

# Research Summary

## Population Projections

### Population Projections

- In the next 20 years the population of Northumberland is projected to increase from 312,000 in 2010 to 338,000 by 2033, a rise of 8.3%.
- Northumberland has an ageing population, a trend which is set to continue with the number of older people in Northumberland predicted to rise dramatically in the next 25 years. By 2033 31% of the total population of Northumberland will be aged over 65.
- In comparison the number of people aged under 16 will decrease, accounting for 16.9% of the population in 2010 to 15.8% in 2033.
- The largest projected decreases will be in those aged 50-54 (16.6%) and 55-59 (21.1%).

These population trends have implications for the authority in terms of the services they provide. If the older population increases as expected this will place additional pressure on a range of services which will need to be adapted for a changing clientele. In comparison the authority may wish to put in place policies which help retain our younger people and the 50-59 age group where the largest projected falls are expected to occur.

The following summary provides details of the population projections produced by the Office for National Statistics (ONS) and the Policy & Research team and the methodologies behind them.

The Policy & Research team would like to know if you would like to become involved in developing the population projections or inputting particular scenarios into the model to test different assumptions. For more information contact the Policy & Research team.

February 2012

This research summary is produced by the Northumberland County Council Policy and Research Team. It provides an indication of possible change in the population of Northumberland over the next 25 years.

**Population Projections Resources (click to view)**

[ONS Population Projections](#)

[ONS Projections Methodology](#)

[InfoNet Projections](#)

[Know Northumberland – Population & Health Bulletin](#)

Contact Shona Rowe or Gillian Taylor for more information:  
[InfoNet@northumberland.gov.uk](mailto:InfoNet@northumberland.gov.uk)  
Tel. 01670 533903

**Policy and Research Team**  
Transformation Service  
Northumberland County Council  
County Hall  
Morpeth  
Northumberland  
NE61 2EF

[InfoNet@northumberland.gov.uk](mailto:InfoNet@northumberland.gov.uk)

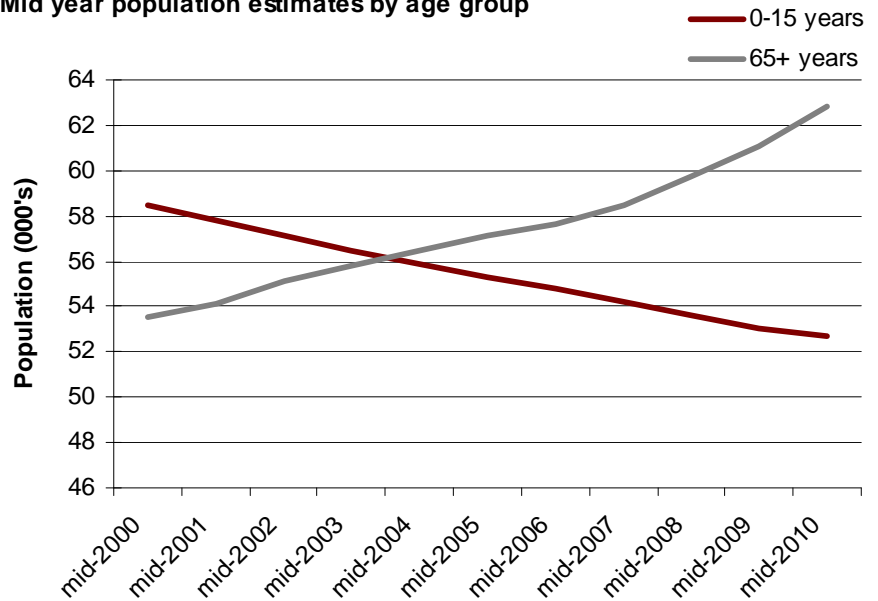


## The population of Northumberland at the present time

### Northumberland - Mid 2010 population estimates

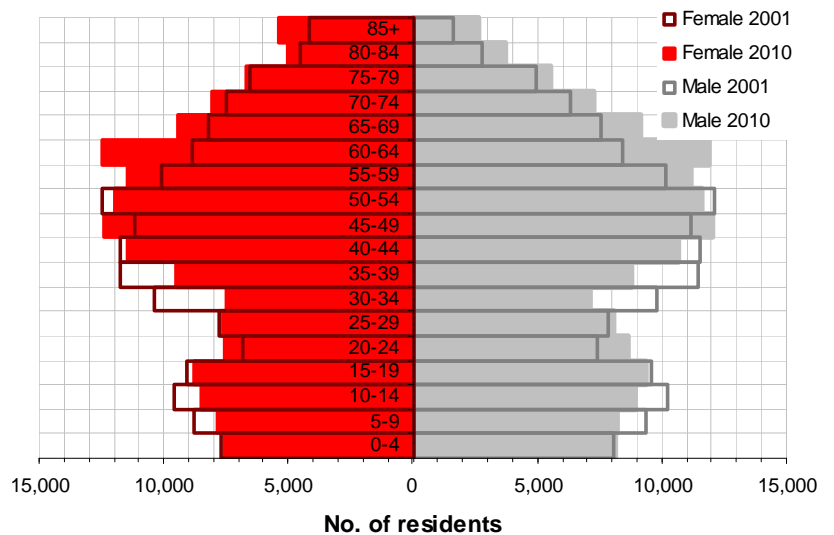
According to the Office for National Statistics (ONS), the population for Northumberland in mid 2010 was 312,000. 30.4% of those residents were in the 45 - 64 age bracket, with a further 20.1% in the 65 years and over group. Children (0 -15) made up 16.9% of the population with only 4.7% of the population between 16 -19.

Mid year population estimates by age group



It can be seen that the number of older residents aged 65 and over has increased significantly over the last 10 years, (53,500 to 62,800) whereas the number of children has fallen from 58,500 to 52,700 over the same period.

The population in 2010 was estimated as 312,000 which was an increase of 4,600 since 2001. The attached chart shows the current breakdown by age group and sex, of the residents in Northumberland. It can be seen that the figures for older age groups are larger than for younger groups in both 2001 and 2010. Also, the number of older residents, both male and female has risen over the ten year period.



Gender	All Ages	0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81+
Male	152,846	18,076	18,195	16,556	16,385	23,081	22,630	20,371	12,076	5,476
Female	159,145	17,024	16,997	15,367	17,509	24,175	23,371	21,217	14,231	9,254

Source: ONS Mid 2010 Population Estimates

## The population of Northumberland in the future

### What are Population Projections?

The purpose of population projections is to show how the size and structure of the population would change over the next 25 years if recent demographic trends continue. They are intended to help local users plan ahead, and are one of the factors used to determine how funding will be distributed to local government and health authorities.

### Uses and Limitations

Population projections have numerous uses in planning future services for the residents of Northumberland which include:

- helping to understand the implications of an ageing population;
- helping to determine future service provision needs;
- examining the impact of housing constraints on the population;
- predicting future education provision needs;
- health care planning.

In general, users of population projections tend to be interested in either short-term population changes (3-5 years ahead) often used to assess resource allocation or longer-term population changes (up to the full 25 year horizon) generally used for housing and infrastructure planning and provision of services.

It is important to note however, that as it is extremely difficult to predict how the population will change over the next 20 years and the resulting outputs should be classed as population projections rather than forecasts, i.e. if the assumptions within the scenario are satisfied, then these populations are likely to result. There are two sources of population projection data for Northumberland, and both are initially based on mid year population estimates produced by ONS:

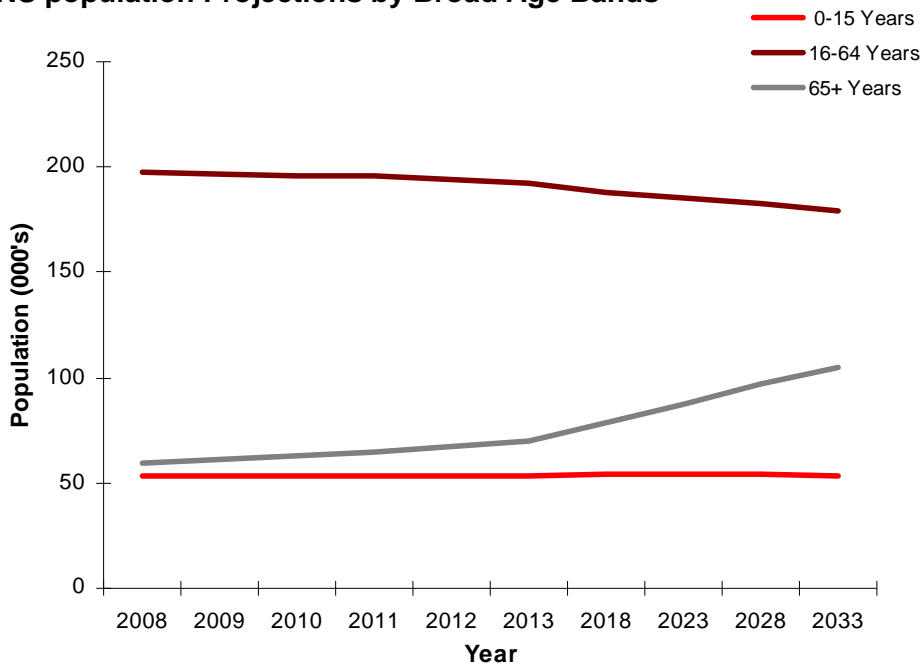
1. ONS Sub National Population Projections	2. Northumberland County Council Projections
<p>These projections are trend-based, making assumptions about future levels of fertility, mortality and migration based on levels observed over a five-year reference period. Therefore, they give an indication of what the future population, by age and sex structure, might be if recent trends continue, and take no account of policy or development aims in local authorities.</p>	<p>Although projections are already produced to a local authority level by the ONS, these do not take into consideration local variations. By producing our own projections it is felt that the assumptions that the projections are based on, can take account of local knowledge particularly where migration is concerned.</p>

# 1. ONS Population Projections (2010 based)

## ONS projections - methods

The projections are based on estimates of the resident population of the UK and its constituent countries at mid-2010. They are made for successive years running from one mid-year to the next. For each age, the starting population plus the net number of migrants less the number of deaths produces the number in the population, one year older, at the end of the year. Infants born during the year also have to be added, excluding those that do not survive (see link to methodology on first page).

## ONS population Projections by Broad Age Bands



## Components of ONS population projections for Northumberland (2008-based)

By 2028, Natural Change is projected to account for a reduction of 1,000 persons from the previous year, with All Migration Net projected to account for 2,000 additional residents. By 2033 Natural Change is projected to account for a -1,300 population decrease from the previous year, with All Migration Net predicted to account for 2,100.

Year to							
2018		2023		2028		2033	
Natural Change	All Migration Net	Natural Change	All Migration Net	Natural Change	All Migration Net	Natural Change	All Migration Net
-0.4	1.7	-0.6	1.9	-1.0	2.0	-1.3	2.1

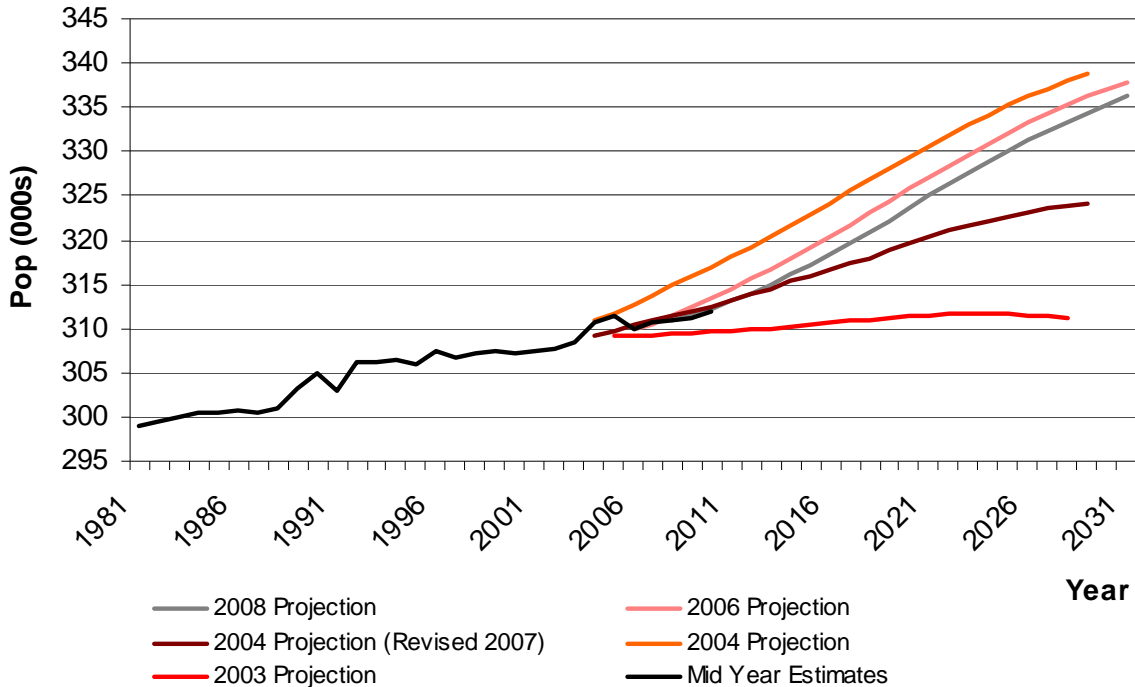
Source: Subnational Population Projections, Office for National Statistics. Figures in thousands

Natural change = births – deaths

All migration net = internal and international inward migration - internal and international outward migration

These national population projections by age and sex are produced regularly and are based on a review of the underlying assumptions regarding fertility, mortality and migration. It can be seen that there is a great variation in figures depending on the base date of their calculations.

### ONS Mid-Year Estimates and Projections for Northumberland



## 2. Northumberland population projections

### Why produce our own projections?

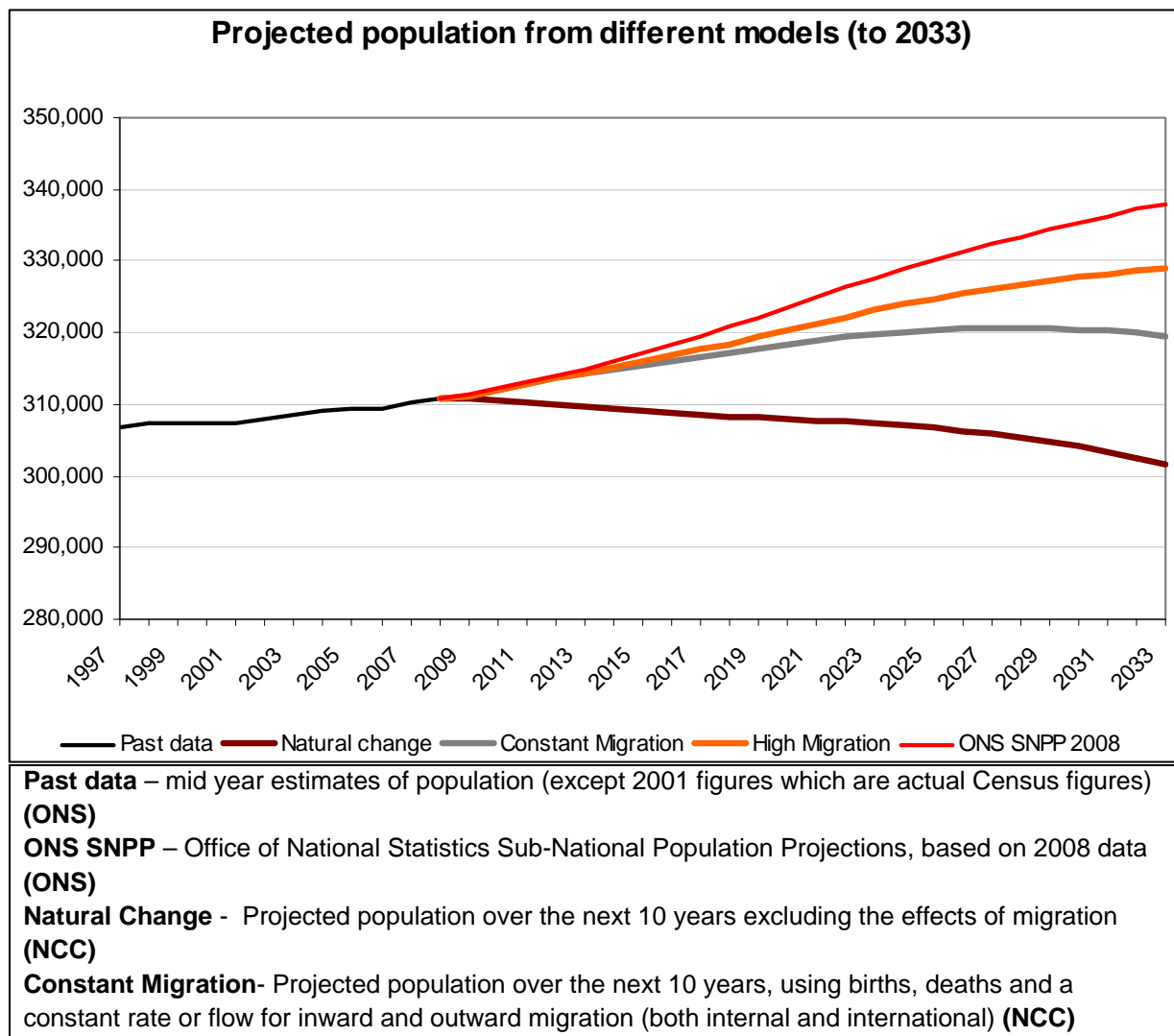
Northumberland InfoNet has produced population projections for Northumberland up to 2033, which have been produced as an alternative to using ONS projections for three reasons:

- There is considerable variation in the different ONS projections due to the short-term trend-based methodology.
- ONS projections for Northumberland are constrained by the national projections.
- Producing population projections within Northumberland County Council allows impacts of different scenarios to be investigated.

The population model projects population by using estimated births, deaths and migration flows over future years, based on single-year cohorts. It is felt that by using the characteristics of population change specifically for Northumberland, by including local data such as birth rates or internal migration rates, more locally focussed projections can be produced. By using specialised population projection modelling software, there is also the capability to look at the impact of additional scenarios e.g. the impact on the population of an extra 10% of 20-29 year olds leaving the county or a decrease of migrants entering Northumberland due to lack of work opportunities.

The table shows figures produced by using different models. By 2021, the population for the ONS scenario and the Northumberland constant migration scenario is expected to differ by nearly 8,500. The chart below shows the difference in figures when using different fertility, mortality and migration assumptions. Looking ahead to 2033, it can be seen that the ONS and High Migration models continue to increase, the Constant Migration levels off and the natural change model predicts a decreasing population.

Year	NCC Natural change	NCC Constant migration	NCC High migration	ONS projection
2009	310.8	311.6	311.1	311.5
2010	310.5	311.8	312.0	312.3
2011	310.2	312.3	312.9	313.1
2012	310.0	312.8	313.6	313.9
2013	309.7	313.3	314.4	314.9
2014	309.5	313.8	315.1	316.1
2015	309.2	314.2	315.9	317.2
2016	309.0	314.7	316.7	318.4
2017	308.9	315.1	317.6	319.6
2018	308.7	315.5	318.4	320.9
2019	308.5	315.9	319.3	322.2
2020	308.4	316.2	320.3	323.6
2021	308.2	316.5	321.2	325.0



## Assumptions

### Fertility (birth) and mortality (death) rates

The assumption has been made that Northumberland fertility and mortality rates will follow the future trend of national rates. However, these have been adjusted to bring them more in line with expectations for Northumberland, e.g. if historical rates for a particular age/sex are consistently lower in Northumberland than in England & Wales, then these are assumed to also be lower in the future.

### UK (internal) migration

The projection shown, assumes that the 2006-2008 3-month average migration rates (split by age and gender) will remain constant over the projection period.

### International migration

Outward international migration is assumed to be dependent on the population, whereas inward international migration is assumed to be independent. The 3-month average (2006-2008) migration total flow (for inward migration) and rate by age/gender (for outward migration) is assumed to remain constant over the projection period. As net international migration has varied between positive and negative over the past few years, an alternative scenario could be run to remove international migration entirely from the projection.

When looking at a longer projection period, the Northumberland InfoNet projections (except the natural change projection) expect the population to grow at a lesser rate than the ONS projection. The projection based on constant migration increases initially, before declining later in the projection period, and is projected to peak at just over 317,000 in 2025 and 2026, an increase of around 6,200 (2%) on the 2008 figure.

### Further information and using the projections

In terms of using these figures for further analysis/reporting, the choice of whether to use the constant migration projection, ONS projections, or different projections based on high migration, should depend on the purpose of the further work. Please contact the Policy & Research Team for further information on population projections, including methodology, and the uses and limitations of different projections. A more detailed breakdown of the projected population by age and gender can also be provided. Additional projections can also be produced using different scenarios to test for example the impact of housing constraints or an increase in migration.