

## ENSURING CONTINUITY — LINKING CBC AND BBS

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How do the results of these two major surveys compare? *Steve Freeman, David Noble, Stuart Newson and Stephen Baillie* discuss recent analyses.

ASEGURANDO LA CONTINUIDAD – VINCULACIÓN DEL CBC Y EL BBS  
¿Qué diferencias hay entre los resultados de estos dos censos? *Steve Freeman, David Noble, Stuart Newson y Stephen Baillie* analizan resultados recientes.

Over the last four decades most of the data available on the trends in common terrestrial birds have come from the Common Birds Census (CBC). Many BTO volunteers have painstakingly recorded the locations of all birds on their CBC site from around 10 survey visits per summer. The results have regularly appeared in *BTO News*, furnished the BTO website [www.bto.org/birdtrends](http://www.bto.org/birdtrends) and formed a basis for many scientific publications. Indeed, much of our knowledge of the decline in farmland birds over this period has come from the CBC.

### BBS — A DIFFERENT APPROACH

For all the enormous influence of the CBC, however, the future will see an alternative approach to monitoring common birds. The CBC was concentrated largely in southeastern Britain, and the sites were selected by the observers themselves. Because of this, although the annual changes and population trends derived are believed representative of this region, it is less clear how well they reflect what is happening to the birds in the UK as a whole. This is particularly important for species such as Meadow Pipit and Pied Flycatcher, which are most common in north and west Britain. Since

1994, the BTO has been running a parallel monitoring scheme, the BTO/JNCC/RSPB Breeding Bird Survey (BBS), which will also be familiar to *BTO News* readers.

The BBS field protocol differs from that of the CBC in several details. Rather than rigorously identifying and recording breeding territories, simple counts of birds seen along two 1-km transects are recorded twice a year. This is less onerous and means that we have been able to recruit greater numbers of surveyors. Some 1,800 people now undertake this important work every summer, covering over 2,100 BBS sites. This has increased the coverage of squares throughout the country, especially in the less populated areas. BBS sites are based on 1-km grid squares, and are allocated at random. This makes the survey more representative of the range of habitats found in Britain, each of which supports a different range of species and numbers. In future research, the BTO will now use data from the BBS to assess national population changes.

### THE NEED FOR CBC–BBS LINK

In order to interpret population trends fully, we will still require a longer-term perspective. This means that continuing comparisons will have to

be made with past results of the CBC. Such comparisons are only valid if the trends in numbers recorded by the two surveys are indeed consistent. We have recently completed an analysis of the two surveys in their years of overlap, to examine the validity of this comparison. These results will underpin future analyses of population levels with respect to those of the 1960s and 1970s.

### PROMISING RESULTS

Gratifyingly, we found that for the vast majority of species, population trends calculated from CBC and BBS in southern Britain (within the boundaries shown in Figure 1) have been consistent since 1994. Marked and statistically significant differences were only revealed for Pheasant, Chiffchaff, Stock Dove and Coal Tit. For example, Pheasant shows a marked increase on BBS squares, while numbers on CBC plots have remained steady. Stock Dove, in contrast,

remained steady on BBS squares but increased on CBC plots. For species other than these four, the consistency suggests that it is reasonable to produce population indices based upon both BBS and CBC data together.

The ultimate aim is to use both surveys to produce unbroken trends from when CBC started through to the 21st century, at least for the part of the country indicated in Figure 1. Two such trends (here just for the years 1994–2000) are shown in Figure 2, in comparison with those from the two surveys in isolation. Note that the combined trend for Lesser Whitethroat (and indeed almost all species) falls much closer to that obtained from the BBS alone. This reflects the far greater amount of information available from the larger number of BBS surveyors. Tawny Owl represents a rare exception; yet upon consideration this too is sensible. Although it is common, because it is a nocturnal species it will often be missed on the two early morning walks that make up an annual BBS survey. More

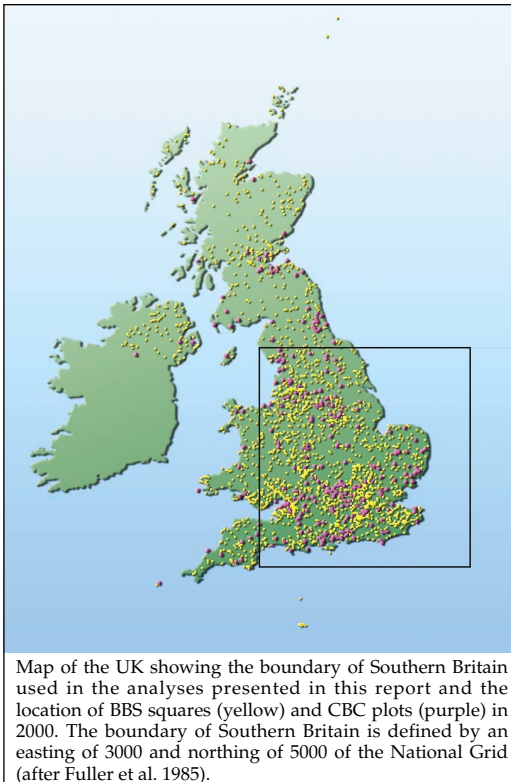


FIGURE 1. BBS squares and CBC plots used in analyses.

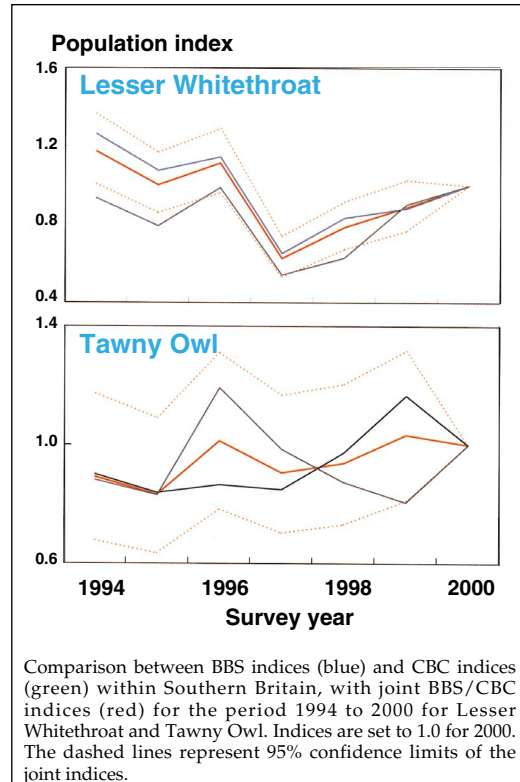


FIGURE 2. Comparison between CBC and BBS indices within Southern Britain.

information for this species actually comes from the smaller, yet more concentrated, territory-mapping study that is the CBC, and the jointly derived population index reflects this.

So can these joint indices be produced for the whole of the UK? This will require an assessment of population trends for the region indicated in Figure 1, the area where most CBC sites were concentrated, and areas outside. Should there be marked differences between these two regions, the combination of long-term data across the UK would be invalid, because substantial information for Scotland and the West has only been available since BBS has been operating. Because of this geographical difference between the two surveys

(Figure 1), comparison of trends for southern Britain and elsewhere is only practical based on data from the more widespread BBS. Given the diversity of habitats, it is perhaps not surprising to find that BBS data suggest significant differences in population trends between areas inside and outside of the square for 38 (52%) of the 73 species considered. These species cover a wide range — seed-eaters and insectivores, residents and migrants and a variety of taxonomic families — and full details can be found in a forthcoming BTO Research Report (No. 303). Nonetheless, the

possibility remains for credible UK population indices dating right back to the start of the CBC for the remaining species. These would, of course, always carry the caveat that although geographical trends have been similar since 1994 this does not necessarily imply that they must have been so previously. In the absence of sufficient data from that period, this assumption cannot be tested.

These analyses were carried out as part of the BBS work programme and we are very grateful to JNCC and RSPB for their support.

### HELP STILL NEEDED

To continue this work we welcome additional BBS volunteers for some areas. If you are interested in taking on a site in your area for this simple survey please contact Mike Raven at BTO Thetford HQ or e-mail [mike.raven@bto.org](mailto:mike.raven@bto.org).

### REFERENCE

Fuller, R J, Marchant, J M and Morgan, R A. 1985. How representative of agricultural practice in Britain are Common Birds Census farmland plots? *Bird Study* 32, 56–70.