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Local Authority Population Projections for Wales (2008-based)

Summary Report

NATIONAL STATISTICS
YSTADEGAU GWLADOL

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Introduction

On May 27 2010 the Statistical Directorate published 2008-based local authority population projections for the 22 local authorities in Wales. This report provides summary information of the results, and a short background to the methodology and data used to form the projections.

There is a high level of interest in population and migration data for Wales, and so a strong demand for projections at the local authority level. Those who plan for the future, to deliver services and to help frame sustainable policies, need to consider the population by age and sex. Population projections provide estimates of the size of the future population and are based on assumptions about births, deaths and migration.

This report provides summary information on the 2008-based population projections for local authorities in Wales. The report explains what population projections are, the approach taken and the broad methodology used. This includes a summary section comparing and contrasting patterns across all local authorities.

Detailed data cubes have also been published on our StatsWales website. If a symbol appears next to a Table or Figure in this publication, this indicates that more detailed data is available on StatsWales:
www.statswales.wales.gov.uk

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Background

Background

What are population projections?

Population projections provide estimates of the size of the future population, and are based on assumptions about births, deaths and migration. The assumptions are based on past trends. The local authority projections only indicate what may happen should the recent trends continue. Projections done in this way do not make allowances for the effects of local or central government policies on future population levels, distribution and change.

The Office for National Statistics (ONS) produces national population projections for Wales, and the other UK countries. These are usually produced every two years.

The Welsh Assembly Government is responsible for producing population projections at a sub-national level for Wales.

Uses of population projections

There is a high level of interest in population and migration data for Wales, and so a strong demand for projections at the local authority level. Those who plan for the future, to deliver services and to help frame sustainable policies, need to consider the population by age and sex.

Population projections can be used for planning services and to estimate future need (for example - number of teachers/schools, social services provision). Population projections can identify trends that shape the context for future policy development.

There are similar demands for local authority household projections for planning purposes. Local authority population projections are the basis for producing household projections. These are used for housing planning purposes e.g. in Local Authority Development Plans.

Limitations of population projections

Population projections have limitations. These local authority population projections only indicate what may happen should the trend-based assumptions become true. They are not policy-based forecasts of what may happen and they do not make allowances for the effects of local or central government policies on future population levels, distribution and change.

As the process of demographic change is cumulative, projections become increasingly uncertain the further they are carried forward. Demographic change affects some populations more rapidly and more seriously than others. Due to the size of migration flows, for some local authorities, migration assumptions are more critical than fertility and mortality assumptions. Therefore, migration assumptions can have a significant effect on certain areas in the long-term.

In order to illustrate the uncertainty associated with population projections, variant projections have also been published alongside the main (or principal) population projection. These include a no migration (natural change only) projection to illustrate the projected population of each local authority if there were no future inward or outward migration. Higher and lower variant projections have also been published.

Local authority population projections indicate the likely population size and profile, if existing trends continue. This may lead to new policies being introduced, which may result in the original projections not being realised. This means that the population projections will have met one of its prime functions – to illustrate the consequences of recent and current demographic trends, and allow policy makers and service delivery planners an opportunity to change this. Local authorities are advised to use these projections as a starting point, and are encouraged to produce their own variants if required. Permission will be sought from ONS to share the base data used to form these LA projections with local authorities in Wales, so that local authorities can use the data to create their own variants.

History of local authority projections in Wales

This is the second time that local authority population projections have been published for Wales.

The Welsh Office intended to produce 1996-based local authority projections; however they were unable to produce meaningful results at the local authority level.

The ONS were commissioned to produce 1998-based and then 2003-based local authority projections using the model used for local authority projections for England. Under the ONS methodology, assumptions about local fertility and mortality by age and sex were based on birth and death registration information for the previous five years. As part of the projection process, for each year projected forward, the local fertility and mortality rates were scaled, so that the national rates and the projected numbers of births and deaths were consistent with the national projections.

However, during the quality assurance process, for both sets of projections (1998-based and 2003-based), the decision was taken not to publish the projections at a local authority level, as the methodology had not produced consistent and meaningful results. Whilst the scaling of births and deaths ensured that the total births and deaths were consistent with the national projections, the local rates did not reflect recent, local trends. Scaling was also more significant with small areas such as the 22 local authorities in Wales. This led to the projections being published at a regional level.

Therefore the Statistical Directorate of the Welsh Assembly Government devised a new approach to forming local authority projections, detail of which is provided on the next page. In June 2008 the Welsh Assembly Government produced 2006-based local authority projections for Wales. This is the second time that the Statistical Directorate has published population projections for the 22 local authorities in Wales.

Approach to producing local authority projections

A new approach was used to develop the 2006-based local authority projections, and the same process has been used for the 2008-based projections. This approach means using local data and local trends, but not forcing the local authority projections to sum to the national Wales level population projection.

The projections have been developed in close collaboration with local authorities and key users in Wales - through the Wales sub-national population working group (WASPP). The WASPP group was originally formed as a subgroup of the Welsh Statistical Liaison Committee. The WASPP group has met on a regular basis over the past four years, and has been a forum for technical discussion on the methodology, the base data, and the launch of the population projections. Members of WASPP include local authority representatives with knowledge of and/or experience of demographic data and population projections.

To view papers from recent WASPP meetings please visit:
www.wales.gov.uk/statistics

Regular updates (papers and presentations) have also been provided at full meetings of the WSLC. Further information on the WSLC, including membership is provided at:
www.wales.gov.uk/statistics

Results Overview

Results Overview

The following section provides an overview of the main results from the 2008-based local authority projections for the first 15 years of the projection period (mid-2008 to mid-2023). An annex is included at the end of this section which presents results for the full 25 year projection period (to mid-2033). Note that these projections are trend based projections and become more uncertain the further they are carried forward.

Total Population

Table 1: Total population by local authority, selected years

	2008	2013	2018	2023
Isle of Anglesey	68,800	69,900	71,000	71,900
Gwynedd	118,600	119,700	121,300	123,200
Conwy	111,400	113,000	114,700	116,300
Denbighshire	96,700	99,800	103,100	106,200
Flintshire	149,700	151,200	152,400	153,100
Wrexham	132,700	136,900	141,100	145,000
Powys	131,700	135,400	138,900	142,200
Ceredigion	76,800	78,600	80,500	82,300
Pembrokeshire	117,600	120,500	123,500	126,100
Carmarthenshire	180,700	187,400	194,300	200,900
Swansea	230,100	237,400	246,100	255,300
Neath Port Talbot	137,600	140,400	143,500	146,500
Bridgend	133,900	138,000	142,100	146,000
Vale of Glamorgan	124,100	128,400	132,800	137,300
Cardiff	330,500	353,900	381,100	410,500
Rhondda Cynon Taf	234,400	237,200	240,300	243,200
Merthyr Tydfil	55,600	56,200	57,000	57,600
Caerphilly	172,400	175,000	177,700	179,900
Blaenau Gwent	68,800	69,400	70,300	71,100
Torfaen	90,600	90,700	90,800	90,700
Monmouthshire	87,800	89,500	91,000	92,500
Newport	139,700	142,100	145,200	148,400

Table 2: Percentage change since 2008 by local authority, selected years

Per cent

	2013	2018	2023
Isle of Anglesey	2	3	5
Gwynedd	1	2	4
Conwy	1	3	4
Denbighshire	3	7	10
Flintshire	1	2	2
Wrexham	3	6	9
Powys	3	5	8
Ceredigion	2	5	7
Pembrokeshire	3	5	7
Carmarthenshire	4	8	11
Swansea	3	7	11
Neath Port Talbot	2	4	7
Bridgend	3	6	9
Vale of Glamorgan	3	7	11
Cardiff	7	15	24
Rhondda Cynon Taf	1	3	4
Merthyr Tydfil	1	3	4
Caerphilly	2	3	4
Blaenau Gwent	1	2	3
Torfaen	0	0	0
Monmouthshire	2	4	5
Newport	2	4	6

Between mid-2008 and mid-2023, it is projected that the majority of local authorities in Wales will experience an increase in their overall population. Five local authorities are projected to see increases of 10 per cent or more between mid-2008 and mid-2023.

Torfaen's population is projected to remain roughly the same from mid-2008 to mid-2023. In each year of the projection, Torfaen will experience around 100 more people migrating out of the authority than moving in. Natural change is projected to initially increase to over 100 more births than deaths for Torfaen, but is projected to decrease below 100 from 2019/20 onwards, which results in a net change that fluctuates around zero for the first few years of the projection period, resulting in Torfaen's population remaining roughly constant.

Cardiff's population is projected to increase from 330,500 in mid-2008 to 353,900 in mid-2013 (a 7 per cent increase). The population is projected to increase to 381,100 by mid-2018, and by mid-2023 Cardiff's population is projected to reach 410,500 (a 24 per cent increase since mid-2008). This is a reflection of the population changes in Cardiff in recent years. This projected population increase is mainly due to a net migration of 2,400 people into Cardiff in each year of the projection period. Cardiff is also projected to see around 2,000 more births than deaths in 2008/09, and this is set to increase to 3,500 more births than deaths by 2022/23, mainly due to rising births levels as a result of a projected increase in the number of females of fertility age.

Births, Deaths and Natural Change

Table 3: Number of births, deaths and natural change by local authority, selected years

	2008/09			2012/13			2022/23		
	Births	Deaths	Natural Change	Births	Deaths	Natural Change	Births	Deaths	Natural Change
Isle of Anglesey	800	800	-	800	700	-	700	800	-100
Gwynedd	1,300	1,300	-100	1,300	1,300	-	1,400	1,200	100
Conwy	1,100	1,400	-300	1,100	1,400	-300	1,100	1,400	-300
Denbighshire	1,100	1,100	-	1,100	1,100	-	1,100	1,100	-
Flintshire	1,800	1,400	400	1,700	1,300	400	1,600	1,400	200
Wrexham	1,700	1,300	400	1,700	1,300	400	1,600	1,300	300
Powys	1,300	1,400	-200	1,200	1,400	-200	1,200	1,600	-300
Ceredigion	700	700	-100	700	700	-	700	800	-100
Pembrokeshire	1,300	1,300	-	1,300	1,300	-	1,200	1,300	-100
Carmarthenshire	2,000	2,100	-100	2,000	2,000	-	2,000	2,100	-100
Swansea	2,700	2,300	400	2,900	2,200	600	3,100	2,200	900
Neath Port Talbot	1,600	1,500	100	1,600	1,400	100	1,500	1,400	100
Bridgend	1,600	1,400	200	1,600	1,400	200	1,600	1,400	100
Vale of Glamorgan	1,500	1,200	300	1,500	1,200	300	1,500	1,200	300
Cardiff	4,600	2,700	2,000	5,100	2,500	2,500	5,900	2,500	3,500
Rhondda Cynon Taf	2,900	2,500	400	2,800	2,400	500	2,700	2,300	400
Merthyr Tydfil	800	600	200	800	600	200	700	600	100
Caerphilly	2,200	1,700	500	2,100	1,700	500	2,000	1,700	300
Blaenau Gwent	900	800	100	900	800	100	800	700	100
Torfaen	1,100	1,000	100	1,000	900	100	1,000	900	-
Monmouthshire	800	900	-	800	900	-100	800	900	-100
Newport	2,000	1,300	600	2,000	1,300	700	2,000	1,200	800

Natural Change

In 2007/08, there were 13 local authorities in Wales who had more births than deaths.
It is projected that:

- 13 local authorities will experience more births than deaths in 2012/13, and 6 local authorities (Isle of Anglesey, Gwynedd, Denbighshire, Ceredigion, Pembrokeshire and Carmarthenshire) will have births and deaths roughly in balance.

- 13 local authorities will experience more births than deaths in 2022/23, and 2 local authorities (Denbighshire and Torfaen) will have births and deaths roughly in balance.

Cardiff is projected to see the most positive natural change in 2008/09, 2012/13 and 2022/23, mainly due to its high birth numbers. Conwy is projected to see the most negative natural change (300 more deaths than births) in 2008/09, 2012/13 and 2022/23.

Births

Between 2008/09 and 2022/23, birth numbers are generally projected to be highest in Cardiff, Swansea and Rhondda Cynon Taff. This is a reflection of the fact that these are the largest local authorities. Birth numbers in Swansea are projected to increase from 2,700 in 2008/09 to 3,100 in 2022/23, while birth levels in Cardiff are projected to increase from 4,600 in 2008/09 to 5,900 in 2022/23. These growths in birth numbers are mainly a result of an increase in the population of women of fertility age, which is likely to be caused by a high in-migration of women of this age group. Cardiff in particular is projected to see a high net in-migration of women aged 15-49, at around 1,500 each year.

Birth numbers are projected to be lowest in the Isle of Anglesey, Ceredigion and Merthyr Tydfil, at around 700 to 800 births from 2008/09 to 2022/23. Birth levels in Ceredigion are projected to remain fairly constant, while births levels are projected to decline from 2012/13 to 2022/23 in the Isle of Anglesey and Merthyr Tydfil. This decrease in the number of births is a result of a decrease in the number of women of fertility age in these local authorities.

Total Fertility Rate

Table 4: Total Fertility Rate by local authority, selected years

	2008/09	2012/13	2022/23
Isle of Anglesey	2.19	2.12	2.10
Gwynedd	1.80	1.74	1.73
Conwy	2.19	2.12	2.10
Denbighshire	2.26	2.18	2.17
Flintshire	2.11	2.04	2.03
Wrexham	2.08	2.01	1.99
Powys	2.22	2.14	2.13
Ceredigion	1.59	1.54	1.52
Pembrokeshire	2.22	2.15	2.13
Carmarthenshire	2.06	1.99	1.98
Swansea	1.86	1.80	1.78
Neath Port Talbot	1.99	1.93	1.91
Bridgend	2.13	2.06	2.04
Vale of Glamorgan	2.14	2.06	2.05
Cardiff	1.73	1.67	1.66
Rhondda Cynon Taf	1.91	1.84	1.83
Merthyr Tydfil	2.31	2.23	2.22
Caerphilly	2.05	1.98	1.97
Blaenau Gwent	2.10	2.03	2.02
Torfaen	2.00	1.93	1.92
Monmouthshire	2.16	2.09	2.07
Newport	2.30	2.22	2.20

The Total Fertility Rate (TFR) is the average number of children that women would bear if the female population experienced the age-specific fertility rates for the year in question throughout their childbearing lifespan.

The National Population Projections show that across Wales, the TFR is expected to decrease from 1.93 in 2008/09 to 1.85 by 2013/14 and then remain constant at 1.85 until 2032/33.

Between 2008/09 and 2012/13, the TFR is projected to decrease in every local authority. Between 2012/13 and 2022/23, the TFR is still projected to decline in every local authority, but at a slower rate than seen in earlier years. Looking further forward shows that the TFR levels are projected to remain relatively constant in each local authority from 2022/23 onwards.

Replacement level fertility (**2.08 for England and Wales**) represents the approximate number of children per woman needed for the population to replace itself in the long-term given constant mortality rates and the absence of migration. Over the course of the projection period, 13 local authorities in Wales are projected to see TFRs at or above replacement level fertility for one or more years.

The local authority with the lowest TFR levels from 2008/09 to 2022/23 is Ceredigion, which highlights the importance of inward migration into the local authority to sustain its population.

Despite Cardiff experiencing increasingly high birth numbers from 2008/09 to 2022/23, its TFR is below replacement level fertility and decreases from 1.73 in 2008/09 to 1.66 in 2022/23.

It can be seen that the local authorities with the lowest TFR levels are Ceredigion, Cardiff, Gwynedd and Swansea. These local authorities contain relatively large numbers of students, who have lower fertility levels, which results in a low overall TFR for these local authorities.

Deaths

Overall, across Wales the death rates across all ages are projected to decrease year on year throughout the projection period. However, if death rates are decreasing this means that more people will live to an older age (which have higher death rates) and therefore it is projected that from around 2018/19 the number of deaths will begin to rise.

Powys is the local authority projected to see the highest percentage increase in deaths from 2008/09 to 2022/23, with numbers increasing from 1,400 deaths in 2012/13 to 1,600 deaths in 2022/23, mainly due to an increase in the population of older people in Powys. The population aged 75 and over in Powys is projected to increase from 13,700 in mid-2008 to 22,800 in mid-2023.

Expectation of life at birth

Table 5: Expectation of life at birth by local authority, selected years

	2008/09	2012/13	2022/23
Isle of Anglesey	80.6	81.5	83.0
Gwynedd	80.3	81.2	82.7
Conwy	80.1	81.0	82.5
Denbighshire	80.3	81.2	82.8
Flintshire	80.4	81.3	82.8
Wrexham	80.1	81.1	82.6
Powys	81.5	82.4	83.8
Ceredigion	82.0	82.9	84.2
Pembrokeshire	80.5	81.5	83.0
Carmarthenshire	80.2	81.1	82.7
Swansea	80.4	81.3	82.8
Neath Port Talbot	79.6	80.6	82.2
Bridgend	79.6	80.6	82.2
Vale of Glamorgan	80.7	81.6	83.1
Cardiff	80.0	80.9	82.4
Rhondda Cynon Taf	79.0	79.9	81.6
Merthyr Tydfil	77.9	78.9	80.7
Caerphilly	79.1	80.1	81.7
Blaenau Gwent	78.2	79.2	81.0
Torfaen	79.8	80.8	82.3
Monmouthshire	81.6	82.5	83.9
Newport	79.7	80.7	82.3

Expectation of life at birth is the age until which a person is expected to live if they experience the age specific mortality rates of the particular local authority at the time of their birth, during the course of their life. An individual's life expectancy will therefore change as mortality rates change throughout their lifetime.

Across Wales it is projected that expectation of life will increase year on year throughout the whole projection period, and all local authorities are predicted to see continual increases in expectation of life throughout the whole projection period.

In each of the selected years, the expectation of life across Wales is projected to be lowest in Merthyr Tydfil and highest in Ceredigion. Between 2008/09 and 2022/23, it is predicted that the expectation of life will increase from between 77.9 years and 82.0 years (Merthyr Tydfil and Ceredigion respectively) to between 80.7 years and 84.2 years (Merthyr Tydfil and Ceredigion respectively).

Although predicted to experience the lowest expectation of life over the period until 2022/23, Blaenau Gwent, Merthyr Tydfil, Caerphilly and Rhondda Cynon Taf are all predicted to experience the greatest increases in expectation of life.

These changes reflect the expected falls in mortality rates expressed in the national population projections, which have been used in the sub-national population projections to predict future changes in mortality rates.

Migration

A constant level has been assumed for both in and out migration for each local authority for each year of the projection period, based on each local authority's in and out migration over the last 5 years. The local authority projections are trend based, and only indicate what might happen if recent trends continue.

Table 6: Assumed migration levels for the duration of the projection period by local authority, selected years

	total migration			internal migration			international migration		
	in	out	net	in	out	net	in	out	net
Isle of Anglesey	2,500	2,300	200	2,300	2,100	200	100	100	-
Gwynedd	5,900	5,600	300	5,300	5,100	100	600	500	100
Conwy	5,200	4,600	600	4,900	4,200	700	300	400	-100
Denbighshire	4,900	4,200	600	4,600	4,000	700	200	200	-
Flintshire	4,900	5,000	-100	4,700	4,700	-	200	300	-100
Wrexham	4,300	3,900	400	3,900	3,600	300	500	300	100
Powys	5,900	5,000	900	5,700	4,800	900	300	300	-
Ceredigion	6,700	6,300	400	5,900	5,800	100	800	500	300
Pembrokeshire	4,600	4,000	600	4,200	3,600	600	400	300	-
Carmarthenshire	6,800	5,400	1,400	6,500	5,100	1,300	300	300	100
Swansea	10,500	9,500	1,000	8,900	8,500	400	1,600	1,000	600
Neath Port Talbot	4,100	3,700	500	4,100	3,500	600	100	200	-100
Bridgend	4,300	3,700	600	4,100	3,400	700	200	200	-100
Vale of Glamorgan	5,500	4,900	600	5,100	4,600	500	300	300	-
Cardiff	23,200	20,700	2,400	17,700	17,900	-300	5,500	2,800	2,700
Rhondda Cynon Taf	7,000	6,900	100	6,500	6,300	300	500	600	-100
Merthyr Tydfil	1,400	1,500	-	1,300	1,400	-100	100	100	-
Caerphilly	4,500	4,500	100	4,400	4,200	200	100	200	-100
Blaenau Gwent	1,700	1,600	-	1,600	1,600	-	100	100	-
Torfaen	2,400	2,500	-100	2,300	2,400	-	-	100	-100
Monmouthshire	4,500	4,100	400	4,400	3,900	400	200	200	-100
Newport	5,400	5,600	-200	4,900	5,000	-200	500	600	-

For the sub-national population projections, migration is considered as the movement of people into and out of a local authority.

Migration to or from the UK is defined as internal migration and is recorded for every move at the time of migration.

Migration to or from overseas is defined as international migration. However, a person is only classified as an international migrant if they intend to migrate for a period of 12 months or more. Migrants who, at the time of migration, do not intend to stay for 12 months or more are classified as short-term migrants and are not included in the migration figures. An adjustment is made each year for people who change their length of stay from their intentions at the time of migration (either under 12 months to over 12 months or vice versa).

In each year of the projection period it is projected that:

- The majority (17) of local authorities within Wales will experience more people moving in than moving out. Merthyr Tydfil and Blaenau Gwent will have a net migration of roughly zero, while Flintshire, Torfaen and Newport will experience more people moving out than moving in.
- Cardiff will see the greatest net inflow of migrants (around 2,400 more people arriving than leaving each year).

Considering only migration **within the UK** (Internal migration), in each year of the projection it is predicted that:

- Cardiff will experience the highest number of internal in and out migrants (17,700 and 17,900 respectively), but will experience negative net migration within the UK (around 300 more people leaving than arriving each year);
- Merthyr Tydfil will experience the lowest number of internal in and out migrants (1,300 and 1,400 respectively);
- Carmarthenshire will experience the greatest difference between people arriving than leaving (a net inflow of 1,300 people each year).

In terms of migration **from overseas** (International migration), in each year of the projection it is predicted that:

- Cardiff will experience the highest number of international in and out migrants each year (5,500 and 2,800 respectively), likely to be the result of high volumes of students migrating from overseas to attend Cardiff University;
- Swansea and Ceredigion also have universities and are projected to experience the second and third highest volumes of international net migration at 600 and 300 respectively;
- Torfaen will experience the lowest number of international in migrants (around 40 people) and Blaenau Gwent will experience the lowest number of international out migrants (around 70 people);
- Caerphilly will experience the greatest net outflow of migrants (around 150 more people leaving than arriving each year);
- Cardiff will experience the greatest net inflow of migrants (around 2,700 more people arriving than leaving each year).

Comparing the total net migration figures for each local authority with the overall population growth shows that migration is one of the most important drivers for population change, and highlights the importance of the migration assumption.

Cardiff, Carmarthenshire and Swansea experience the most people moving into the authority than moving out, with a net inflow of 2,400, 1,400 and 1,000 people per year respectively. These local authorities also experience the highest population growth from mid-2008 to mid-2023, indicating that high net in-migration is a key driver for the population increase.

However the age profile of the migrants is an important factor to consider, as high numbers of females of fertility age migrating into the local authority may result in higher birth numbers and further population growth. If the age profile of migrants tended to be older, for example, then the effect of migration may not be so significant.

Annex A

The following section presents some tables showing the projections results up to mid-2033. Please note however that projections become more uncertain the further they are carried forward. These 2008-based local authority projections are based on past trends of births, deaths and migration, and only indicate what might happen should these past trends continue. They do not make allowances for the effects of local or central government policies on future population levels, distribution and change.

Table 7: Total Population by local authority, selected years up to mid-2033

	2008	2013	2018	2023	2028	2033
Isle of Anglesey	68,800	69,900	71,000	71,900	72,400	72,600
Gwynedd	118,600	119,700	121,300	123,200	124,900	126,000
Conwy	111,400	113,000	114,700	116,300	117,600	118,300
Denbighshire	96,700	99,800	103,100	106,200	108,900	111,000
Flintshire	149,700	151,200	152,400	153,100	153,100	152,100
Wrexham	132,700	136,900	141,100	145,000	148,500	151,500
Powys	131,700	135,400	138,900	142,200	144,800	146,300
Ceredigion	76,800	78,600	80,500	82,300	83,700	84,600
Pembrokeshire	117,600	120,500	123,500	126,100	128,000	129,300
Carmarthenshire	180,700	187,400	194,300	200,900	206,700	211,600
Swansea	230,100	237,400	246,100	255,300	264,000	272,100
Neath Port Talbot	137,600	140,400	143,500	146,500	148,900	150,900
Bridgend	133,900	138,000	142,100	146,000	149,400	152,100
Vale of Glamorgan	124,100	128,400	132,800	137,300	141,200	144,600
Cardiff	330,500	353,900	381,100	410,500	439,700	468,200
Rhondda Cynon Taf	234,400	237,200	240,300	243,200	245,200	246,400
Merthyr Tydfil	55,600	56,200	57,000	57,600	57,900	58,100
Caerphilly	172,400	175,000	177,700	179,900	181,300	181,900
Blaenau Gwent	68,800	69,400	70,300	71,100	71,400	71,400
Torfaen	90,600	90,700	90,800	90,700	90,100	89,200
Monmouthshire	87,800	89,500	91,000	92,500	93,500	93,900
Newport	139,700	142,100	145,200	148,400	151,200	153,600

Table 8: Percentage change since 2008 by local authority, selected years up to mid-2033

Per cent

	2013	2018	2023	2028	2033
Isle of Anglesey	2	3	5	5	5
Gwynedd	1	2	4	5	6
Conwy	1	3	4	6	6
Denbighshire	3	7	10	13	15
Flintshire	1	2	2	2	2
Wrexham	3	6	9	12	14
Powys	3	5	8	10	11
Ceredigion	2	5	7	9	10
Pembrokeshire	3	5	7	9	10
Carmarthenshire	4	8	11	14	17
Swansea	3	7	11	15	18
Neath Port Talbot	2	4	7	8	10
Bridgend	3	6	9	12	14
Vale of Glamorgan	3	7	11	14	16
Cardiff	7	15	24	33	42
Rhondda Cynon Taf	1	3	4	5	5
Merthyr Tydfil	1	3	4	4	5
Caerphilly	2	3	4	5	6
Blaenau Gwent	1	2	3	4	4
Torfaen	0	0	0	-1	-2
Monmouthshire	2	4	5	6	7
Newport	2	4	6	8	10

Between mid-2008 and mid-2033 it is projected that 12 local authorities will experience increases of 10 per cent or more between mid-2008 and mid-2033.

By mid-2033 it is projected that Cardiff's population will reach 468,200 (a 42 per cent increase). This large population increase is due to the assumed net migration of 2,400 people into Cardiff in each year of the projection period. The migration assumptions are based on past trends from the most recent five years, and so it is debatable as to whether the high migration seen in the past 5 years will continue so far into the future. The projections are trend based and do not make allowances for the effects of local or central government policies on future population levels, distribution and change.

By mid-2033 the population of Torfaen is projected to have decreased slightly to 89,200, a 2 per cent decrease since mid-2008. This decrease is due to 100 more people migrating out of the authority than moving in for each year of the projection period, and is also due to the natural change becoming increasingly negative in Torfaen due to fewer births and more deaths.

Table 9: Number of births, deaths and natural change by local authority, selected years up to mid-2033

	2008/09			2012/13			2022/23			2032/33		
	Births	Deaths	Natural Change	Births	Deaths	Natural Change	Births	Deaths	Natural Change	Births	Deaths	Natural Change
Isle of Anglesey	800	800	-	800	700	-	700	800	-100	700	900	-200
Gwynedd	1,300	1,300	-100	1,300	1,300	-	1,400	1,200	100	1,300	1,400	-100
Conwy	1,100	1,400	-300	1,100	1,400	-300	1,100	1,400	-300	1,000	1,500	-500
Denbighshire	1,100	1,100	-	1,100	1,100	-	1,100	1,100	-	1,100	1,300	-300
Flintshire	1,800	1,400	400	1,700	1,300	400	1,600	1,400	200	1,500	1,700	-200
Wrexham	1,700	1,300	400	1,700	1,300	400	1,600	1,300	300	1,600	1,500	100
Powys	1,300	1,400	-200	1,200	1,400	-200	1,200	1,600	-300	1,200	1,900	-700
Ceredigion	700	700	-100	700	700	-	700	800	-100	600	900	-300
Pembrokeshire	1,300	1,300	-	1,300	1,300	-	1,200	1,300	-100	1,100	1,500	-400
Carmarthenshire	2,000	2,100	-100	2,000	2,000	-	2,000	2,100	-100	2,000	2,500	-500
Swansea	2,700	2,300	400	2,900	2,200	600	3,100	2,200	900	3,000	2,400	600
Neath Port Talbot	1,600	1,500	100	1,600	1,400	100	1,500	1,400	100	1,500	1,600	-100
Bridgend	1,600	1,400	200	1,600	1,400	200	1,600	1,400	100	1,600	1,700	-100
Vale of Glamorgan	1,500	1,200	300	1,500	1,200	300	1,500	1,200	300	1,500	1,500	-
Cardiff	4,600	2,700	2,000	5,100	2,500	2,500	5,900	2,500	3,500	5,900	2,700	3,200
Rhondda Cynon Taf	2,900	2,500	400	2,800	2,400	500	2,700	2,300	400	2,600	2,500	-
Merthyr Tydfil	800	600	200	800	600	200	700	600	100	700	600	100
Caerphilly	2,200	1,700	500	2,100	1,700	500	2,000	1,700	300	1,900	1,900	-
Blaenau Gwent	900	800	100	900	800	100	800	700	100	800	800	-
Torfaen	1,100	1,000	100	1,000	900	100	1,000	900	-	900	1,000	-100
Monmouthshire	800	900	-	800	900	-100	800	900	-100	800	1,100	-400
Newport	2,000	1,300	600	2,000	1,300	700	2,000	1,200	800	2,000	1,300	600

Powys is projected to have the most negative natural change by 2032/33, mainly due to an increase in deaths from 1,400 in 2008/09 to 1,900 by 2032/33 caused by an increasingly older population.

Cardiff is still projected to have the highest natural change at 3,200 more births than deaths by 2032/33, but despite a high rise in births during the first 15 years of the projection period, birth levels in Cardiff are projected to remain fairly constant between 2022/23 to 2032/33.

Methodology and Assumptions

Methodology and Assumptions

This section provides an overview of the broad methodology used to form the assumptions. A full technical report including more detailed explanations of the methodology will be available in late 2010.

Note that the local authority population projections are not constrained to the National Population projections for Wales. Guidance on using the two sets of projections are provided in the 'Local Authority Population Projections for Wales (2008-based) - Guidance Leaflet'. www.wales.gov.uk/topics/statistics/publications/popprojectionsguidance08/?lang=en

Additional information on why the local authority projections are not constrained to the National Population Projections are available in the 'Local Authority Population Projections for Wales (2006-based) - Summary Report'.
www.wales.gov.uk/topics/statistics/publications/publication-archive/popprojsum06/?lang=en

The two paragraphs above were added on 6 April 2011.

Population Estimates Methodology

In simple terms, population estimates are calculated by:

- Taking the previous year's population estimate;
- Taking out special population groups;
- Ageing every person on one year;
- Adding births and subtracting deaths;
- Allowing for inward and outward migration;
- Adding back in the special population groups.

A similar approach is taken to calculate population projections. However, in order to produce population projections, assumptions need to be formed to project future levels of fertility, mortality and migration for each local authority. These assumptions are based on local trends in recent years.

The projections have been calculated by gender and single year of age (up to age 90 and over). This means that users can aggregate into age-groups of their choice.

Revisions to the mid year estimates

ONS in partnership with other organisations have a long-term programme of work on improving migration and population statistics. This means that mid-year population estimates are subject to regular revision, and a revised set of mid-year estimates for 2002-2008 were published on 13th May 2010. More information on this project can be accessed below:
www.ons.gov.uk/about-statistics/methodology-and-quality/imps/index.html

The 2008-based local authority population projections for Wales are based on the **revised population and revised migration estimates**. The 2006-based population projections will not be revised.

Population Base

The population projections use the 2008 revised mid-year population estimates as the population base. These population estimates were published by the ONS on May 13th 2010. They are also available on the StatsWales website: www.statswales.wales.gov.uk

The population estimates and population projections are based on the usually resident population. Usual residents away from home temporarily are included, but visitors are excluded. Students are counted at their term-time address. It should also be noted that the UN definition of an international migrant is used – those changing country of residence for a period of at least 12 months. Short-term migrants (e.g. migrant workers from Eastern European countries) are not counted in the population estimates and hence are not included in the population projections.

Fertility Assumptions

Long-term age-specific fertility assumptions for each local authority were produced by analysing age-specific fertility trends for each local authority during the most recent 5 years. Births data by age of mother for each local authority were obtained from the vital events registrations system (ONS).

Age Specific Fertility Rates (ASFRs) were calculated for females aged 15 to 49 by single year of age for each local authority in Wales. ASFRs are calculated by dividing the number of live births to females aged X by the total number of females aged X and multiplying by 1,000.

The fertility rate assumptions for the population projections are:

- Based on 2007/2008 birth levels.
- Based on the average ASFRs over the previous 5 years.
- Combined with the ONS National Population Projection fertility differentials that take into account changes in fertility over time (eg initially more births for older mothers but then a decrease).

Mortality Assumptions

Long-term age-specific mortality assumptions for each local authority were produced by analysing age-specific mortality trends for each local authority during the most recent 5 years. Deaths by gender and age for each local authority were obtained from the vital events registrations system (ONS).

Age Specific Mortality Rates (ASMRs) were calculated for males and females aged newborn to 90+ by single years of age for each local authority in Wales. ASMRs are calculated for each single year of age and gender by dividing the number of deaths at age X by the population aged X and multiplying by 1,000.

The mortality rate assumptions for the population projections are:

- Based on 2007/2008 mortality levels.
- Based on the average ASMRs over the previous 5 years.
- Combined with the ONS National Population Projection mortality differentials that take into account changes in mortality over time.

Migration Assumptions

In order to produce the population projections, assumptions for internal (within UK) inward and outward migration were required. In addition to this, assumptions for international inward and outward migration were required.

Long-term migration assumptions for each local authority were produced by analysing age and gender specific migration trends for each local authority during the most recent 5 years. Migration data by gender and age for each local authority were obtained from the ONS. Internal migration estimates are based on information from GP registrations, which are adjusted by Higher Education Statistical Agency data to improve estimates of student moves. International migration estimates are based on information from the International Passenger Survey (IPS) together with information from other sources (e.g. Asylum Seekers, etc).

Due to the volatility relating to migration figures year on year, the long-term internal and international (both in and out) migration assumptions are based on an average of the last 5 years of data. This means a static level migration assumption for both in and out migration.

Special populations

Special population groups are sub-sets of the population that have specific age structures, which are fairly constant over time. Special population groups are not usually captured within migration (both internal and international) estimates.

As these groups have fairly static age structures, the projections model of ageing-on would not be appropriate (e.g. a 17 year old boy at a boarding school would be 22 within 5 years but would not be living in the boarding school and would have been replaced by someone of similar age).

To prevent the ageing on of these populations:

- special populations (by age and gender) are removed at the start of each year of the projection
- the projections model is applied to the remaining population
- the special populations (by age and gender) are added back in at the end of the process for each year of the projection period.

To maintain consistency with the Mid-Year Estimates, the following have been considered as Special Population groups in the Wales sub-national projections:

- Home Armed Forces
- Prisoners
- School Boarders

Special population numbers from the year 2007/08 were used and were projected forward as static counts across the whole projection period.

Variant Projections

In order to illustrate the uncertainty associated with population projections, variant projections have also been published alongside the main (or principal) population projection.

A no migration (natural change only) projection has been produced to illustrate the projected population of each local authority if there were no future inward or outward migration.

Higher and lower variant projections have also been produced. The higher variant is based on an assumption of higher fertility and lower mortality. The lower variant is based on an assumption of lower fertility and higher mortality.

Further Work

Further Work/Improvements

This is the second time that population projections for the 22 local authorities in Wales have been produced. Population projections are continuously evolving – as new data is collected and improved methods for estimating the population introduced, the methods for projecting the population are thus also improved.

As part of the work on developing the local authority population projections, a number of issues/methodologies were identified for ongoing investigation.

Propensity to migrate models

Such models consider the probability of a person moving from area X to area Y.

Further work will be undertaken to assess the feasibility of using propensity to migrate models in future.

National Park Projections

2006-based national park projections for Wales were published by the Welsh Assembly Government in March 2010. Here is a link to the work:
www.wales.gov.uk/statistics

Work will be done to publish 2008 based national park projections early next year.

Improving Migration Programme

ONS in partnership with other organisations have a long-term programme of work on improving migration and population statistics. This means that mid-year population estimates are subject to regular revision, and a revised set of mid-year estimates for 2002-2008 were published on 13th May 2010.
More information on this project can be accessed below:
www.ons.gov.uk/about-statistics/methodology-and-quality/imps/index.html

The 2008-based local authority population projections for Wales are based on the **revised population and revised migration estimates**. Therefore any improvements that have been implemented in the revised population and migration estimates will be fed through to the local authority population projections.

Technical Report

A full technical report including more detailed explanations of the methodology will be available in late 2010.

Timetable

No decision has yet been taken as to when the next round of local authority projections will be published. This will be considered alongside decisions on the timetable for the population estimates and national projections. When available, data from the 2011 Census will be used to quality assure existing methodology. It may also be possible to use Census data in future projection rounds.

Quality Information

Quality Information

Information on quality is provided throughout this publication. A selection of key quality information is also provided below.

Definitions
The projected population is for 30 June each year. The projected components (births, deaths and migration) are based on a 1 year period (middle of year to middle of year).

Revisions
ONS in partnership with other organisations have a long-term programme of work on improving migration and population statistics. This means that mid-year population estimates are subject to regular revision, and a revised set of mid-year estimates for 2002-2008 were published on 13th May 2010.
More information on this project can be accessed below:
www.ons.gov.uk/about-statistics/methodology-and-quality/imps/index.html

The 2008-based local authority population projections for Wales are based on the **revised population and revised migration estimates**.

Base Population
The 2008 revised mid year estimates of population have been used as the base population for these projections.

Population Estimates
These are based on the usually resident population. Usual residents away from home temporarily are included, but visitors are excluded. Students are counted at their term-time address. It should also be noted that the UN definition of an international migrant is used – those changing country of residence for a period of at least 12 months. Short-term migrants (e.g. migrant workers from Eastern European countries) are not counted in the population estimates and hence are not included in the population projections.

Age-specific Fertility Rates (ASFR)
ASFRs refer to the total number of births per 1,000 women of a given age (calculated for women aged 15-49 only).

Total Fertility Rate (TFR)
The TFR is the average number of children that would be born per woman if women experienced the age-specific fertility rates for the year in question throughout their childbearing lifespan.

Replacement Level Fertility
Replacement level fertility is the level of fertility required for the population to replace itself in size in the long term given constant mortality rates and the absence of migration. For England and Wales this is 2.08.

Age-specific Mortality Rates (ASMR)
ASMRs refer to the total number of deaths per 1,000 people of a given age.

Expectation of life at birth
The 'expected years of life' is the average future lifetime, which would be lived by persons of a particular age, if they were subject throughout their lives to the average recorded death rate of the year in question.

Internal Migration
Internal (or within-UK) migration refers to the movement of people moving within the UK, for example, from one local authority to another. Each Health Authority holds a register of patients registered with its GPs, called the Patient Register Data System (PRDS). Combining every patient register in England and Wales and comparing with the register from the previous year identifies people who have changed their postcode. As part of the project undertaken by ONS to improve population and migration estimates, data on the term time address of students from the Higher Education Statistics Agency has been incorporated into the internal migration estimates to help identify moves of students who are slow to re-register with a surgery when moving to university.

International Migration
International Migration refers to the movement of people to or from countries outside the UK. The UN definition of an international migrant is used – those changing country of residence for a period of at least 12 months. International migration movements are estimated by combining data from the International Passenger Survey (IPS), Home Office data on asylum seekers and visitor switches, with estimates of migration between the Republic of Ireland and Wales from the Irish Labour Force survey.

Working Age and State Pension Age
All figures presented in this report for working age and pensionable age populations are based on the state pension age for the given year. Between 2010 and 2020, state pension age will change from 65 years for men and 60 years for women, to 65 years for both sexes. Between 2024 and 2046, state pension age will increase in three stages from 65 years to 68 years for both sexes.

Geographies and Boundaries
The population projections are for local authority areas, and are based on the boundaries used for the 2008 mid-year estimates of population. Historic data used to produce assumptions may have been based on slightly different boundaries.

Frequency
No decision has yet been taken as to when the next round of local authority projections will be published. This will be considered alongside decisions on the timetable for the population estimates and national projections. When available, data from the 2011 Census will be used to quality assure existing methodology. It may also be possible to use Census data in future projection rounds.

Symbols
The following symbol has been used throughout the publication:
- the data item is not exactly zero, but rounds to zero.

Further Information

Further Information

Local Authority Population Projections

A guidance leaflet and further information on the 2008-based local authority population projections can be found at:
www.wales.gov.uk/statistics

Data cubes are available on the StatsWales website
(Population and Migration / Population / Projections / 2008-based local authority)
www.statswales.wales.gov.uk

National Population Projections for Wales

Data cubes are available on the StatsWales website
(Population and Migration / Population / Projections / 2008-based national)
www.statswales.wales.gov.uk

Further detailed information can be found on the ONS website:
www.statistics.gov.uk

Population and Migration Data

Information on how and where to access population and migration data for Wales is available on the Welsh Assembly Government's Population Statistics theme page:
www.wales.gov.uk/statistics

Contact details

For queries on the 2008-based local authority projections, or for general queries on demographic data, please contact:

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