

Heronries Census

Title

Heronries Census 1928 - present

Description and Summary of Results

The Grey Heron *Ardea cinerea* is one of the largest and most widespread bird species in the UK and is a predator at the top of the freshwater food chain. As such it is an 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 main species covered is Grey Heron but Little Egrets *Egretta garzetta*, which since 1996 have been nesting in a growing number of English and Welsh heronries, are fully included, as are (will be) any rarer species of colonial herons such as Cattle Egrets *Bubulcus ibis*, which nested for the first time in Somerset in 2008. Even single nests of any of these normally colonial species are relevant to the Heronries Census. Counts for Cormorants *Phalacrocorax carbo* and Spoonbills *Platalea leucorodia* nesting at or near heronries are also collected. There have also been periodic Heronries Surveys which expand upon the annual coverage of the ongoing Heronries Census. Such special Heronries Surveys, of varying particular aims and scope, have been undertaken in 1928, 1954, 1964, 1985 and 2003. These are described as Special Surveys separately, although their data are fully integrated into the Heronries Census.

Numbers of Grey Herons in the UK have been rising over the long term and reached a peak in 2001. A shallow decline has been evident since then, heightened by recent cold winters.

Methods of Data Capture

Volunteer observers make counts of 'apparently occupied nests' at heron colonies each year. The ideal time for this is considered to be the second half of April when most active nests are likely to have an adult present either incubating or defending the nest. Some colonies are only visited once but others may be visited several times through the season in which case the maximum estimate in the year is used for the dataset.

Purpose of Data Capture

The stated aim is to count at as many heron colonies as possible every year to produce annual estimates of population level, particularly for the Grey Heron but all other associated species are included.

Geographic Coverage

All of the UK. In practice about half the known colonies are visited in any one year with coverage in England and Wales being in general rather higher than in Scotland and Northern Ireland. This is partly due to the smaller number of volunteers available in these latter countries but also that the birds tend to nest in smaller, and often more ephemeral, colonies than in England and Wales. In all about 3400 colonies (sites) have been counted for the Heronries Census at least once.

Temporal Coverage

The survey started in 1928 and has been carried out every year since then and continues. Periodic fuller censuses have been carried out in 1928, 1954, 1964, 1985 and 2003 – see separate notes.

Other Interested parties

The 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)

Current organiser is John Marchant (since 1994).

Previously the census was organised by Max Nicholson (1928-1938), W.B. Alexander (1939-1953), John Burton (1954-1956), John Stafford (1957-1970), Chris Reynolds (1971-1985) and Steve Carter (1986-1993), the last as a staff member.

Current Staff Contact

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Publications

The primary output each year is the Grey Heron contribution to the BTO's Wider Countryside Report www.bto.org/birdtrends/wcrgrehe.shtml.

Prior to this there were more or less annual reports in one of the BTO publications, most recently *BTO News*.

A reanalysis of the annual census for England and Wales which followed a major curation and cleaning up of the dataset was published as:

Marchant, J.H., Freeman, S.N., Crick, H.Q.P. & Beaven, L.P. 2004. The BTO Heronries census of England and Wales 1928-2000: new indices and a comparison of analytical methods. *Ibis* 146: 323-334.

The Scottish data have been summarised most recently in:

Marquiss, M. 1989. Grey Herons *Ardea cinerea* breeding in Scotland: numbers, distribution, and census techniques. *Bird Study* 36: 181-191.

Available from NBN?

No.

Computer data -- location

The definitive data are held 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 from the start (1928) to 2006 were scanned with material sorted by year.

Notes on Access and Use

Other information needed

Notes on Survey Design

Specific Issues for Analysis

The Marchant *et al.* (2004: *Ibis*) paper reanalysed all the data from 1928-2000. 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 2004 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) are therefore more statistically reliable and robust than previously.