

Sub-National Population Projections

General Register Office for Scotland
Glasgow City Council Visit, 23 February 2010



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Outline

- Summary of latest projections for Glasgow
- Current work on small area population projections



Latest population projections

- Published 3 February 2010.
- Based on mid-2008 population estimates.
- Sub-national – council areas and health board areas.
- Projections for next 25 years.
- Also includes high and low migration variants.

(Strategic Development Plan areas later in 2010.)



Latest population projections

- General Register Office for Scotland (GROS) projections are based on past trends.
- Make assumptions about future fertility, mortality and migration rates.
- Not policy-based forecasts. They don't take account of
 - Future planned initiatives
 - Economic predictions
 - Planned housing developments



Births, Deaths and Migration

Assumptions behind the projections



Births

- 2008-based national assumptions
 - Average completed family size will continue to fall from around 1.85 children per woman born in the early 1960s to 1.70 for those women born in the 1990s and later.
- Local scaling factors for fertility rates
 - National rates adjusted to take account of local variations in 5 years preceding the projections
 - Glasgow City = 0.846
 - Greater Glasgow & Clyde = 0.962



Deaths

- 2008-based national assumptions
 - Mortality rates will continue to decrease but Scotland will continue to have higher rates than the rest of the UK.
 - Scottish life expectancy at birth is projected to increase
 - Males: 74.8 for 2007 to 80.7 in 2033
 - Females: 79.8 in 2007 to 85.3 in 2033
- Local scaling factors for mortality rates
 - National rates adjusted to take account of local variations in 5 years preceding the projections (by broad age bands)

	Males			Females		
	0-59	60-79	80+	0-59	60-79	80+
Glasgow City	1.510	1.556	1.157	1.393	1.370	1.080
Greater Glasgow & Clyde	1.345	1.339	1.094	1.200	1.236	1.053



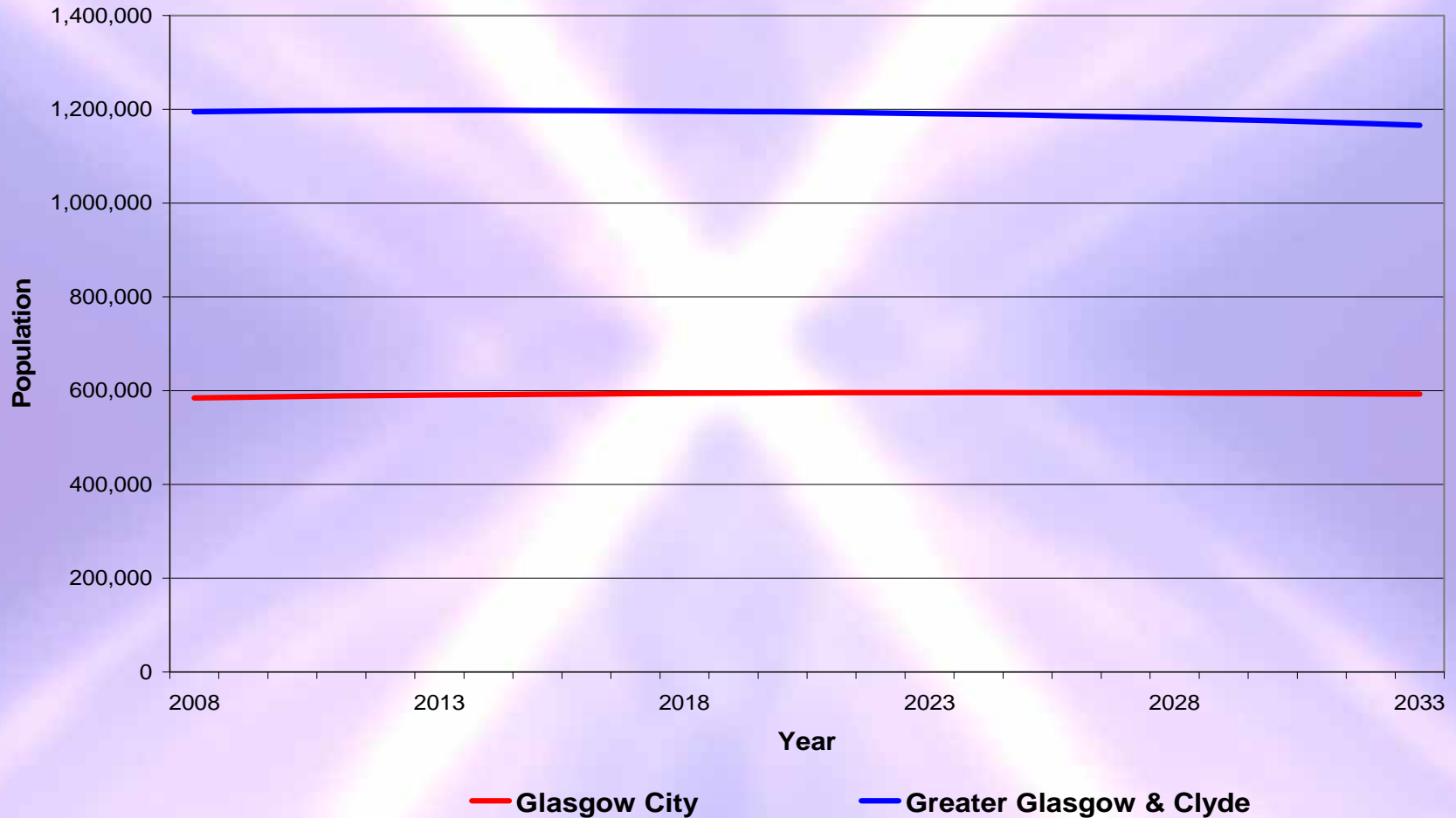
Migration

- 2008-based national assumptions
 - Net in-migration of 12,000 pa from 2014/15 onwards
- Local assumptions
 - Initial long-term assumptions calculated by taking 5-year averages of in/out migration to/from council areas within Scotland and other countries
 - Consult with local authorities
 - Takes into account the effect of asylum seekers
 - Annual net migration:

	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15 +
Glasgow City	1,150	900	500	200	-100	-350	-550
Greater Glasgow & Clyde	698	85	-500	-934	-1,287	-1,728	-2,063



Total population, 2008-2033



Population change by age groups, 2008-2033

	Glasgow City	Greater Glasgow & Clyde	Scotland
Children	-9%	-12%	-2%
Working age	2%	-5%	2%
Pensionable age	11%	18%	31%
(Age 75+	28%	52%	84%)

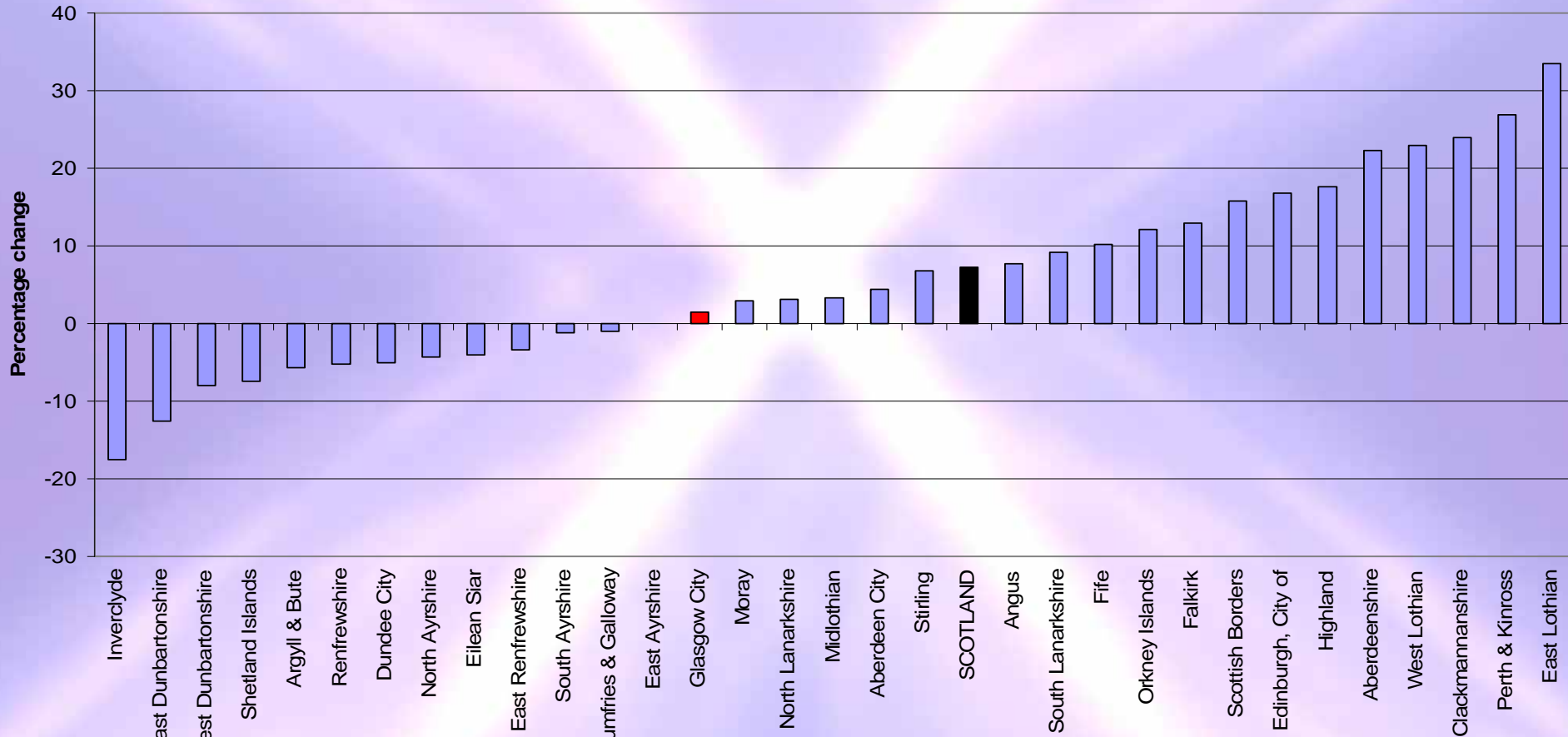
Children: 0-15

Working age: 2008 – 16-59 (females), 16-64 (males); 2033 – 16-65 (males & females)

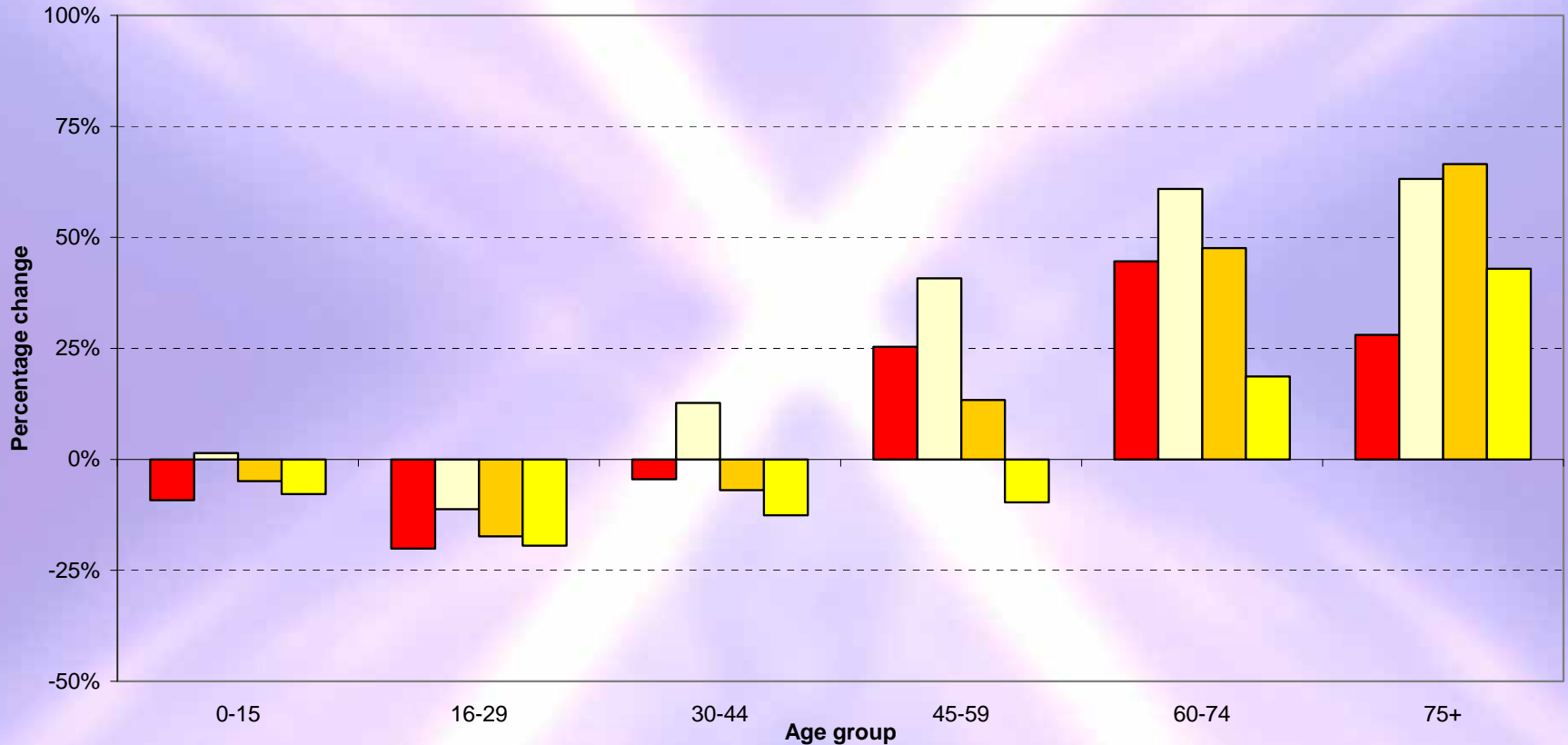
Pensionable age: 2008 – 60+ (females), 65+ (males); 2033 – 66+ (males & females)



Projected percentage change in population (2008-based) by council area, 2008-2033



Projected percentage population change in main Scottish cities, 2008-2033



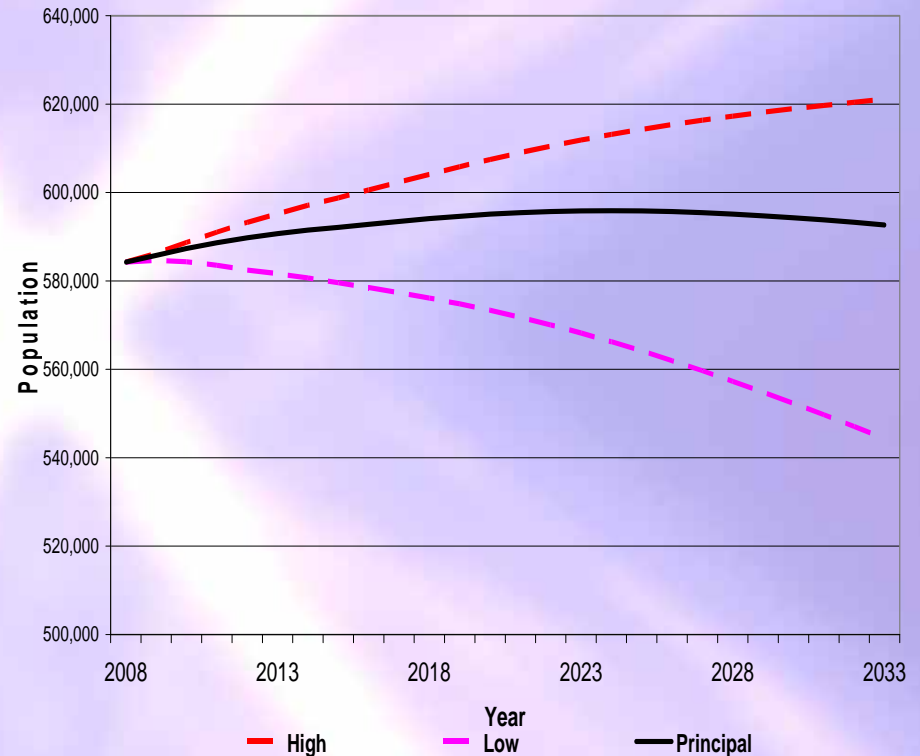
■ Glasgow ■ Edinburgh ■ Aberdeen ■ Dundee



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Variant population projections Glasgow City, 2008-2033

- Long-term migration assumptions (2014 onwards)
 - Principal = -550
 - Low migration = -2,000
 - High migration = +400
- Projected 2033 population
 - Principal = 592,672
 - Low migration = 544,335
 - High migration = 621,108



Web page

The screenshot shows a web browser window displaying the 'Population Projections' page of the General Register Office for Scotland. The page features a purple header with the GROS logo and a search bar. A left-hand navigation menu lists various statistics categories, with 'Population projections' highlighted. The main content area is titled 'Population Projections' and is divided into three sections: 'Population Projections Scotland', 'Sub-National Population Projections', and 'Population and Household Projections for Scotland's Strategic Development Planning Areas'. Each section contains a list of links for different years and bases of projections.

Section	Category	Item
Population Projections Scotland	Latest	Projected Population of Scotland (2008-based)
		Projected Population of Scotland (2006-based)
	Previous	Projected Population of Scotland (2004-based)
		Projected Population of Scotland (2003-based)
		Projected Population of Scotland (2002-based)
		Projected Population of Scotland (2001-based)
Revised 1994-based Population Projections		
Sub-National Population Projections	Latest	2008-based Population Projections for Scottish Areas
		2006-based Population Projections for Scottish Areas
	Previous	2004-based Population Projections for Scottish Areas
Population Projections Scotland (2002-based) - Population projections by sex, age and administrative area		
Population Projections Scotland (2000-based) - Population projections by sex, age and administrative area		
Population and Household Projections for Scotland's Strategic Development Planning Areas	Latest	Population and Household Projections for Scotland's Strategic Development Planning Areas (2006-based)

www.gro-scotland.gov.uk/statistics/publications-and-data/popproj/index.html



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Small Area Population Projections



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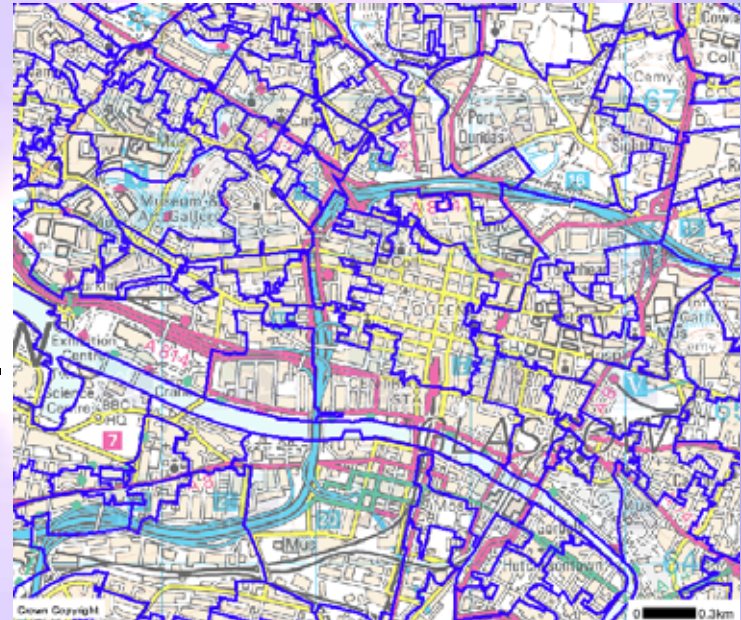
Aims

- Make data available for local authorities data to run their own population projections.
 - Data (births, deaths, migration) for small areas (data zones).
 - Aggregate to any higher geography.
 - Software used POPGROUP.



Data zones

- Small areas developed by Scottish Government for providing local statistics.
- Scottish Neighbourhood Statistics (www.sns.gov.uk).
- 694 data zones in Glasgow City.
- Average population about 850.



POPGROUP

- Excel-based software from Centre for Census & Survey Research (CCSR), University of Manchester.
- Can be used for any area or sub-area.
- Uses past information & future assumptions about births/fertility, deaths/mortality, and migration (in/out flows).
- Cohort-component method to produce projections.
- Provides results in Excel spreadsheets with data and chart routines.



Issues with small area data

- Disclosure
 - Provide data for 5-year period.
 - Provide data for 5-year age groups.
 - Applying disclosure control methods to the data.
- Stability of data
 - But data used as building blocks for higher geographies.
- Geographic fit may not be good
 - May require apportionment of data zones that cross boundaries.



Current work

- Looking at multi-member ward projections for Fife.
- CCSR have produced MMW (Multi-member Ward) level population projections for Fife Council.
 - Some data provided by GROS & Fife Council.
 - Some publicly-available data.
- GROS has been running alternative scenarios using different rates of fertility, mortality and migration.
 - Using data available to GROS only.



Purpose of alternative scenarios

- Do alternative scenarios give significantly different results?
- Are results from alternative scenarios more plausible?
- How much difference does the extra information available to GROS make to the final results. For example, does having 'age of mother' data make a significant difference to projected number of births for an area?
- Identify what data is required to produce good quality population projections for small areas.



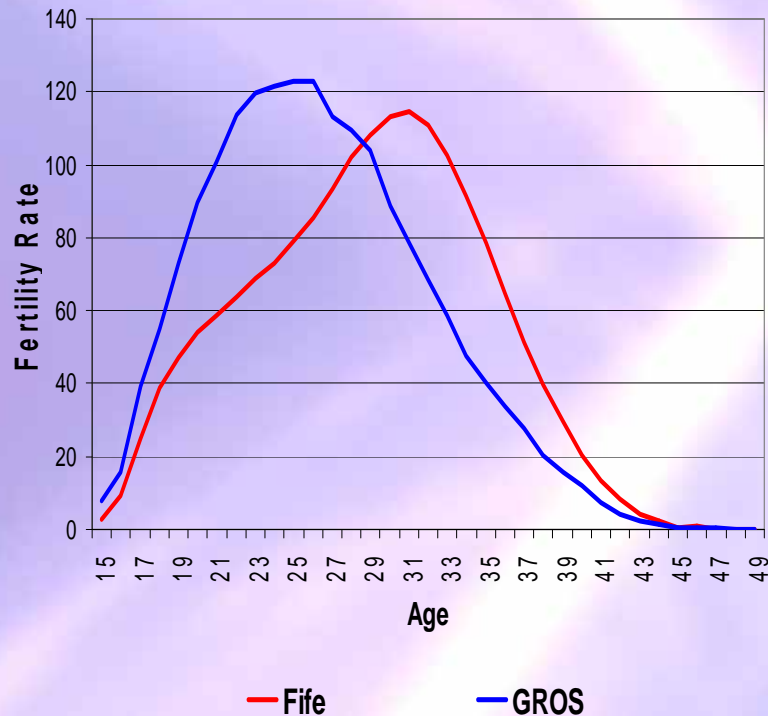
Example - alternative fertility assumption

- Fife projections
 - Used national age-specific fertility rates (Annex A, sub-national projections).
 - Applied MMW-level fertility differentials, derived from available information, to get local fertility rates.
- GROS alternative
 - Used age-specific fertility rates at MMW-level derived from counts of births, including the age of mother.

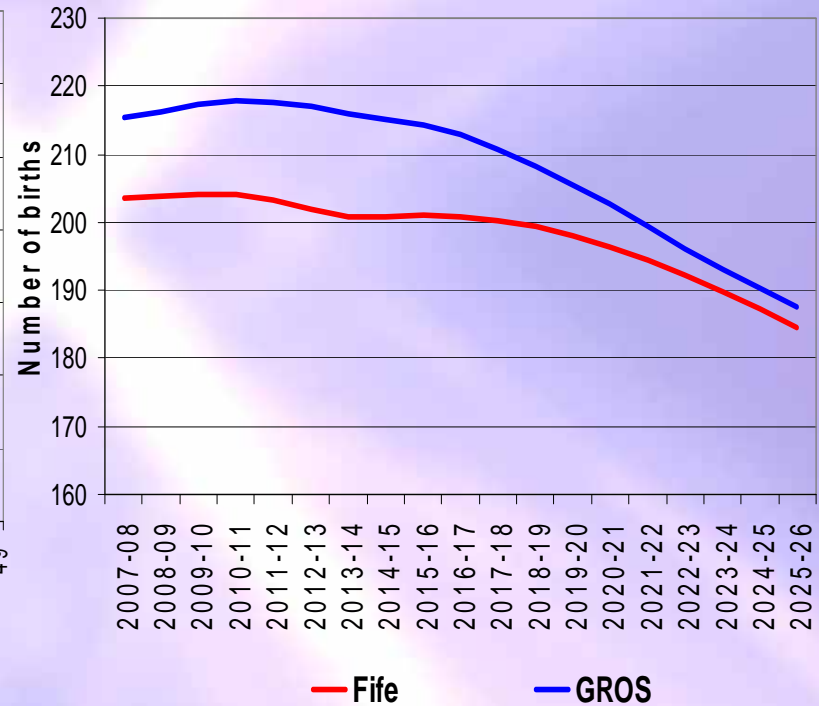


Example - projected births in ward

Fertility rates (per 1,000 women)



Projected number of births



Other alternative scenarios

- Looking at various scenarios with different fertility rates.
- Similar for mortality.
- Migration is different because there are much greater restrictions on what data can be released.
- Work on-going.



Next steps

- Find out from local authorities what data they need (especially for migration).
- Report on outcome of analysis of alternative scenarios for Fife MMW population projections.
- Set up database for POPGROUP users.
- Produce guidance notes for running projections on POPGROUP at small area level.
- Set up POPGROUP users group.



Thank you

Questions?

