

PROJECTED POPULATION OF SCOTLAND (2002 BASED)

I. Background

The Government Actuary's Department (GAD), in consultation with, and at the request of, the Registrars General, prepares population projections for the United Kingdom and its constituent countries. This note presents the main results of the latest, (2002-based) projection for Scotland, which takes full account of the 2001 Census results, and outlines the fertility, mortality and migration assumptions used in its preparation. Although longer term projections are produced we have concentrated on the first 25 years, as projections are increasingly uncertain the further forward they go.

II. Summary of results

The results of this new projection, summarised in **Table 1**, show the total projected population of Scotland falling slowly from 5.05 million in 2002 to 4.84 million by 2027, falling below 5 million in 2009. Longer term projections, for up to 40 years ahead, show a slightly faster decline after 2027 to 4.5 million in 2042. Although the trend of a slowly falling population is still the same as the previous 2001-based interim projections, the 2002-based projections fall at a slightly slower rate – because of lower mortality rates for older people, partly counter-balanced by higher net emigration.

	2002 (base)	2003	2008	2013	2018	2023	2027	Longer term projections	
								2031	2042
All Ages	5,055	5,045	5,007	4,970	4,935	4,891	4,840	4,770	4,505

Table 2 provides information on the projected components of change between 2002 and 2027. It is clear from this table that the most significant factor affecting future projected levels of population is the natural decrease - more deaths than births. More detailed information on the fertility assumptions underlying the numbers of births is given on page 3. The number of births has been falling in recent decades, and the lower number of women passing through child bearing ages further contributes to the reduction in the number of births.

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Table 2	Projected components of population change; Scotland: 2002-2027, (annual averages)						(‘000s)
	2002 -2003	2003 -2008	2008 -2013	2013 -2018	2018 -2023	2023 -2027	
Population at start	5,055	5,045	5,007	4,970	4,935	4,891	
Births	52	49	48	49	48	46	
Deaths	58	56	54	54	56	58	
Natural change	-7	-6	-6	-5	-7	-11	
Migration	-3	-2	-2	-2	-2	-2	
Population at end	5,045	5,007	4,970	4,935	4,891	4,840	
Total change	-10	-8	-7	-7	-9	-13	

* Note: Not all figures will sum due to rounding.

A summary of projected population by broad age groups is given in **Table 3**; projected populations by sex and five year age groups are given in **Table 6**. These tables show that the age structure of the population is projected to change notably between 2002 and 2027. Between 2010 and 2020, the pensionable age for women rises from 60 to 65 and the figures take account of this. The main changes are:

- the number of children aged under 16 is projected to fall to 80 per cent of its 2002 level by the year 2027;
- the number of people of working age is projected to fall by 8 per cent from 3.15 million in 2002 to 2.88 million in 2027;
- the number of people of pensionable age is projected to rise by 25 per cent to nearly 1.2 million in 2027. (Without allowing for the change in the female pension age, the number of people over pensionable age would have increased by 45 per cent between 2002 and 2027.);
- the number of elderly people of 75 and over is projected to rise by 61 per cent to 585,234 in 2027, and the sex structure of the elderly population over 75 years old is projected to change from 35 per cent male in 2002 to 42 per cent male in 2027.

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Age group	2002 (base)	2003	2008	2013	2018	2023	2027
All ages	5,055	5,045	5,007	4,970	4,935	4,891	4,840
Children							
under 16	955	942	865	808	782	773	765
Working ages							
16-64/59 ¹	3,150	3,147	3,128	3,118	3,107	3,011	2,885
16-29	873	871	902	889	835	766	723
30-44	1,158	1,145	1,027	926	883	911	897
45-64/59 ¹	1,118	1,131	1,200	1,303	1,388	1,334	1,266
Pensionable ages							
65/60 ¹ & over	950	956	1,013	1,045	1,046	1,107	1,190
65/60 ¹ - 74	585	590	621	617	578	569	605
75 & over	364	366	392	427	469	539	585

¹ Pensionable age is 65 for men, 60 for women until 2010; between 2010 and 2020 pensionable age for women increases to 65.

* Note: Not all figures will sum due to rounding.

A useful summary measure of the age structure of a population is the dependency ratio - the ratio of persons aged under 16 or over pensionable age to those of working age. **Table 4** shows that the dependency ratio is projected to fall slightly from 60 per 100 working age population to 59 in 2013, before rising to 68 in 2027. (Without the change in women's state pension age, the dependency ratio would have been much higher in 2023 - 73 per 100 working age population - than the currently projected ratio of 62.) After the completion of the change to the state pension age in 2020, the dependency ratio is projected to rise further, to reach to 78 in 2042.

Age group	2002 (base)	2003	2008	2013	2018	2023	2027
All dependants	60	60	60	59	59	62	68
Children							
under 16	30	30	28	26	25	26	27
Pensionable ages							
65/60 ¹ & over	30	30	32	34	34	37	41
65/60 ¹ - 74	19	19	20	20	19	19	21
75 & over	12	12	13	14	15	18	20

¹ Pensionable age is 65 for men, 60 for women until 2010; between 2010 and 2020 pensionable age for women increases to 65.

* Note: Not all figures will sum due to rounding.

III. The base population and assumptions used in the projection

The base population: The projection is based on the Registrar General's population estimates for mid - 2002. The population includes everyone usually resident in Scotland, of whatever nationality. Members of HM and non-UK armed forces stationed in Scotland are included; HM forces stationed outside Scotland are excluded. Students are treated as being resident at their term-time address.

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Fertility: The fertility rates used in the projection are based on assumptions about the average completed family size of successive generations of women. It has been assumed that the average completed family size will continue to decline from just under 2 children per woman for those born in the mid to late 1950s and now reaching the end of their childbearing lives, before levelling off at 1.60 for those born in 1975 and later. The recent downward trend in the number of births is expected to continue for the projection period, falling below 50,000 in 2005 before declining further to a projected level of about 46,000 in 2027.

Mortality: The mortality rates for the projections are based on long-term trends up to 2002. Generally, mortality rates are projected to fall, initially at varying rates but tending to a reduction of 1.0 per cent a year at all ages by 2027. In line with the long-term trends, it has been assumed that the mortality rates for Scotland will continue to be higher at most ages than those for England & Wales.

Based on these rates, expectations of life at birth are projected to increase from 73.5 in 2002-03 to 78.4 in 2026-27 for males; and from 79.0 in 2002-03 to 83.2 in 2026-27 for females.

Migration: The total outflow is expected to be slightly greater than the total inflow. A net out-migration of 1,500 each year is assumed from 2003-04 to the end of the projection period. These assumptions have been derived from analyses of trends in civilian migration to and from the United Kingdom as well as cross-border migration between the four constituent countries. The loss in the first year of the projection period is assumed to be higher.

IV. Comparison with previous projections

The last full set of projections was based on the year 2000. A year ago, GAD produced an "interim" set of 2001-based population projections, consistent with the 2001 mid-year estimates. The revised projections were classed as "interim" because they did not take full account of the results of the 2001 Census. (The main change from the previous 2000-based full set of projections was the change to the population base and the international migration assumption.)

The 2002-based projections take full account of the 2001 Census results. The key changes compared with the previously-published 2001-based interim projections are the new (lower) mortality rates for older people, and an assumed net out-migration from Scotland of 1,500 a year (compared with 1,000 net out-migration in the previous projections). The fertility assumption (long-term average number of children per woman) remains the same at 1.60.

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The change in mortality assumptions increased the expectation of life in 2027 by 1.6 years from 76.8 for males, and by 1.4 years from 81.8 for females. These improved mortality assumptions results in around 3,000 fewer deaths per year over the period.

The projected results for the current and previous projections are shown in **Table 5**.

	2002	2008	2013	2018	2023	2027
2002 based	5,055	5,007	4,970	4,935	4,891	4,840
2001 based	5,057	5,007	4,967	4,925	4,871	4,812
2000 based	5,102	5,065	5,034	4,999	4,951	4,896

V. Further information

Further information about the projections for Scotland and other parts of the UK will be published by the Office for National Statistics in an article in *Population Trends 115* in March 2004. A reference volume (ONS Series PP2 no. 25) about the projections will be published later in 2004. This volume will contain full details of the underlying assumptions used.

Corresponding data for the United Kingdom and its constituent countries is available from the Government Actuary's web site (www.gad.gov.uk) or by contacting GAD at:

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15-17 Furnival Street
London EC4A 1AB

Tel: 020 7211 2622
Fax: 020 7211 2640
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More detailed age and sex breakdowns of the Scottish results are available from GROS customer services or from the GAD web site (www.gad.gov.uk). The next set of sub-national projections for Scotland will be released in January 2004. These will be consistent with the latest 2002-based projection for Scotland described above. Further details on timing and availability can be obtained from:

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General Register Office for Scotland
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Table 6		Projected population of Scotland (2002-based), by sex and age 2002-2027						(’000s)
Age	Sex	Estimated population 30		Projected population at 30 June				
		June 2002	2008	2013	2018	2023	2027	
All ages	Persons	5,055	5,007	4,970	4,935	4,891	4,840	
	Males	2,432	2,409	2,390	2,369	2,341	2,310	
	Females	2,623	2,597	2,580	2,566	2,550	2,529	
0-4	P	268	247	241	243	241	232	
	M	137	126	123	124	123	119	
	F	131	121	118	119	118	113	
5-9	P	299	264	247	241	244	243	
	M	153	135	126	123	124	124	
	F	146	129	121	118	120	119	
10-14	P	323	293	263	246	241	242	
	M	165	149	134	125	122	123	
	F	157	143	130	121	119	119	
15-19	P	319	322	295	265	249	243	
	M	163	164	150	134	126	123	
	F	156	158	145	131	123	120	
20-24	P	320	334	331	305	276	262	
	M	161	169	167	153	138	131	
	F	159	165	164	152	138	131	
25-29	P	299	308	319	316	290	265	
	M	147	154	160	158	145	132	
	F	152	154	159	158	145	134	
30-34	P	370	281	301	312	309	289	
	M	178	136	149	155	153	142	
	F	192	145	152	157	156	146	
35-39	P	403	352	278	298	308	309	
	M	194	168	133	145	151	151	
	F	209	184	145	152	157	157	
40-44	P	385	394	347	274	294	299	
	M	188	189	165	130	143	145	
	F	198	205	183	144	151	154	
45-49	P	345	385	388	342	270	285	
	M	170	186	185	161	127	137	
	F	175	199	203	181	142	148	
50-54	P	336	346	378	381	337	275	
	M	167	168	181	180	158	129	
	F	170	177	197	201	179	146	
55-59	P	311	321	337	369	373	343	
	M	153	157	163	176	175	159	
	F	159	164	174	193	197	183	
60-64	P	262	308	307	323	355	362	
	M	125	149	148	154	167	169	
	F	137	159	159	169	188	194	
65-69	P	239	246	288	288	305	330	
	M	111	115	137	137	143	154	
	F	129	131	151	151	161	176	
70-74	P	209	216	223	262	264	274	
	M	91	98	102	122	123	127	
	F	118	118	121	140	141	147	
75-79	P	164	172	183	192	228	234	
	M	66	72	80	85	103	106	
	F	98	100	103	107	125	128	
80-84	P	112	119	130	143	154	177	
	M	39	45	51	59	64	76	
	F	72	74	79	84	89	101	
85-89	P	58	69	74	85	98	104	
	M	17	22	26	31	37	41	
	F	41	47	48	54	60	64	
90 & over	P	30	31	40	48	60	70	
	M	7	8	11	15	20	24	
	F	23	24	29	33	40	46	