

# Garden Nesting Survey

## Title

Garden Nesting Survey

## Description and Summary of Results

Gardens attached to houses appear to hold high densities of birds, and both they and the houses themselves provide nest sites. Yet suburban areas have often not been considered to be a significant resource at the national scale for most species.

The national population estimates in the 1988-1991 Breeding Atlas were created by dividing the nation into three major habitats: 'farmland' (50.6%), 'woodland' (8.7%) and 'all other habitats' (40.7%). The Atlas editors used the farmland and woodland Common Birds Census (CBC) density estimates to provide estimates for the total populations occupying those habitats and used the habitat information from the Key Squares Survey to calculate estimates for the remainder. The 'other' habitat includes most upland areas, heathland, water bodies, saltmarsh, and both industrial and residential urban areas. The last covers some 8.7% of Great Britain and is thus equal to woodland in extent.

The Garden Nesting Survey was designed as an extensive questionnaire survey of birds nesting on or in houses and gardens and covering the whole of Great Britain. The data obtained covered all species found nesting on properties by respondents. Data for 21 species were analysed. These included all 17 which were in the 15 most frequently recorded nesters in at least one of the three types of property. The other four were each in the 'top 20' in at least one property type but were included for particular interest: Coal Tit *Periparus ater* because it often uses nest-boxes and for comparison with Great Tit *Parus major* and Blue Tit *Cyanistes caeruleus*, Goldfinch *Carduelis carduelis* because it has become an increasingly common user of artificial foods in British gardens over the last few years, and Spotted Flycatcher *Muscicapa striata* and Tree Sparrow *Passer montanus* because they are on the Red List of Birds of Conservation Concern.

The analysis of the data rested on several assumptions. Some of these have been at least partly circumvented and some are likely to have resulted in only trivial biases, but some are likely to have biased the results substantially (see Specific Issues for Analysis for more details). Even so, it is clear that the numbers of at least some species nesting on houses and in gardens have been seriously underestimated in the past. The commonest species nesting in gardens were found to be Blue Tit (with an estimated 6.7 million pairs), House Sparrow *Passer domesticus* (5.1 million), Blackbird *Turdus merula* (3.3 million), Great Tit (2.4 million), Starling *Sturnus vulgaris* (2.2 million), Robin *Erithacus rubecula* (1.3 million) and House Martin *Delichon urbicum* (1.1 million). For various reasons the estimates for ten of the 21 species are thought likely to be too high but it is clear that overall numbers of birds nesting in built-up areas are substantially higher than previously thought.

Questionnaires and self-responding to these are notorious for producing biased results. However the follow-up removed some of these. The potential effects of some other assumptions are considered fully in the publication and summarised below in Specific Issues for Analysis.

**Methods of Data Capture**

All 12687 member households of the BTO Garden BirdWatch (GBW) scheme were sent a questionnaire, asking them to record the number of birds' nests that were built on their property (that is, in their garden or on or in their house) during 2000. Of these 6035 responded. A follow-up survey, to which 1757 responded, showed that people with no nests on their properties had been less likely to respond in the initial survey than had those with nests, and this result allowed the bias from the initial survey to be corrected for. Respondents were asked to count only nests in which at least one egg was laid -- and nests were only counted once, even if used for more than one clutch. They were also asked to record the type of house in which they lived, their post-code -- to get their geographical region -- and the area occupied by their property. The 1991 national (human) population census was used to determine how many houses of the various types occurred in each statistical region which in turn allowed national estimates of nesting birds from a sample of these.

**Purpose of Data Capture**

To determine the numbers of birds nesting on or in houses and gardens in Great Britain, and hence the importance of the populations of birds in urban and suburban areas.

**Geographic Coverage**

All of Great Britain.

**Temporal Coverage**

The questionnaire referred to the breeding season of 2000.

**Other Interested parties**

The survey was funded by the BTO itself using the Garden BirdWatch database as the source of names and addresses to send the questionnaire.

**Organiser(s)**

Richard Bland, John Tully and Mike Toms.

**Current Staff Contact**

gbw@bto.org

**Publications**

The main report of the survey is:

Bland R.L., Tully J. & Greenwood J.J.D. 2004. Birds breeding in British gardens: an underestimated population. *Bird Study* 51: 97-106.

The survey was noted in the BTO Garden BirdWatch magazine *Bird Table*.

**Available from NBN?**

No.

**Computer data -- location**

BTO Windows Network: in the GBW archive area.

**Computer data -- outline contents**

Raw data are site based, one row per site then details of what was nesting and where. The data held are for 2002 and 2003 (when BTO helped with data collection, but not for 2000).

**Computer data -- description of contents**

**Information held in BTO Archives**

None. The data for 2000 were retained by Richard Bland and John Tully.

**Notes on Access and Use**

**Other information needed**

**Notes on Survey Design**

**Specific Issues for Analysis**

The estimate of the total number of nests of each species in or on all domestic properties in Britain was produced by summing the figures for all 30 combinations of region and house type in Britain. The latter, and allowing for differing sampling intensity between the regions and house types, were obtained from the observed mean number of nests per garden for each species in each combination of house type and region, taking account of the corresponding correction factors derived from the follow-up survey, and from the census data on the numbers of houses.

The figures (estimates) calculated from the results of the survey are subject to several assumptions. These are listed here with a very brief assessment of the consequences. They are discussed much more fully in the published paper.

1: *respondents found all the nests in their gardens*. Unlikely to be true for all species.

2: *GBW participants have gardens that are representative of the nation at large, in terms of their bird populations.* Also very unlikely to be true -- almost certainly GBW gardens are more bird-friendly than the average, they may be larger than average and more likely to be in rural situations. In addition 95 responses were from such as flats but the answers seemed usually to refer to the garden for the whole block and not just the one flat. These have been ignored.

3: *numbers of birds nesting in association with dwellings other than detached, semi-detached and terraced houses are small.*

4: *respondents were a representative sample of GBW participants.* The distribution of the respondents across regions and house types was different from the population at large. Detached houses were seriously over-represented and terraced seriously under-represented in the sample and there were regional differences as well. However the figures were calculated for each combination separately and the follow-up survey removed some further potential biases.

The proportion of participants in the follow-up survey that reported no birds nesting was much higher than among the initial respondents. It seems that the most probable explanation is that people whose properties held no nesting birds were less likely than those whose properties held some nests to respond to the initial survey and that this bias was less marked among the follow-up respondents.