

Population and Migration Statistics Committee

11 May 2016 Meeting

Sub-National Population Projections
Review: Update

Progress Overview

- The new SAS-based projections system has been coded and is currently in testing phase.
- The 2012-based projections have been run on the new system and are being compared with the published figures.
- We are planning on a July 2016 publication but this may progress to August 2016 depending on the outcome of testing.

Proposed Timetable

May 2016

- Finalise testing of system.
- Produce report on difference between methods.

June 2016

- Consult on migration for 2014-based projections.

July 2016

- Publish 2014-base projections.

Summary of Changes

- Mortality & Fertility
 - The method has not changed.
- Special Populations
 - The special populations are removed at the beginning, and added back in at the end of each year of the projection.
- Migration has been changed
 - Within Scotland and Rest of UK (RUK) Migration are projected using a rates based model;
 - International Migration uses time series modelling as a base for the projection.

Within Scotland & RUK Migration

- Rates are calculated using an average of the previous populations and migration from an area.
- The rate is applied to the population of an area to calculate out migration from said area.
- An adjustment can be applied which takes account of the population of the destination area.
- In migration is calculated by summing all out migration from other areas.

International Migration

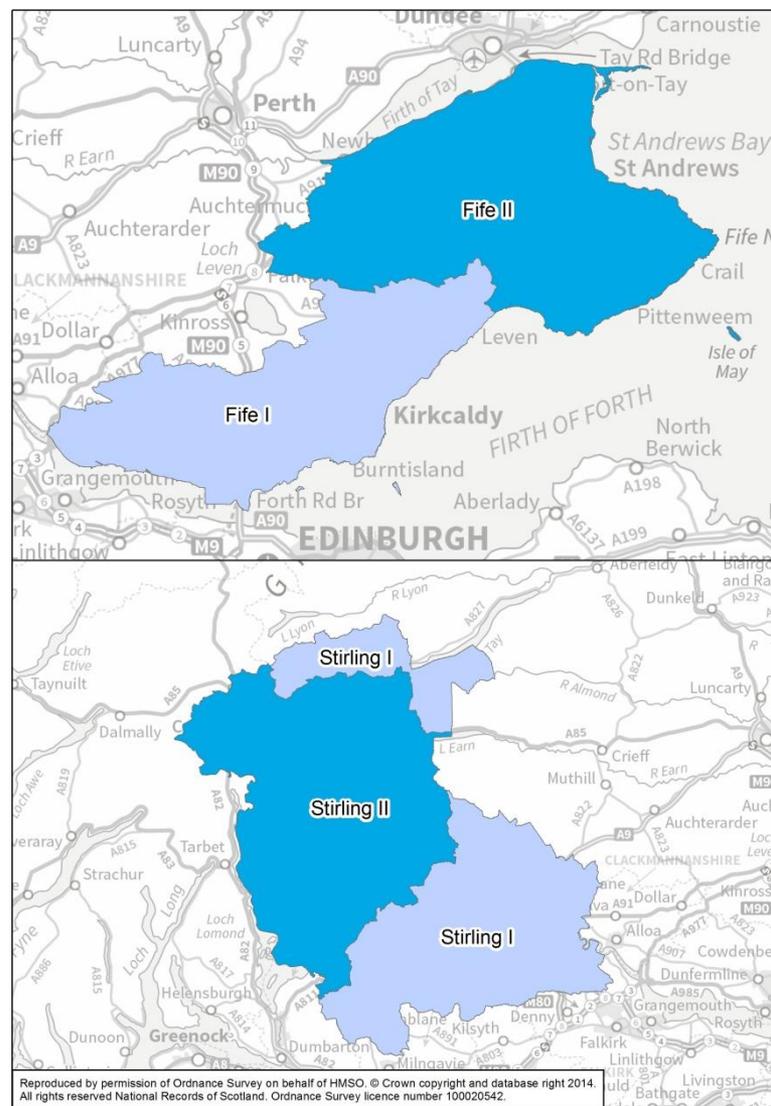
- International migration is projected by performing time series analysis on historic totals to project future totals.
- A 5-year average of international migration estimates will be constrained to the projected totals to create age and sex distributions.
- The age and sex distributions will be constrained to the international migration for Scotland.

Geography

- The projections are produced for 34 Processing Units.
- The Processing Units are geo-converted to the four published geographies.
- This guarantees consistency across geographies and improves the fit for National Park, and Strategic Development Plan areas.
- The geo-conversion is based on trends seen between the 2001 and 2011 Censuses.

Processing Units

Processing Unit	Processing Unit
Aberdeen City	Inverclyde
Aberdeenshire	Midlothian
Angus	Moray
Argyll & Bute	Na h-Eileanan Siar
Clackmannanshire	North Ayrshire
Dumfries & Galloway	North Lanarkshire
Dundee City	Orkney Islands
East Ayrshire	Perth & Kinross
East Dunbartonshire	Renfrewshire
East Lothian	Scottish Borders
East Renfrewshire	Shetland Islands
Edinburgh, City of	South Ayrshire
Falkirk	South Lanarkshire
Fife I	Stirling I
Fife II	Stirling II
Glasgow City	West Dunbartonshire
Highland	West Lothian



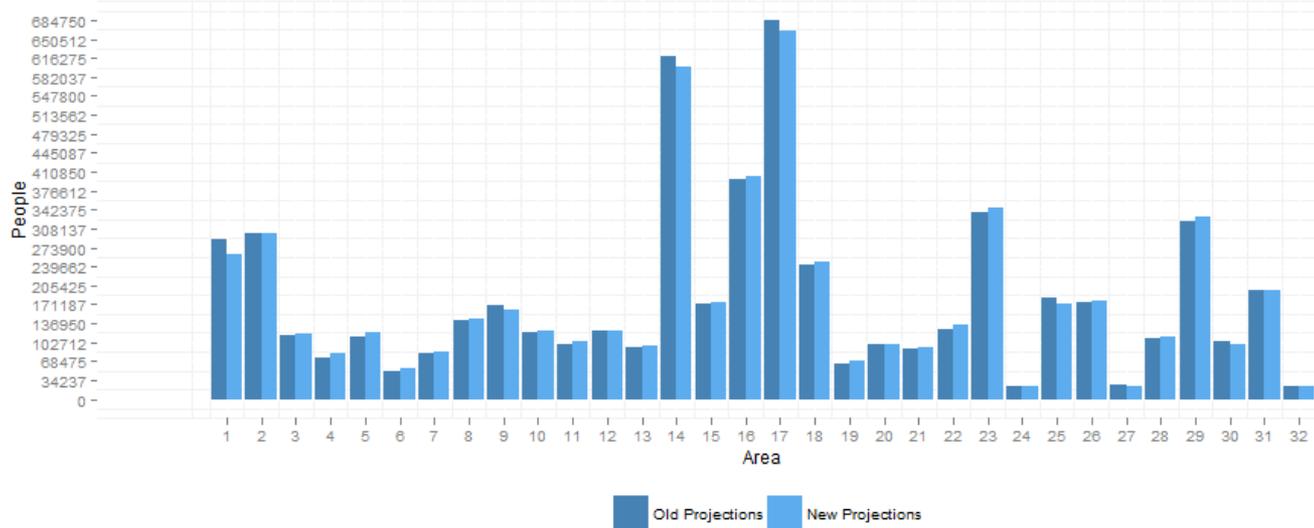
New System Test

- The system has been run using one of the possible models.
- The new system has been run to produce 2012-based population projections.
- All variants have also been produced.
- Constrained and unconstrained projections have been produced.

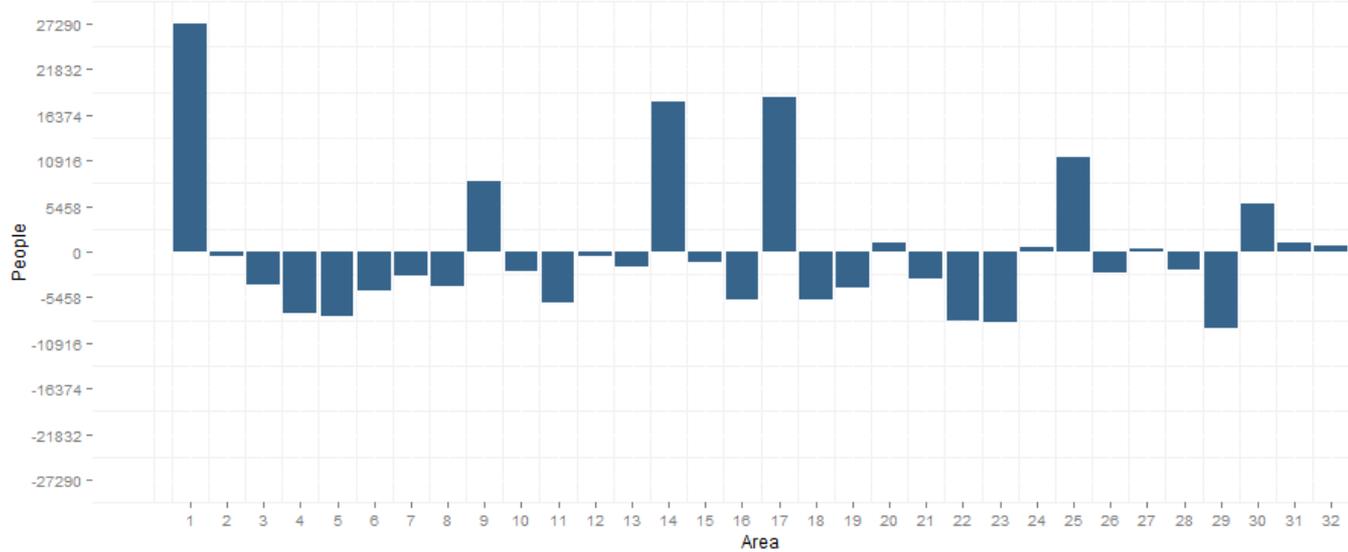
Provisional Results

- The output from the new system is now being quality assured against the published 2012-based population projections.
- We have produced a lot of output and the checking quality assurance process is taking some time but looking positive.
- The final models which will be used in the projections may change following testing.

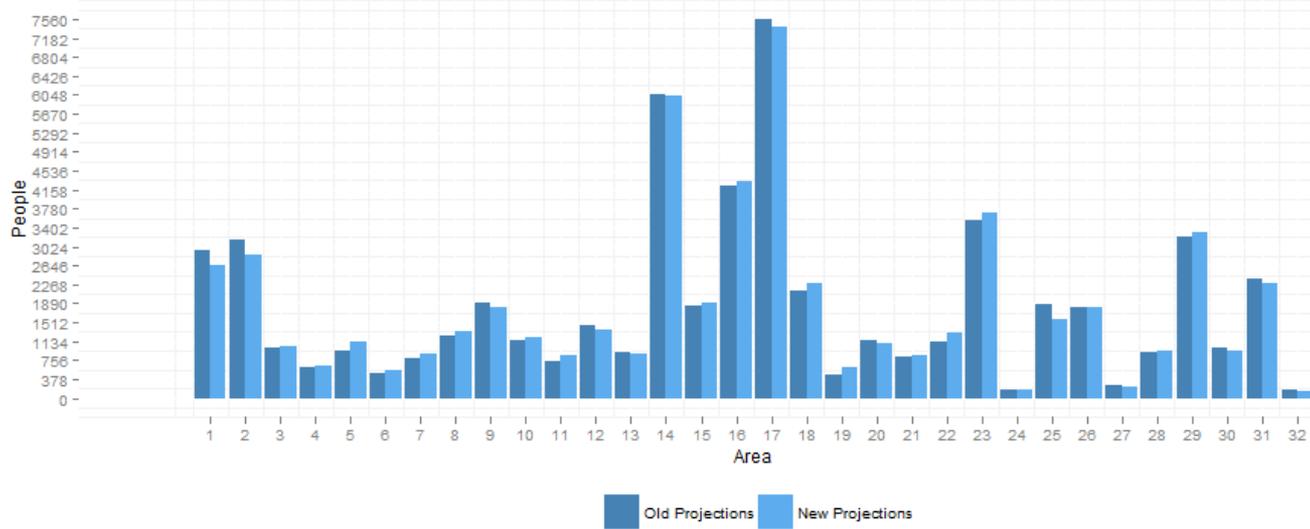
Population projection for ages 0 to 90 in the year 2037



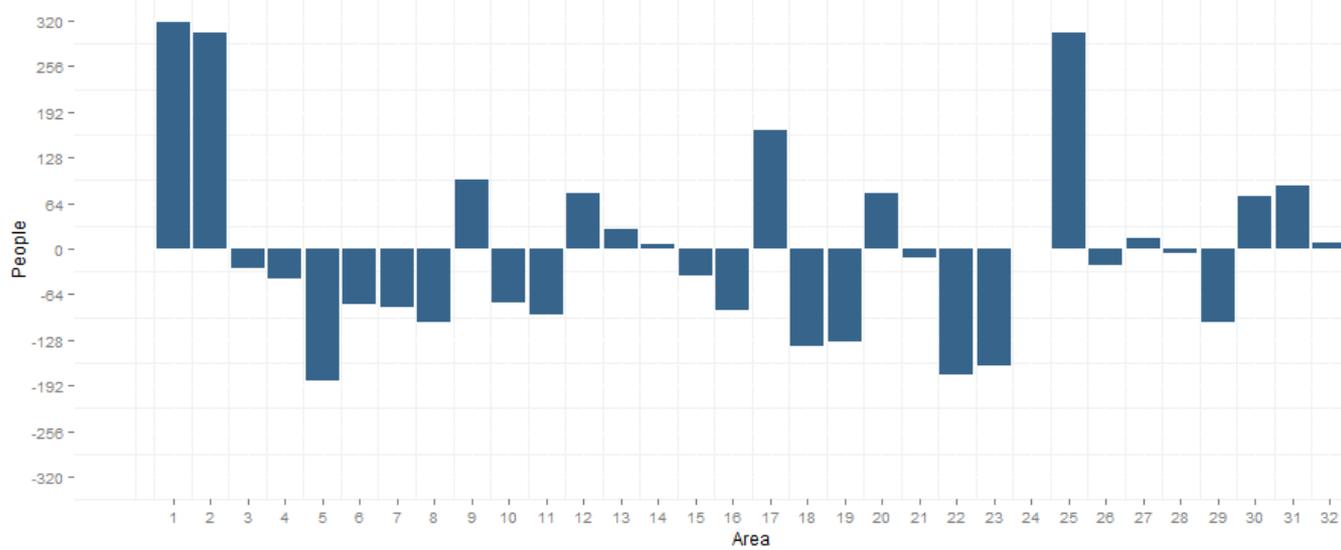
Difference between Old and New Projections (Old minus New)



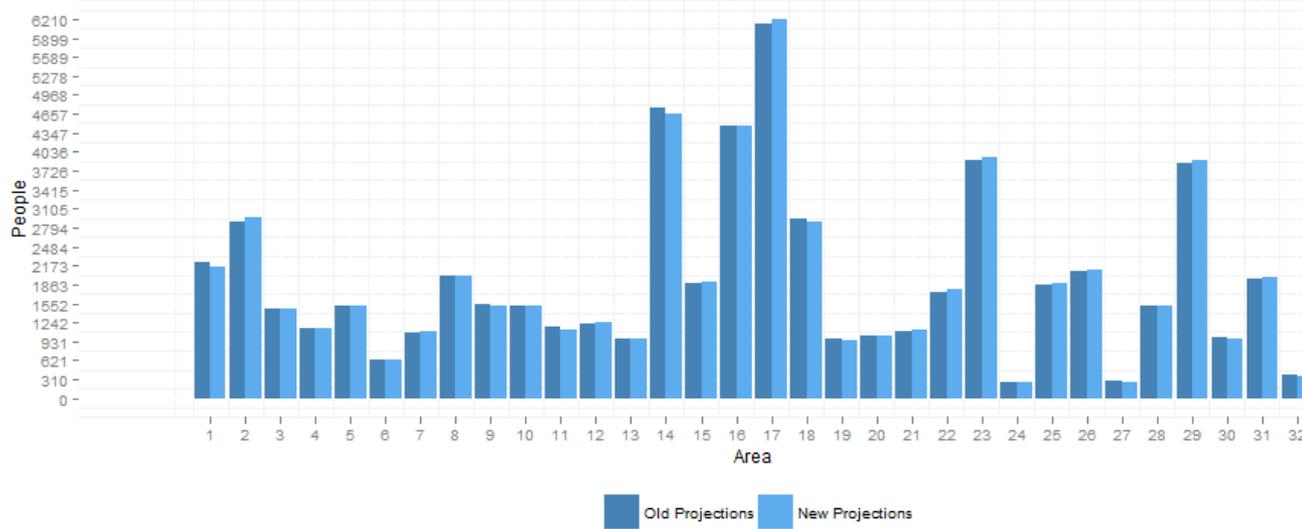
Births projection for ages 0 to 90 in the year 2037



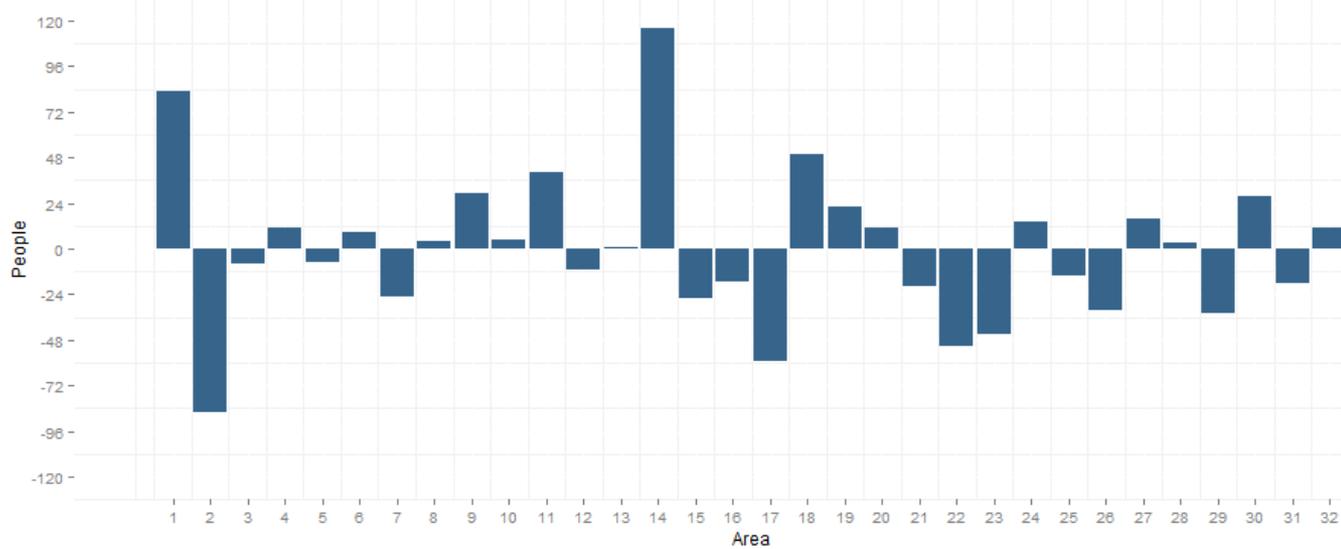
Difference between Old and New Projections (Old minus New)



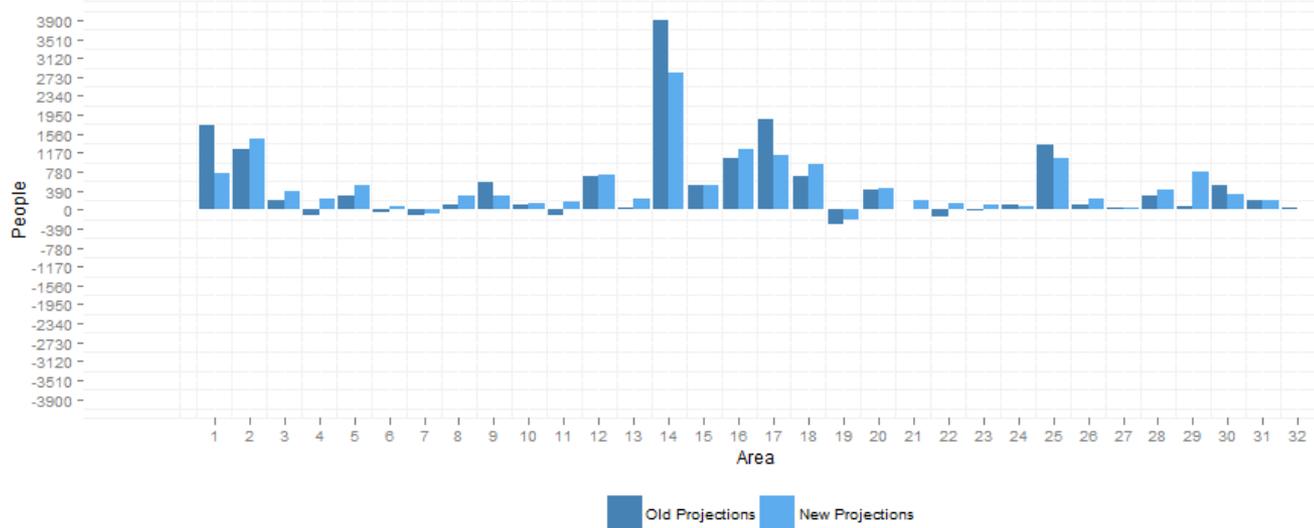
Deaths projection for ages 0 to 90 in the year 2037



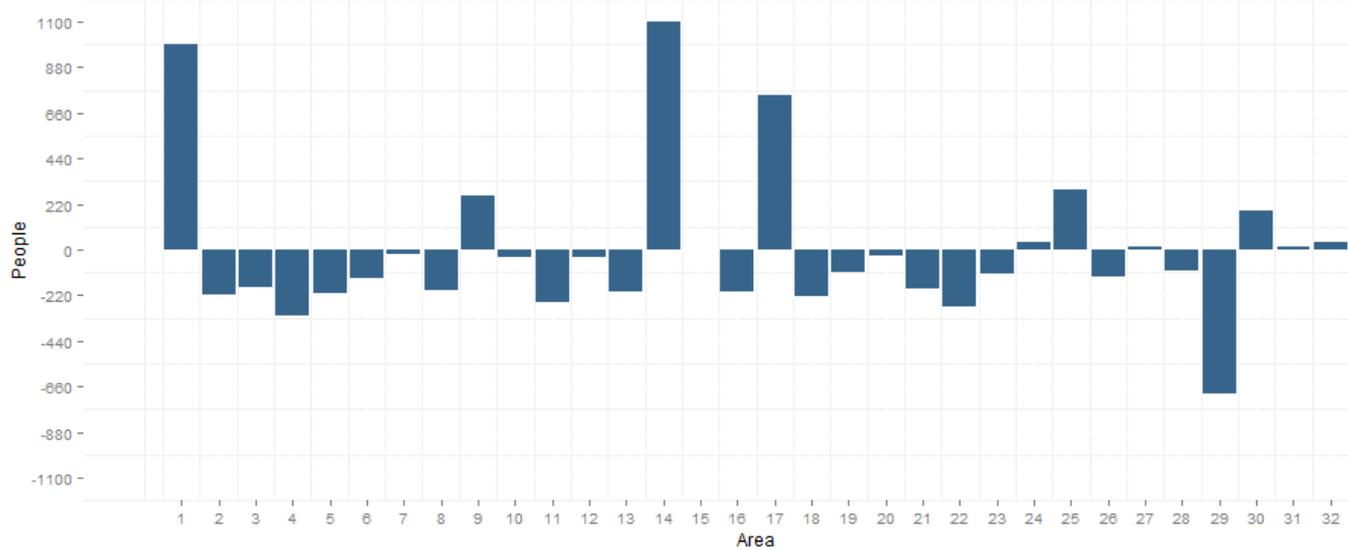
Difference between Old and New Projections (Old minus New)



Net_Migration projection for ages 0 to 90 in the year 2037



Difference between Old and New Projections (Old minus New)



Comparison Paper

- We will be producing a paper comparing the 2012-based projections that have been published with those produced using the new methodology.
- What would you like to see in the comparison paper?
- What data would you like?

Questions?