be included in the population estimates if counted in the previous census but could be allocated to the wrong area if subsequent moves were not captured by the patient registers.

Although usual residence is the recognised definition for population estimates, use of a single definitional base does not meet the needs of all users. The usually resident population does not always coincide with the number of persons to be found in an area at a particular time of day or year. The daytime populations of cities and the summer-time populations of holiday resorts, for example, will normally be larger than their usually resident populations. We have also developed and published national estimates of short-term migrants to supplement the mid-year population estimates. These estimates refer to the flows of short-term migrants to and from England and Wales for each year since mid-2004. Short-term migration estimates at local authority level are also available.

Geography

SAPE are produced by the ONS for England and Wales, by Output Area, Lower and Middle layer Super Output Areas, electoral wards, Parliamentary constituencies, health geographies and National Parks. SAPE estimates are published unrounded by single year of age and sex at the lowest levels of geography possible to allow users to aggregate estimates to bespoke geographical areas as needed. The ONS geoportal provides a range of lookup files that allow users to produce estimates for major towns and cities, built-up areas and historic wards. It also provides a hierarchical representation of UK statistical geographies a diagram showing how different geographies fit together, and a short description of each geography in the Beginner's Guide to UK Geography.

Each year we publish estimates for the boundaries in place at the reference point and for the latest boundaries where these differ. While most boundaries remain similar from year to year there are annual changes to both health and ward boundaries. Additional geographic breakdowns are published on Nomis.

SAPE include a number of geographies that would not usually be described as small areas, such as health geographies (Integrated Care Boards) and National Parks, which are often larger than local authority areas. This is because these estimates being created from smaller building blocks (either LSOA or OA-level estimates) as the areas do not align with local authority boundaries.

Assessment of user needs and perceptions

(The processes for finding out about uses, users and their views on the statistical products.)

Local area users are consulted through the Central and Local Information Partnership (CLIP) Population Subgroup. The aim of the CLIP Population Subgroup is to improve communication between the ONS and some users of population statistics produced by ONS. Further information on this user group is available on the Knowledgehub website.

Users are encouraged to email feedback and suggestions regarding the population estimates to the Population Estimates Unit Customer Services Team at pop.info@ons.gov.uk.

Timeliness and punctuality

(Timeliness refers to the lapse of time between publication and the period to which the data refer. Punctuality refers to the gap between planned and actual publication dates.)

Because of the requirement for SAPE to be consistent with the local authority mid-year estimates, the publication of the LSOA and MSOA estimates and other geographies follows on from the publication of these local authority estimates. It is the aim that the SAPE should be published as soon as is practically possible after the local authority estimates.

From mid-2013, all SAPE (including LSOA and MSOA estimates along with Output Area-based estimates for other geographies) were published in a single release. This was to reduce the number of releases and make it easier for users to find the data. The mid-2019 and mid-2020 estimates were published approximately three months after the local authority-level mid-year estimates, that is, 15 months after the reference date of the estimates. Improvements have been made in order to reduce this time lag since the estimates were first published (mid- 2005 estimates were originally published 28 months after the reference date).

When revisions have been made to the local authority mid-year estimates (and the backseries of estimates) as a result of methodological improvements, the SAPE have also been subject to revision. Where this situation has occurred, the time lag between the reference and publication dates of the estimates has been increased because of the additional work required to incorporate the revisions. The majority of revised SAPE estimates for mid-2002 to mid-2010 were published approximately seven months after the revised local authority mid-year estimates (National Park estimates were not published until 10 months after the local authority figures).

All SAPE have been published to time on pre-announced dates apart from a single slippage of one week.

For more details on related releases, a release calendar for government statistics provides 12 months' advance notice of release dates. In the unlikely event of a change to the pre-announced release schedule, public attention will be drawn to the change and the reasons for the change will be explained fully at the same time, as set out in the Code of Practice for Statistics.

Rebased backseries, mid-2012 to mid-2020

The rebased backseries of estimates for mid-2012 to mid-2020 were published in November 2024 while the local authority rebased estimates, which these are constrained to, were published in November 2023.

Mid-2021 and mid-2022 estimates

The mid-2021 and mid-2022 estimates were published together in March 2024. Ordinarily we try to publish small area estimates around 15 months after the reference, however, for mid-2021 and mid-2022 this gap was close to three years and two years, respectively. This gap reflects a delay to mid-2021 local authority estimates (based on the 2021 Census) of almost six months and requirements to revise local authority estimates for mid-2021 (in November 2023).

Mid-2023 estimates

Estimates for mid-2023 were published in November 2025, 26 months after the reference date. This lag between reference date and publication reflected the need to publish the rebased backseries of SAPE in November 2024 and regular revisions to local authority estimates primarily because of the improvement and revision of admin-based international migration estimates.

Mid-2024 estimates

Estimates for mid-2024 were published on 7 November 2025 but were delayed by two weeks from their original planned publication date of 24 October 2025. Publication was delayed because an issue with the processing of prison population data was discovered during final quality assurance. The data on the prison population used to produce revised estimates for mid-2022 were based on an outdated specification.

Mid-2019 and mid-2020 estimates

For both the mid-2019 and mid-2020 releases the publication date has been shifted forwards by around two months from late October to early September. This accelerated production schedule reflects a higher level of interest in the estimates as a consequence of the coronavirus pandemic; these population estimates have been used to understand both the level of infection in local areas and the success of the vaccine rollout. The accelerated publication schedule has resulted in some changes to the release. Notably, we have prioritised making data available early at the expense of additional primary analysis.

6 . Methods used to produce the data

This section briefly describes the methodologies used to produce small area population estimates (SAPE). There are two broad types of SAPE. The main products are the estimates for Super Output Areas (SOAs), which are based on Census 2021 and rolled forward annually using a ratio change methodology. This approach uses the change in the population recorded in the Personal Demographics Service (based on GP registrations) as an indicator of the change in the true population.

Estimates for Lower layer SOAs (LSOAs) by broad ages and Middle layer SOAs (MSOAs) by five-year age groups are accredited official statistics. Estimates at greater levels of disaggregation, for example, by single year of age, are provided as supporting information only. More information can be found in our Small Area Population Estimates: Summary of methodology review and research update.

The remainder of our small area population estimates products relate to a range of different geographic areas and are derived directly from the SOA figures. First, estimates for LSOAs are broken down to Output Area (OA) level using an apportionment approach. These OA estimates are then aggregated to produce estimates for electoral wards and Westminster Parliamentary constituencies on a best-fit basis. Estimates for National Parks are also calculated from the OA-level data.

Electoral wards, Westminster Parliamentary constituencies, and National Parks are official statistics in development. Estimates for health geographies are aggregated directly from LSOAs and are accredited official statistics.

The estimates for Output Areas, along with geography lookups from the Office for National Statistics (ONS) Open Geography Portal, enable additional geographic breakdowns to be produced.

The mid-2011 to mid-2022 SAPEs covered by this release are fully consistent with our mid-year population estimates, including local authorities, regions, and the national total for England and Wales. A full description of the methods used to calculate all SAPE is available in our methodology note.

In some local authorities, the number of people included on the Personal Demographics Service in any current year may have increased or decreased in many LSOAs and MSOAs, compared with the previous year. This may be because of changes in administrative practices or may reflect genuine population change. The process of constraining LSOA and MSOA estimates to previously published local authority population estimates means that this pattern is not automatically reflected in the mid-year estimates.

Statistical disclosure control

The estimates are subject to statistical disclosure control. The general application of statistical disclosure control ensures that information attributable to an individual or organisation is not disclosed in any publication.

The Code of Practice for Statistics and, specifically, the pillar on trustworthiness, sets out principles for how we protect data from being disclosed. The pillar includes as part of principle T6.4: "Organisations should be transparent and accountable about the procedures used to protect personal data when preparing the statistics and data...appropriate disclosure control methods should be applied before releasing statistics and data...". More information can be found in National Statistician's Guidance: Confidentiality of Official Statistics.

The disclosure control processes applied to the estimates include small adjustments made to selected cells. Adjustments are made in such a way that inference of an underlying count is not possible but that the usefulness of the aggregated estimates is not materially affected.

The underlying census base for the mid-2021 LSOA level estimates was only available rounded to the nearest 5 at the LSOA by single year of age and sex level. This reflects the risk of disclosure because of differences in the definitions for population and for the census.

Accessibility and clarity

(Accessibility is the ease with which users are able to access the data, also reflecting the format in which the data are available and the availability of supporting information. Clarity refers to the quality and sufficiency of the release details, illustrations and accompanying advice.)

Our recommended format for accessible content is a combination of HTML web pages for narrative, charts and graphs, with data being provided in usable formats such as CSV and Excel. Our website also offers users the option to download the narrative in PDF format. In some instances other software may be used, or may be available on request. Available formats for content published on our website but not produced by us, or referenced on our website but stored elsewhere, may vary. For further information please refer to the contact details at the beginning of this report.

For information regarding conditions of access to data, please refer to the following links:

- terms and conditions (for data on the website)
- copyright and reuse of published data
- accessibility

In addition to this quality and methodology information, basic quality information relevant to each release is available in the quality and methodology section of the relevant statistical bulletin.

SAPE by age and sex are available for 2001 onwards. The estimates are accompanied by statistical bulletins from mid-2010 onwards. Standard tables can be downloaded free of charge in .xls file formats. More detailed tables, for example, by single year of age, are also published. Metadata describing the limitations and suitable use of the data from these more detailed tables are provided with each individual dataset. Most queries can be answered from the website datasets or supporting methods documents.

To meet user needs for more detailed geographic information the provision of OA estimates allows for the creation of population estimates for most geographic areas using a "best-fit" approach. This gives users the flexibility of being able to obtain population estimates for locally defined or bespoke areas. Information about the different geographies used in England and Wales and "best-fitting" can be found on the ONS geography website. Any other requests for data that take more than 30 minutes to process will be charged for in accordance with the ONS Income and Charging Policy.

7 . Other information

Any additional enquiries regarding the small area population estimates or requests for additional data can be made via email pop.info@ons.gov.uk or by telephone on +44 1329 444661.

Advance notice of any forthcoming major changes in methodology will be announced on the ONS website.

Useful links

Latest mid-year population estimates (national and local authority level):

- Publications, data tables and methodology information. Population estimates by output area, electoral, health and other geographies:
- Mid-2001 to Mid 2024 estimates

8 . Cite this methodology

Office for National Statistics (ONS), updated 7 November 2025, ONS website, methodology, Population estimates by output areas, electoral, health and other geographies methodology