
Population Estimates for Scotland Mid-2002 to Mid-2010 revised following the 2011 Census

Population estimates by sex, age and
administrative area

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Main Points

The main points in this report are:

- The mid-year population estimates for Scotland and its Council and NHS Board areas for mid-2002 to mid-2010 have been revised to take into account the 2011 Census. The revised series provides a consistent time-series of population estimates to mid-2011 for Scotland and each Council area and NHS Board.
- Over the decade the size of these revisions is small (45,100 or 0.9 per cent) in the context of total population for Scotland.
- Nearly 80 per cent of Council areas and 64 per cent of NHS Boards were revised by fewer than 5,000 people. In 88 per cent of Council areas and 86 per cent of NHS Board areas the total population was revised by less than 5 per cent across the decade.
- The largest upward revisions were in North Lanarkshire (11,000) and Highland (10,000). The largest downward revisions were in Edinburgh (17,000) and Glasgow City (6,000). In percentage terms all the revisions were below 10 per cent.
- The revised series shows that the population of Scotland has grown every year from mid-2001 to mid-2011, with the largest annual percentage growth in the years to mid-2007 and mid-2011 both at 0.72 per cent.
- The revised series shows that migration contributed to a larger proportion of population change than the difference between births and deaths in all years between mid-2001 to mid-2011 at Scotland level but this varies by administrative area.
- The reasons for the differences compared with the previous estimates are partly to do with underestimating the 2004 European Union accession countries (EU8) and non-EU migration across the decade, imprecision in the census bases and historic processing changes.

1. Background

- 1.1 This paper summarises the National Records of Scotland's (NRS) revised national and administrative areas population estimates for mid-2002 to mid-2010. These population estimates were revised following the results from the 2011 Census. The revised mid-2002 to mid-2010 population estimates are based on the rolled-forward series updated to account for the 45,100 difference between the mid-2011 estimates based on the 27 March 2011 Census and the estimates rolled-forward from the 2001 Census. The Office for National Statistics (ONS) performed a similar revision to their [population estimates](#) and have published [revised population estimates](#) for the UK, both of which can be found on their website
- 1.2 This bulletin describes the new consistent time-series of population estimates to mid-2011. It provides information on the size and age/sex structure of the population and describes the changes to the previously published series of estimates as a result of the revisions. The mid-2011 estimates, based on the 2011 Census, were published on 8 August 2013 and provided a base for revisions to the estimates for mid-2002 to mid-2010. The revised estimates take into account additional information that the 2011 Census has provided about the population of Scotland over the past decade.
- 1.3 The former mid-2002 to mid-2010 estimates were based on population change since the 2001 Census. However, any estimates are subject to uncertainty – meaning that the true value may be higher or lower – and this particularly applies to internal and international migration which is the most difficult component of population change to estimate. Since there is no means of verifying the true population between censuses, the amount of uncertainty will accumulate with time as we move further from the previous census. The 2011 Census and the resulting mid-2011 estimates, however provide a new base point at which certainty is greater. Therefore, by revising the mid-2002 to mid-2010 estimates to bring them into line with the census-based mid-2011 estimates, a more consistent series has been created.
- 1.4 These population estimates are produced using the demographic cohort component method. The population from the previous year is 'aged on' one year (that is the 0 year olds become 1 year olds, and so on), the number of births in the year are added, the number of deaths subtracted and adjustments are made for estimated migration and other changes in special populations. Both the former and revised mid-2002 to mid-2010 estimates follow this method although the new revised estimates were rolled-back from the 2011 Census rather than forward from the 2001 Census. The estimates were created by rolling-back because the age sex structure of the population in 2011 provided a better structure for the estimates across the decade. The methodology used to produce the revised series is described in full on the [Mid-Year Population Estimates](#) section of the National Records of Scotland (NRS) website. The methodology paper also contains an Excel workbook which compares the old and the revised estimates by Council area and also includes some comparator sources

- 1.5 The Scottish Government has set a target to match average European Union (EU15) population growth over the period from 2007 to 2017. The revised population estimates will be used to measure progress towards this target.

More details can be found on the [Scotland Performs](#) section of the Scottish Government website where the progress to the target in 2017 has been updated with the new information.

- 1.6 The availability of an improved and continuous back series is important as population estimates are an important input in a wide range of National Statistics. They are also used for calculating rates and performance measures, informing local and national policy, weighting surveys, planning, resource allocation and in modelling the economy.
- 1.7 The revised estimates are certified as National Statistics by the United Kingdom Statistics Authority (UKSA), in line with the Statistics and Registration Services Act 2007 and signifying compliance with the Code of Practice for Official Statistics. Further information can be found in the [UK Statistics Authority-Assessments](#) section on the NRS website.
- 1.8 The population estimates are revised using the 2011 Scotland Census results which are available on the [Scotland's Census](#) website. The census is the most complete source of information about the population and produces a high quality population estimate which is used to rebase annual mid-year estimates each decade.
- 1.9 The methodology used to calculate mid-year population estimates is constantly being improved. In consultation with users on [Population and Migration Statistics Committee](#) (PAMS) (information available on NRS website) we have made improvements to the distributions we apply to international migration estimates. The improved method is used on these revised mid-2002 to mid-2010 population estimates. Work to improve the method to allocate international out-migrants to NHS Board and Council areas is continuing and further improvements will be considered for future publications. We also consulted PAMS on the methods used to revise the estimates and a couple of users from Council areas helped to quality assure the estimates.

2. Size of difference between estimates

- 2.1 The census-based mid-2011 estimates were 45,100 (0.9 per cent) higher than the rolled-forward mid-2011 estimates. This reflects the fact that the census revealed that the rolled-forward estimates were slightly underestimating Scotland's total population.
- 2.2 At Council area and NHS Board level the situation is more complex. There were six (19 per cent) Council areas and two (14 per cent) NHS Boards in which the 2011 census-based estimates were lower than the rolled-forward estimates while the remainder underestimated the population.
- 2.3 Overall 25 Council areas (78 per cent) and 9 NHS Boards (64 per cent) had a difference of less than +/- 5,000. Tables 1 and 2 show the Council areas where the rolled-forward and census-based estimates differed most.

Table 1: Council areas where the census-based mid-2011 estimates had the largest positive difference compared with rolled-forward mid-2011 estimates

| Council area | Census-based mid-2011 population | Rolled-forward mid-2011 population | Difference |
|-------------------|----------------------------------|------------------------------------|------------|
| North Lanarkshire | 337,720 | 326,680 | 11,040 |
| Highland | 232,730 | 222,370 | 10,360 |
| Moray | 93,470 | 87,260 | 6,210 |
| Aberdeenshire | 253,650 | 247,600 | 6,050 |
| Angus | 116,200 | 110,630 | 5,570 |

Table 2: Council areas where the census-based mid-2011 estimates had the largest negative difference compared with the rolled-forward mid-2011 estimates

| Council area | Census-based mid-2011 population | Rolled-forward mid-2011 population | Difference |
|--------------------|----------------------------------|------------------------------------|------------|
| Edinburgh, City of | 477,940 | 495,360 | -17,420 |
| Glasgow City | 593,060 | 598,830 | -5,770 |
| Perth & Kinross | 146,850 | 149,520 | -2,670 |
| Fife | 365,300 | 367,370 | -2,070 |
| Argyll & Bute | 88,930 | 89,590 | -660 |

- 2.4 There are variations between Council areas with large differences and those with the largest percentage differences. Similar information is therefore presented in percentage terms in [Tables 3](#) and [4](#).

Table 3: Council areas where census-based mid-2011 estimates had the largest positive percentage difference compared with the rolled-forward mid-2011 estimates

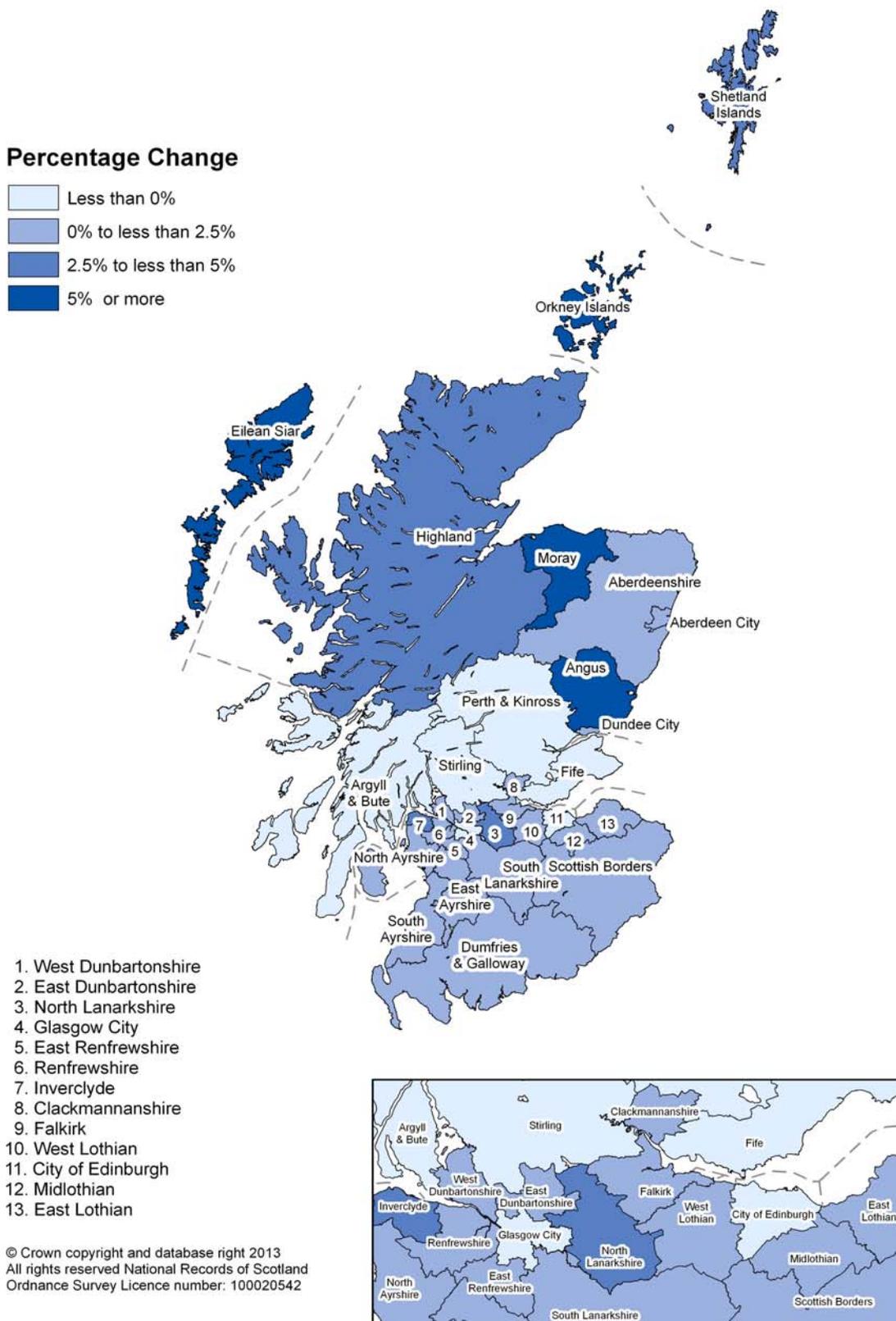
| Council area | Census-based mid-2011 population | Rolled-forward mid-2011 population | Difference |
|----------------|----------------------------------|------------------------------------|------------|
| Moray | 93,470 | 87,260 | 7.1 |
| Orkney Islands | 21,420 | 20,160 | 6.3 |
| Eilean Siar | 27,690 | 26,080 | 6.2 |
| Angus | 116,200 | 110,630 | 5.0 |
| Highland | 232,730 | 222,370 | 4.7 |

Table 4: Council areas where the census-based mid-2011 estimates had the largest negative percentage difference compared with the rolled-forward mid-2011 estimates

| Council area | Census-based mid-2011 population | Rolled-forward mid-2011 population | Difference |
|-----------------|----------------------------------|------------------------------------|------------|
| Edinburgh | 477,940 | 495,360 | -3.5 |
| Perth & Kinross | 146,850 | 149,520 | -1.8 |
| Glasgow City | 593,060 | 598,830 | -1.0 |
| Argyll & Bute | 88,930 | 89,590 | -0.7 |
| Fife | 365,300 | 367,370 | -0.6 |

- 2.5 Tables 3 and 4 show that the Council areas with the highest percentage difference are mainly the same as identified in [Tables 1 and 2](#) with largest absolute differences. However, for positive percentage differences we also have island Council areas on the list. These differences could be attributed to incomplete accounting of births, deaths, migration, recording of armed forces personnel, definitional differences and imprecision in the two censuses themselves. More information on these differences can be found within the [2011 Census Reconciliation Report - Population](#) (available on the NRS website).
- 2.6 [Figure 1](#) shows the percentage difference between the census-based mid-2011 and rolled-forward mid-2011 estimates. There is no clear pattern for the distribution of the differences across the country.

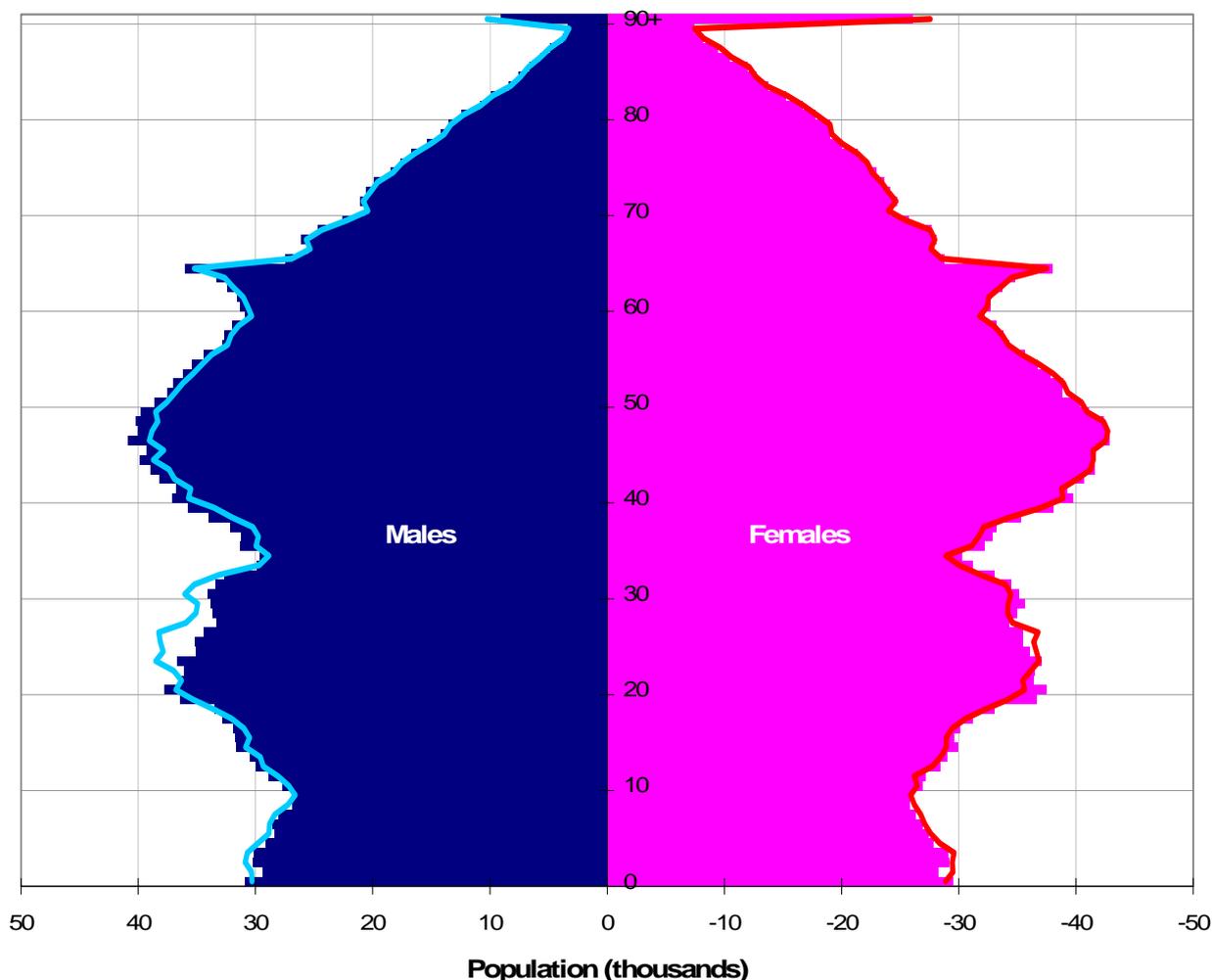
Figure 1: Percentage difference between the rolled-forward and mid-2011 census-based estimates



3. Age and sex structure, comparing census-based and rolled-forward estimates

3.1 The age and sex structure of the revised estimates is broadly similar to the rolled-forward estimates. However, there are some differences across the ages as shown in Figure 2. The shaded bars show the revised mid-2011 estimates based on the 2011 Census. The lines represent age and sex structure of the rolled-forward mid-2011 population estimates. The difference between the age structures show the effect of uncertainties between census years which have been corrected by the revisions.

Figure 2: Population pyramid for Scotland, mid-2011 census-based estimates (bars) and mid-2011 rolled-forward estimates (line)



3.2 The number of males in their early twenties to around thirty were overestimated in the rolled-forward estimates and so the revised estimates show fewer males in these ages. The number of females in their early twenties were underestimated in the rolled-forward estimates, so more females were added in these ages in the revised estimates. There were fewer males and females in the 10 to 19 age group and therefore in the revised estimates more people were added in these age categories. From mid-thirties to mid-fifties males were underestimated and partly for females in these ages and so the revised estimates show more people in these ages.

4. Distribution of revisions across the decade

- 4.1 National Records of Scotland (NRS) have published on their website the [2011 Census Reconciliation Report - Population](#) which explains the differences between the rolled-forward population estimates from the 2001 Census and the March 2011 Census results. The revisions to the population estimates have been based on findings from this report. Although the amount of revision for each Council area varies from year to year, the end point is that the revised series completely fills the difference between the rolled-forward estimates and the 2011 census-based estimates.
- 4.2 At national level the difference is largely due to international migration in particular an underestimate of immigrants from the countries of central and eastern Europe that joined the European Union in 2004. International migration is primarily based on International Passenger Survey which is however based on a small sample and therefore subject to a large sampling error. Most issues identified on international migration relate to earlier and middle part of the decade before the Office for National Statistics (ONS) improved the methodology for calculating the estimates.
- 4.3 At Council area level the revisions have involved distributing the national level differences to Council and NHS Board areas. Another change across the decade involves revising the international migration estimates to the Long Term International Migration (LTIM) produced by the ONS throughout the full decade. We also implemented the new method of distributing international out-migrants to areas in Scotland. Migration to and from overseas and to and from the rest of the UK has also been split for all years, previously the split was only available from 2007.
- 4.4 Any difference which could not be attributed to a specific cause have been described as 'unattributable'. These unattributable component has been distributed evenly across the decade. It is assumed that birth and death data derived from administration records are accurate. The other difference could be attributed to inaccuracy in international or internal migration and also uncertainty around the 2001 or 2011 Census. While the census provides the best population estimate, not everyone completes a form. Therefore robust methods are used to get an estimate of the total population.
- 4.5 The full explanation on methods used to create the revised estimates are detailed within the [Revisions methodology paper](#) on the NRS website.
- 4.6 [Table 5](#) shows the small impact of the revisions in the context of the total population estimate for Scotland for each year from mid-2002 to mid-2011. The revised estimates show that the population of Scotland has grown every year. The largest annual percentage growth was recorded in the years to mid-2007 and mid-2011 when the population increased by 0.72 per cent for both years.

Table 5: Population estimates for Scotland, revised, rolled-forward and size of revision, mid-2001 to mid-2011

| Year | Revised MYE ¹ | Rolled-forward MYE ¹ | Size of revision | Percentage annual growth revised MYE ¹ |
|---------------------|--------------------------|---------------------------------|------------------|---|
| Mid-01 ² | 5,064,200 | 5,064,200 | - | - |
| Mid-02 | 5,066,000 | 5,054,800 | 11,200 | 0.04 |
| Mid-03 | 5,068,500 | 5,057,400 | 11,100 | 0.05 |
| Mid-04 | 5,084,300 | 5,078,400 | 5,900 | 0.31 |
| Mid-05 | 5,110,200 | 5,094,800 | 15,400 | 0.51 |
| Mid-06 | 5,133,100 | 5,116,900 | 16,200 | 0.45 |
| Mid-07 | 5,170,000 | 5,144,200 | 25,800 | 0.72 |
| Mid-08 | 5,202,900 | 5,168,500 | 34,400 | 0.64 |
| Mid-09 | 5,231,900 | 5,194,000 | 37,900 | 0.56 |
| Mid-10 | 5,262,200 | 5,222,100 | 40,100 | 0.58 |
| Mid-11 ³ | 5,299,900 | 5,254,800 | 45,100 | 0.72 |

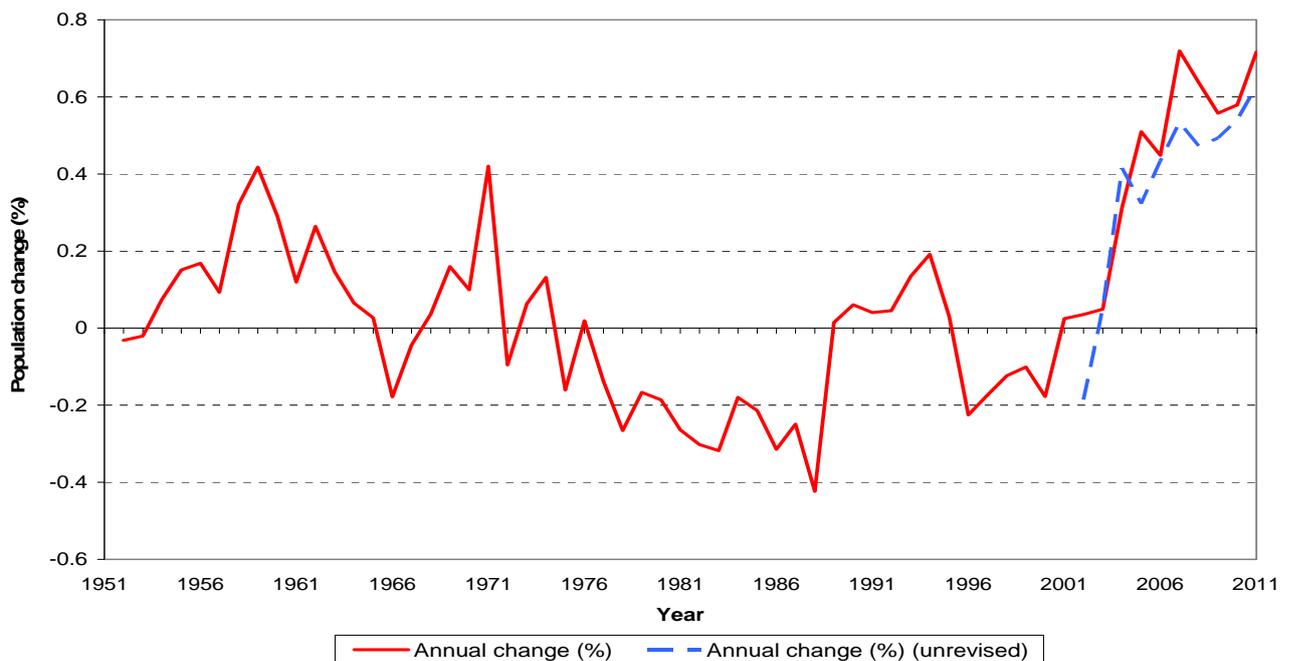
Footnotes

- 1) MYE means Mid-year estimate.
- 2) Population estimates for 2001 are not being revised.
- 3) Revised estimates for 2011 were published on 8 August 2013.

4.7 The year to mid-2011 shows the largest absolute and percentage growth since 1951. The rolled-forward estimates previously showed the largest annual absolute and percentage growth between mid-2001 and mid-2011 was also in the year to mid-2011 but the size of growth was slightly smaller in the rolled-forward series at 0.63 per cent compared with 0.72 per cent in the revised series.

4.8 Figure 3 shows the population growth in the last decade being put into context of the longer time series from 1951. While the overall population increased every year since 2001, the rate of growth for each year varied.

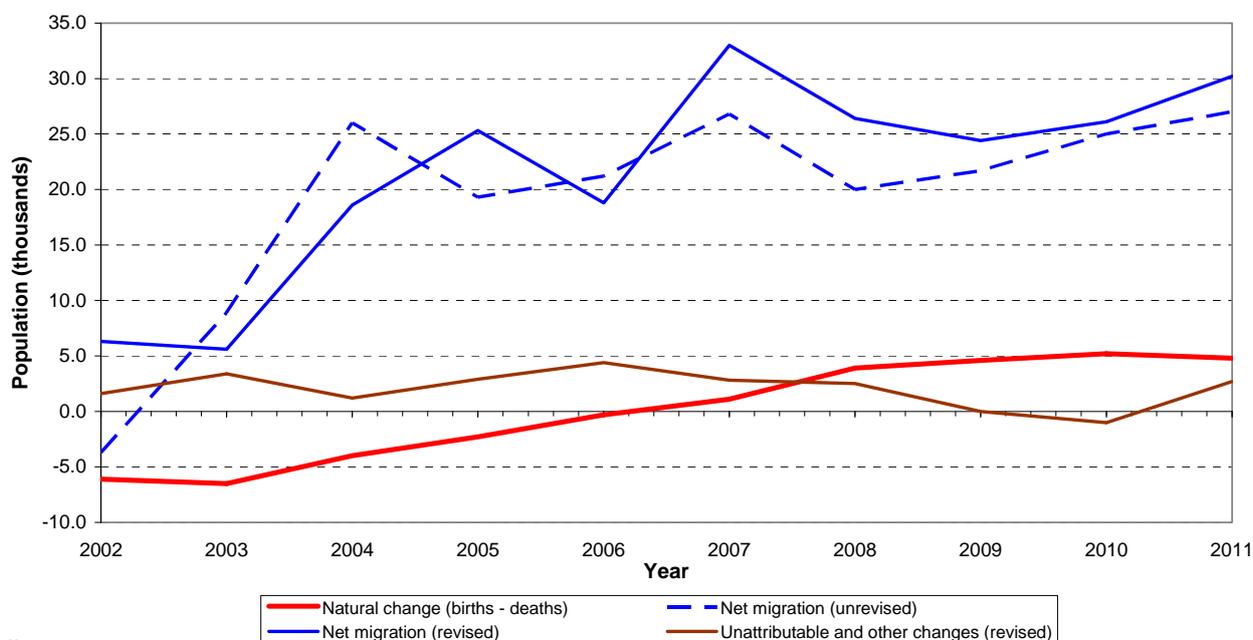
Figure 3: Annual percentage population change for Scotland, 1951 to 2011



5. Components of population change

- 5.1 Population change mainly occurs as a result of two factors; difference between number of births and deaths (referred to as natural change) and a difference between the number of people migrating into a country and those migrating out of a country (net migration).
- 5.2 Registration of births and deaths data through administrative processes over the decade are considered accurate and therefore these have not been revised. Part of the difference seen between mid-2011 census-based estimates and mid-2011 rolled-forward estimates is now known to be underestimation of migration throughout the decade. As a result, the contribution of net migration to population change during the decade has been revised.
- 5.3 A third component of population change referred to as 'other' is included. The 'other' component also includes changes in the number of prisoners, number of armed forces stationed in Scotland and rounding adjustments. This component comprises changes which could either be caused by net migration or uncertainty around the census estimates used as the bases for the population estimates. In the Excel tables we also separately show an unattributable component.
- 5.4 [Figure 4](#) shows the relative contributions of natural change and migration to the population growth seen in Scotland since mid-2002. The contribution of migration in the old rolled-forward series is also shown to illustrate the impact of the revisions. The figure demonstrates the contribution that different types of change have on population growth.

Figure 4: Population change due to natural change, migration, unattributable and other changes, 2002 to 2011



Note

Unattributable and 'other changes' comprises changes which could either be caused by uncertainties in estimating net migration or uncertainty around census estimates. This group includes changes in the number of prisoners, number of armed forces stationed in Scotland, unattributable component from revision and rounding adjustments.

- 5.5 It is evident from the figure that most of the population growth across the decade has been driven by positive net migration. The peaks of migration around 2005 and 2007 are evidence of migrants from European Union (EU) accession countries around those years, with some minor drops in-between. From 2006 births have consistently exceeded deaths contributing to population growth through natural increase. Other and unattributable changes have been fluctuating across the decade but their numbers are small relative to the overall population.
- 5.6 The impact of revisions on net migration are mostly within the years before 2009 which used the old migration methodology used from 2002 to 2006. After mid-2009, the differences between the rolled-forward migration estimates and the revised series is smaller. This reflects the impact of improvements made to the [International Passenger Survey](#) (IPS) (available on the ONS website) from 2009.
- 5.7 The relative importance of migration and natural change differs between Council areas. In some areas that have had a population increase, such as Aberdeenshire, Shetland Islands and West Lothian, the gain is attributable to both migration and natural increase (more births than deaths). East Lothian, Stirling and Fife experienced a population increase because of in-migration combined with a very low natural change. In other areas, the population increase is due to in-migration, despite the number of deaths exceeding the number of births. These included Orkney, Highland and Perth & Kinross.
- 5.8 Similarly, some areas of population decline, such as Inverclyde, East Dunbartonshire and West Dunbartonshire have experienced population decreases both from migration and natural change. In Argyll & Bute, the population decline was mainly attributable to more deaths than births. This analysis is shown in [Table 6](#) which compares percentage change in population due to natural change and migration across the Council areas. [Figure 5](#) shows the percentage population change across Council areas between mid-2001 and mid-2011.

Table 6: Components of population change for Council areas: mid-2001 to mid-2011

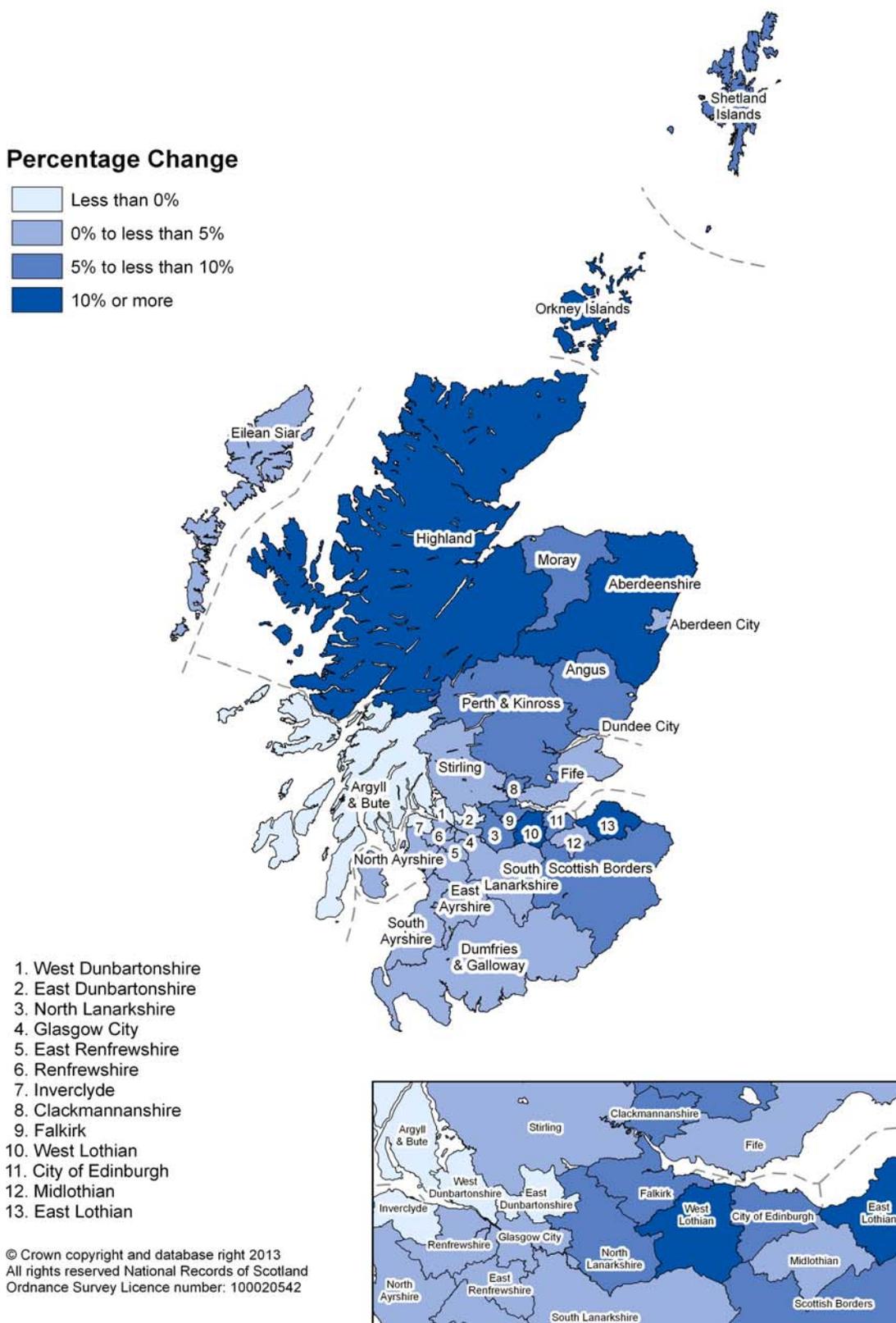
| | Natural change ¹ | Net civilian migration, unattributable and other changes ¹ | Percentage population change ² |
|----------------------|-----------------------------|---|---|
| Scotland | 0.0 | 4.4 | 4.7 |
| Council areas | | | |
| Inverclyde | -2.6 | -1.1 | -3.5 |
| East Dunbartonshire | -0.4 | -2.7 | -3.0 |
| West Dunbartonshire | -1.0 | -2.0 | -2.9 |
| Argyll & Bute | -3.9 | 1.2 | -2.6 |
| South Ayrshire | -3.5 | 4.2 | 0.7 |
| Renfrewshire | -0.6 | 1.7 | 1.1 |
| Dundee City | -0.7 | 1.9 | 1.2 |
| East Renfrewshire | 0.3 | 1.2 | 1.6 |
| North Ayrshire | -1.2 | 2.8 | 1.7 |
| East Ayrshire | -0.9 | 2.9 | 2.0 |
| Dumfries & Galloway | -2.7 | 5.1 | 2.5 |
| Glasgow City | -0.1 | 2.6 | 2.5 |
| Midlothian | 1.1 | 1.9 | 3.1 |
| South Lanarkshire | 0.2 | 3.5 | 3.8 |
| Fife | 0.3 | 3.9 | 4.4 |
| Eilean Siar | -4.6 | 9.1 | 4.7 |
| Stirling | 0.1 | 4.5 | 4.8 |
| Aberdeen City | 0.8 | 4.0 | 5.0 |
| North Lanarkshire | 1.5 | 3.4 | 5.1 |
| Shetland Islands | 1.7 | 3.8 | 5.8 |
| Edinburgh, City of | 1.3 | 4.8 | 6.4 |
| Scottish Borders | -1.8 | 7.9 | 6.5 |
| Clackmannanshire | 1.1 | 5.6 | 7.1 |
| Angus | -1.5 | 8.3 | 7.2 |
| Moray | -0.3 | 7.3 | 7.4 |
| Falkirk | 1.0 | 6.0 | 7.6 |
| Perth & Kinross | -1.4 | 9.6 | 8.8 |
| West Lothian | 4.1 | 5.2 | 10.2 |
| East Lothian | 0.2 | 9.5 | 10.8 |
| Highland | -0.4 | 10.7 | 11.4 |
| Orkney Islands | -1.4 | 11.7 | 11.4 |
| Aberdeenshire | 1.6 | 8.9 | 11.8 |

Footnotes

1) Change per 100 population at mid-2011. The underlying data used to produce this table is found within the components of change Excel workbook at Council area level on the National Records of Scotland website.

2) Ordered by percentage population change.

Figure 5: Percentage change between mid-2001 and mid-2011 population estimates



6. Notes and definitions

Population covered

The estimated population of an area includes all those usually resident there, whatever their nationality. Students are treated as being resident at their term-time address. Members of UK and non-UK armed forces stationed in Scotland are included; UK forces stationed outside Scotland are excluded. Short-term international migrants, who stay for less than 12 months, are excluded.

Age

Population figures relate to 30 June of the year shown and ages relate to age at last birthday.

Presentation of estimates

Although the populations are tabulated in units, this does not imply accuracy to that level. The data are presented in units for the convenience of users wishing to compile non-standard aggregations without encountering rounding problems.

Administrative areas

The composition of the NHS Board areas in terms of Council areas is summarised in the table below. From 1 April 2006 responsibility for NHS Argyll & Clyde was split between NHS Greater Glasgow (now known as Greater Glasgow & Clyde) and NHS Highland. The tables presented in the revised population estimates show information for the new NHS Board areas for all years.

Composition of NHS Board areas

| NHS Board area | Council area |
|------------------------------------|--|
| Ayrshire & Arran | Dumfries & Galloway (part), East Ayrshire, East Renfrewshire (part), North Ayrshire, South Ayrshire |
| Borders | Scottish Borders (part) |
| Dumfries & Galloway | Dumfries & Galloway (part) |
| Fife | Fife (part) |
| Forth Valley | Clackmannanshire, Falkirk (part), Perth & Kinross (part), Stirling (part) |
| Grampian | Aberdeen City, Aberdeenshire, Moray |
| Greater Glasgow & Clyde | East Dunbartonshire, East Renfrewshire (part), Glasgow City (part), Inverclyde, North Lanarkshire (part), Renfrewshire, South Lanarkshire (part), Stirling (part), West Dunbartonshire |
| Highland | Argyll & Bute, Highland |
| Lanarkshire | East Renfrewshire (part), Glasgow City (part), North Lanarkshire (part), South Lanarkshire (part), West Lothian (part) |
| Lothian | East Lothian, City of Edinburgh, Falkirk (part), Midlothian, Scottish Borders (part), West Lothian (part) |
| Orkney | Orkney Islands |
| Shetland | Shetland Islands |
| Tayside | Angus, Dundee City, Fife (part), Perth & Kinross (part) |
| Western Isles | Eilean Siar |

Land area

The land areas used to calculate the population density information presented in revised population series were derived from the latest Standard Area Measurements produced by the Office for National Statistics (ONS).

Methodology and comparisons across the UK

The National Records of Scotland (NRS) website has a guide that describes the [methodology](#) used to produce the revised mid-year population estimates for Scotland. This methodology is similar to that used to produce the revised population estimates in other UK countries. The methodology used for [England and Wales](#) is available from the ONS website and that for [Northern Ireland](#) is available through the NISRA website.

Sources of migration data

Migration is the most difficult component of population change to estimate, as there is no comprehensive system which registers migration in the UK, either moves to or from the rest of the world, or moves within the UK. Estimates of migration have therefore to be based on survey data and the best proxy data that exist.

Migration estimates are derived from the following key sources of data. The National Health Service Central Register (NHSCR) is used to calculate moves between NHS Board areas within the UK, with migration at Council area and below estimated using anonymised data from the Community Health Index (CHI) supplied with the permission of the Scottish Directors of Public Health. The International Passenger Survey (IPS) provides information on moves into and out of Scotland with an origin or destination of outside the UK. In addition to IPS data, additional information is used for asylum seekers. These three main sources are described in more detail in the remainder of this section.

More information on the methodology used to estimate migration can be found in the [Migration Methodology](#) section and in the [Mid-Year Population Estimates for Scotland Methodology Guide](#) on the NRS website.

Internal migration within the UK

The NHSCR system records the movements of patients between NHS Board areas in the UK. Each time a patient transfers to a new NHS doctor in a different NHS Board area, the NHSCR is notified and the patient is then considered to have made a migrant move. Counts of these re-registrations are used as a proxy indicator for moves within the UK.

The CHI holds records of people registered with an NHS doctor in Scotland. The records used in production of the mid-year population estimates contain the postcode of the patient's address, which enables migration to be estimated for Council areas, and for smaller areas. The approach used for estimating Council area-level migration involves matching CHI patient records extracted from a database which reflects the 'live' CHI system on two occasions one year apart.

Currently, migration data derived from the NHSCR is considered to be the most reliable data available at NHS Board level, so estimates from the CHI are controlled to ensure that they are consistent with the NHSCR data for moves across a NHS Board boundary by origin, destination, age and sex. Due to an improvement in data sources, the accuracy of cross border migration data between Scotland and Northern Ireland was improved from mid-2009.

More information on the nature of the improvements is contained in the papers from the May 2010 meeting of the [Population and Migration Statistics Committee \(PAMS\)](#), available on the NRS website.

International migration

An international migrant is defined by the United Nations (UN) as someone who changes country of residence for 12 months or more. There is no single, all-inclusive system in place to measure all movements of population into and out of the UK or to determine if they meet the definition of a long term migrant. Therefore, it is necessary to use a combination of data from different sources that have different characteristics and attributes in order to produce estimates of international migration. While offering the best data currently available, none of the data sources used is specifically designed to capture information solely on international migration.

National Records of Scotland use the Long-Term International Migration (LTIM) estimates (previously referred to as Total International Migration (TIM)) produced by Office for National Statistics (ONS) for the national estimates of international migration to and from Scotland. These are the best estimates of the moves to and from the UK that meet the definition of long term migration.

Three sources of data are used by ONS to compile the LTIM estimates for Scotland:

- The International Passenger Survey (IPS) is a continuous sample survey conducted by ONS at the principal air, sea and Channel Tunnel routes between the United Kingdom (UK) and countries outside the British Isles. It is the prime source of migration data to and from the UK, providing estimates of both inflows and outflows, but does not cover all migration types;
- Home Office (HO), which provides data on asylum seekers and their dependants;
- The Labour Force Survey (LFS), which collects information on where international migrants live.

Fundamental changes were introduced to the IPS sample design at the beginning of 2009 to make the survey more focused on identifying migrants. These changes included a re-organisation of the times and frequency of sampling of travellers, sampling at additional locations including Aberdeen and improvements to the IPS weighting methodology.

Given that the IPS collects information on intentions which may or may not be realised, an adjustment is made to the IPS data for visitor and migrant switchers (people who change their intentions and their migratory status).

The IPS provides an estimate of international migrants into the United Kingdom. The allocation of these migrants to Scotland is based on the LFS. The LFS provides more reliable data on the geographical distribution of immigrants than the destination provided in the IPS as it is based on where migrants actually live rather than on their initial intentions. The outflow of international migrants from Scotland is based directly on the IPS data. More information on the [LTIM method](#) can be found on the ONS website.

Distribution of international migrants to areas within Scotland

International migration flows between Scotland and overseas are allocated to each NHS Board area and given an assumed age and sex distribution using proportions recorded on the NHSCR. These proportions are applied to the total LTIM flows for Scotland.

For inflows the recorded moves from overseas to Scottish NHS Boards on the NHSCR are used to estimate the proportion of migrants entering each area. NHSCR records hold limited data on international outflows from NHS Boards to overseas, as patients do not reliably de-register with their doctor when moving overseas. International outflows are currently allocated to NHS Board areas based on flows of other groups of migrants which stand as a proxy for overseas out-migrants.

Age and sex distributions of international migrants are obtained from the NHSCR in a similar way, and calculated separately for each NHS Board, with proxy groups again providing the characteristics of out-migrants.

It is acknowledged that NHSCR flows undercount the number of migratory moves, for young men in particular, due to GP registration behaviour in different groups. Compared with LTIM estimates by sex there are fewer men in both the in and out-migrant groups recorded on the NHSCR. A sex-ratio adjustment has been introduced from 2011 which increases the number of male migrants at young adult ages where there is a large majority of women seen in the NHSCR data. The revised population estimates applied a sex-ratio adjustment in revising the international male migrant population.

The distribution of migrants to Council areas is based on records from the Community Health Index (CHI), which are made consistent with the NHSCR geographic and age/sex distributions. International in-migrants were allocated using records appearing on the CHI extract where the patient had arrived from overseas. Like the NHSCR, the CHI extract holds limited data on people leaving Scotland for overseas and so international out-migrants were allocated using a combination of in-migrants to Scotland from overseas and migrants leaving Scotland for the rest of the UK.

Additional migration data

The NRS website includes a [migration section](#) which provides additional tables showing migration estimates associated with mid-year population estimates.

Implications for related statistics

The revised national and administrative population estimates for mid-2002 to mid-2010 complete the consistent time series of official population estimates up to mid-2012. The estimates will:

- inform the demographic assumptions for 2012-based sub-national population projections for Scotland;
- provide the Council area totals to which population estimates for small areas are constrained;
- allow the revision of other statistics products which rely on mid-year population estimates for example the [Small Area Population Estimates](#) (available on the NRS website) which will be revised for the years 2002 to 2010 in 2014.

7. Notes on statistical publications

National Statistics

The United Kingdom Statistics Authority (UKSA) has designated these statistics as National Statistics, in line with the Statistics and Registration Service Act 2007 and signifying compliance with the Code of Practice for Official Statistics (available on the [UKSA](#) website).

Designation can be broadly interpreted to mean that the statistics:

- meet identified user needs;
- are well explained and readily accessible;
- are produced according to sound methods, and
- are managed in a fair, independent and unbiased way in the public interest.

Once statistics have been designated as National Statistics, the Code of Practice for Official Statistics must continue to be followed.

National Records of Scotland

We, the National Records of Scotland, are a non-ministerial department of the devolved Scottish Administration. Our aim is to provide relevant and reliable information, analysis and advice that meets the needs of government, business and the people of Scotland. We do this as follows:

- Preserving the past – We look after Scotland’s national archives so that they are available for current and future generations, and we make available important information for family history.
- Recording the present – At our network of local offices, we register births, marriages, civil partnerships, deaths, divorces and adoptions in Scotland.
- Informing the future – We are responsible for the Census of Population in Scotland which we use, with other sources of information, to produce statistics on the population and households.

You can get other detailed statistics that we have produced from the [Statistics](#) section of our website. Statistics from the 2001 Census are on [Scotland’s Census Results On-Line \(SCROL\)](#) website and the 2011 Census results are held on the [Scotland’s Census](#) website.

We also provide information about future publications on our website. If you would like us to tell you about future statistical publications, you can register your interest on the Scottish Government [ScotStat website](#).

Enquiries and suggestions

Please visit our [enquiries](#) page if you need any further information.

Email: customer@gro-scotland.gsi.gov.uk

If you have comments or suggestions that would help us improve our standards of service, please contact:

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8. Related organisations

| Organisation | Contact |
|--|--|
| <p>The Scottish Government (SG) forms the bulk of the devolved Scottish Administration. The aim of the statistical service in the SG is to provide relevant and reliable statistical information, analysis and advice that meets the needs of government, business and the people of Scotland.</p> | <p>Office of the Chief Statistician Scottish Government 3WR, St Andrews House Edinburgh EH1 3DG</p> <p>Phone: 0131 244 0442</p> <p>Email: statistics.enquiries@scotland.gsi.gov.uk</p> <p>Website: www.scotland.gov.uk/Topics/Statistics</p> |
| <p>The Office for National Statistics (ONS) is responsible for producing a wide range of economic and social statistics. It also carries out the Census of Population for England and Wales</p> | <p>Customer Contact Centre Office for National Statistics Room 1.101 Government Buildings Cardiff Road Newport NP10 8XG</p> <p>Phone: 0845 601 3034 Minicom: 01633 815044</p> <p>Email: info@statistics.gsi.gov.uk</p> <p>Website: www.ons.gov.uk/</p> |
| <p>The Northern Ireland Statistics and Research Agency (NISRA) is Northern Ireland's official statistics organisation. The agency is also responsible for registering births, marriages, adoptions and deaths in Northern Ireland, and the Census of Population.</p> | <p>Northern Ireland Statistics and Research Agency McAuley House 2-14 Castle Street Belfast BT1 1SA</p> <p>Phone: 028 9034 8100</p> <p>Email: info.nisra@dfpni.gov.uk</p> <p>Website: www.nisra.gov.uk</p> |

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