Winter Hedgerow Survey 1988/89

Title
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Description and Summary Results
It had long been known that hedges and other field boundaries are important parts of the agricultural landscape for breeding birds and which characteristics of these were the most important for increasing bird numbers. However much less was known about how important they might be in the winter. The overall ecology of farmland birds in the winter was also relatively little known, although there was some evidence that crop management had some effect on over-winter survival and that some of the declining breeding species took berries and other fruits and seeds from the hedges at that time.
Hence a survey was organised for the winter of 1988/89 to collect information on the birds seen and various characteristics of the field boundaries. In the event 1739 units on 180 sites were surveyed.
Overall the abundance and diversity of birds were higher in early winter, perhaps due to a reduction in available resources, a switch of habitat preference, migration or mortality later on. Most bird species were commoner in the boundaries than on the ground adjacent, and most of them were more abundant in structurally diverse hedges and in those with trees although numbers of some species levelled off or even decreased in the largest hedges. The predominantly ground-feeding species were particularly scarce adjacent to the woodiest hedges. Eleven species showed variations in preference for different hedge types through the winter. Structure was a significant factor in the abundance of 19 species but there were no consistent patterns.
Broadly therefore it was found that the same features enhanced the numbers of birds in the winter as were known to do so for the breeding season. So, appropriate management regimes would benefit birds in both seasons.

Methods of Data Capture
Survey units were identified as 200m of more or less homogeneous lengths of field boundary, and there could be one or more units on any one farm. Each unit was at least 100m from any other and hedges adjacent to woodland were not selected. On a preliminary visit some structural characteristics, plant species composition and management variables of the unit were recorded, together with some notes on adjacent habitat and surrounding landscape. Most of these were ordinal ranks rather than absolute abundance. (A full list is given below under Computer Data with more details in Table 1 of the survey report.)
For the bird surveys observers walked along one side of each unit recording all the birds seen in the hedge, or on the ground adjacent and within 10m of the hedge. Visits were once each month from October to February (with a few final ones in early March). Care was taken to avoid double counting and observers were asked to avoid wet and windy weather

and the first hour or of daylight. In addition to the birds, observers noted any changes to the habitat (eg trimming of hedges, planting a crop) since the previous visit.

Purpose of Data Capture
To determine the numbers and diversity of birds using hedges in winter and to find out which characteristics of these were the most important.

Geographic Coverage
180 farms throughout the UK.

Temporal Coverage
The winter of 1988/1989 with visits to count birds requested for each month from October to February.

Other Interested parties
The survey was run by the BTO as part of Graham Tucker's project on birds wintering in farmland, funded by the Natural Environment Research Council and Nature Conservancy Council under their Special Topic Scheme on Agriculture and the Environment. Some of the analysis was funded by a short contract from the Ministry of Agriculture, Fisheries and Food.

Organiser(s)
Graham Tucker, with the data later analysed by Dan Chamberlain.

Current Staff Contact
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Publications
The main report of the survey is:
Chamberlain, D.E., Vickery, J.A., Marshall, E.J.P. & Tucker, G.M. 2001. The effect of hedgerow characteristics on the winter hedgerow bird community. Pp 197-206 in Barr, C. & Petit, S. (eds) *Hedgerows of the World: their ecological functions in different landscapes*. Proceedings of the 10th annual IALE (UK) conference in Birmingham, September 2001.
The survey was noticed in *BTO News* numbers 157, 162 and 164.

Available from NBN?
No.

Computer data -- location

BTO Windows network central area.

Computer data -- outline contents

Data files (bird, habitat and change), a series of programs for the analyses, and electronic copies of various reports etc.

Computer data -- description of contents

The data files (in the directory Data) are:

birds5 (the bird data): Columns 1-3 Site number; 5-6 County code (2-letter); 8-10 date (as days from 1 October); 12-14 16-18 20-22 24-26 28-30 32-34 number of boundary unit (up to 6 on a line but can be numbered 1-6, 7-12 etc, 0=past the last for the site); 36-37 2-letter bird species code; 38-41 42-45 etc to 78-81 82-85 Counts of the bird in Hedge then Ground in each of the 6 units.

hab3 (the habitat data): Columns 1-3 Site number; 4-5 Boundary number (Unit); 6-9 10-km square; 11-12 Boundary Type (1=hedge, 2=bank, 3=wall, 4=fence, 5=ditch only); 13-14 Height (1=up to 1m, 2=1-2m, 3=2-3m, 4=3-4m, 5=over 4m); 15-16 Width (1=up to 1m, 2=1-2m, 3=2-3m, 4=over 3m); 17-18 Ditch (0=absent, 1=up to 0.5m, 2=0.5-1m, 3=over 1m); 19-20 Base (1=ground level, 2=earth bank, 3=stone wall); 21-22 Profile (1= rectangular, 2=rounded, 3='A' shaped, 4=undercut, 5=irregular); 23-24 Structure (1=standard, 2=coppiced, 3=layed); 25-26 Trimming (0=untrimmed, 1=trimmed); 27-28 Gaps (% to nearest 5% which is gaps of >0.5m); 29-30 Live Trees (number over 4m that project or are in gaps); 31-32 Dead trees (number irrespective of size); 33-34 Adjacent habitat on "your" side, 35-36, 37-38, 39-40 Other habitats on "other" side (CS=cereal stubble, OS=other stubble, BP=bare plough, BT=bare tilled, WC=winter cereal, PO=potatoes, SB=sugar beet, OR=other roots, BR=brassica, RP=rape, LY=ley, PG=permanent grass, UG=unknown grass, RG=rough grass, OH=orchard, FR=fruit, OC=other crop, UC=uncropped, SC=scrub, RL=river/lake, TP=track/path, RD=road, GD=garden); 41-42 Boundary Strip (0=absent, otherwise 1 of above 2=letter codes); 43-44 Width of Strip (1=up to 1m, 2=1-2m, 3=2-3m, 4=3-4m, 5=4-5, 9=absent); 45-46 Field Size (1=up to 5ha, 2=5-10ha, 3=10-20ha, 4=20-30ha, 5=over 30ha); 47-49 Altitude (m); 50-51 Distance to Farm, 52-53 Distance to Village, 54-55 Distance to Wood (1=under 100m, 2=100-500m, 3=500-1000m, 4=1-2km, 5=2-3km, 6=3-5km, 7=over 5km); 56-57 to 80-81 Plant Abundance if boundary is a hedge (0=absent, 1=rare, 2=uncommon, 3=common, 4=abundant, 5=dominant, 6=unsure, 9=not a hedge of Oak, Ash, Beech, Field Maple, Hazel, Holly, Balckthorn, Hawthorn, Elder, Rose, Bramble, Conifer, Other); 82-83, 84-85, 86-87 Berry Abundance (0= absent, 1=rare, 2=uncommon, 3=common, 4=abundant of Hawthorn, Blackthorn, Other); 88-89, 90-91 Ground Cover of Grass and Non-grass if boundary is hedge or bank (0=absent, 1=1-10%, 2=10-25%, 3=25-50%, 4=50-75%, 5=75-90%, 6=90-100%, 9=not a hedge or bank).

changes (changes between visits): Columns 1-3 Site number; 5-6 County (2-letter code); 8-9 Boundary number (Unit); 11-12 CHR (?); 14-15 Day; 16-17 Month; 18-19 new habitat code (as above).

In addition there are directories: Programs: FORTRAN programs to convert original input into data files; various SAS programs from Dan Chamberlain used during his analyses. Report and Talks: electronic versions of the paper to the IALE conference -- at which the results were presented by Dan Chamberlain; his Powerpoint talk at that conference; HG+othercharts contains mostly Harvard Graphics (.CH3) format files of some graphs now not readable.

Information held in BTO Archives

1 Folder of correspondence only.

The bird and habitat data sheets are available as scanned sheets.

Notes on Access and Use

Other information

Notes on Survey Design

Specific Issues for Analysis