



General Register Office
for
SCOTLAND
information about Scotland's people

Centenarians in Scotland, 2002 - 2008

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1. Introduction

- 1.1. The number of centenarians (people aged 100 years and over) across the industrialised world has been growing at an increasing rate since the 1950s¹. At the start of the 20th century, Scottish centenarians were extremely rare, but by the start of the 21st century, there were estimated to be over 500 people aged 100 or over in Scotland. Since the 1950s, centenarians have been growing at a faster rate than any other age group.
- 1.2. This increase in centenarians has been largely driven by increased survival rates of older people, brought on by improvements in hygiene, sanitation, medical treatment, housing and living standards in general.
- 1.3. In recent years, there has been an increased interest in estimating the population of very elderly people in Scotland, as survival rates are expected to carry on increasing in the foreseeable future and reflect the general trends seen in today's ageing societies.
- 1.4. This report details the numbers of people aged 90 to 104, by single year of age, and the number of people aged 105 and over in Scotland, yearly, from mid-2002 to mid-2008. In Scotland in 2002, there were approximately 29,410 people (22,860 women and 6,550 men) aged between 90 and 99. In 2008, this figure had risen to 30,470 people (23,010 women and 7,460 men). Over the same period, centenarians (people aged 100 and over) have risen from 570 (510 women and 60 men) to 720 (630 women and 90 men).
- 1.5. However, for the past two years, there has been a drop in the number of people aged 90-99, from a peak of 31,790 in 2006 to 31,150 in 2007 and 30,470 in 2008. This reduction is largely due to a decrease in the number of men and women at the lower end of this age-range. The small size of this cohort relative to previous years can be traced back to a lower number of births in the years 1915 to 1917, coinciding with the First World War.

2. Methodology

- 2.1. The General Register Office for Scotland (GROS) produces population estimates by single year of age from 0 to 89 using the 'cohort component' method. Starting with the most recent census (2001), each year the population of a given area is aged on by one year, births in the area are added to the population, deaths in the area are subtracted and estimates of migration are used to allow for people moving in and moving out.
- 2.2. However this method is not reliable for single year of age populations for the very elderly because the census itself is less reliable for populations aged 90 and over (as it becomes harder to establish firmly someone's age the older they get). So, in the standard GROS Mid-Year Estimate of the Scottish population², people aged 90 and over are aggregated together into one group.

¹ 'Kannisto, V 1997 The Advancing frontier of survival. Odense Monographs on Population Aging 3. Odense University Press.'

² 'Mid-2008 Population Estimates Scotland' available from <http://www.gro-scotland.gov.uk/statistics/publications-and-data/population-estimates/index.html>

- 2.3. To produce single year of age estimates of the population aged 90 and over, GROS uses the Kannisto-Thatcher³ (KT) method. This method has also been adopted by the Office of National Statistics (ONS) to produce estimates for the elderly in England and Wales. These estimates can be found in the [Population](#) section of the ONS web site.
- 2.4. The KT method uses 'age at death' data to build up distribution profiles of the numbers of elderly people in Scotland in previous years. For example, if someone dies in 2006 aged 105, then this means that they were alive and aged 104 in 2005 and 103 in 2004 etc. By collating 'age at death' data for a series of years, it becomes possible to make an estimate of the number of people of a given age alive in any particular year and so create age distribution profiles, assuming that migration at these oldest ages is minimal.
- 2.5. To make estimates for 2008, it is not possible to use death data, as we are interested in the population who are currently or very recently alive. So the KT method uses an average of the last 5 years of age at death information to produce an estimate of the number of survivors for the most current year. Estimates are then controlled to agree with the GROS Mid-Year Estimate of people aged 90 and over.
- 2.6. One consequence of this method is that each year the estimates for earlier years become more accurate as more death data become available to inform the age profiles. For example, the latest estimate of the number of centenarians in 2007 is 660 which differs from the estimate of 710 centenarians in 2007 made a year ago.
- 2.7. Population estimates calculated using the KT method for single year of age from 90 to 99 and the 100 plus age group were found to be broadly similar to comparable data available from the Department for Work and Pensions (DWP). The estimates of those aged 100 and 105 and over were also broadly in agreement with the number of congratulatory messages sent by the Queen to people celebrating birthdays at these ages.
- 2.8. The increase in the number of centenarians reflects an increase in life expectancy. The ONS produces annual estimates of life expectancy for Scotland on behalf of GROS⁴. The latest figures (for the period 2005-2007) show a life expectancy at birth of 74.8 for males and 79.7 for females.

3. Centenarians in Scotland

- 3.1. Population estimates from 2002 to 2008 by single year of age from 90 to 104 and by aggregated age from 105 and over, are shown in [Table 1](#).
- 3.2. [Figure 1](#) shows that elderly women greatly outnumbered elderly men. In 2008, women made up 76 per cent of the 90-99 age group and 88 per cent of centenarians.
- 3.3. [Figure 2](#) shows that the number of centenarians in Scotland from 2002 to 2008 has increased from 570 in 2002 to 720 in 2008, a rise of 26 per cent. Over the

³ Thatcher, R, 1999, The demography of centenarians in England and Wales. Population Trends 96.'

⁴ <http://www.gro-scotland.gov.uk/statistics/publications-and-data/life-expectancy/life-expectancy-at-scotland-level/index.html>

last 6 years the number of women aged 100 or more has increased by about a quarter whereas the number of men aged 100 or more has increased by a half.

- 3.4. Centenarians are still rare. But [Figure 3](#) shows that the number of centenarians in the total population has increased from 1.1 per 10,000 in 2002 to 1.4 per 10,000 in 2008. Male centenarians showed the strongest rise relative to the total population, increasing from 0.24 per ten thousand to 0.37 per ten thousand.

Figure 1 2008 Single year of age estimates 90 to 105 & over

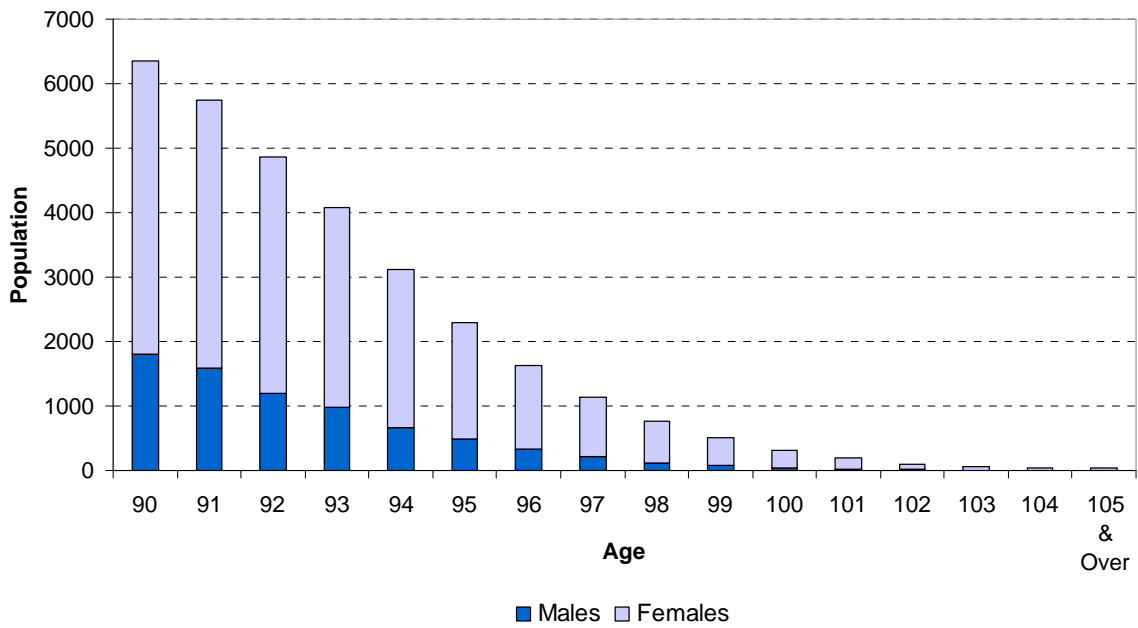


Figure 2 Centenarians by sex, 2002-2008

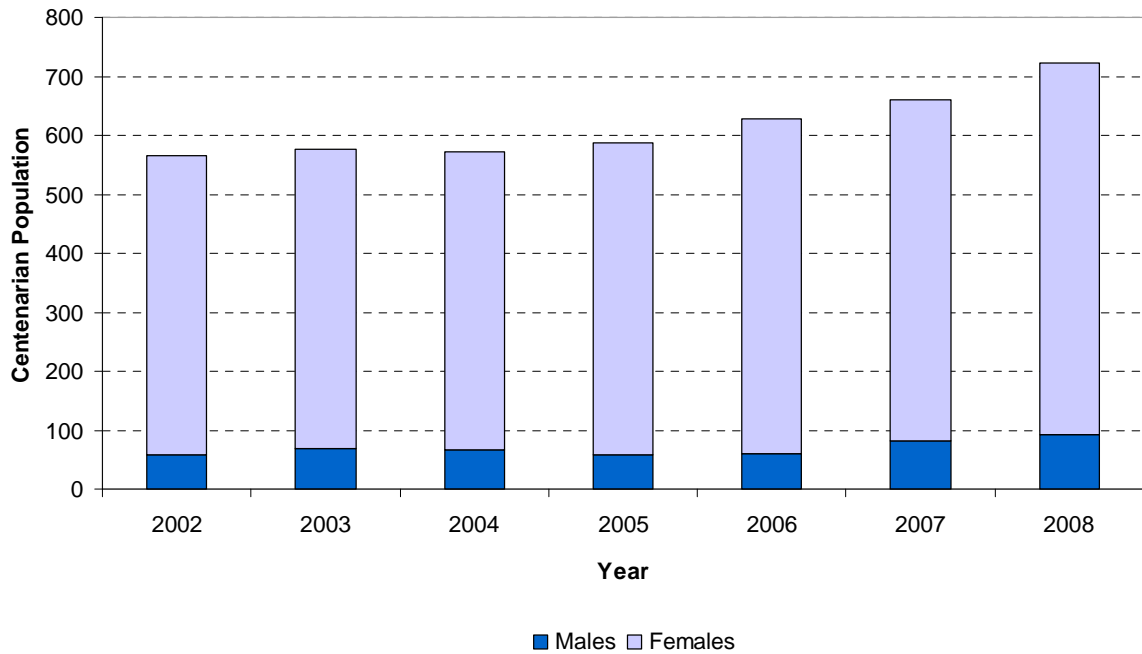


Figure 3 Proportion of the population that are centenarians (aged 100 & over)

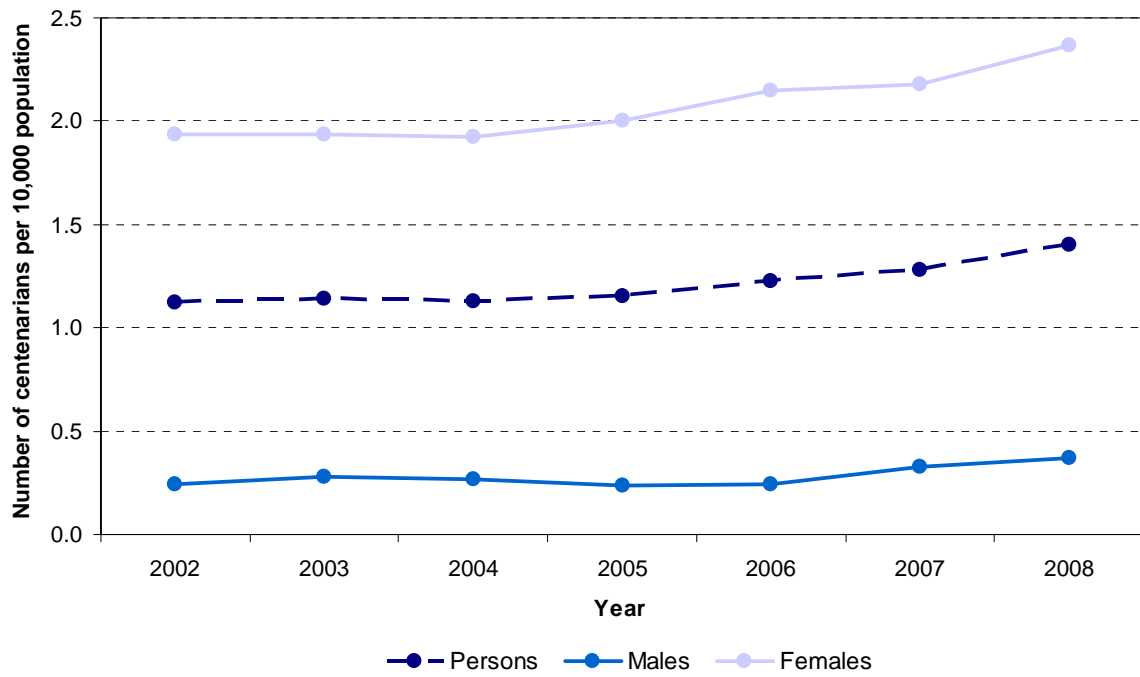


Table 1 Mid-2002 to mid-2008 population estimates of the very elderly (including centenarians)

Rounded to the nearest ten

Mid-year population	Persons 90-99	Persons 100+	Persons 90	Persons 91	Persons 92	Persons 93	Persons 94	Persons 95	Persons 96	Persons 97	Persons 98	Persons 99	Persons 100	Persons 101	Persons 102	Persons 103	Persons 104	Persons 105+
2002	29,410	570	7,290	5,780	4,720	3,660	2,760	1,970	1,380	890	570	380	260	130	90	50	20	20
2003	29,940	580	7,450	5,930	4,640	3,700	2,810	2,050	1,430	960	610	370	250	160	70	50	20	20
2004	30,650	570	7,670	6,060	4,770	3,680	2,850	2,120	1,480	980	640	410	240	150	80	40	30	20
2005	31,460	590	7,810	6,350	4,870	3,760	2,790	2,120	1,530	1,100	680	440	250	140	90	50	20	30
2006	31,790	630	7,330	6,510	5,160	3,890	2,930	2,110	1,580	1,110	730	460	280	150	90	50	30	30
2007	31,150	660	6,880	6,000	5,190	4,060	2,970	2,170	1,540	1,100	760	480	290	180	90	50	30	30
2008	30,470	720	6,340	5,750	4,850	4,080	3,120	2,290	1,630	1,130	770	510	310	190	100	60	30	30
	Males 90-99	Males 100+	Males 90	Males 91	Males 92	Males 93	Males 94	Males 95	Males 96	Males 97	Males 98	Males 99	Males 100	Males 101	Males 102	Males 103	Males 104	Males 105+
2002	6,550	60	1,870	1,400	1,080	770	570	360	240	130	80	50	30	20	10	<5	<5	<5
2003	6,810	70	2,000	1,460	1,070	790	560	420	240	150	80	50	40	20	10	10	<5	<5
2004	7,040	70	1,960	1,570	1,130	820	580	400	300	150	90	40	30	20	10	<5	<5	<5
2005	7,420	60	2,180	1,570	1,190	850	580	400	270	220	100	50	20	10	10	10	<5	<5
2006	7,570	60	1,960	1,740	1,240	930	630	410	290	180	130	60	30	10	10	10	<5	<5
2007	7,530	80	1,960	1,550	1,320	900	680	450	300	180	120	80	40	30	10	10	<5	<5
2008	7,460	90	1,800	1,580	1,190	990	670	500	330	210	130	70	50	20	10	10	<5	<5
	Females 90-99	Females 100+	Females 90	Females 91	Females 92	Females 93	Females 94	Females 95	Females 96	Females 97	Females 98	Females 99	Females 100	Females 101	Females 102	Females 103	Females 104	Females 105+
2002	22,860	510	5,420	4,380	3,640	2,880	2,200	1,610	1,150	760	490	330	230	110	80	50	20	20
2003	23,140	510	5,450	4,470	3,560	2,910	2,250	1,630	1,190	810	530	320	210	150	60	40	20	20
2004	23,610	510	5,710	4,490	3,640	2,870	2,260	1,720	1,180	830	550	360	210	140	70	40	30	20
2005	24,040	530	5,640	4,780	3,680	2,910	2,210	1,720	1,260	880	580	390	230	130	80	40	20	30
2006	24,220	570	5,370	4,760	3,920	2,960	2,300	1,700	1,280	930	600	400	250	150	80	40	30	20
2007	23,610	580	4,920	4,450	3,870	3,160	2,290	1,730	1,240	920	640	400	250	150	80	40	20	30
2008	23,010	630	4,540	4,170	3,660	3,090	2,450	1,790	1,310	920	640	430	270	170	90	50	30	30

Source: General Register Office for Scotland

Please note these figures are provisional estimates. The survivorship rate methodology used in these estimates means that previous years estimates may change when a new year of data is added.

Although these figures are quoted to the nearest ten people, they may not be accurate to the level that might otherwise be inferred by rounding. Figures may not add exactly because of rounding.

Notes On Statistical Publications

Enquiries About This Publication

Enquiries should be addressed to:
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The General Register Office For Scotland (Gros)

GROS is the devolved Government department in Scotland responsible for the registration of births, marriages, civil partnerships, deaths, divorces and adoptions in Scotland. We are responsible for the Census of Population in Scotland which we use, with other sources of information, to produce population and household statistics. We make available important information for family history. Our website is www.gro-scotland.gov.uk/.

Other Gros Statistics

Further detailed statistics produced by GROS are available from the statistics pages of the GROS website (www.gro-scotland.gov.uk/statistics/index.html). Statistics from the 2001 Census are on the Scotland's Census Results On-Line website (www.scrol.gov.uk) and on the Census section of the main website (www.gro-scotland.gov.uk/census/index.html).

Information about future publications is provided on the GROS website (www.gro-scotland.gov.uk/futurepb.html). If you would like to receive notification of forthcoming statistical publications, you can register your interest on The Scottish Government's ScotStat web site at www.scotland.gov.uk/Topics/Statistics/scotstat/Intro.

Complaints And Suggestions

If you are not satisfied with our service, please write to Kirsty MacLachlan, Head of Demography Division, Room 1/2/7, Ladywell House, Ladywell Road, Edinburgh, EH12 7TF, Telephone: (0131) 314 4242, E-mail: kirsty.maclachlan@gro-scotland.gsi.gov.uk.

We also welcome any comments or suggestions that would help us to improve our standards of service.

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ORGANISATION	CONTACT
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The Office for National Statistics (ONS) is responsible for producing a wide range of economic and social statistics. It also, for England and Wales, registers life events and holds the Census of Population.	Customer Contact Centre, Room 1.015, Office for National Statistics, Cardiff Road, Newport, NP10 8XG Telephone: 0845 601 3034 Minicom: 01633 812399 Fax: 01633 652747 E-mail: info@statistics.gsi.gov.uk Website: www.statistics.gov.uk
The Northern Ireland Statistics and Research Agency (NISRA) is Northern Ireland's official statistics organisation. The Agency also has responsibility, in Northern Ireland, for the registration of births, marriages, adoptions and deaths and the Census of Population.	Northern Ireland Statistics and Research Agency, McAuley House, 2-14 Castle Street, Belfast, BT1 1SA Telephone 028 9034 8100 Fax 028 9034 8106 Website: www.nisra.gov.uk

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