

House Martin Nest Study 2016 & 2017

Title

House Martin Nest Study

Description and Summary of Results

An earlier House Martin Survey collected basic information about House Martin *Delichon urbicum* nesting activities via a questionnaire between 2008 and 2013. In 2014, the BTO ran a public House Martin Appeal to fund research on House Martins, to investigate the causes of the overall decline of the species in the UK and the reasons why trends differed across the UK (with increases occurring in the north and west contrasting with declines in the south and east).

The work was designed to comprise two different surveys over successive years. The first survey in 2015, the House Martin Count Survey was a survey covering random squares across the UK in order to produce a UK population estimate which could also serve as a baseline to enable comparison with future surveys. The second survey, the House Martin Nest Study (this survey) was designed to collect detailed observations of activity at individual nests across the course of the breeding season. The survey was originally intended to run for one year only (2016) but data collection was extended to 2017 in order to enable additional data to be collected and to enable comparison of activity at the same nests in successive years (although observers did not have to take part in both years). Almost 1,000 volunteers collected data from 9,289 nests in total across the two years of the survey. The initial results were reported on in an article in BTO News in spring 2019 and have been written up in a paper which was published online in the journal *Ibis* in 2020.

The nest study found that pairs started breeding earlier in the east and that breeding performance (defined as whether or not a nest was apparently successful) was higher in the east. There was also no effect of latitude on breeding performance so the results did not explain the differences in population trends across the UK. Previously used nests were more likely to be successful than newly built nests and more likely to be used for multiple broods. The same was true for artificial nests compared to natural nests. Nests built on plastic soffits were less likely to be successful than nests built on other materials.

Methods of Data Capture

Observers were asked to observe the nests at least once a week during the breeding season from ground level and record the condition of each nest and the activity observed at each nest. Observers could either follow all the nests in the colony, or could record a subset of nests in larger colonies. Information about the nest and nest location was also collected (e.g. artificial/natural, soffit type, wall surface). The instructions stressed that regular

recording was essential for the purposes of the survey; however, many sites were dropped from the final analyses due to insufficient data. Data were submitted via an online recording form by the vast majority of observers, with a small number of participants submitting paper forms which were entered into the online recording system by BTO staff.

Purpose of Data Capture

To systematically record the activity at individual nests regularly across the course of the breeding season and hence to ascertain information about some aspects of breeding productivity such as the success or failure of individual breeding attempts and the number of broods. This information could then be used to compare some of the factors which might be causing different outcomes to occur and hence might help infer some of the drivers of the population decline.

Geographic Coverage

All of the UK. Respondents chose sites themselves with no attempt at formal sampling. A couple of participants in the Republic of Ireland also took part

Temporal Coverage

The survey took place in the 2016 and 2017 breeding seasons with observers asked to continue recording until the breeding season was finished so data cover April to October inclusive in both years.

Other Interested parties

None.

Organiser(s)

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Publications

A peer-reviewed paper has been published in *Ibis*: Kettel, E.F., Woodward, I.D., Balmer, D.E. & Noble, D.G. 2020. Using citizen science to assess the drivers of Common House Martin *Delichon urbicum* breeding performance. *Ibis* 163: 366-379. doi: [10.1111/IBI.12888](https://doi.org/10.1111/IBI.12888)

Some earlier preliminary findings were also published in the Spring 2019 BTO News (<https://www.bto.org/sites/default/files/house-martins-survey-article-bto-news-spring-2019.pdf>).

Available from NBN?

No. (Some data from the survey are included in the BTO Dataset available from NBN, but these data are merged with other BTO data and hence survey data are not specifically identifiable)

Computer data -- location

All data are stored in the BTO's online Oracle database.

Computer data -- outline contents

All information held on the survey forms is available from Oracle and a spreadsheet containing a download of the data (csv format) is held in the project file.

Computer data -- description of contents

Information held in BTO Archives

Hard copies of the survey forms and instructions are held in the Archives, along with those copies of completed paper survey forms received from volunteers and input into the online system by BTO staff members (note that this is only a small proportion of the data as the vast majority of records were submitted online by the volunteers themselves).

Notes on Access and Use

Data are available on request (<https://www.bto.org/our-science/data/data-request-system>). There may be some usage restrictions, in particular access may be restricted until BTO data analyses are completed and the results from the survey have been published.

Other information needed

Notes on Survey Design

A pilot study was held in 2014 – some of details and forms from the pilot are held in the BTO archives file.

Specific Issues for Analysis

The open nature of the survey design meant that the number and frequency of the visits and the start and end time of visits during the breeding season varied considerably between volunteers and individual nests and sites. In addition, it should be noted that observations were made from ground level (i.e. observers did not attempt to look at the contents of the nest) and that observations were often weekly and therefore fledging was not necessarily confirmed through direct observation. Consequently, the data need to be interpreted with care, e.g. working out the start and end of individual breeding attempts and categorising breeding attempts as successful or failure is not straightforward and it is not always possible to be certain about outcomes. Therefore, rules based on ecological knowledge and common-sense need to be applied. The Methods section of the peer-reviewed paper in Ibis gives details of the assumptions made by the BTO when analysing the data (under the section 'Extracting nesting metrics from survey data').