

# Heronries Survey 2003

## Title

Heronries Survey 2003

## Description and Summary of Results

The Grey Heron *Ardea cinerea* is one of the largest and most widespread bird species in UK and is a predator at the top of the freshwater food chain. As such it is excellent indicator of environmental health in the countryside. Nesting is typically in colonies in traditional sites, many of which have been occupied by a heronry for many decades. The presence of a heronry is often the basis of designating a site as a protected area.

The Heronries Census began in 1928 and is now the longest-running breeding-season monitoring scheme for any bird in the world. The aim is to collect annual nest counts from as many heron colonies as possible in the United Kingdom. Coverage has been variable but for many years well over half the estimated population has been included in each year's count.

The Heronries Census grew from what was intended to be a one-off, complete survey in 1928. In the following years a growing sample of heronries were counted each year and the census grew into an annual, long-running sample survey. There have been several subsequent attempts at full coverage, in 1954, 1964, 1985 and then this one in 2003, which marked the 75<sup>th</sup> anniversary of the initial survey. These periodic attempts at more complete coverage have served to boost coverage for the ongoing Heronries Census. These days, far more heronries are counted annually in the UK than were counted in the 1928, 1954 and 1964 special surveys. The application of modern modelling techniques allows the estimation of national population sizes for every year in the sequence, and estimates for the early special-survey years are much higher than those made at the time.

Results from the 2003 Heronries Survey are fully integrated within the ongoing Heronries Census and have been influenced by heronries counts made in subsequent years.

## Methods of Data Capture

The methods employed for the 2003 survey were the same as for the ongoing Heronries Census in that volunteer observers were asked to count 'apparently occupied nests' at all heron colonies. The only difference was that the extra publicity was geared towards trying to obtain counts at a much larger number of colonies and to try to find any new ones.

In addition to counting at known colonies a random sample of tetrads was searched carefully in 2003 aiming to find colonies which had previously been missed. Few new heronries were located, however, and not enough to allow the full number of unknown sites to be estimated with precision.

Intensive watching at a small sample of heronries through the season confirmed that it was unlikely that counters visiting their heronries as normal were missing substantial numbers of active nests.

**Purpose of Data Capture**

The primary aim was to increase the accuracy and precision of the Heronries Census population estimates for 2003.

**Geographic Coverage**

All of the UK with the stated aim of counting all nests in all colonies. A sample of random tetrads was searched to find previously unknown colonies.

**Temporal Coverage**

The breeding season of 2003.

**Other Interested parties**

BTO Heron Appeal funded the 2003 survey. The annual Heronries Census is funded entirely by the BTO. The Natural Environment Research Council funded the curation and cleaning up of the dataset and the subsequent reanalysis of the data which resulted in the Marchant *et al* (2004) review paper.

**Organiser(s)**

John Marchant

**Current Staff Contact**

heronries@bto.org

**Publications**

National population estimates for Grey Heron were published by BirdLife International (BirdLife International, 2004. *Birds in Europe: population estimates, trends and conservation status*. BirdLife Conservation Series No. 12. BirdLife International, Cambridge), and by the Avian Population Estimates Panel (Baker, H., Stroud, D.A., Aebischer, N.J., Cranswick, P.A., Gregory, R.D., McSorley, C.A., Noble, D.G. & Rehfisch, M.M. 2006. Population estimates of birds in Great Britain and the United Kingdom. *British Birds* 99: 25-44).

These have, however, been superseded by the new data provided in the BTO's Wider Countryside Report ([www.bto.org/birdtrends](http://www.bto.org/birdtrends)).

The 2003 survey was noticed in *BTO News* numbers 250 and 257.

**Available from NBN?**

No.

### **Computer data -- location**

The data for the 2003 survey are held as part of the overall annual dataset on the BTO network Unix system.

### **Computer data -- outline contents**

Files contain the counts from each year at each site which was counted, habitat data from each site and its immediate surrounds and their name and geographical location.

### **Computer data -- description of contents**

The three most important files and their contents are:

**yrdata** -- the counts from each year at each colony (apparently occupied nests).

cols 1-6 site number; cols 8-11 year; cols 13-15 the count (from primary source: -6 occupied, no count; -7 definitely not yet started; -8 extinct; -9 no information); col 17 accuracy (+ =minimum, ? =a guess, ) inferred from another year, - =maximum); col 19 primary data source (c=heronries card; p=punchcards; r=bird report; l=letter/note; n=Nest Record Scheme; o=other/unknown ; cols 21-26 source codes (cprlno as for col 19, where relevant); cols 28-57 Notes.

**habdata** -- the habitat in which the colony occurs.

cols 1-6 site number; cols 8-9 habitat code (Crick system); cols 11-79 Description.

**colonies** -- geographic location of colonies.

cols 1-6 site number; cols 8-11 county code (GBxx) using BTO standard codes; cols 13-20 2-letter and 6-figure grid reference; cols 22-117 name of site.

Other directories contain some older versions of the data and the programs used to check and analyse the data.

### **Information held in BTO Archives**

All original cards from observers are held sorted by year. The periodic more complete surveys are included within the dataset.

This amounts to 32 card index drawers containing data cards and 23 boxes containing letters and reports.

All data cards and associated correspondence up to and including 2006 have been scanned.

### **Notes on Access and Use**

### **Other information needed**

### **Notes on Survey Design**

### **Specific Issues for Analysis**

The Marchant et al. (2004 *Ibis* 146: 323-334) paper reanalysed all the data from 1928-2000 and which had been subjected to a major clean-up and curation. Up to that point the index of population size had been calculated using a Chain Method, ie using data only from those

sites which had been surveyed in two consecutive years and using the change in total numbers on these sites as the index of overall change. The new analysis used a statistical technique developed mainly by Thomas (2003 *Applied Statistics* 42: 473-486) which was able to take account of colonies which had only been counted periodically as well as those counted every year. The figures now published as part of the Wider Countryside Report ([www.bto.org/birdtrends](http://www.bto.org/birdtrends)) are therefore more statistically reliable and robust than previously.