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Explaining the difference between Welsh Government's 2008- and 2011-based projections for the Isle of Anglesey

Produced for the Joint Local Development Plan team for Anglesey and the Gwynedd by the Corporate Research and Information Unit, Conwy County Borough Council

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Produced by:

The Corporate Research and Information Unit
Conwy County Borough Council,
Bodlondeb,
Conwy, LL32 8DU.
Email: research.unit@conwy.gov.uk

Phone: 01492 575291

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Headlines

- This paper has been written to explain and analyse the results of the 2011-based population and in particular the household projections which are published by Welsh Government.
- Key current characteristics for Anglesey's population:
 - The median age is higher than average, and the population is getting older
 - More deaths than births – the population of Anglesey does not replace itself naturally
 - Net population increase comes from migration, which fluctuates
 - Young people move out, older people move in
 - The ageing population structure and the trend towards net out-migration amongst younger age groups would naturally lead to a long term decline in population numbers.
- The new projections show that
 - Population starts to fall after 2026 for the 10 year trend variant projection, and even earlier for the principal projection, where 2020 is the last year of population growth
 - 11.3% growth for households was predicted in 2008 for the period 2011 to 2026, whereas the new 2011-based projections suggest only 2.9% growth for the principal (5 year migration trend) projection and only 5.4% growth for the 10 year migration trend variant.
 - The indicative dwelling requirement for the 15 year period falls significantly from a total of 3,880 predicted in the 2008-based projections to either 990 (5 year migration trend) or 1,845 (10 year migration trend).
- The differences between the 2008-based and 2011-based projections are due to:
 - the recalibration of all data after the results of the 2011 Census were published
 - changes in the migration trend that was used – the 2011-based principal projection is based on a five year migration trend that looks at a period of economic slowdown which led to much lower levels of migration than had been seen in previous years (annual ave. net migration = 40). 2008-based projections took a trend from 2003/04, which was still mostly a period of economic migration expansion (annual ave. net migration = 204). The 2011-based 10 year trend projection took a longer period, which evened out some of the peaks and troughs seen over the shorter periods (annual ave. net migration = 165).
 - the difference between predicted and observed household size at 2011 – average household size was larger than expected, so fewer households were forming than past trends had predicted.
- Average household size was bigger than expected because
 - fewer young people than predicted are leaving the family home and forming their own households, perhaps due to housing costs

- fewer people than predicted are living alone or in small households after family break-up
 - death rates for men have reduced, meaning fewer household of lone older females living alone than predicted
 - there are more households where adult children are living with their parents
 - there are more households made up of unrelated adults who are sharing living costs
- Overall, however, the trend is still towards more smaller households and fewer large households in the future, though growth is at a slower rate than predicted in the past.

Introduction

This paper has been written to explain and analyse the results of the 2011-based population and in particular the household projections which are published by Welsh Government. It was produced in June 2014 by Conwy County Borough Council's Corporate Research and Information Unit under commission from the Joint Local Development Plan team for Anglesey and the Gwynedd Local Planning Authority Area.

Welsh Government's latest 2011-based population figures were published in July 2013 and the household projections were published in February 2014. The figures are very different to the 2006- and 2008- based projections that were published in 2008 and 2010 respectively. The household projections give figures for most local authorities – including the Isle of Anglesey – which are much lower than presented in 2008-based household projections, and this has caused some concern. However, though the difference in the total number of households at the start of the period is useful to know because it gives us a starting point for lots of calculations (such as homelessness rate per 1,000 households or estimations of average household size, what is really of interest for land-use planning is the change in numbers and types of household over time, and this brief paper focuses more on explaining why that rate of change is so different from those in the household projections produced in the past.

This paper also gives some context for the trends seen in the projections. All population and household projections will be influenced by the local characteristics of the population, and it is important to have an understanding of these characteristics and how they are likely to impact on future population trends before critiquing the projections themselves.

Note: In their 2011-based projections Welsh Government have, for the first time, produced a migration variant projection that shows a 10 year migration trend. This is a more robust projection to use for land-use planning, as it uses a more stable longer-term migration trend and better fits the time period covered by local development plans.

Though the principal projection (5 year migration trend) has traditionally been

“(t)he latest Assembly Government local authority level Household Projections for Wales [which] should form the starting point for assessing housing requirements”¹,

the Welsh Government Minister for Housing and Regeneration has indicated² that

“it is not prudent for a Plan, looking 15-20 year ahead to replicate a period of exceptionally poor growth”.

Therefore the 10 year trend variant projection will mostly likely have a greater weight when considering housing growth in local development plans in the coming years than is given to the principal projection. For this reason both the 2011-based principal projection and the 10 year trend migration variant are presented in this paper, together with a comparison against the now superseded 2008-based projections that were published by the Welsh Government in 2010. (see ‘Explaining the difference – migration changes’ section below for more details)

¹ Planning Policy Wales Edition 4 - February 2011 - Chapter 9 Housing

² Letter from Minister of Housing, Welsh Government to all Local Authority Cabinet members with Responsibility for Housing, 10th April 2012 – topic ‘Use of 2011 household projections’ (Ref: SF/CS/1070/14)

Key current characteristics for Anglesey's population

This section of the report presents some key data about the population of Anglesey, and explains how these population characteristics will impact on population estimates and projections in a general way.

The age of the population and natural change

The median age is higher than average, and the population is getting older –

The median age (the age at which half the population is older and half is younger) of Anglesey's population is 44 years. The current median age for Wales is 41 and 38 for the UK. This means the population is significantly older than for Wales and UK. The median age has increased from 41 to 44 years over the last decade.

More deaths than births – the population of Anglesey does not replace itself naturally. With deaths over a ten year period at an average of 790 per annum and births at just 740 the population of Anglesey would decrease by around 50 persons per year if there were no net in-migration into the area.

Migration

Net population increase comes from migration, which fluctuates – any overall growth in population comes from a net increase of people moving into the area – whether new migrants or returning former residents (for example students), and whether from Bangor or Liverpool or France. However, though the number of births and deaths remain relatively stable year-on-year, migration is a much more volatile component of population change, which is difficult to measure and even harder to predict. Any year in which net migration is less than around 50 is likely to see a fall in total population numbers.

Table 1: proportion of migration by age group, Isle of Anglesey, (average 2002/03 to 2011/12)

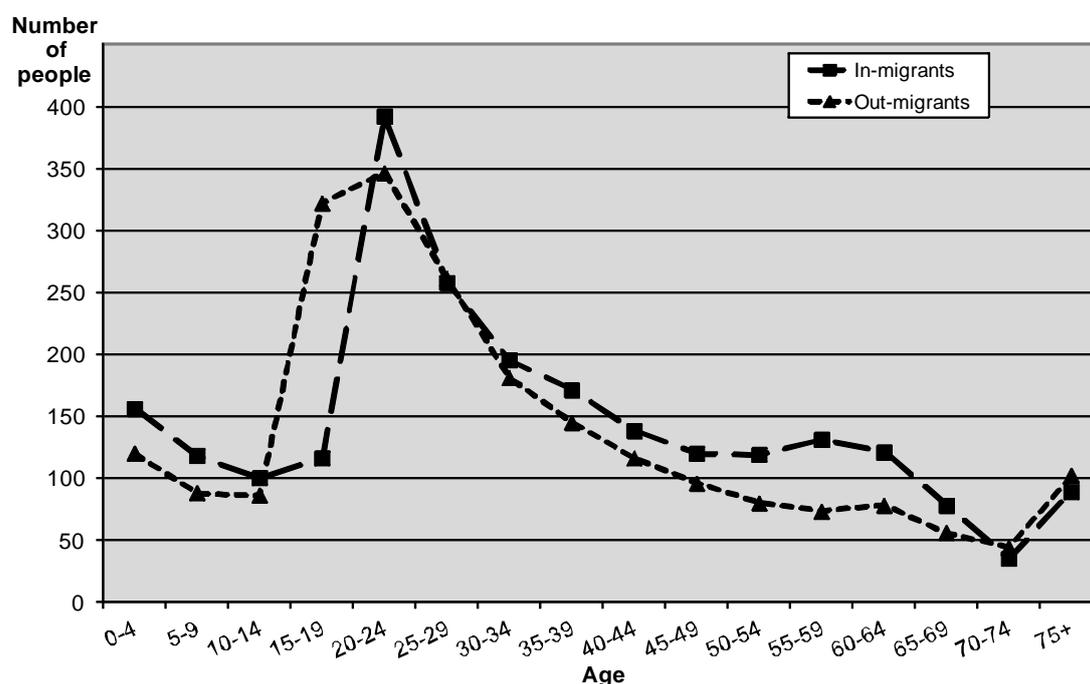
Sources: internal and international migration flow data, ONS

	In-migrants	Out-migrants
Total migrants	2,350	2,200
Aged 0-14	16%	13%
Aged 15-24	22%	30%
Aged 25-49	38%	36%
Aged 50-64	16%	11%
Aged 65+	9%	9%
Aged 75+	4%	5%

Young people move out, older people move in – most age groups see a net gain of population due to more in-migration than out-migration. However, there is a big rise in out-migration in the 15-24 age groups. There is no higher education institution in Anglesey, so most people wanting to go on to university or other higher education at age 18 have to leave the area. This is also the age group which is mostly likely to be economically and socially mobile, seeking work and other social opportunities outside the area. This age group has become increasingly mobile in recent years so the size and impact of their out-migration has grown. As a 10 year average, these age groups account for 30% of out-migrants.

Chart 1: average age profile of migrants in the Isle of Anglesey, 2002/03 to 2011/12

Sources: internal and international migration flow data, ONS



The spike in the age profile for in-migrants in the 20-24 age group suggests that some of these young people return to the area when they have finished higher education. However, not all of those who leave in their late teens or early twenties come back to the area, and this accentuates the older than average age profile of the population. About 670 people in the 15-24 age groups leave the Isle of Anglesey each year, and only about 510 move in.

Though there is net in-migration of people in their late 20s to 40s, it does not balance out this net loss of young adults, and leads to an imbalance in the population structure.

There is a bulge in in-migration in the pre-retirement age groups – those aged 50 to 64 make up about 16% of in-migrants. In the last 10 years, net migration in that age group has been an average annual gain of 160 persons. There is much lower net migration gain in the 65-69 age group. On average, from ages 70 onward in-migration and out-migration are balanced.

Note: Migration is affected by many factors over which we have no control at a local level, such as national economic policy or social trends towards overseas retirement. Unforeseen or one-off events can also have a significant impact on migration, such as the influx of economic migrants from Eastern Europe which was seen after EU accession in 2004 or the slow-down in both internal and international migration after the 2008 economic downturn. We therefore need to be careful when trying to interpret trends in migration.

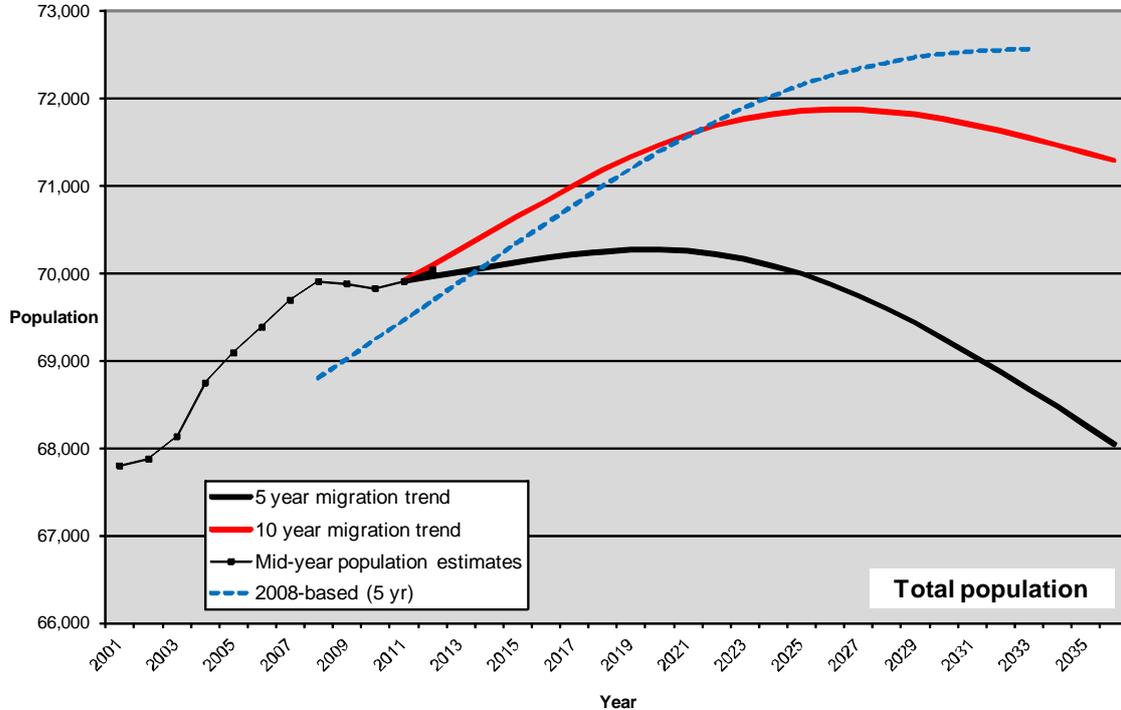
What the projections show

The population projections, though starting at a higher point than the 2008-based projections, showed a very different pattern for future population. After a period of population growth, population totals were expected to decline in the 2020s – they are expected to start to fall after 2026 for the 10 year trend variant projection, and even earlier for the principal projection, where 2020 is the last year of predicted population growth.

The ageing population structure and the trend towards net out-migration amongst younger age groups as discussed in the section above would naturally lead to this long term decline in population numbers.

Chart 2: comparing population projections for the Isle of Anglesey

Sources: Mid-year population estimates, ONS; 2011- & 2008-based household projections, Welsh Government



The table below shows the differences between the 2011- based projections and the 2008-based official projection. It compares across a 15 year period, which is the length of operation for most development plans.

Over this period (2011 to 2026) the growth in household numbers and the dwelling impact of this growth is expected to be much lower than predicted by previous projections – 11.3% growth was predicted in 2008, whereas the 2011-based projections suggest only 2.9% growth for the principal (5 year migration trend) projection and only 5.4% growth for the 10 year migration trend variant. This means the indicative dwelling requirement for the 15 year period falls significantly from a total of 3,880 in 2008 to either 990 (5 year migration trend) or 1,845 (10 year migration trend) in the 2011-based projections.

Table 2: differences between 2008- and 2011-based household projections for Isle of Anglesey

Sources: 2011- & 2008-based household projections, Welsh Government

	2011-based WG household projections		2008-based WG 5 year mig trend
	Principal (5 mig year trend)	10 year mig trend	
Number of households			
2011 (base year)	30,655	30,655	31,482
2026 (15 year period)	31,540	32,306	35,026
Change 2011-26 (no.)	885	1,651	3,544
Change 2011-26 (%)	2.9%	5.4%	11.3%
Household size			
2011 (base year)	2.254	2.254	2.182
2026 (15 year period)	2.181	2.183	2.031
Change 2011-26 (no.)	-0.073	-0.071	-0.152
Change 2011-26 (%)	-3.3%	-3.2%	-7.0%
Possible dwelling impacts			
Change 2011-26 (no.)	990	1,845	3,880
Change 2011-26 (%)	2.9%	5.4%	11.3%
Migration assumption			
Annual net migration (people)	40	165	206

Explaining the difference

Rebasing the population estimates

The biggest factor in explaining the difference between the 2008- and 2011-based projections is the recalibration of all data after the results of the 2011 Census were published. The previous projections relied on the changes which were seen between the 1991 and 2001 Censuses to set their assumptions about household growth rates

In particular, the 2011 Census and the 2011 mid-year population estimates gave us a new population base from which to predict population growth in the future. In order to produce population projections we also needed to know how population changed each year between 2001 and 2011. We needed to know what part of population growth came from natural change (births and deaths) and what part came from migration.

Between the 2001 and 2011 Censuses, trends which had been relatively stable for several decades changed. New data from the 2011 Census showed that for Isle of Anglesey, population growth was higher (+1.5%) than expected, and household growth lower (-2.8%) than expected. (Wales figures – population +0.9%, households -2.5%). For some age groups and household types within the population the difference was even greater.

Analysis of the new data from the Census allowed demographers at the Office for National statistics and within Welsh Government to:

- produce fertility rates and mortality rates based on corrected population estimates, so we can make predictions about future births and deaths. Rates changed significantly as they are calculated against a very different population base. In particular fertility rates help predict how many children will be born in future, and if these are wrong a set of projections can significantly under- or over- predict the population at younger age groups.
- look at migration trends (both total numbers and by age/gender) to decide which assumptions to make about future migration trends. Migration totals and the age structure of the migrant profile changed significantly, as mis-estimation of migration was one of the chief reasons for the mismatch between the 2011 Census and the old rolled-forward mid-year population estimates. If we use the wrong migration data in the projections model, growth levels will be very distorted.

These and other analyses led to a recalibration of all the data that was used to produce population and household estimates and projections. As well as fertility/mortality rates and migration trends, household composition and institutional population figures were also revised. Some elements of change were more significant than others for the Isle of Anglesey – namely changes in migration trends and changes to average household size – and these are investigated in more detail below.

Migration changes

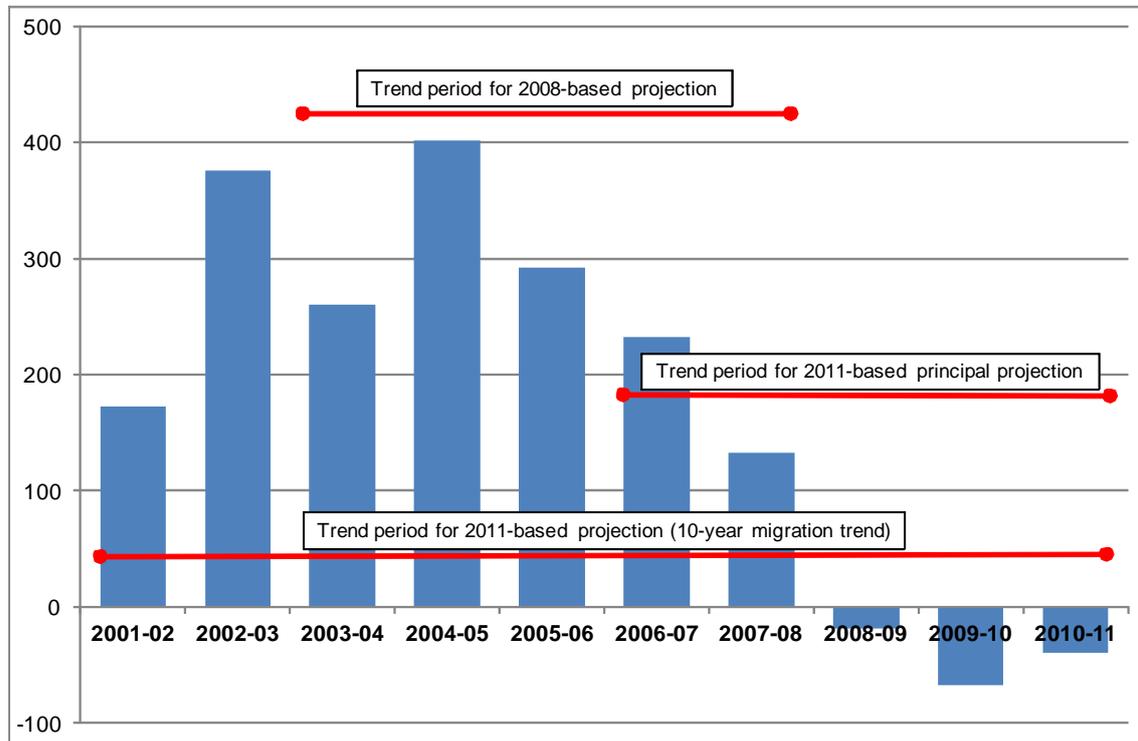
Partly, the difference between the 2008- and 2011-based projections is due to changes in the population element of household projections, in particular different migration trends. Migration is a very volatile component of population change and can fluctuate significantly from year to year. (See bottom line in table 2 above)

The new 2011-based principal projection is based on a five year migration trend and looks at the period from 2006/07 to 2010/11 – four of the five years within that period were years of economic slowdown which led to much lower levels of migration than had been seen in previous years. For three of these years Anglesey saw net out-migration (more people leaving the island than moving to live there). The average annual migration for the 5 year period was +40

2008-based projections took a trend from 2003/04, which was still mostly a period of economic migration expansion, after the accession of the A8 countries to the European Economic Union. The average annual migration for the 5 year period was +206 – more than 5 times higher than the 2011-based figure.

Chart 3: annual net migration for Isle of Anglesey, showing trend periods used in Welsh Government population projections

Sources: 2011- & 2008-based household projections, Welsh Government



The 2011-based 10 year trend projection took a longer period, which led to an average trend that was somewhere between the high levels of migration seen in 2003/04-2007/08 and the slump in migration seen between 2006/07-2010/11, as it evened out some of the peaks and troughs seen over the shorter period. The average annual migration for the 10 year period was +165.

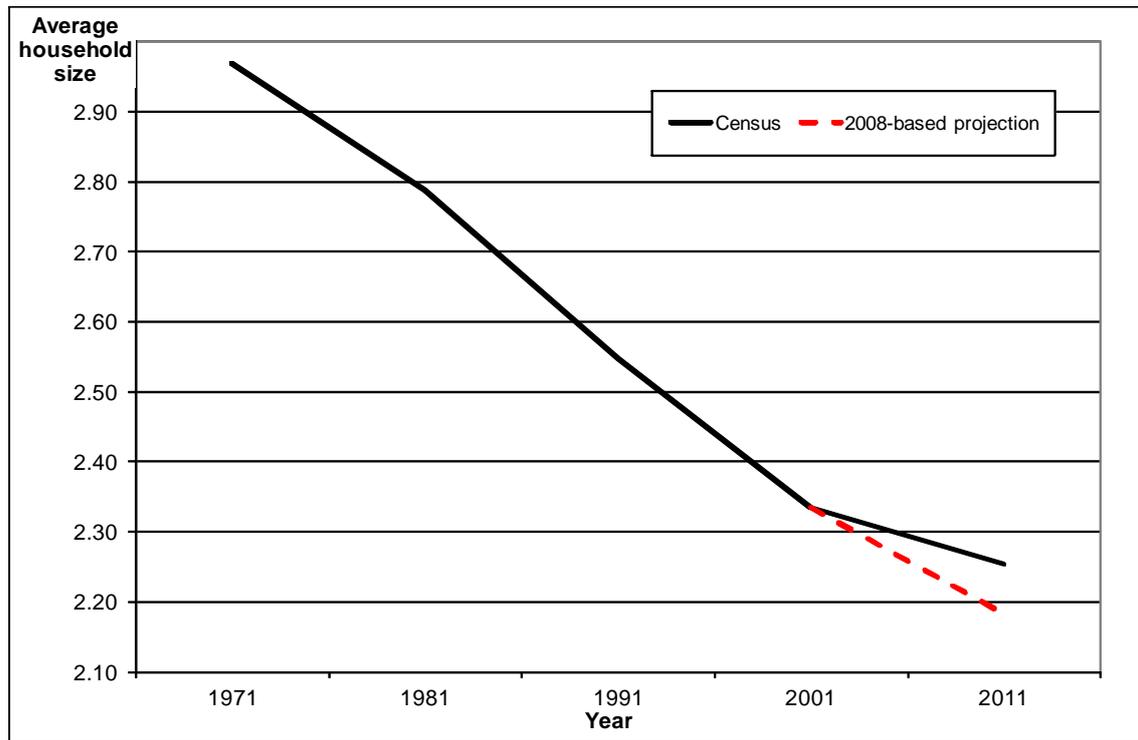
There was also some minor adjustment of the migration totals and the age structure of the migrant population after the rebasing of the mid-year population estimates, which will have impacted on fertility and mortality (and thus future population totals). However, these changes have a much lesser role in explaining the differences between the 2008-based and the 2011-based projections than the selection of the trend period.

Household size

The biggest impact from the recalibrated Census data came from the difference between predicted and observed household size at 2011.

Chart 4: change in average household size in Isle of Anglesey, 1971-2011

Sources: Census of population; 2008-based household projections, Welsh Assembly Government



The rate of change in average household size has been falling since records began. However, after many decades of an almost linear decline, between 2001 and 2011 the speed of the downward trend reduced considerably. This means fewer households were formed than was predicted by the 2008 projections – that is, average household size was larger than expected, so fewer households were forming than past trends had forecast.

The chart above shows the extent of the change in the linear trend which the 2008-based projections had continued. 2011 data shows a distinct low down in the rate of change.

Changes in institutional population levels also explain some of the differences in the projections. Though only a small proportion of the overall population, the number of people in communal establishments in 2011 was higher than 2001 by 22%, which has an impact on the number of people available to form households. The previous trend had been towards a declining institutional population. Across Wales this rise is mainly due to the increase in student populations, though not in Isle of Anglesey, where the growth in institutional population is in older age groups.

What caused the step change in household size trends?

The growth rate for smaller households was slower than predicted in previous projections. This is due to:

Fewer young people than predicted leaving the family home and forming their own households. This is often because they can't afford to do so, as house prices (both to buy and rent) have increased so much in the past 10-15 years. More of those who do leave the parental home are sharing with other non-related adults rather than setting up their own homes.

Fewer people than predicted are living alone or in small households after family break-up. They are either sharing with other, unrelated adults, or are moving back to the parental home. As a consequence, growth rates in one person and lone parent households were much slower between 2001-2011 than between 1991 and 2001.

Death rates for men have reduced. Much of the growth in single person households was expected to come from a growth in older females living alone after the death of their partners. As men are living longer, the numbers of households composed of lone older females is smaller than predicted

Overall, total numbers of households of 5+ people continue to shrink, though at a slower than previously predicted. This is due to:

More households where adult children are living with their parents. This is both for children who have never left home/have returned to the family home after higher education, and adults moving back in with their parents after relationship breakdown, because they are unable to afford to set up home on their own. Whether this is a sustained trend, or is a temporary result of economic factors (such as steep rises in house prices seen over the past decade or so and the economic downturn of 2007/8) is not yet known.

More households made up of unrelated adults. In Isle of Anglesey, these are mostly young adult households, including student households. In areas where there has been a high level of international in-migration, the increase in larger households may also be due to larger family sizes for some ethnic groups or due to house-sharing amongst young economic migrants. This is not a trend which has had a significant impact in Anglesey however.

Housing mix – future trends

The chart below shows the differences between the current make up of households by size and the predicted mix in 2026. Though both the old and new projections show an increased proportion of smaller households by 2026 and a decrease in larger households, the now superseded 2008-based projections predicted faster growth for smaller households and a steeper decline for larger households.

Overall, however, the trend is still towards more small households and fewer large households in the future, though growth is at a slower rate than predicted in the past.

Despite this slow down in growth rates, small households are expected to account for most of future increases in household numbers, especially in one person households, households formed of two people without children, and one parent households. The number and proportion of households with 4 or 5+ people are set to fall overall, though large households composed of adults only will increase.

Chart 5: housing mix, 2011 and 2026

Sources: 2011- & 2008-based household projections, Welsh Government

