

Household Projections for Scotland (2016-based)



Published on 11 July 2018

This statistical report provides trend-based projections of the number of households in Scotland and in each Council, National Park and Strategic Development Plan area. The projections include breakdowns by type of household and age of head of household.

By 2041 the number of households is projected to increase to 2.76 million

Over the next 25 years the number of households is projected to increase by 317,000 to 2.76 million.

The projected average increase will be 12,700 more households per year.

The number of households is projected to increase faster than the population

The average number of people in a household is projected to decrease, as people increasingly live in smaller households or alone.

This causes households to increase much faster than the population.

Part of the projected increase is due to more people living alone

One person households are projected to become the most common type. This is partly due to Scotland's population ageing, as older people are more likely to live alone or in smaller households.

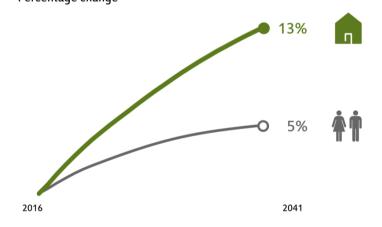
Households with children are projected to slightly decline.

Number of households

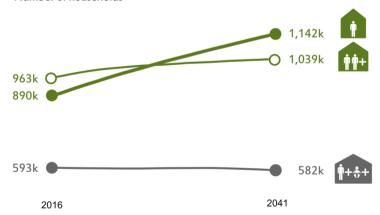


A household is defined as one person living alone or a group of people (not necessarily related) living at the same address

Percentage change



Number of households

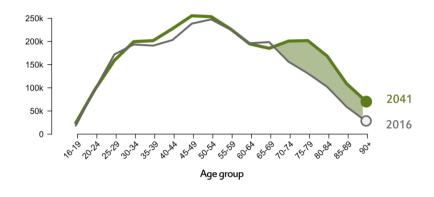


Two or more person households contain only adults, one or more adults with children households contain one or more adults and one or more children





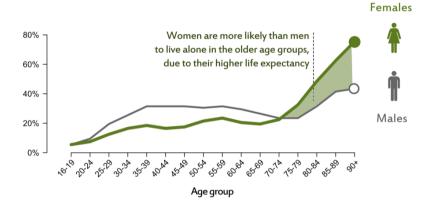
Number of households by age of the head of household



Most of the growth is among older age groups

The number of households headed by someone aged 70 or over is projected to increase by 58%, compared to an increase of just 2% for those under 70.

Percentage of people projected to live alone in 2041



Older people are more likely to live alone

Older people are more likely to live alone than younger people.

The number of people aged 70 and over living alone is projected to increase by 49% over the next 25 years, to 146,000 men and 247,000 women.

The gender difference reflects women's greater life expectancy and tendency to outlive their partners.

There is more information on Scotland's council areas in the interactive data visualisation accompanying the household projections 2016-based which is available from: https://scotland.shinyapps.io/nrs-household-projections



Contents

	•	S	
1.	Introdu	ıction	13
	1.1	Producing the household projections	13
	1.2	Interpreting the household projections	
	1.3	Uses of the household projections	
2.	Result	S	15
	2.1	Scotland: Overall number of households	15
	2.2	Scotland: Type of household and age of head of household	17
	2.3	Council areas: Overall number of households	
	2.4	Council areas: Type of household	
	2.5	Council areas: Age of head of household	
	2.6	National Parks: Overall number of households	34
	2.7	National Parks: Type of household and age of head of household	34
	2.8	Strategic Development Plan areas: Overall number of households	38
	2.9	Strategic Development Plan areas: Type of household and age of hea	d of
		household	38
3.	Compa	rison with previous household projections	46
4.	Varian	t household projections	49
	4.1	Introduction to the variant household projections	49
	4.2	Variation in migration assumptions	
5.	Sources and methods		53
	5.1	Summary	53
	5.2	Household types and age groups used in the household projections	
	5.3	Data sources	
	5.4	Methodology	61
6.	Definitions and limitations of the household projections		65
	6.1	Definitions	65
	6.2	Limitations	66
7	Relate	d nublications and websites	68

List of statistical tables for this publication (available on the NRS website)

Tables available for principal, low migrations, and high migration projections for 2016 - 2041:

Table	Table description
number	rabio accomplicit
Table 1	Overall projections for Scotland
Table 2	Household projections for Scotland by type of household
Table 3	Household projections for Scotland by age of household head
Table 4	Projected number of households in Scotland, by household type and age of head of household
Table 5	Projected percentage of people living alone, by gender and age group
Table 6	Household projections by area
Table 7	Projected average household size by area
Table 8	Projected percentage of households of each type, by area
Table 9-13	Household projections by area, by type of household
Table 14	Projected percentage of households by area, by age of household head
Table 15-19	Household projections by area, by age of household head
Table 20	Comparison between principal, low and high migration variant household projections, by area
Table 21	Proportion of households in Scotland in each household type principal and variant projections
Table 22	Proportion of households in Scotland by age of household head; comparing principal and variant projections

Detailed Council level tables available for principal, low migrations, and high migration projections for 2016 - 2041:

Table number	Table description
Per council	Detailed breakdown of projection by age of household head and by type of household

List of Figures

Figure	1:	Projected number of households in Scotland, 2016 to 20418
Figure	2:	Projected population and household change in each NP and SDP area, between 2016 and 2041
Figure	3:	Summary of projected percentage of people living alone in each NP and SDP area, 2016 and 204111
Figure	4:	Percentage of households headed by people aged 65 or over in each NP and SDP area, 2016 and 204112
Figure	5:	Projected change in number of households and population in Scotland, 2016 to 2041
Figure	6:	Change in household types in Scotland, 2001 to 201616
Figure	7:	Projected number of households in Scotland by household type, 2016 and 2041 17
Figure	8:	Projected number of households in Scotland by age of head of household, 2016 and 2041
Figure	9:	Projected number of households in Scotland by household type and age of head of household, 2016 and 2041
Figure	10:	Projected percentage of people living alone in 2016 and 2041, by age and gender 21
Figure	11:	Projected number of households by Council area, 2016 and 204125
Figure	12:	Projected percentage change in the number of households by Council area, 2016 to 2041
Figure	13:	Projected percentage change in households by Council area, between 2016 and 2041 (Map)27
Figure	14:	Projected average household size by Council area, 2041 (Map)28
Figure	15:	Projected age ratio of adults in households containing one adult with no children by Council area, 2041 (Map)31
Figure	16:	Projected percentage of households with children by Council area, 2041 (Map)32
Figure	17:	Projected percentage of households headed by someone aged 60 or over by Council area, 2041 (Map)
Figure	18:	Projected number of households in Scotland's National Parks, by household type, 2016 and 2041
Figure	19:	Projected number of households in Scotland's National Parks, by age of head of household, 2016 and 2041

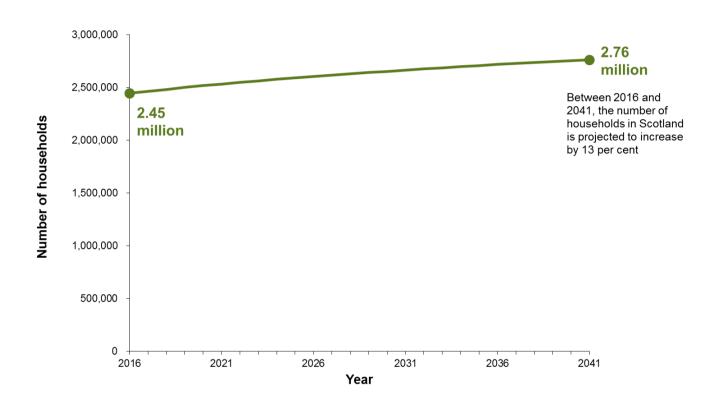
Figure	20a	Projected number of households in CNP by household type and age of head of household, 2016 and 204136
Figure	20b	: Projected number of households in LLTNP by household type and age of head of household, 2016 and 204137
Figure	21:	Projected number of households in Strategic Development Plan areas, by household type, 2016 and 2041
Figure	22:	Projected number of households in Strategic Development Plan areas, by age of head of household, 2016 and 2041
Figure	23a	: Projected number of households in Glasgow & Clyde Valley by household type and age of head of household, 2016 and 2041
Figure	23b	e: Projected number of households in Aberdeen City & Shire by household type and age of head of household, 2016 and 2041
Figure	230	: Projected number of households in SESplan by household type and age of head of household, 2016 and 2041
Figure	230	Projected number of households in TAYplan by household type and age of head of household, 2016 and 204145
Figure	24:	Comparison with previous household principal projections (2012-, 2014- and 2016-based) and household estimates
Figure	25:	Projected percentage change in the number of households and population by Council area; 2014- and 2016-based household and population projections
Figure	26:	Principal, low and high migration variants, 2016-based population and household projections for Scotland50
Figure	27:	Projected percentage change in households, principal, low and high migration variant projections, by Council area, 2016 to 2041
Figure	28:	Flow diagram of the method used to produce household projections53
Figure	29:	Map showing the council areas and council area parts within strategic development plan area boundaries
Figure	30:	Map showing the council area parts within national park area boundaries 60
Figure	31:	Map showing the council area parts within Cairngorms National Park and the boundary of Highland II built up from data zones

Main points

This report presents projections of the number of households in Scotland from 2016 to 2041, based on the <u>2016-based population projections for Scotland</u>. These household projections are trend-based and are not, therefore, policy-based forecasts of what the Government expects to happen. Specifically, the assumptions do not take account of the June 2016 referendum vote to leave the European Union.

Change in Scotland's households

Figure 1: Projected number of households in Scotland, 2016 to 2041



- Between 2016 and 2041, the number of households in Scotland is projected to increase by 13 per cent to 2.76 million an average annual increase of about 12,700 households (<u>Figure 1</u>). Over the same period, Scotland's population is projected to increase by five per cent (<u>Figure 5</u>). This rise in population explains some of the increase in household numbers over the projection period.
- However, the household projections increase by a larger percentage than the population projections. This is the result of more people living alone or in smaller households.
- Scotland's population is ageing. The number of people aged 65 and over is increasing much
 faster than the number of children and younger adults. This has an impact on household
 structure as children tend to live in larger households and older people in smaller ones.
- The average household size is projected to decrease from 2.17 people in 2016 to 2.02 people in 2041.

Household type in Scotland

- Almost a quarter of people aged 16 or over are projected to live alone in 2041 (24 per cent), compared to 20 per cent in 2016. The number of households containing just one adult is projected to increase from 889,700 (36 per cent of all households) to around 1.14 million (41 per cent) (Figure 7).
- Households containing just one adult with children are projected to increase by 22 per cent, from 159,200 to 194,400 households. However, they make up a slightly increasing percentage of all households throughout the projection period (rising from 6.5 per cent in 2016 to 7.0 per cent in 2041).
- In both 2016 and 2041, almost a third of households (31 per cent and 32 per cent respectively) contain two adults only. However, the number of such households is projected to rise from 761,000 in 2016 to 871,700 in 2041, an increase of 15 per cent.
- In contrast, the number of larger households is projected to fall. Those containing two or more adults with children are projected to decrease by 11 per cent by 2041. This will take them from making up 18 per cent of all households in 2016 to 14 per cent in 2041. There is also a projected decrease, of 17 per cent, in the number of households containing three or more adults without children, taking their share of the total from eight per cent in 2016 to six per cent in 2041.

Age of head of household in Scotland

- The greatest increase is for households headed by someone aged 70 or over, due to the ageing population. The number of such households is projected to increase by 58 per cent between 2016 and 2041, from 473,200 to 746,900 (Figure 8). The increases are particularly large in the oldest age groups, with the number of households headed by someone aged 85 or over projected to more than double from 85,900 to 178,500.
- In contrast, households headed by someone aged under 70 are projected to increase by just two per cent, to around 2.02 million.
- Older people tend to live in smaller households. By 2041 there are projected to be 464,400 people aged 65 and over living alone, an increase of 37 per cent from 339,800 in 2016. Increases are particularly large in the oldest age groups (85 and over) where the number of people living alone is projected to be more than twice as high by 2041 (an increase of 108 per cent, from 65,400 to 136,100) (Figure 10).

Council area projections

• The number of households is projected to increase in almost every Council area over the projection period (Figure 12) The largest projected increases are in Midlothian, East Lothian and City of Edinburgh (36, 26 and 26 per cent respectively). In contrast, there are just four Council areas where the number of households is projected to decrease; these are Na h-Eileanan Siar (a projected decrease of six per cent), Inverciyde (five per cent), Argyll and Bute (two per cent) and North Ayrshire (less than one per cent).

Strategic Development Plan (SDP) area and National Parks projections

• The number of households is projected to increase in each of the four Strategic Development Plan (SDP) areas in Scotland from 2016 to 2041, ranging from an increase of 11 per cent in the TAYplan area to an increase of 20 per cent in the SESplan area (Figure 2).

- While a seven per cent increase is projected in the number of households in Cairngorms National Park (CNP), an eight per cent decrease is projected in Loch Lomond and the Trossachs National Park (LLTNP) (Figure 2).
- The projected increases in number of households in most of these areas is due to a combination of increasing population (Figure 2), and decreasing average number of people per household (or 'household size'). The projections indicate that by 2041 the proportion of people living alone will have risen in each National Park and SDP area. By 2041, the proportion of people aged 16 and over projected to be living alone in Glasgow & Clyde Valley is 27 per cent compared with 24 per cent for Scotland as a whole. In all other SDP areas and in both National Park areas this proportion is projected to be between 20 and 23 per cent (Figure 3).

Figure 2: Projected population and household change in each NP and SDP area, between 2016 and 2041

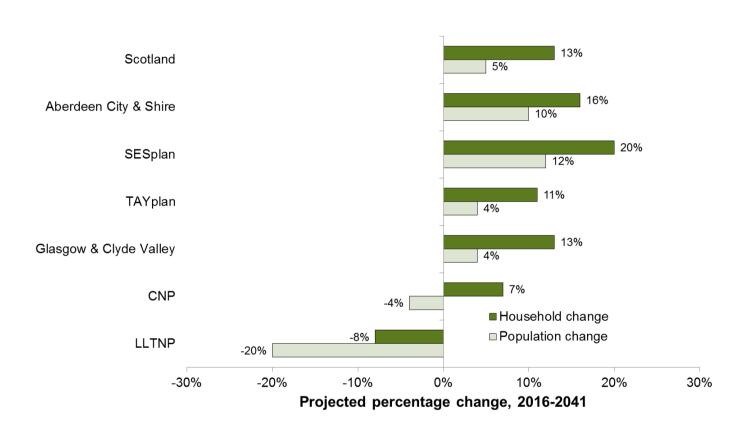
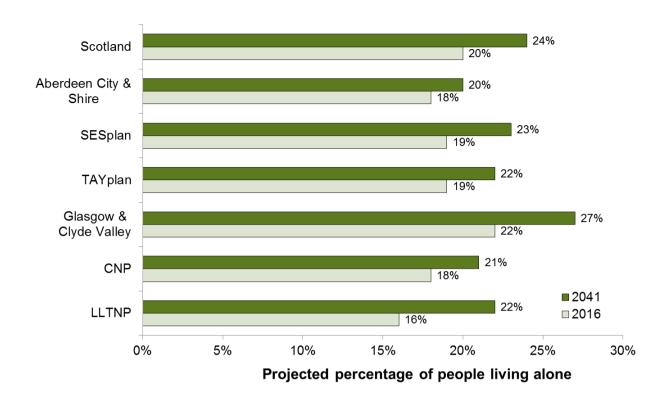
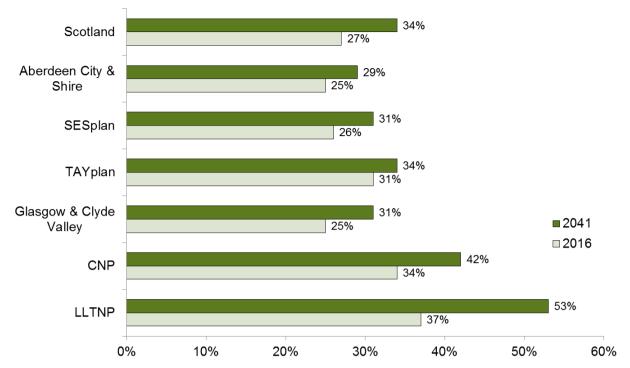


Figure 3: Summary of projected percentage of people living alone in each NP and SDP area, 2016 and 2041



 Household size is projected to decrease as the number of older people in the population rises, because older people are more likely to live in smaller households or alone. By 2041, the projections indicate the percentage of households headed by older people aged 65 or over will have increased in each SDP and National Park area (Figure 4). This proportion is projected to range from 29 per cent of households (Aberdeen City and Shire) up to 53 per cent (LLTNP).

Figure 4: Percentage of households headed by people aged 65 or over in each NP and SDP area, 2016 and 2041



Percentage of households headed by people aged 65 or over

Variant projections

- This publication also includes two sets of variant projections, based on population projections using different assumptions about future migration. The percentage increase in households between 2016 and 2041 is 8 per cent for the low migration variant and 17 per cent for the high migration variant, compared to 13 per cent for the principal projection (Figure 26).
- The differences in projected number of households in 2041 between the principal projection and the high and low migration variants are greatest for the city Council areas (Aberdeen, Dundee, Edinburgh and Glasgow) (Figure 27).

Differences from the previous household projections

 The current household projections are slightly lower than the previous projections, for Scotland as a whole. The previous projections showed growth of 14 per cent over a 25 year period; in the current projections, the equivalent figure is 13 per cent (<u>Figure 24</u>). However, this is not the case for all Council areas which show more variation (<u>Figure 25</u>).

1. Introduction

1.1 Producing the household projections

Household projections are produced by the National Records of Scotland (NRS) every two years. The method and sources of data used for the 2016-based household projections have not changed significantly from those used for the 2014-based projections.

This set of projections covers the period from 2016 to 2041, a projection period of 25 years. The household projections incorporate the latest (2016-based) population projections and the 2016 and 2017 household estimates (both available on the NRS website). Information from Scotland's Census 1991, 2001 and 2011 and the 2016 Scottish Household Survey is used to project trends in the types of household that people are living in. Data from a range of sources on residents in communal establishments, such as care homes or prisons, are also included. The results of the household projections are presented for Scotland, and for each Council, Strategic Development Plan (SDP) and National Park area.

Further information on the data and methods used to produce the household projections is available in <u>Section 5</u>. Definitions of some of the terms used in this publication can be found in <u>Section 6.1</u>.

1.2 Interpreting the household projections

The household projections have limitations. A projection is a calculation showing what happens if particular assumptions are made. The household projections are trend-based and are not, therefore, policy-based forecasts of what the Government expects to happen. Specifically, the assumptions do not take account of the June 2016 referendum vote to leave the European Union.

They are based on the population projections and trends in household formation. The assumptions used for the population projections, such as future migration, fertility and mortality, will therefore affect the household projections. Further information on the assumptions can be found in the <u>2016-based sub-national population projections</u> publication.

No forecast is made of possible future changes that may alter these trends, such as economic and social change, as well as imbalances between housing supply and demand.

There will be more uncertainty in the projections for smaller areas and smaller groups of people. The populations of the two National Parks in particular are quite small, and forward projections for such small populations are less reliable than for larger communities. Since smaller areas tend to be affected more by migration, which is harder to predict, projections for these areas tend to be less reliable than those for areas with larger populations. The uncertainty in the projections also increases as they are taken further into the future, therefore care must be taken in their interpretation. More information on the limitations of the household projections can be found in Section 6.2.

This report focuses on the 'principal projection', the projection based on the assumptions that we think are most likely to occur. The report also includes sections on household projections prepared using alternative assumptions, see <u>Section 4.2</u>. These variant projections reflect possible effects of uncertainty in the assumptions underlying the population projections. Low and high migration variant household projections, which use the low and high migration variant population projections, are presented in <u>Section 4</u>.

1.3 Uses of the household projections

Household projections are mainly used for informing council decisions about future housing need and service provision (such as waste collection and community care). The projections feed into development plans, including assessments of housing need and demand for the future¹. The projections are also used to help inform policy development and for answering requests for information from Ministers, councils, academics, other organisations and the general public.

Household estimates and projections (for Scotland and the UK) are used directly and indirectly in the production of certain statistics contained within the <u>Annual Government Expenditure and Revenues Scotland (GERS)</u> publication and the <u>Quarterly National Accounts Scotland (QNAS)</u> releases which are available on the Scottish Government (SG) website. The estimates and projections are used in QNAS as an auxiliary variable (alongside consumption data) in the production of Household Final Consumption Expenditure estimates by product. In turn, these expenditures inform the GERS publication in estimating revenues associated with consumption (e.g. VAT and duties).

Some councils and other planning authorities use information from the household projections, such as the proportion of people of each age group living in communal establishments, in producing local projections of future household numbers. For example, some Development Plans may demonstrate departures from projections that seem better able to fit local circumstances.

1) Household projections are only one element to be taken into account in assessing future housing need and demand. More information about the planning system in Scotland is available from the Scottish Government website.

2. Results

2.1 Scotland: Overall number of households

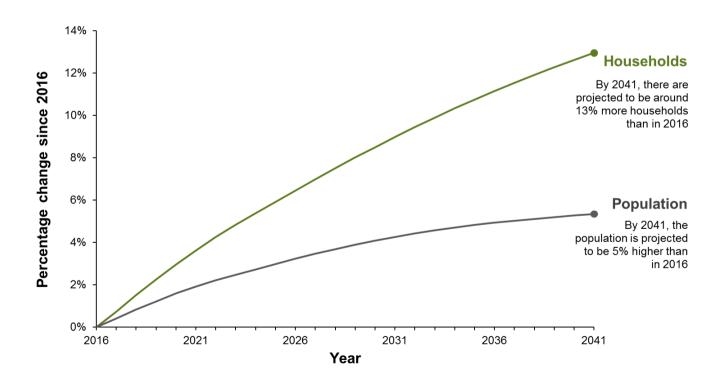
(Table 1)

The number of households in Scotland is projected to increase from 2.45 million to 2.76 million between 2016 and 2041, an increase of 13 per cent. The projected yearly increase in the number of households is around 12,700. The rate of the increase is lower in the later years of the projection period.

The household projections are affected by the projected trends in the Scottish population. The population is projected to increase by five per cent between 2016 and 2041, with average annual increases that are greater at the beginning of the projection period than at the end. This rise in population explains some of the increase in household numbers over the projection period.

However, the household projections increase by a larger percentage than the population projections, as shown in (Figure 5). The larger change in the household projections is a result of more people living alone or in smaller households (Section 2.2). Scotland's population is ageing, with the number of people aged 65 or over increasing much faster than the number of children and younger adults. This has an impact on household structure as children tend to live in larger households and older people in smaller ones.

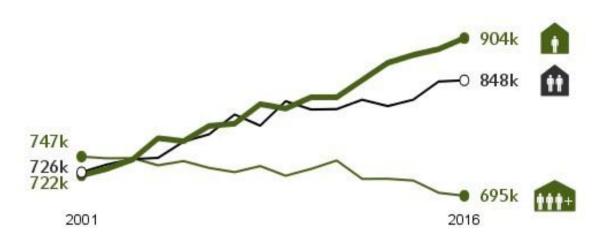
Figure 5: Projected change in number of households and population in Scotland, 2016 to 2041



The average household size is projected to decrease from 2.17 people in 2016 to 2.02 people in 2041, continuing the long-running decline in average household size. In 1961, the average

household size was over three people, and it has been falling over time as more people live in smaller households and fewer people live in large households. However, the rate of change has been slowing down in recent decades. <u>Figure 6</u> shows how one person households have become the most common household size in recent years.

Figure 6: Change in household types in Scotland, 2001 to 2016



The economic downturn which began in 2008 also had an effect on household numbers. Numbers of households have risen more slowly since then². A reduction in the number of new homes being built³ and problems with affordability and obtaining mortgages, amongst other factors, have contributed to a slower rate of increase in household numbers since 2008 than earlier in the decade. The biggest effect of this has been on young adults. The number of young adults aged 20 to 34 renting or living with their parents has been rising, which affects overall household numbers and sizes. In contrast, the level of home ownership among young adults has been falling⁴.

^{2) &#}x27;Estimates of Households and Dwellings in Scotland, 2017' (Table 1) on the NRS website

^{3) &#}x27;Housing Statistics for Scotland - supply of new housing', Scottish Government

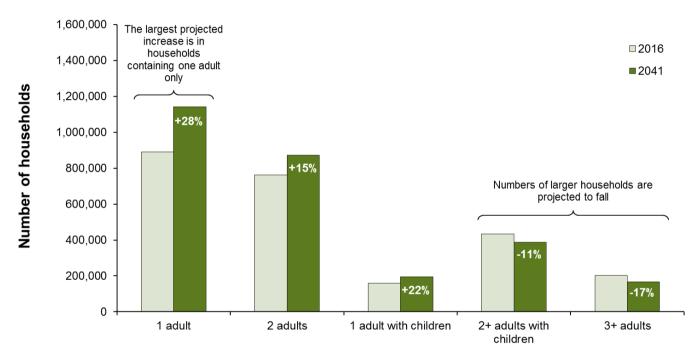
^{4) &#}x27;Why are more young people living with their parents?', Office for National Statistics

2.2 Scotland: Type of household and age of head of household

(Tables 2 to 4)

As described above, the decline in average household size in Scotland results from more people living alone or in smaller households⁵. Figure 7 show the projected number of households of each type in 2016 and 2041. The largest projected increase (in number and percentage terms) is in households containing one adult only. The numbers of households containing two adults only and one adult with children are also projected to rise. In contrast, numbers of larger households are projected to fall.

Figure 7: Projected number of households in Scotland by household type, 2016 and 2041



Type of household

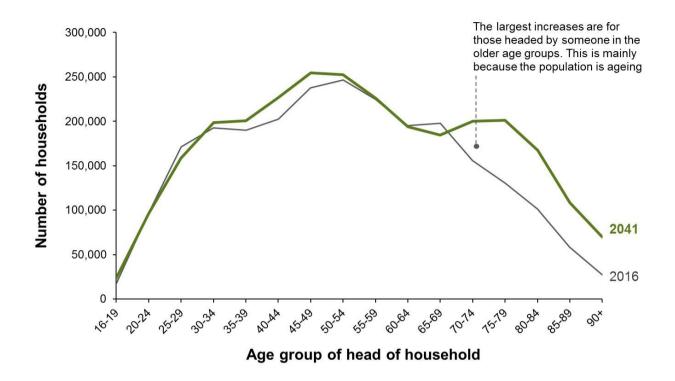
The number of households broken down by the age group of the head of household is shown in Figure 8. The largest increases are for those headed by someone aged 70 or over. By 2041, there are projected to be 746,900 households headed by someone in this age group, an increase of 58 per cent from 2016. This is mainly because Scotland's population is ageing. The latest population projections show that the number of people aged 70 or over will increase by 66 per cent between 2016 and 2041. The increases in household numbers are even more striking when focussing on those aged 85 or over. The number of households headed by someone in this age group is projected to more than double from 85,900 to 178,500.

In contrast, the overall number of households headed by someone aged under 70 is projected to increase by just two per cent between 2016 and 2041, Within this age group, there are decreases in the projected number of households headed by someone aged 20 to 29 or by someone aged 60 to 69 (of five per cent and four per cent respectively), while there are relatively small increases projected in the number of households headed by someone in other age groups. Unlike those

^{5) &#}x27;Scottish household survey 2016: annual report' (Section 3.2), Scottish Government

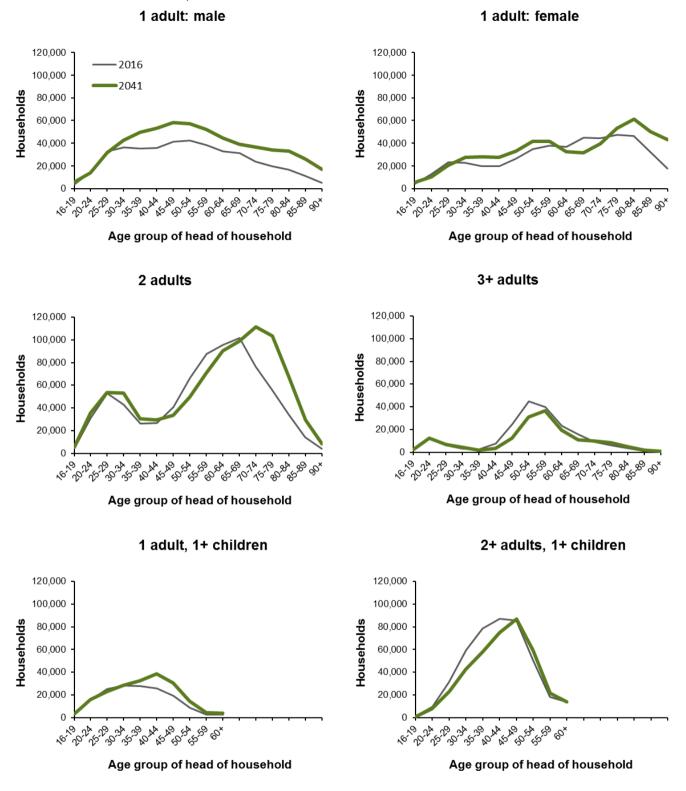
aged 70 or over, the number of people aged 16 to 69 is projected to decrease (by four per cent) in the population projections. The overall increase in households headed by someone aged under 70 is caused in part by people becoming more likely to live in smaller households than they have in the past.

Figure 8: Projected number of households in Scotland by age of head of household, 2016 and 2041



Projected household numbers for Scotland, by household type and age of head of household are shown in <u>Figure 9</u>.

Figure 9: Projected number of households in Scotland by household type and age of head of household, 2016 and 2041



One adult households (Tables 5 and 9):

In 2016, 20 per cent of the population aged 16 or over lived alone and this is projected to rise to 24 per cent by 2041. People are more likely to live alone as they become older, with 62 per cent of people aged 85 and over projected to be living alone in 2041, up slightly from 55 per cent in 2016. The percentages vary according to gender and age, as illustrated in <u>Figure 10</u>.

In 2041, in most age groups up to 75 years old, men are more likely to live alone than women. From the age of 75 onwards, however, women are more likely to live alone, and this likelihood increases with age. This pattern reflects women's greater life expectancy, and the tendency of women to marry men who are older than them, which means that women are more likely to outlive their partners.

The gap between the average life expectancy of men and women in Scotland is decreasing⁶. This means that the number of older men is projected to increase more rapidly than the number of older women, which contributes to the projected increase in the total number of men living alone. In 2016, 76,300 men aged 70 and over were living alone; this is projected to nearly double (92 per cent increase), to 146,500 in 2041. This compares to an increase of 32 per cent in the number of women aged 70 or over living alone, to 247,400.

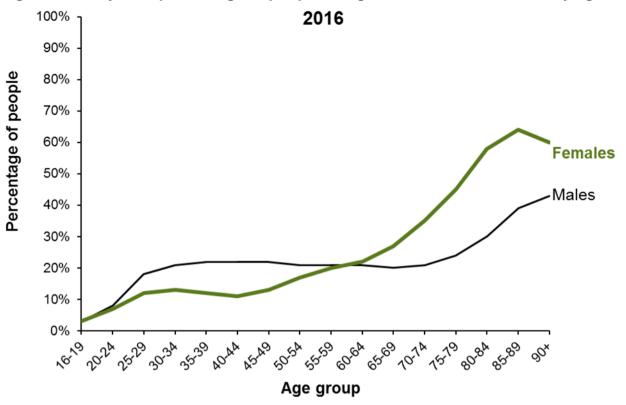
The number of men aged 85 or over living alone is projected to more than double from 16,200 to 42,900, a 165 per cent increase, compared to a 90 per cent increase for women. Despite the sharper rise in the number of men living alone there will still be many more women aged 85 or over living alone. In 2041, 93,300 women aged 85 or over (67 per cent of women in this age group) are projected to live alone, compared to 42,900 men (42 per cent of men in this age group).

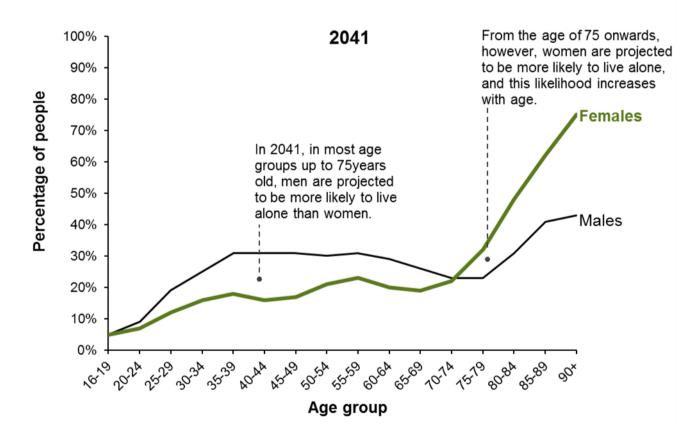
The substantial projected increase in the number of older households, and particularly the increase in older people living alone, has implications for services and policies aimed at supporting older people.

_

⁶⁾ Further information can be found in '<u>Life Expectancy for Administrative Areas within Scotland 2014-2016</u>' on the NRS website.

Figure 10: Projected percentage of people living alone in 2016 and 2041, by age and gender





Households containing two or more adults without children (Tables 10 and 11):

The number of two adult households is projected to rise by 15 per cent between 2016 and 2041, from 761,000 to 872,000. However, the percentage of all households which contain just two adults remains relatively stable at just under a third (31 to 32 per cent).

The increase in the number of two adult households is mainly down to a large increase in those headed by someone aged 65 or over. This is a result of a projected increase in the population in this age group, as well as the narrowing of the gap between male and female life expectancy.

The number of two adult households headed by someone aged 65 or over is projected to increase by 46 per cent from 287,000 in 2016 to 419,000 in 2041. The number of two adult households headed by someone aged 85 or over is projected to more than double over the same period, to over 38,300. By 2041 almost half (48 per cent) of two adult households will be headed by someone aged 65 or over, compared with 38 per cent in 2016.

In contrast, the number of two adult households headed by someone aged 45 to 64 is projected to fall by 16 per cent (a reduction of 46,000 households). The number of such households headed by someone aged under 45 is projected to increase by 13 per cent.

Meanwhile, the number of households with three or more adults is projected to decline for those headed by someone aged between 35 and 69, but increase for most of the younger and older age groups. In 2016 eight per cent of all households were this type, this falls to six per cent in 2041.

Households with children: (Tables 12 and 13)

In 2016, six per cent of all households consisted of one adult living with one or more children. Although the number of such households is projected to increase in numbers by 22 per cent by 2041, the proportion of households which are this type remains roughly constant. The number of households of this type is projected to rise for most ages of head of household, with the majority of the increase being among those aged between 35 and 49. Decreases in the number of households of this type are seen where age of head of household is between 20 and 29.

In 2016, 18 per cent of all households contained two or more adults with children, a figure that is projected to fall to 14 per cent by 2041 (a reduction of 11 per cent in household numbers). There are reductions in the numbers headed by someone under 45, but increases in all older age groups.

2.3 Council areas: Overall number of households

(Table 6)

Household projections by household type and age group for all 32 Council areas can be found in the <u>detailed Council area tables</u> on the National Records of Scotland (NRS) website. It should be noted that projections for areas with small populations tend to be less reliable than those for areas with larger populations.

The number of households in almost every Council area is projected to increase over the projection period. <u>Figure 11</u> shows the projected number of households in each Council area in 2016 and 2041.

<u>Figure 12</u> shows the projected percentage change in the number of households between 2016 and 2041. This information is also presented as a map in <u>Figure 13</u>. The largest projected percentage increases between 2016 and 2041 are in Midlothian (36 per cent), East Lothian (26 per cent) and City of Edinburgh (26 per cent). In contrast, just four Council areas are projected to have a fall in household numbers. These Council areas are Na h-Eileanan Siar (six per cent decrease), Inverclyde (five per cent), Argyll and Bute (two per cent) and North Ayrshire (less than one per cent decrease).

The changes in household numbers can be compared to the changes in the projected population for each Council area, between 2016 and 2041⁷. The projected population changes range from a fall of 14 per cent for Na h-Eileanan Siar to an increase of 31 per cent for Midlothian. Although 11 Council areas are projected to have a decline in population over the 25 years, only four are also projected to experience a decline in household numbers. This difference is a result of people becoming increasingly likely to live in smaller households, as discussed in Section 2.2.

The Council areas with the largest projected average household size (number of people per household) in 2041 are East Renfrewshire (2.28) and Aberdeenshire (2.27). The areas with the smallest average household size are Na h-Eileanan Siar (1.86), Argyll and Bute (1.88) and Renfrewshire (1.88). The average household size is projected to be less than two people for 14 of the 32 Council areas by 2041. Figure 14 is a map showing the average household size for each Council area in 2041. The map shows that the areas with the largest average household sizes (over 2.10) tend to be adjacent to the cities which have low average household sizes. This is related to the different population and household structure of these areas, as young people move

_

⁷⁾ The projected percentage change in the population for each Council area is published in Table 3 of the <u>2016-based Population Projections for Scottish areas</u> on the NRS website.

to the cities for work or study, and then people are more likely to move to surrounding Council areas as their families grow, for example as people form couples and have children.					

Figure 11: Projected number of households by Council area, 2016 and 2041

Number of households

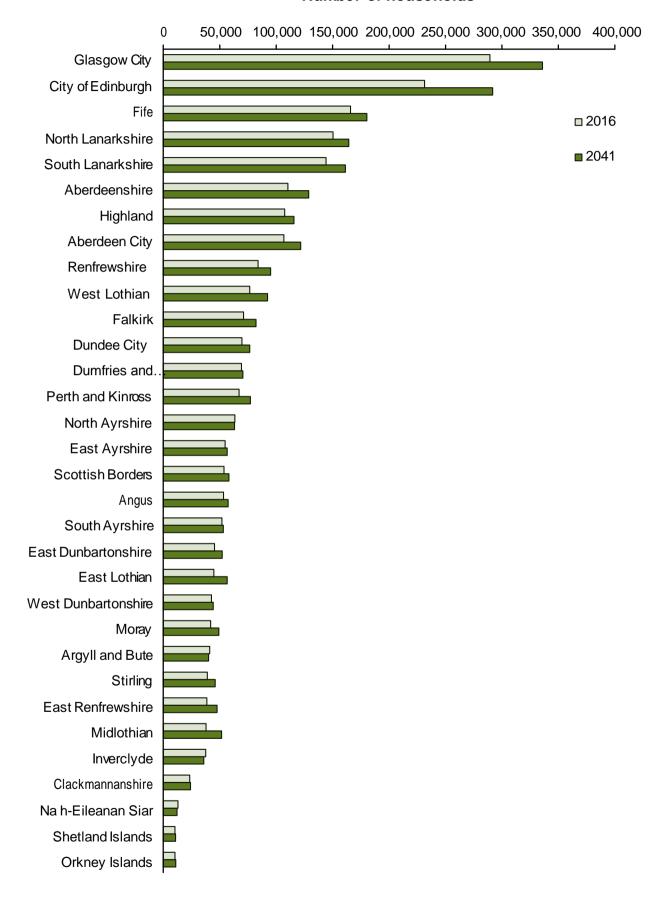


Figure 12: Projected percentage change in the number of households by Council area, 2016 to 2041



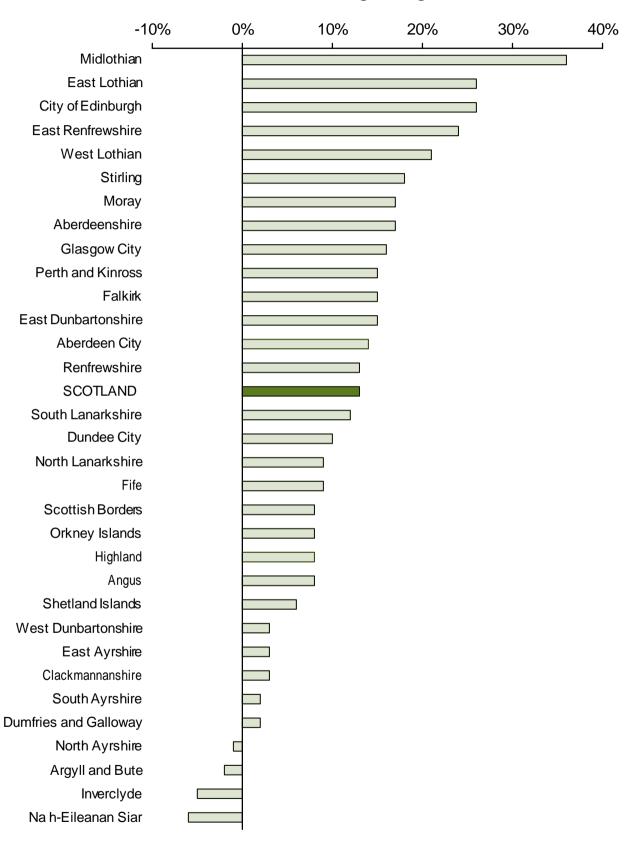
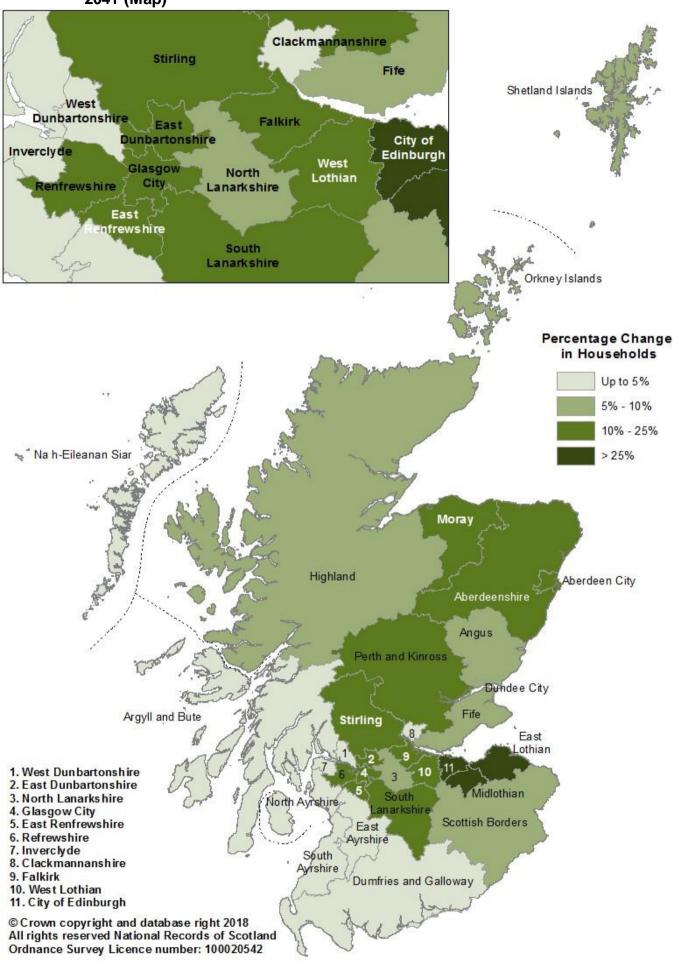


Figure 13: Projected percentage change in households by Council area, between 2016 and 2041 (Map)



Clackmannanshire Stirling Shetland Islands Dunbartonsh Falkirk Dunbartonshire City of Inverciyde Edinburgh West Glasgow North Lothian Renfrewshire narkshire East Renfrewshire South Lanarkshire Orkney Islands Household size Up to 1.95 1.95 - 2.0 2.0 - 2.1 * Na h-Eileanan Siar >2.1 Highland Aberdeen City Aberdeenshire Angus Perth and Kinross Dundee City Argyll and Bute Stirling East othian 1. West Dunbartonshire 2. East Dunbartonshire Midlothian South 3. North Lanarkshire North Ayrshire 4. Glasgow City Lanarkshire Scottish Borders 5. East Renfrewshire East 6. Refrewshire Ayrshire 7. Invercly de South 8. Clackmannanshire Ayrshire 9. Falkirk Dumfries and Galloway 10. West Lothian 11. City of Edinburgh © Crown copyright and database right 2018 All rights reserved National Records of Scotland Ordnance Survey Licence number: 100020542

Figure 14: Projected average household size by Council area, 2041 (Map)

2.4 Council areas: Type of household

One adult households (Table 9):

In every Council area there is a projected increase in the number of people living alone between 2016 and 2041, ranging from a 10 per cent increase in Argyll and Bute to a 51 per cent increase in East Renfrewshire. The map in <u>Figure 15</u> shows the projected age ratio of adults in households which contain just one adult (and no children), in each Council area in 2041.

By 2041, half of the households in Glasgow City (50 per cent) are projected to be single adult households, compared to the Scottish figure of 41 per cent. The lowest percentage of single adult households is found in Aberdeenshire (31 per cent). In general, the figures are highest in the cities and in the west of the country.

Households containing two or more adults without children (Tables 10 and 11):

There is a projected increase in two adult households between 2016 and 2041 in all but four Council areas. The largest increase is in Midlothian (37 per cent). The Council areas with a projected decrease are Inverclyde (10 per cent decrease), Na h-Eileanan Siar (three per cent), North Ayrshire (less than one per cent) and Argyll and Bute (less than one per cent). The proportion of households consisting of two adults but no children in 2041 is projected to vary from 25 per cent in Renfrewshire, Inverclyde and East Renfrewshire to 37 per cent in Aberdeenshire, compared to a Scottish figure of 32 per cent.

In contrast, there are projected reductions in three or more adult households in all Council areas apart from Midlothian (where a five per cent increase is projected). Na h-Eileanan Siar is projected to experience the greatest percentage decrease at 44 per cent. The percentage of households of this type in each Council area ranges from four per cent (Scottish Borders) to nine per cent (East Dunbartonshire) in 2041.

Households containing children (Tables 12 and 13):

The overall number of households containing children is projected to fall by almost two per cent by 2041 in Scotland as a whole. The number of such households containing just one adult is projected to increase by 22 per cent by 2041 whereas the number containing two or more adults is projected to fall by 11 per cent.

Nearly all Council areas are projected to see an increase in the number of households consisting of one adult with one or more children between 2016 and 2041. The highest percentage increase occurs in Moray, where the number of households is projected to rise by 68 per cent (from 2,200 to 3,600). Glasgow City is the only Council area with a projected reduction (decrease of one per cent). West Lothian is projected to have the highest proportion of households of this type in 2041 (10 per cent of all households), and Aberdeen City the smallest (four per cent of all households).

The number of households containing two or more adults with children is projected to decrease between 2016 and 2041 in 25 of the 32 Council areas. The largest percentage decrease is found in Na h-Eileanan Siar (39 per cent fall) while the largest percentage increase is found in Midlothian (25 per cent increase). Glasgow City is projected to have the smallest proportion of this type of household (10 per cent) whilst Aberdeenshire is projected to have the highest (21 per cent).

<u>Figure 16</u> shows the projected percentage of households with children (regardless of the number of adults) in each Council area in 2041. In general, it is the Council areas which are reasonably close to the main cities which have the highest percentages of households with children. The figures are lower in the cities themselves, and in the more remote rural areas and island Council

areas. East Renfrewshire, Midlothian, West Lothian, Aberdeenshire and East Lothian have the highest proportions of households containing children, at around 26 to 29 per cent of all households. Na h-Eileanan Siar has the smallest proportion, 16 per cent.

2.5 Council areas: Age of head of household

(Tables 14 to 19)

In 2041, just under half of Council areas are projected to see a reduction in the number of households headed by adults aged under 45 (14 Council areas). In almost three fifths of Council areas (18) there is a projected decrease in the number of households headed by someone aged 45 to 59, with mainly the city Council areas having increases in this age group. In contrast, the number of households headed by someone aged 60 to 74 is projected to rise in almost half of the Council areas (15) by 2041.

The largest increase in household numbers is projected to occur for those headed by people aged 75 and over. By 2041 around one in five (20 per cent) of households in Scotland are projected to be headed by someone aged 75 or over, compared with 13 per cent in 2016. Every Council area is projected to see an increase of households headed by this age group. The smallest percentage increases are in Dundee City (40 per cent), Na h-Eileanan Siar (47 per cent) and Glasgow City (49 per cent). In contrast, the numbers of such households are projected to increase by more than 90 per cent in West Lothian (111 per cent increase), East Lothian (93 per cent), Clackmannanshire (92 per cent) and Midlothian (91 per cent). Dumfries and Galloway has the highest proportion of such households in 2041 (28 per cent) and Glasgow City the lowest (12 per cent).

<u>Figure 17</u> shows the projected percentage of households headed by someone aged 60 or over in 2041. Four Council areas are projected to have over half of their households headed by someone in this age group by 2041: Argyll and Bute (54 per cent), Na h-Eileanan Siar (53 per cent), South Ayrshire (52 per cent) and Dumfries and Galloway (52 per cent). The lowest proportions are in the city Council areas (30 to 33 per cent).

Figure 15: Projected age ratio of adults in households containing one adult with no children by Council area, 2041 (Map)

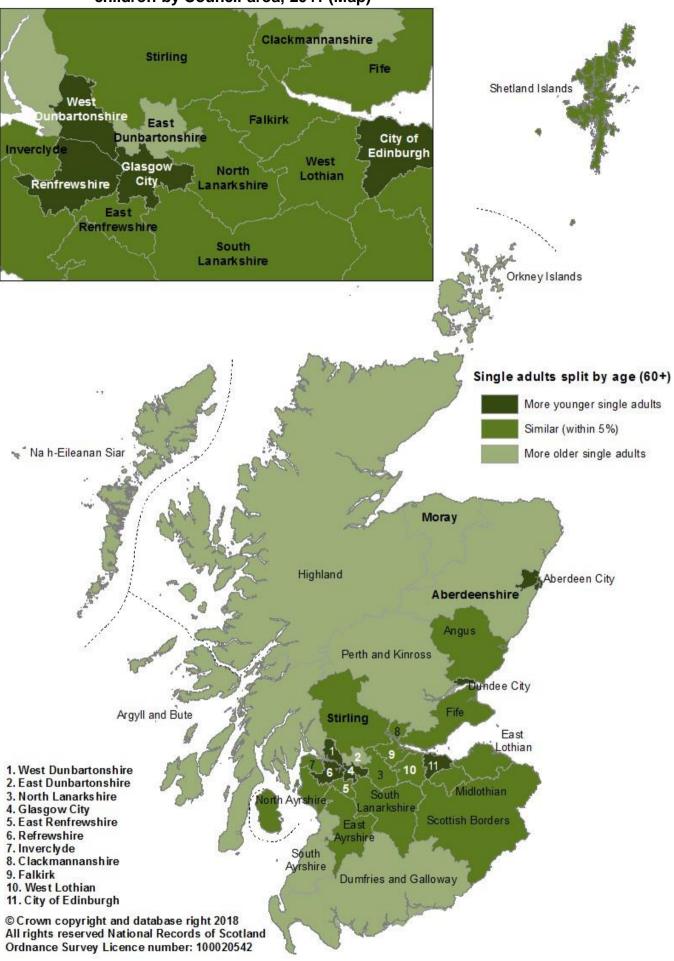


Figure 16: Projected percentage of households with children by Council area, 2041 (Map)

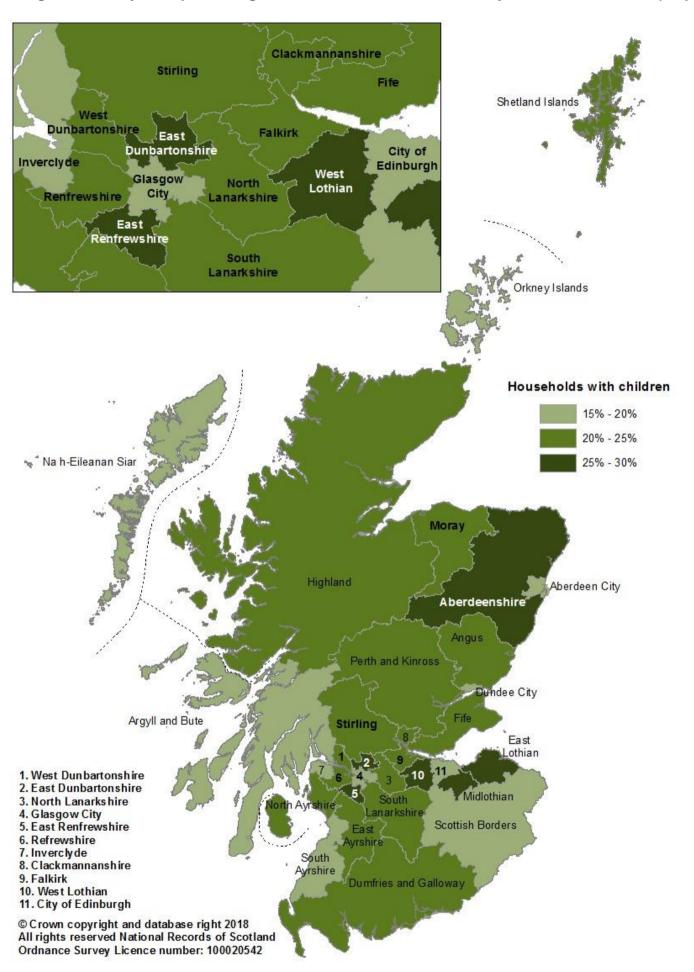
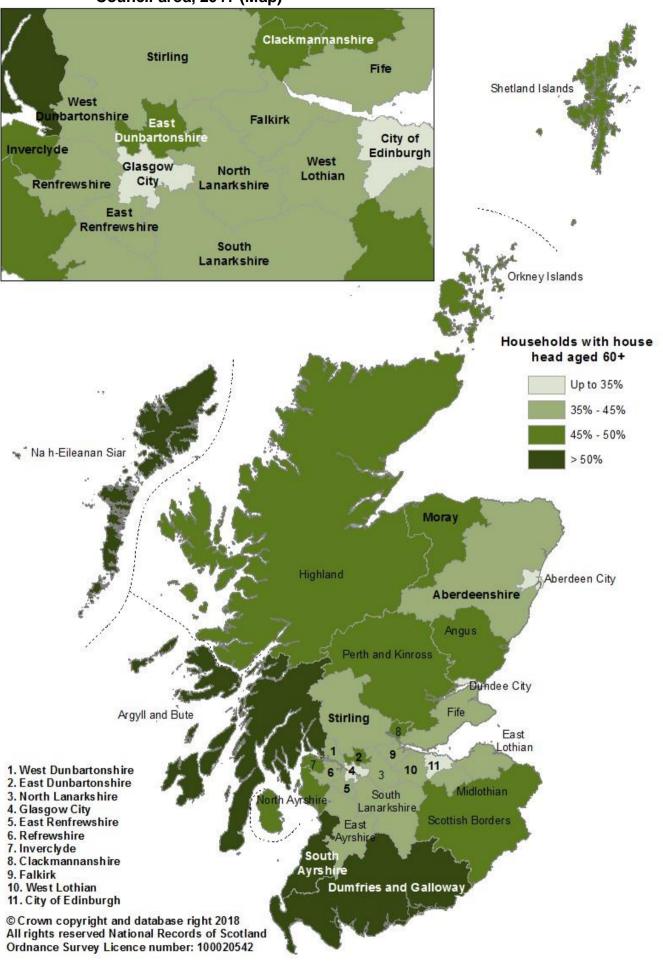


Figure 17: Projected percentage of households headed by someone aged 60 or over by Council area, 2041 (Map)



2.6 National Parks: Overall number of households

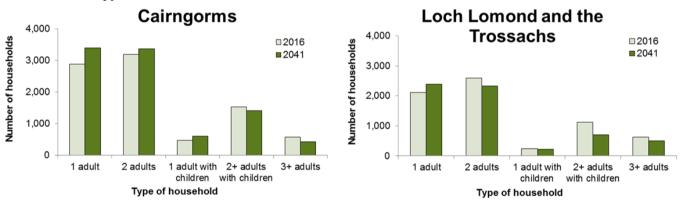
(Tables 6 and 7)

The number of households in Cairngorms National Park (CNP) is projected to increase by seven per cent by 2041, from 8,600 to 9,200 households. The number of households in Loch Lomond and the Trossachs National Park (LLTNP) is projected to decrease by eight per cent, from 6,700 in 2016 to 6,100 in 2041, reflecting a projected decrease of 20 per cent in the population projection over this period.

Despite a projected decrease in population in both national parks the number of households is less affected, and even shows a positive increase for the Cairngorms (Figure 2). This is because the average number of people per household ('household size') is decreasing in each National Park. Average household size is projected to decrease from 2.14 to 1.93 people per household in CNP, and 2.17 to 1.89 people per household in LLTNP. The projections also suggest that people will increasingly live alone in the National Parks. The number of households containing just one adult is projected to rise by 18 per cent in CNP and by 13 per cent in LLTNP (Figure 18) Similarly, by 2041 the proportion of people aged 16 or over living alone is projected to rise to 21 per cent in CNP (up from 18 per cent in 2016) and to 22 per cent in LLTNP (up from 16 per cent in 2016, Figure 3).

2.7 National Parks: Type of household and age of head of household (Tables 8 to 19)

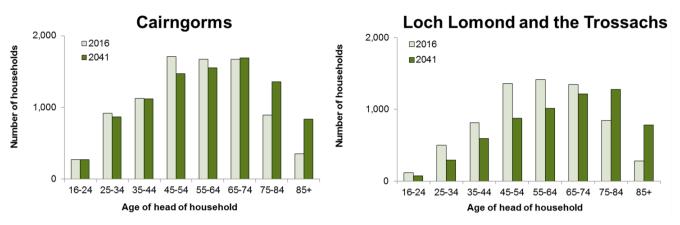
Figure 18: Projected number of households in Scotland's National Parks, by household type, 2016 and 2041



In CNP, small household types (1 adult, 2 adults, 1 adult with children) are all projected to increae. In LLTNP household type of 1 adult is still increasing however 2 adults and 1 adult with children are both projected to decrease. (Figure 18). The number of larger households (two or more adults with children, or three or more adults without children) are projected to decrease in both regions.

These changes in household type and size are down in a large part to the ageing population. As the number of older people in the population increases, the number of households headed by older people will also increase. Figure 19 shows that the changes in number of households by age of head of household are projected to follow similar patterns in each National Park. The number of households headed by someone aged 16-64 are projected to decrease over the projection period (from around 5,700 to 5,300 in CNP, and from 4,200 to 2,900 in LLTNP), while the number of households headed by someone aged 65 and over is projected to increase (from around 2,900 to 3,900 in CNP and 2,500 to 3,300 in LLTNP).

Figure 19: Projected number of households in Scotland's National Parks, by age of head of household, 2016 and 2041



Households headed by older people are typically smaller than households headed by younger people. This is because older people tend to live alone, or with just one other adult, whereas younger adults are more likely to live with other adults or children. Therefore, as the populations of the National Parks age, household size is projected to decrease, and this is projected to lead to change in overall household numbers and relative numbers of different types of households in the National Parks (Figure 20a), (Figure 20b).

In both National Parks, men in the younger age groups (16-34 and 35-64) are projected to be more likely to live alone than women. However, in the 65 or older age group, women are more likely to live alone than men. In both National Parks, around a third of women aged 65 and older are projected to live alone by 2041 (33 per cent in CNP, 35 per cent in LLTNP). The equivalent figures for men are slightly lower (30 per cent in CNP, 27 per cent in LLTNP). This pattern is influenced by women's greater life expectancy.

However, the gap between the average life expectancy of men and women in Scotland is narrowing. This means that the number of older men living alone is projected to increase more rapidly than the number of older women. The number of one adult male households is projected to increase by 72 per cent in CNP in the 65 or older age group. For LLTNP the increase is 62 per cent. In contrast, the number of one adult female households in this age range is projected to increase by only 24 per cent in CNP and 25 per cent in LLTNP.

For both National Parks, there are large projected increases in the number of households containing two adults, without children, headed by someone aged 65 or older (30 per cent increase in CNP, 22 per cent increase in LLTNP). This is also likely to be linked to the increase in average life expectancy and the narrowing of the gap between the life expectancy of men and women.

The projected changes in the number of one adult households with children show a decrease in LLTNP by 10 per cent. CNP projects an increase of 28 per cent in this category which is greater than the overall growth of households in the region of 7 per cent. In contrast, the number of households containing two or more adults with children is projected to fall in both National Parks. In CNP there is an overall decrease of 7 per cent, and in LLTNP a large decrease of 38 per cent. This decrease is influenced by the changes in demographics, in particular a shift towards a more elderly population at much greater rates than in the full population.

Figure 20a: Projected number of households in CNP by household type and age of head of household, 2016 and 2041

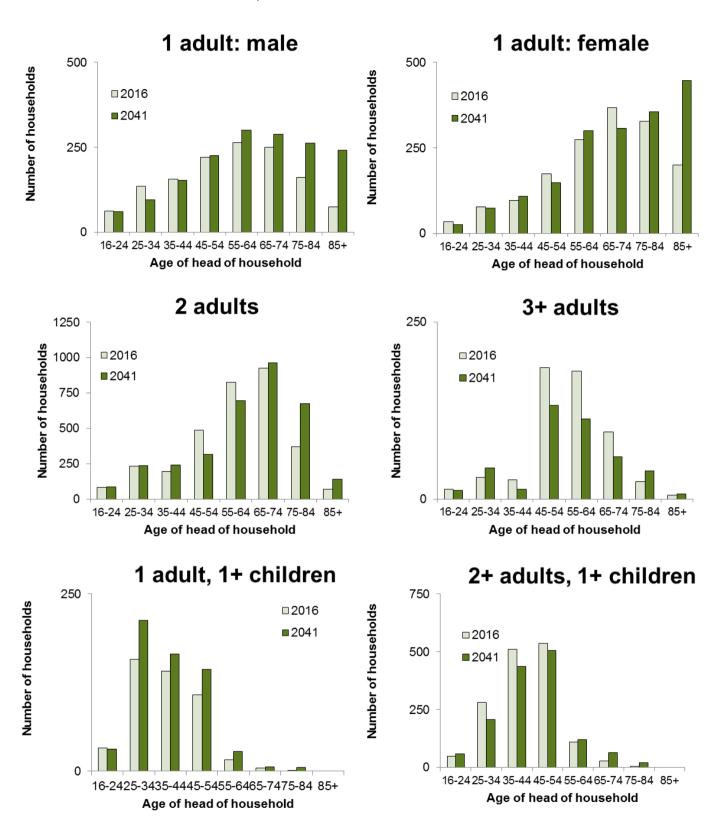
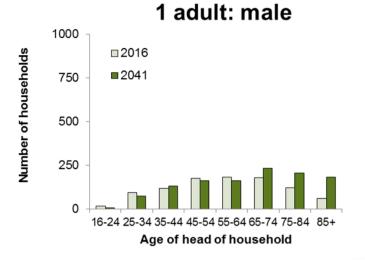
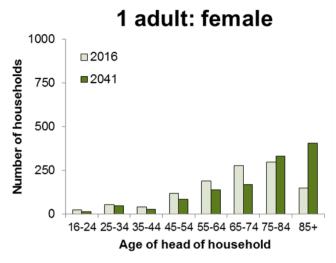
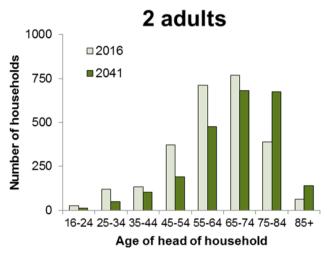
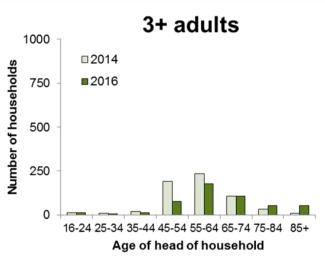


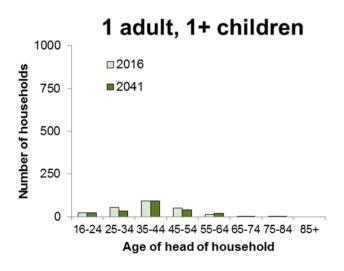
Figure 20b: Projected number of households in LLTNP by household type and age of head of household, 2016 and 2041

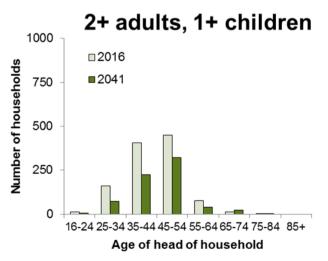












2.8 Strategic Development Plan areas: Overall number of households (Tables 6 and 7)

All SDP areas show projected increases in the number of households between 2016 and 2041. These increases range from 11 per cent in the TAYplan area to 20 per cent in the SESplan area. The projected increases in both Aberdeen City & Shire (16 per cent) and SESplan (20 per cent) are higher than the projected increase for Scotland as a whole (13 per cent).

The household projections are influenced by the population trends in the SDP areas. The area with the highest projected increase in households (SESplan) also has the highest projected increase in population (12 per cent). Conversely, the area with lowest increase in households (TAYplan) has the lowest projected increase in population (four per cent).

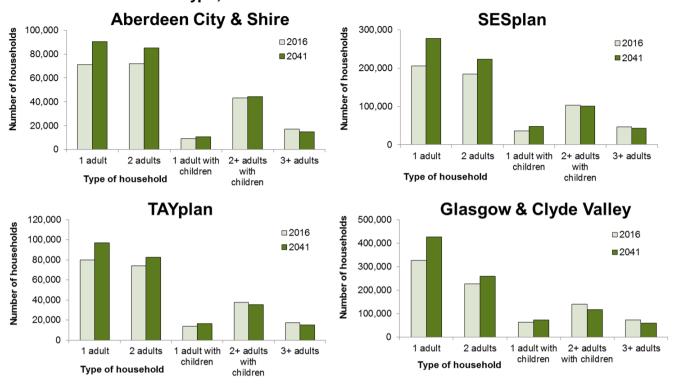
The number of households is projected to rise faster than the population in each SDP area, as in Scotland as a whole. This is because people will increasingly live alone or in smaller households. In all SDP areas the average household size is projected to decrease between 2016 and 2041. The average household size by 2041 is projected to be between 1.92 people per household (Glasgow & Clyde Valley) and 2.13 people per household (Aberdeen City & Shire), varying around the projected figure for Scotland as a whole (2.02 people per household).

2.9 Strategic Development Plan areas: Type of household and age of head of household (Tables 8 to 19)

The average size of households is decreasing as relatively more people live in smaller households (e.g. single adults, or two adults with no children) rather than larger households (e.g. three or more adults). There are large projected increases in the number of adults living alone in all the SDP areas (Figure 3), the greatest percentage increase being in SESplan (35 per cent). The proportion of adults aged 16 and over projected to live alone is also set to rise in each SDP area, the greatest increase being from 22 per cent to 27 per cent of adults living alone in Glasgow & Clyde Valley.

There are also projected increases in all SDP areas in the number of households containing two adults and no children, and one adult with children (<u>Figure 21</u>), although these are smaller increases in absolute numbers of households than for one adult households. In contrast, the number of households containing two or more adults with children is projected to decrease in all SDP areas other than Aberdeen City & Shire, and the number of households with three or more adults and no children is projected to decrease in all SDP areas (Figure 21).

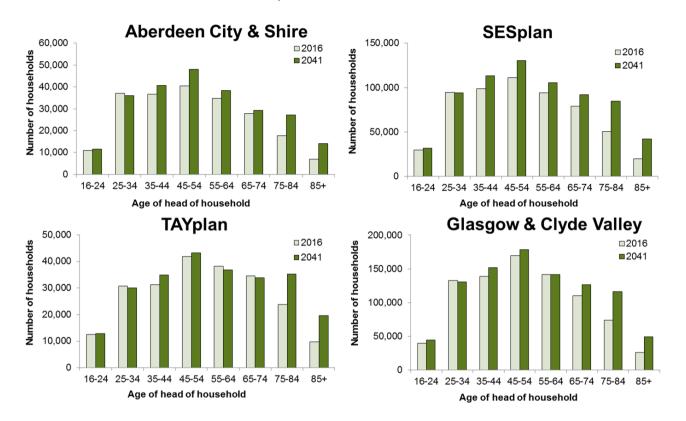
Figure 21: Projected number of households in Strategic Development Plan areas, by household type, 2016 and 2041



Note: Different scales are used on the vertical axis for each SDP area.

The changes in household size and type are primarily due to the ageing population. While there are projected increases in households in each SDP area overall, Figure 22 shows that the largest increases are occurring for households headed by people aged 75 and over. By 2041, between 17 per cent (Aberdeen City & Shire) and 22 per cent (TAYplan) of households will be headed by someone aged 75 or over in the SDP areas, compared to 12 per cent (Aberdeen City & Shire) and 15 per cent (TAYplan) of households in 2016.

Figure 22: Projected number of households in Strategic Development Plan areas, by age of head of household, 2016 and 2041



Note: Different scales are used on the vertical axis for each SDP area

Older people are more likely to live alone or in smaller households (e.g. two adults only) than in larger households (e.g. households with children, or households with three or more adults). Between 2016 and 2041 there are large projected increases in the number of people living alone in the older age groups (Figure 23a, Figure 23b, Figure 23c. Figure 23d). Over this period, the number of women living alone aged 75 or older is projected to increase by between 34 per cent (TAYplan), and 48 per cent (SESplan). The increases in the number of men aged 75 or older living alone are even greater – the number is projected to at least double in every SDP area by 2041.

There are also several changes in household numbers related to changes in life expectancy. While the numbers of older people living alone are increasing, the number of older people living alone is decreasing in some age categories, particularly for women aged around 55 to 74. The age at which women become more likely to live alone than men is also projected to shift. In 2016 woman are more likely than men to live alone past the age of 60. In 2041 this age will have shifted up to 75. For each SDP area, there are large projected increases in the number of households containing two adults without children in the older age groups, particularly from age 70 and above.

These changes are all likely to be due to the decreasing gap between the life expectancy of men and women. This means that the number of older men is projected to increase more rapidly than older women. This contributes to the larger projected increases in the number of men living alone, compared to women, but may also contribute to the decreases in the likelihood of people, particularly women in their sixties and seventies, living alone, as their partners are also living longer.

In every SDP area there is a projected increase in the number of households consisting of one adult living with one or more children. These increases range from 15 per cent in Glasgow & Clyde Valley to 33 per cent in SESplan. However, while in SESplan the numbers of these households

are projected to increase across all age groups, in the other SDP areas there are projected to be some decreases in numbers of households headed by people under 34.

The number of households containing two or more adults and at least one child is projected to increase only in Aberdeen City & Shire (three cent), but to decrease in the other SDP areas: Glasgow & Clyde Valley (17 per cent decrease), Tayplan (six per cent decrease) and SESplan (two per cent decrease). Across all the SDP areas, the decreases in the numbers of this type of household will be occurring mainly among the younger age groups (roughly those under 45), whereas the number of such households headed by older people (roughly those 45 and over) will be increasing. This may be due to falling fertility rates and people having children later in life.

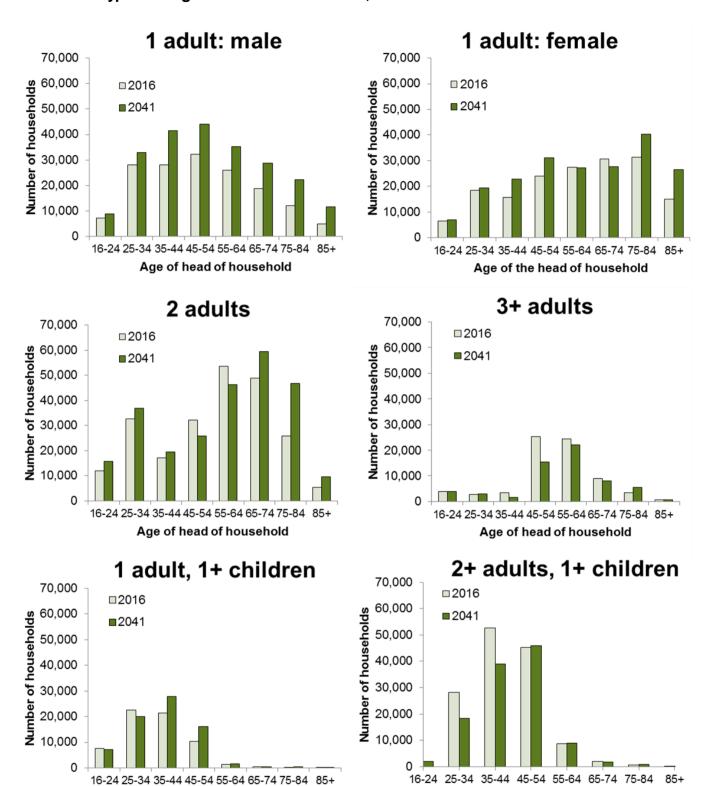
Meanwhile, the number of households with three or more adults is projected to decline between 2016 and 2041 in all SDP areas, by eight per cent (SESplan) to 17 per cent (Glasgow & Clyde Valley).

-

⁸⁾ For further information see National Records of Scotland 'Births, Deaths and Other Vital Events' publications available at https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/vital-events/general-publications/births-deaths-and-other-vital-events-preliminary-annual-figures/2016

⁹⁾ For further information see NHS Information Services Division publication 'Births in Scottish Hospitals' available at http://www.isdscotland.org/Health-Topics/Maternity-and-Births/Births/.

Figure 23a: Projected number of households in Glasgow & Clyde Valley by household type and age of head of household, 2016 and 2041



Age of head of household

Age of head of household

Figure 23b: Projected number of households in Aberdeen City & Shire by household type and age of head of household, 2016 and 2041

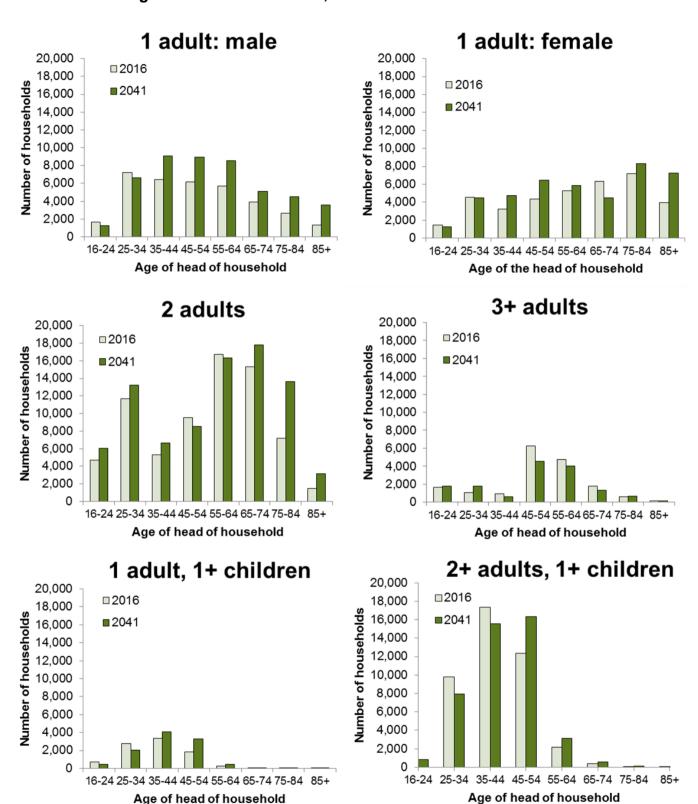
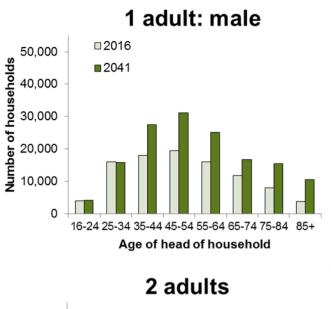
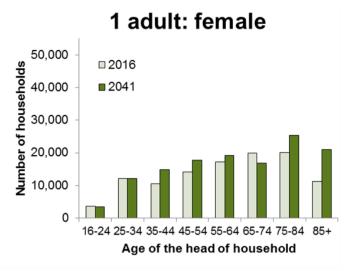
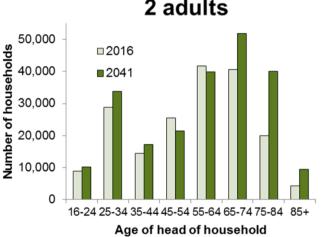
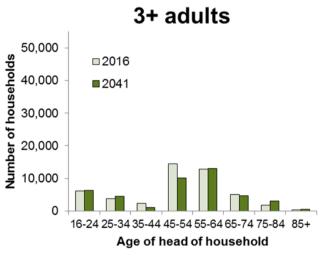


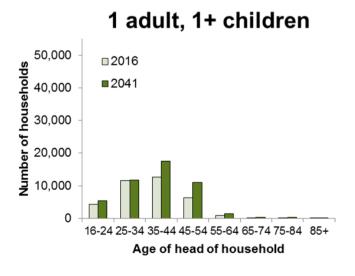
Figure 23c: Projected number of households in SESplan by household type and age of head of household, 2016 and 2041











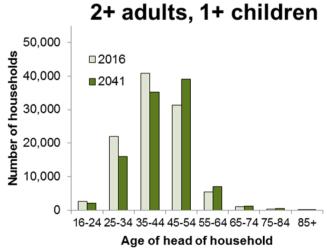
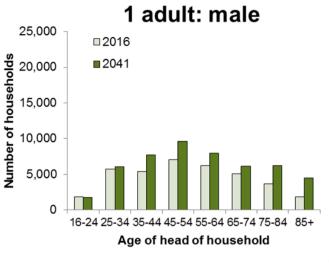
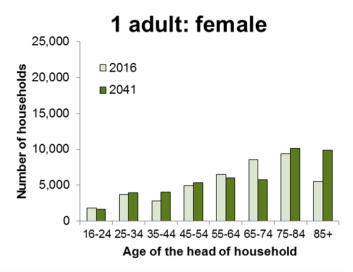
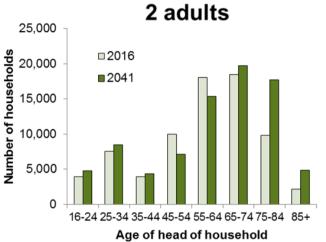
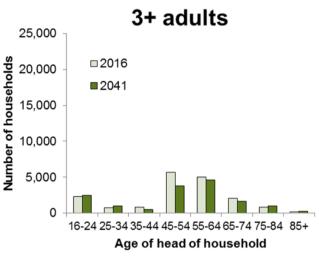


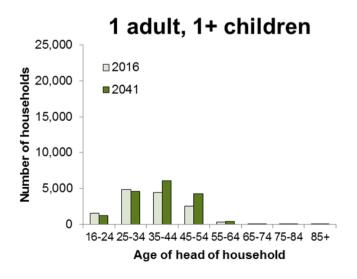
Figure 23d: Projected number of households in TAYplan by household type and age of head of household, 2016 and 2041

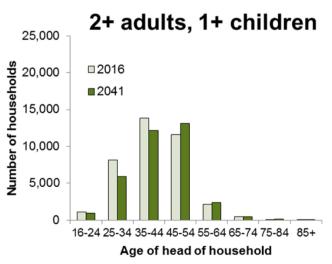










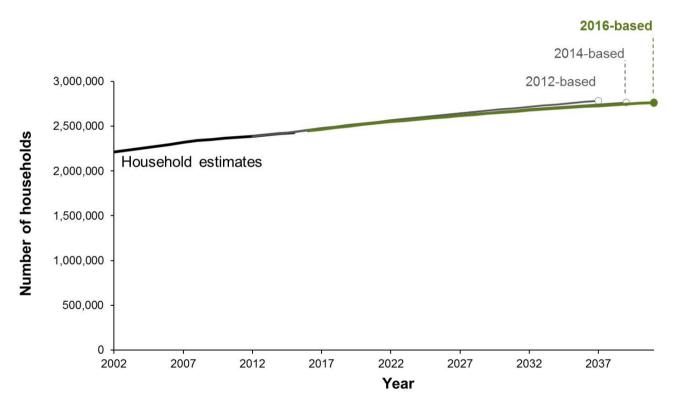


3. Comparison with previous household projections

Household projections for Scotland are published every two years and cover a 25-year period. Figure 24 compares the total number of households projected in the latest (2016-based) principal household projection with the 2012- and 2014-based principal projections. For more details go to 'Household Projections for Scotland' on the NRS website.

The 2012-based principal projection suggested an average annual increase of around 15,800 households per year between 2012 and 2037, corresponding to an overall increase of 17 per cent over the 25-year projection period. The 2014- and 2016-based projections have suggested successively lower average annual increases of 13,800 and 12,700 households per year, corresponding to overall increases over the 25-year projection period of 14 per cent and 13 per cent respectively.

Figure 24: Comparison with previous household principal projections (2012-, 2014- and 2016-based) and household estimates



There are many reasons for this change. For example, although the 2014-based household projections use the same methodology as the 2012-based household projections, the 2014-based national population projections for Scotland were lower, and the methodology for the 2014-based sub-national population projections for Scotlish areas (which feed into the household projections) had changed. As the population projections are incorporated into the household projections, any changes to the population projections will affect the household projections results. Further details on the sub-national population projections methodology can be found on the NRS website.

The biggest relative changes between the 2014- and 2016-based household projections are at council level, rather than for Scotland as a whole. <u>Figure 25</u> shows the percentage change (over a 25 year projection period) in the 2014- and 2016-based household projections for each Council

area, the equivalent figures from the population projections and the relationship between the two sets of figures.

In general, the 2016-based household projections are lower, but this is not the case for all Council areas; in Midlothian, East Lothian, East Renfrewshire, West Lothian, Moray, East Dunbartonshire, Renfrewshire and West Dunbartonshire, the 2016-based household projections are higher. The average percentage change, from 2016 to 2041, in the household projections is higher than in the population projections over the same period, due to more people living alone or in smaller households.

For some Council areas it is particularly clear that differences in the 2014- and 2016-based population projections account for much of the differences between the 2014 and 2016-based household projections. For example, the number of households in Midlothian is projected to increase by 36 per cent in the 2016-based projection compared to an increase of 31 per cent in the 2014-based projections. Similarly there is also a large difference in the two sets of population projections for Midlothian, with the 2016-based projections showing a 31 per cent increase compared to a 26 per cent increase in the 2014-based projection.

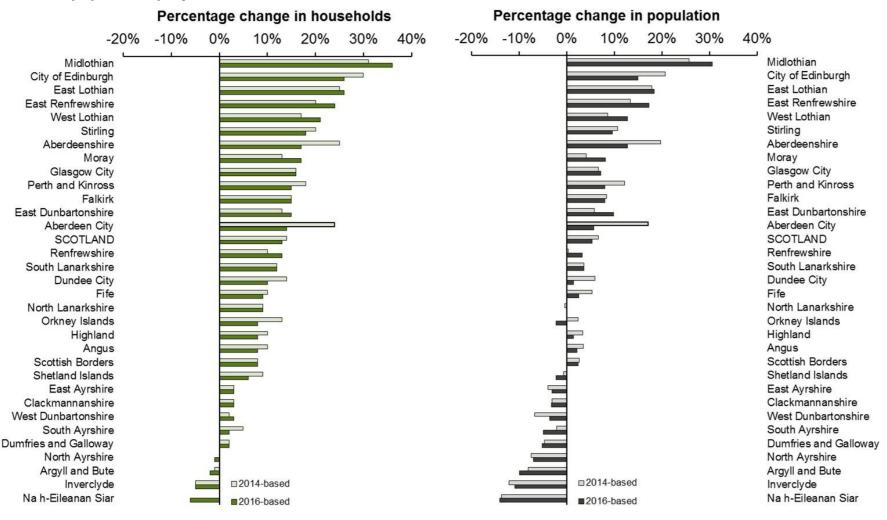
For each of the SDP areas, the population and number of households in the first year of the 2016-based projection was similar to the number of households in the first year of the 2014-based projection. Over the course of the 2016-based projection period, the population and number of households increase in the SDP areas, but by slightly less than projected over the 2014-based projection period. This largely follows from the trend in council areas.

The patterns for the two National Parks are different to the SDP areas. The population of LLTNP is projected to fall more significantly in 2016-based projection than in the 2014-based (-20 per cent compared to -9 per cent). This results in number of households in the region starting to decrease, when they were previously projected to be slightly increasing (-8 per cent compared to +1 per cent). This change is to some extent expected as even in the 2014-based projection there was a continual decrease in households over the last decade of the projection. This combined with the revised population estimate leads to the downturn in households

For Cairngorms National park the 2014-based and 2016-based projections are reasonably consistent in terms of both population change and households. Both predicted a 4 per cent decrease in population. The 2016-based projection predicts very slightly more households (a 7 per cent increase compared with the previous estimate of six per cent).

The 2016-based projections may be different to the 2014-based projections for several reasons. The changes may reflect actual changes in household estimates, household type distribution, and in factors underlying the population projections such as migration rates.

Figure 25: Projected percentage change in the number of households and population by Council area; 2014- and 2016-based household and population projections¹⁰



¹⁰⁾ This chart compares the percentage change from 2014 to 2039 in the 2014-based household and population projections with the percentage change from 2016 to 2041 in the 2016-based household and population projections.

4. Variant household projections

(Table 20-22)

4.1 Introduction to the variant household projections

Variant projections provide a broad indication of the sensitivity of the household projections to the demographic assumptions that are used to produce them. The principal household projection is based on the principal population projection produced by the National Records of Scotland (NRS), which uses assumptions about fertility, mortality and migration which are thought to be the most likely to occur over the next 25 years. The household projection is also dependent on the assumption that the projected trends in household formation will continue until 2041.

Two variant household projections are presented here. These are based upon variant population projections produced by NRS that use different assumptions regarding future migration. These are discussed below. Full results of each variant projection, by Council area, are available from the NRS website.

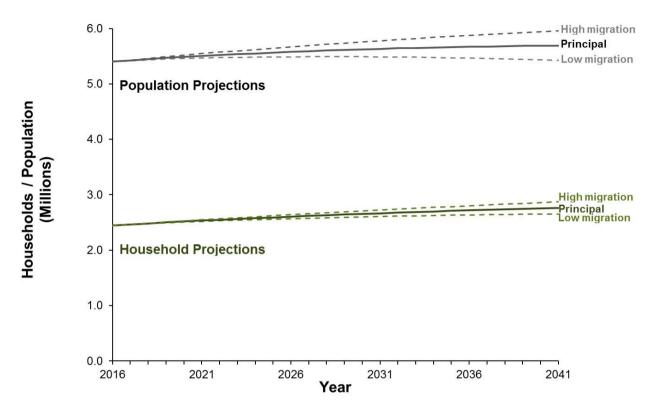
4.2 Variation in migration assumptions

The low and high migration variant population projections use the same assumptions about fertility and mortality as the principal population projection but assume varied levels of migration to and from Scotland. The migration assumptions, by Council area, can be found in Annex A of the '2016-based population projections for Scottish Areas' on the NRS website.

Migration variant household projections are calculated by replacing the principal population projection with a variant migration population projection, keeping all other inputs to the household projections (communal establishment rates, headship rates, survey data and household estimates) unchanged.

The principal household projection shows the number of households in Scotland increasing from 2.45 million households in 2016 to 2.76 million households in 2041. This latter number compares to 2.65 million households for the low migration variant and 2.87 million households for the high migration variant. Figure 26 illustrates this, along with the projected increase in population for the principal and variant projections. The percentage increase in households between 2016 and 2041 is 8 per cent for the low migration variant and 17 per cent for the high migration variant, compared to 13 per cent for the principal projection.

Figure 26: Principal, low and high migration variants, 2016-based population and household projections for Scotland¹¹



The use of low or high migration population projections has little effect on the projected type of households that the population is living in. The proportions of all households in each household type, in both the low and high migration projections, differ from the principal projection by at most 0.7 percentage points. In 2041, average household size in the low and high migration projections is 2.00 and 2.03 respectively, compared to 2.02 in the principal household projection. The differences are small as the assumptions about household formation are the same in each projection. The small differences in each variant household projection are due to differences in the age distribution of the underlying populations in each variant population projection, as different age groups tend to form different types of household.

However, there are differences in the age groups of the heads of household between the variant household projections. These are caused by different age distributions in the variant population projections, as the age groups of migrants are not necessarily typical of the overall population (migrants tend to be younger). The differences in the proportion of all households that are headed by each age group, compared to the principal population, are small (one percentage point or less) for both variant household projections. The largest difference in percentage of households headed

50

¹¹⁾ More details available in an <u>interactive figure</u> of the 2016-based household projections showing the principal, low and high migration variants for each Council area.

by a particular age group between the principal and variant household projections is for the 30 to 44 age group. For this age group, the proportion of all households is one percentage point smaller than in the principal projection in the low migration variant and one percentage point larger in the high migration variant.

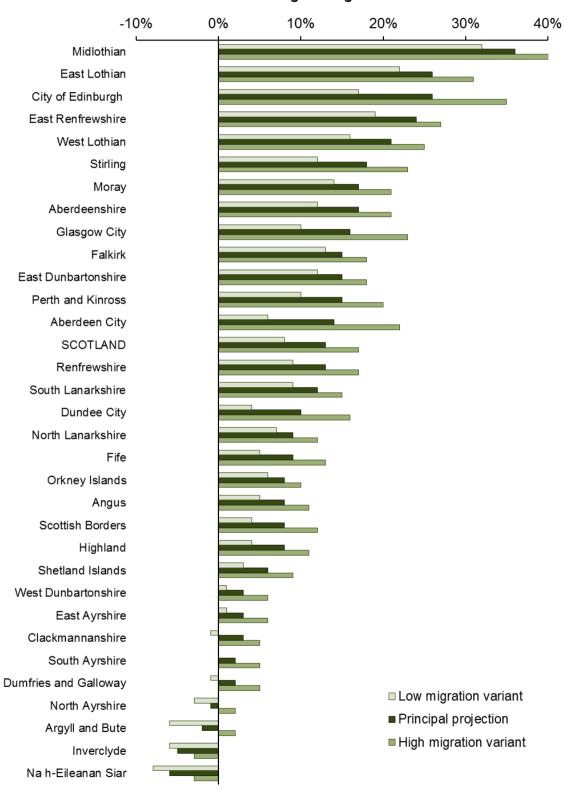
The projected number of households for each Council area in the principal, low and high migration variants are compared. The migration variants tend to have the biggest impact on the areas which have relatively high levels of in- and out-migration. The impacts are biggest for the four city Council areas (differences of around five to seven per cent between each of the variants and the principal projection). The smallest impacts (differences of about two per cent above or below the principal projection) are on East Ayrshire, Inverclyde, North Ayrshire, North Lanarkshire and the Orkney Islands.

<u>Figure 27</u> compares the percentage change in households from 2016 to 2041 under the principal, low and high migration variant projections for each Council area.

The variant projections have a greater proportional effect on the SDP area household projections than the National Park projections. This may be because there are higher levels of migration into and out of the SDP areas compared to the National Parks, so changes to the assumptions about migration rates will have a greater effect on projections for SDP areas. The greatest effect is for Aberdeen City & Shire, however even in this area the variant projections only affect the increase in household numbers by 2041 by six per cent.

Figure 27: Projected percentage change in households, principal, low and high migration variant projections, by Council area, 2016 to 2041

Percentage change in households



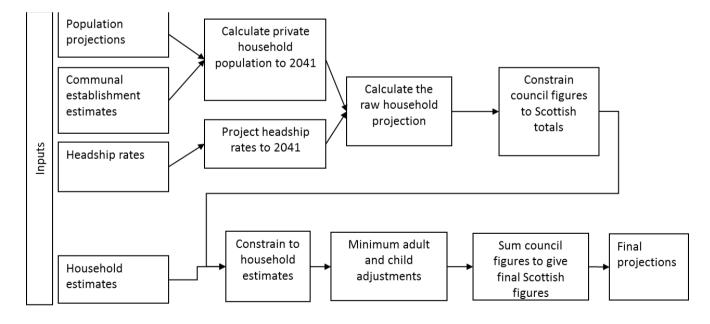
5. Sources and methods

5.1 Summary

The household projections are based on <u>population projections</u> produced by the National Records of Scotland (NRS). The number of people living in private households is estimated by taking the population projections for each year and subtracting the number of people living in communal establishments, such as student halls of residence, care homes or prisons. To estimate the number of households of each type, information on household formation is projected forward from Scotland's Census 1991, 2001 and 2011, for each household type, age group and Council area. These figures are weighted using data from the 2016 <u>Scottish Household Survey</u>. This information is then applied to the private household population to produce the basic household projections.

The overall projections for Scotland are believed to be more accurate than those for individual Council areas; therefore, the Council area projections are constrained to the Scottish total. Each year NRS produces estimates of the total number of households in each Council area, based on Council Tax data. These estimates are based on more recent data than the household projections therefore the household projections for 2016 and 2017 are adjusted to match the household estimates (on the NRS website), and for 2018 onwards the projections are adjusted by the same proportions as 2017.

Figure 28: Flow diagram of the method used to produce household projections



5.2 Household types and age groups used in the household projections

Household projections are produced for each Council, Strategic Development Plan and National Park area, broken down into seven household types, based on the number of adults and children living in the household, and sixteen age groups, as follows:

Table A: Household types and age groups used in the household projections

Household types			
1 person households:			
1 adult: male 1 adult: female			
2 person households:			
2 adults 1 adult, 1 child			
3+ person households:			
1 adult, 2+ children 2+ adults, 1+ children 3+ adults			

Age group
16-19
20-24
25-29
30-34
35-39
40-44
45-49
50-54
55-59
60-64
65-69
70-74
75-79
80-84
85-89
90+

5.3 Data sources

Five sets of data are used as inputs to the household projections:

- 2016-based population projections
- estimates of the proportion of the population in each age group that are resident in communal establishments in 2016
- headship rates from Scotland's Census 1991, 2001 and 2011
- estimates of the distribution of households across the seven household types in 2016 from Scottish Household Survey data
- 2016 and 2017 household estimates.

Population projections

The first input into the household projections is the 2016-based population projections for Scotland. These are produced for Scotland by Council area, sex and single year of age, using assumptions about births, deaths and migration.

The relevant population for household formation is taken to be the adult population, aged 16 or over. The low and high migration variant population projections used in the variant household projections are taken from the same publication.

Communal establishment estimates

Estimates of the proportion of the population living in communal establishments (i.e. communal establishment 'rates'), such as care homes or prisons, are used to derive the number of people living in private households from the total population given in the population projections. These proportions are calculated, by age group and sex, from the mid-2016 population estimates published by NRS and numbers of residents in communal establishments collated by NRS.

Numbers of residents in communal establishments are collected from a range of data sources, depending on the establishment type. The data is chosen to represent, as closely as possible, the census definition of residence, that is those individuals 'staying, or expecting to stay, in a residential establishment for six months or more'. Individuals resident for shorter stays would be considered visitors and are not included, as they should be accounted for in their usual place of residence.

Data is collected from a range of administrative data sources and surveys and refers to 2016, where possible. For some establishment types, however, no such source is available, or 2016 data is not available, and in these cases earlier administrative data or 2011 Census data is used. Table B details the sources of communal establishment data and the year to which the data refers. In many cases, more than one data source was combined and estimation was required to obtain a full age/gender breakdown for all establishments.

The communal establishment rates used for the 2016-based household projections can be found on the NRS website, in the 'Source Data Tables'. Communal establishment rates for the SDP area and National Parks projections are available on request.

Table B: Communal establishment data sources

Establishment type	Data source	Year of data
Adult care ¹	Care Inspectorate (registered establishments)	2016
	ISD ² Care Home Census	2015 ⁷
Children's care ¹	Care Inspectorate (registered establishments)	2016
	SG ³ Looked After Children Statistics	2016
Defence ¹	NRS ⁴ Armed Forces Data Collection	2016
	DASA ⁵ Regular Forces by Age and Sex	2012
	2011 Census	2011
Hospitals	ISD ² SMR01 (General/Acute)	2016
	ISD ² SMR04 (Mental Health)	2016
	SG ³ Continuing Care Census (Other NHS)	2016
Hostels	2011 Census	2011
Hotels and boarding houses	2011 Census	2011
Prisons	SG ³ Prison Statistics	2014/16 ⁸
Residential Schools	SG ³ Education Analytical Services	2016
	SG ³ Education Scotland	2016
Student Halls of Residence -	2011 Census	2011
Further Education		2011
Student Halls of Residence -	NRS ⁴ Communal establishment address list	2011
Higher Education ¹	HESA ⁶	2011/12
Other	2011 Census	2011

Footnotes

- 1) For this establishment type data from two or more sources are combined to estimate the age/gender
- 2) ISD Information Services Division of NHS Scotland.
- 3) SG Scottish Government.
- 4) NRS National Records of Scotland.
- 5) DASA Defence Analytical Services and Advice.
- 6) HESA Higher Education Statistics Agency.

Further information on the communal establishment data collection and the uses of this data can be found

- 7) 2016 data not available by time of publication, 2015 data was used instead.
- 8) Age/s ex breakdown not available for 2016, so 2016 totals were constrained to 2014

Headship rates

The household formation information used in the household projections is in the form of headship rates, derived from Scotland's Census 1991, 2001 and 2011. These rates are used to convert the private household population into household numbers.

In the census, one member of each household is designated the 'head of household' (the first adult resident recorded on the household form). The headship rate describes, for each age group, the proportion of the population that is designated the

'head of household' in each household type. The proportion of the population, for each age group, who are not a head of any type of household (non-heads) is also available from the census. The proportions for each household type, including non-heads, sum to one, within each age group and Council area. The number of people who head particular household types is the same as the number of households of this type.

Household type distribution

For the second time, survey data has been included in the projection method and plays an important role in the projection of headship rates. For the 2016-based household projections this data comes from the 2016 Scottish Household Survey (SHS) and consists of an estimate of the proportion of households of each type. This data is then adjusted based on differences between 2011 SHS data and the 2011 Census to take into account higher levels of non-response from particular household types in the SHS.

The distribution of households across the seven types of household used in the 2016-based projections can be found on the NRS website, in the 'Source Data Tables'.

Household estimates

Household estimates are published annually by NRS, and the household projections use the estimates from the latest two years (2016 and 2017). The estimates are based on Council Tax data, and provide the total number of households for each Council area in Scotland. The latest household estimates can be found in the 'Estimates of Households and Dwellings in Scotland, 2017' publication on the NRS website.

Strategic Development Plan and National Park geographies

The best fit areas used for projecting households in the SDP areas and National Parks have changed since the 2014-based projections. The areas used in the 2016-based projections have been built up from postcodes rather than data zones wherever possible.

NRS produces population and household projections for the 32 council areas, four SDP areas and two National Park areas. SDP and National Park areas are non-standard geographies and do not nest neatly within the council area boundaries. To produce projections for these non-standard geographies, councils are split into parts. These council area parts can be combined together, or combined with other whole council areas, to form the SDP areas and National Parks. In total nine councils have been split in this manner, these are:

- Aberdeenshire;
- Angus;
- Argyll and Bute;
- Fife;
- Highland;
- Moray:

- Perth and Kinross;
- Stirling; and
- West Dunbartonshire.

Each area has been split into two parts with the exception of Perth and Kinross, which has been split into three parts. <u>Figure 29</u> and <u>Figure 30</u> show how the council areas have been split.

The 2016 household estimates data was not available at postcode level for the part of CNP in Highland council area ('Highland II'). Household estimates were only available for data zones in this area. Therefore, (i) the boundary area used to estimate the number of households in CNP does not exactly match the boundary of the National Park (Figure 31), and (ii) the area used to estimate the number of households in CNP does not exactly match the area used to estimate population, communal establishments, headship rates and household type distribution.

Figure 29: Map showing the council areas and council area parts within strategic development plan area boundaries

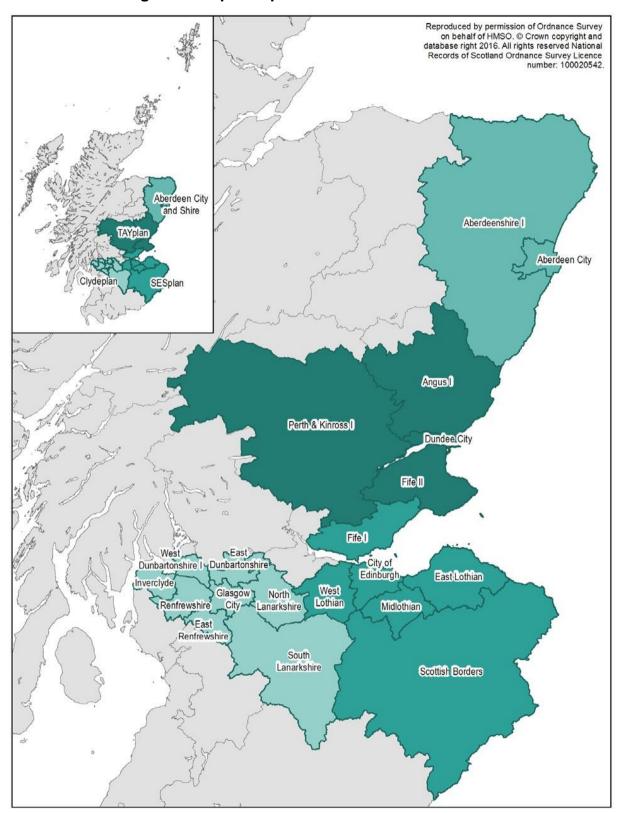
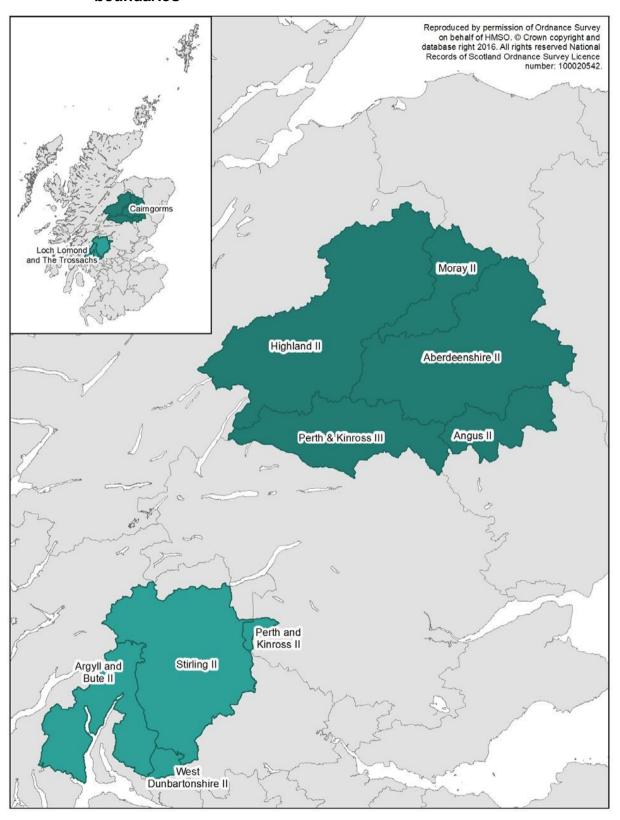


Figure 30: Map showing the council area parts within national park area boundaries



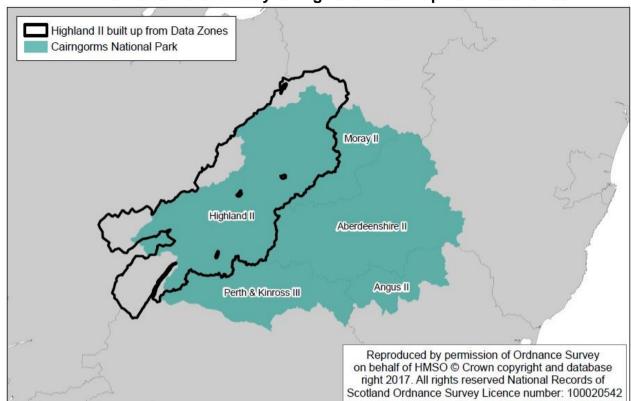


Figure 31: Map showing the council area parts within Cairngorms National Park and the boundary of Highland II built up from data zones

Note: Only the outer boundary of Highland II built up from data zones is shown. Details of the individual data zones used are available on request.

5.4 Methodology

There are several stages to the calculation of the household projections. The first stage calculates the private household population. This is done by first estimating the number of communal establishment residents in each year of the projection, by applying the communal establishment rates described above to the population projections. The communal establishment residents are then subtracted from the population projections to give the private household population for each projection year. The projected private household population for 2016 to 2041, for Scotland and each Council area, can be found on the NRS website, in the 'Source Data Tables'. Variant private household populations are also available in the same dataset, based on the high and low migration variant population projections. Source data for the SDP area and National Parks projections are available on request.

Strategic Development Plan area projections are produced by combining whole Council area projections with parts of other Council Areas (<u>Figure 29</u>). Where entire Council areas are included in an SDP area, these whole council area projections are combined with new projections for the other parts of council areas making up the SDP areas to obtain projections for the overall SDP area. National Park projections

are not built up using any whole council areas, as the National Parks are made up entirely of parts of council areas (Figure 30).

The second stage in calculating the household projections is to estimate the number of households from the private household population, using the headship rates described above. Two sets of projected headship rates are produced using a modified two-point exponential model, one using headship rates from the 1991 and 2001 Censuses, and the other using headship rates from the 2001 and 2011 Censuses.

The formula for the modified two-point exponential model is as follows:

```
y_i = k + ab^{x_i}
              where i
                          = the year, from 2016 to 2041
                                           = the headship rate in year i
                                    Vi
                                    k
                                           = 1 if y_c \ge y_d
                                             0 if y_c < y_d
                                           = y_d - k
                                           = (y_c - k)/(y_d - k)
                                    b
                                           = (i - d)/(c - d)
                                    Xi
                                           = the most recent census year (2001 or d
2011)
                                            = the furthest away census year (1991
2001)
                                    or
```

The two sets of projected headship rates are then combined into a final set of headship rates using weights and the following formula:

```
y_i = \frac{A^{(1)} * y_i^{(1)} + A^{(2)} * y_i^{(2)}}{A^{(1)} + A^{(2)}} where i = the year, from 2016 to 2041 y_i = \text{final headship rate in year i} A^{(1)} = \text{weight given to rates projected using 1991 and 2001} data A^{(2)} = \text{weight given to rates projected using 2001 and 2011} data y_i^{(1)} = \text{projected headship rate in year i using 1991 and 2001} data y_i^{(2)} = \text{projected headship rate in year i using 2001 and 2011} data
```

The weights are chosen so that the projection for 2016 has a distribution of households across the seven household types that is as close as possible to the distribution found in the adjusted 2016 Scottish Household Survey data. This allows us to incorporate more recent information on the types of households that people are living in, rather than purely relying on census data. For the 2016-based projections the weights used were 79 per cent towards the headship rates using 2001 and 2011 Census data and 21 per cent towards projected headship rates using 1991 and 2001 Census data.

The projected headship (and non-headship) rates are constrained so that:

- they cannot individually go above one or below zero: and
- they sum to one within an area and age group.

The projected headship and non-headship rates from the 2016-based household projections can be found on the NRS website in the 'Source Data Tables'.

The household projections are calculated by applying the projected headship rates to the private household population projections to give an estimate of the number of heads of household in each of the projection years for each household type, age group of the head of household and area.

The final stages of the household projection methodology apply a series of adjustments to the household projections. The first adjustment is to control the Council area projections to the all-Scotland projection, as the latter is thought to be more accurate. This ensures that the Council area projections sum to the total for Scotland.

For the National Park projections, the first adjustment is to control the National Park projections, including a projection of the 'Rest of Scotland', to the all-Scotland projection, as the latter is thought to be more accurate. For SDP areas, the adjustment is different. Where a whole Council area (CA) is projected, the projections for all Council areas are controlled to the all-Scotland projections. In contrast, where sub-CA areas are projected, projections are produced for the area that is within the SDP area and the area that is not, and these sub-CA projections are controlled to the main CA projection.

The next adjustment is for the total number of households within each area in 2016 and 2017 to be controlled so that it is equal to the household estimates for these years. The household projections for 2017 onwards are then adjusted by the same proportions as in 2017, to preserve the trend in the household projections. This adjustment allows us to incorporate more recent information on household numbers than the 2011 Census.

The final adjustment ensures that the minimum number of adults required to fill the projected households is not greater than the projected adult private household population (e.g. a minimum of three adults would live in a 'three or more adult' household). The same check is carried out for children. Where an adjustment is required, the number of households is kept constant, but the balance of household types is adjusted, to reduce the number of large households and increase the number of smaller households. For the 2016-based household projections, no minimum or adult or child adjustments were required for any Council, SDP or National Park area in any of the projections.

6. Definitions and limitations of the household projections

6.1 Definitions

The following definitions are used in this publication:

- Household: the 2011 Census definition of a household is used one person living alone or a group of people (not necessarily related) living at the same address who share cooking facilities and share a living room or sitting room or dining area. This excludes people living in communal establishments.
- Private household population: The population living in private households, i.e. people not living in a communal establishment.
- Communal establishment: An establishment providing managed residential accommodation, such as a hospital, care home, prison, student hall of residence or barracks. 'Managed' means full-time or part-time supervision of the accommodation.
- Head of household: The 'head' of the household is normally the first person entered on the census form. The number of heads of household will be equal to the number of households.
- Headship rate: The proportion of people who 'head' particular household types within any particular age group and Council area is known as the 'headship' rate.
- Children: Where children are included in a household type, the 2011 Census definition of a dependent child is used. A dependent child is anyone aged 0 to 15 in a household (whether or not in a family) or a person aged 16 to 18 in full-time education and living with his or her parent(s) or grandparent(s). It does not include any people aged 16 to 18 who have a spouse, partner or a child living in the household.
- Average household size: The average number of people in a private household, calculated by dividing the private household population by the number of households.
- National Parks are protected areas of beautiful countryside, wildlife and cultural heritage. There are two National Parks in Scotland: Cairngorms National Park (CNP) and Loch Lomond and the Trossachs National Park (LLTNP). Each National Park is managed by a National Park Authority, which produces a local development plan. The locations and boundaries of the National Parks are shown in Figure 30 in the Sources and Methods section.
- Strategic Development Plan (SDP) areas were created in 2008 to help deal with region-wide issues that cross boundaries of council areas, for example the scale of housing and the transport and water and connections needed. Around three quarters of the population of Scotland live in Scotland's four SDP areas: Glasgow & Clyde Valley Strategic Development Plan Area (Glasgow & Clyde Valley SDP area); Aberdeen City and Shire Strategic Development Plan Area (Aberdeen City & Shire SDP area); Edinburgh and South East Scotland Strategic Development Plan Area (SESplan SDP area); and Dundee, Perth, Angus and North Fife Strategic Development Plan Area (TAYplan SDP area). Strategic Development Plan Authorities prepare Strategic Development Plans, which set the context for Councils' Local Development Plans. The locations and boundaries of the SDP areas are shown in Figure 29 in the Sources and Methods section.

6.2 Limitations

These household projections have limitations. A projection is a calculation showing what happens if particular assumptions are made. The household projections are trend-based and are not, therefore, policy-based forecasts of what the Government expects to happen. Specifically, the assumptions do not take account of the recent referendum vote to leave the European Union. They are based on the population projections and, as a result, assumptions used for the population projections, such as future migration, fertility and mortality, will affect the household projections. These assumptions are based on past trends. Projections based on small groups of people or households tend to be less reliable than those based on larger groups.

The household projections also rely on projecting trends in household formation from Scotland's Census 1991, 2001 and 2011, and the 2016 Scottish Household Survey, to 2041. They show what is likely to happen if these trends continue into the future. There are various reasons why patterns of household formation may be different in the future, such as economic changes or the impact of new government policies, as well as imbalances between housing supply and demand. Assuming the continuation of past trends results in uncertainty in the projections, and this uncertainty increases the further into the future they are taken. Local planning policies are often intended to modify past trends and Development Plans may demonstrate departures from the projections that seem better able to fit particular local circumstances.

If the projections relied solely on projecting household formation trends from census data they would be unable to reflect any changes in household formation following the 2011 Census. They would become increasingly unreliable as the start year moved further from 2011. However, the new method used for the 2012-, 2014- and 2016-based household projections means that any changes in household formation since the 2011 Census will be incorporated through the use of recent survey data. This will become increasingly important for future sets of projections. The use of information from three censuses should also mean that longer term trends are included.

This report focuses on the 'principal projection', that is the projection based on the assumptions that we think are most likely to occur, but it also includes sections on household projections prepared using alternative assumptions. These variant projections reflect possible effects of uncertainty in the assumptions underlying the population projections. Low and high migration variant household projections are presented in <u>Section 4</u>. They use the low and high migration variant population projections.

Relationship to other projections

These projections apply a single methodology across all Council areas. Individual areas may have a wider range of local information, based for example on local population or household surveys, on which to compile local projections. The supporting material on the NRS website should assist in providing an understanding of the basis of our projections. We are happy to provide additional supporting or background material which users would find useful in assessing and using the

projections, where possible. Please contact us at statisticscustomerservices@nrscotland.gov.uk

7. Related publications and websites

Other household related topics can be found within the following websites:

National Records of Scotland (NRS) publications (available on the NRS website).

The NRS <u>household estimates</u> show annual estimates of the number of households and dwellings in Scotland.

The NRS population <u>estimates</u> and <u>projections</u> show annual estimates of the number of people in Scotland, and projections for future populations.

Scotland's census

Results and information about the 2011 Census are available from the <u>Scotland's</u> <u>census</u> website. This includes '<u>Household composition for specific groups of people in Scotland</u>', an analytical report published in August 2015 which looks at household composition data from the 2011 Census and compares it to the 2001 Census.

Scottish Government statistics

The Scottish Government produces a range of statistics on housing in Scotland, including the number of new homes built each year and numbers of conversions and demolitions. These statistics are available from the Housing Statistics for Scotland website, and include an annual summary of the key trends in housing.

Scottish Government <u>Planning Statistics</u>, which include data on vacant and derelict land, can also be found on the Scottish Government website.

Up-to-date information about the characteristics, attitudes and behaviour of Scottish households and individuals on a range of issues can be found on the Scottish Household Survey section of the Scottish Government website.

Up-to-date information on the State of the Economy and a Monthly Economic Brief for Scotland can be found in the <u>Economy</u> section of the Scottish Government website.

Centre for Housing Market Analysis

The Centre for Housing Market Analysis (CHMA) is part of the Scottish Government's Communities Analysis Division. It provides support to councils and others to aid the strategic planning of housing in Scotland.

The CHMA's monthly 'Scottish Housing Market Review' collates a range of statistics on house prices, housing market activity, cost and availability of finance and repossessions. More information, including the bulletins themselves, can be found on the CHMA website.

Household estimates and projections for other parts of the UK

Household estimates and projections for other parts of the UK are available from the following sources and websites.

- England: <u>Department for Communities and Local Government</u>
- Wales: Welsh Government
- Northern Ireland: <u>Northern Ireland Statistics and Research Agency</u> There are many similarities between the projections, but also some subtle differences between methods. A joint report containing a broad comparison of the household projection methodologies across the UK can be found on the <u>Welsh Government website</u>. The report was published in 2011, therefore it doesn't include any changes made to methods since then. However it provides a useful starting point in understanding the methods used by each country.

Scottish Government statistics user and provider consultation network (ScotStat)

You can register with the Scottish Government's <u>ScotStat</u> website to receive notification of forthcoming household estimates and projections publications. By registering you will also receive other updates relating to these statistics, including notifications of user consultations. You can also choose to receive notifications relating to other areas of Scottish Official statistics.

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).

National Statistics status means that official statistics meet the highest standards of trustworthiness, quality and public value.

All official statistics should comply with all aspects of the Code of Practice for Official Statistics. They are awarded National Statistics status following an assessment by the Authority's regulatory arm. The Authority considers whether the statistics meet the highest standards of Code compliance, including the value they add to public decisions and debate.

It is National Records of Scotland's responsibility to maintain compliance with the standards expected of National Statistics. If we become concerned about whether these statistics are still meeting the appropriate standards, we will discuss any concerns with the Authority promptly. National Statistics status can be removed at any point when the highest standards are not maintained, and reinstated when standards are restored.

Information on background and source data

Further details on data source(s), timeframe of data and timeliness, continuity of data, accuracy, etc can be found in the About this Publication document that is published alongside this publication on the NRS website.

National Records of Scotland

We, the National Records of Scotland, are a non-ministerial department of the devolved Scotlish 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 <u>Statistics</u> section of our website. Scottish Census statistics are available on the <u>Scotland's</u> <u>Census</u> website.

We also provide information about <u>future publications</u> on our website. If you would like us to tell you about future statistical publications, you can register your interest on the Scottish Government <u>ScotStat website</u>.

You can also follow us on twitter @NatRecordsScot

Enquiries and suggestions

Please contact our Statistics Customer Services if you need any further information. Email: statisticscustomerservices@nrscotland.gov.uk

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

Alan Ferrier
Senior Statistician
National Records of Scotland
Room 1/2/12
Ladywell House
Ladywell Road
Edinburgh
EH12 7TF

Phone: 0131 314 4530

Email: alan.ferrier@nrscotland.gov.uk

© Crown Copyright

You may use or re-use this information (not including logos) free of charge in any format or medium, under the terms of the Open Government Licence. Further information is available within the Copyright and Disclaimer section of the National Records of Scotland website.