

## POPULATION ESTIMATES FOR WARDS AND PARISHES IN HEREFORDSHIRE

Official population estimates for areas smaller than the county as a whole are only published every 10 years, at the time of the national Census of Population. As the Census becomes out of date it is necessary to update the estimates to reflect local population changes. Herefordshire Council's Research Team has produced estimates for the population of wards and parishes within the county based on the Office for National Statistics' (ONS) 2004 mid-year estimates of population for Local Authorities. The results are reported first (i.e. population estimates for wards and parishes in Herefordshire), followed by the methodology used to produce them.

### RESULTS

The following estimates for 2004 are available:

- Total population of all **parishes**;
- Population of **wards** and **market towns** by 5-year age-groups (0-4, 5-9, up to 85+) and broad ages (children; working age; retirement age & above).

The full sets of estimates can be accessed from Herefordshire Council's website:

[http://www.herefordshire.gov.uk/council\\_gov\\_democracy/council/4770.asp](http://www.herefordshire.gov.uk/council_gov_democracy/council/4770.asp)

As there are 238 parishes in Herefordshire, the figures aren't presented here, but the estimates by broad age-group for wards and market towns are shown in the two tables below.

### Mid-2004 Estimates of Market Town Populations, Broad Age Groups

Town	All Ages	Children	Working Age	Retirement Age
		0-15	16-59(F)/64(M) <sup>2</sup>	60(F)/65(M)+ <sup>2</sup>
Hereford City	55,940	10,980	33,840	11,130
Bromyard Market Town	4,240	750	2,370	1,120
Kington Market Town	2,660	470	1,420	770
Ledbury Market Town	9,240	1,630	5,120	2,490
Leominster Market Town	11,220	2,080	6,460	2,680
Ross-on-Wye Market Town	10,180	1,770	5,820	2,590
<b>Herefordshire mid-year estimate (ONS)</b>	<b>177,800</b>	<b>33,000</b>	<b>103,700</b>	<b>41,000</b>

Rounded to nearest 10; Source: Herefordshire Council Research Team, using ONS mid-year estimates

**Mid-2004 Estimates of Ward Populations, Broad Age Groups**

WARD	All Ages	Children	Working Age	Retirement Age
		0-15	16-59(F)/64(M) <sup>2</sup>	60(F)/65(M)+ <sup>2</sup>
Aylestone	6,260	1,080	3,600	1,570
Backbury	2,970	520	1,690	770
Belmont	9,840	2,400	6,200	1,250
Bircher	2,780	430	1,500	850
Bringsty	2,890	520	1,760	610
Bromyard	5,890	1,040	3,330	1,520
Burghill, Holmer & Lyde	3,390	640	1,960	790
Castle	3,030	460	1,770	800
Central	2,540	360	1,700	470
Credenhill	3,380	740	1,910	740
Frome	3,230	650	1,950	630
Golden Cross with Weobley	3,080	550	1,670	860
Golden Valley North	2,910	530	1,650	730
Golden Valley South	2,970	510	1,670	790
Hagley	3,480	750	2,130	590
Hampton Court	2,710	430	1,590	690
Hollington	2,000	300	1,230	460
Hope End	5,780	1,050	3,170	1,560
Kerne Bridge	3,050	560	1,710	780
Kington	3,220	560	1,780	890
Ledbury	9,620	1,680	5,340	2,600
Leominster North	5,650	1,140	3,230	1,280
Leominster South	5,570	940	3,230	1,400
Llangarron	3,230	580	1,910	740
Mortimer	3,300	680	1,880	740
Old Gore	3,060	540	1,840	680
Pembridge & Lyonshall with Titley	2,980	510	1,740	730
Penyard	3,130	530	1,820	770
Pontrilas	3,430	640	1,920	860
Ross-on-Wye East	4,720	770	2,540	1,410
Ross-on-Wye West	5,460	1,000	3,280	1,180
St. Martins & Hinton	10,920	2,390	6,460	2,060
St. Nicholas	6,790	1,260	4,100	1,430
Stoney Street	2,830	530	1,610	690
Sutton Walls	3,080	590	1,790	700
Three Elms	10,360	1,810	6,400	2,150
Tupsley	9,240	1,680	5,360	2,210
Upton	2,770	460	1,590	720
Valletts	3,370	710	1,970	680
Wormsley Ridge	2,740	530	1,620	600
<b>Herefordshire mid-year estimate (ONS)</b>	<b>177,800</b>	<b>33,000</b>	<b>103,700</b>	<b>41,000</b>

Rounded to nearest 10; Source: Herefordshire Council Research Team, using ONS mid-year estimates

## METHODOLOGY

No single methodology exists for producing small area population estimates; there are several recognised procedures, but which is most appropriate depends on the data available. The 2004 population estimates for Herefordshire wards and parishes are based on a methodology which draws on the following data sources:

- 2001 Census ward & parish population and household estimates.
- 2004 mid-year estimate of Herefordshire's population (ONS).
- Housing completions, conversions & demolitions between 2001 and 2004, by parish & ward (Herefordshire Council Forward Planning).
- Number of patients registered with GPs in Herefordshire by age & gender for wards, 2004 (Family Health Services Authority Register, Herefordshire Primary Care Trust).

The process involves 3 main stages: firstly, the total population of each parish is estimated; these are then aggregated into ward total estimates before estimating the number of people per age group per ward (and the larger parishes of Bromyard & Winslow, Kington and Ledbury).

### **Parish population totals are estimated as follows:**

1. Start with number of occupied households, total population, numbers resident in communal establishments and in households from the 2001 Census for each parish.
2. Calculate average number of persons per occupied household for each parish.
3. Calculate percentage change in number of households 2001-2004 using parish counts from the Council Tax Register.
4. Apply this percentage change to the number of occupied households in 2001 according to the Census to estimate number of occupied households in 2004.
5. Multiply the number of occupied households by the average number of persons per household to give an initial estimate for the number of household residents.
6. Constrain these initial estimates to the Herefordshire mid-year estimate (ONS).

The appropriate parish totals are then summed to give estimates for the total population of wards, with the exception of parishes that cross ward boundaries (i.e. Hereford, Lower Bullingham, Leominster, Ross-on-Wye and Ross Rural). These parishes are split between wards based on the proportion of dwellings in each of the wards within the parish (using completions conversions & demolitions).

**Once data has been aggregated up to ward level, numbers in age-groups can be estimated;** most parishes are too small to produce reliable estimates of age structure.

The best source of information regarding the age structure of areas below county level is the Family Health Service Authority (FHSA) patient register, but this suffers from over- and under-counting of specific age-sex groups: young adult males, for example, are less likely to register with GPs than other ages and their female counterparts.

Alternative methods of estimating age structures would be to apply the current age structure for the whole county to each ward – which would lose detail about differing age structures across the county; or the 2001 Census age structure for each ward – which would lose information about changes in the age structure over time.

The chosen approach adjusts the individual FHSA ward age structures using the 2004 mid-year estimate of the county's age structure, in an attempt to account for the over- and under-registration. This is carried out as follows:

1. Calculate the proportion of people of each year-of-age and sex in each ward and Herefordshire in total using FHSA register for 2004.
2. For each year-of-age and sex, calculate the ratio between the proportion of Herefordshire's total population according to the FHSA register and the proportion according to the 2004 mid-year estimate.
3. Use each of these ratios as scaling factors to apply to the proportions in each ward to adjust for over- and under-registration.
4. Apply the adjusted proportions to the estimate of each ward's population to estimate the number of people of each age and sex in each ward.
5. Group into 5-year age bands before constraining to the mid-year estimate of the number of people of each age in Herefordshire and the estimated ward totals.

**Any estimation procedure involves making assumptions; those employed in this method are stated below:**

- New homes built in each parish have the same number of persons on average as those in existence at the time of the Census. This is an unreliable assumption if new development has different characteristics to existing properties, but information is not available on the number of bedrooms for new homes.
- Average household size hasn't changed between 2001 and 2004. Long-term national trends show a reduction in average household size, but this is unlikely to have been significant at parish level over a 3-year period – unless there has been a large development of homes of a different size to those in existence before.
- The number of persons resident in communal establishments in a parish remains constant between 2001 and 2004. Establishments may have shut down or opened, but in the absence of this information it is more appropriate to assume no change rather than a rate of change equal to that of household residents;
- GP over- and under-registration for each age & sex is consistent across the county. This seems reasonable: for example there is no obvious reason why young males in rural Herefordshire would be any more or less likely to register with a GP than those in Hereford City.

**For further information on the data in this article, please contact the Research Team on 01432 260498, or e-mail [researchteam@herefordshire.gov.uk](mailto:researchteam@herefordshire.gov.uk)**

**OR for a copy of the full report go to**

**[http://www.herefordshire.gov.uk/council\\_gov\\_democracy/council/4770.asp](http://www.herefordshire.gov.uk/council_gov_democracy/council/4770.asp)**