

The Breeding Bird Survey 2004



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Report Number 10



by

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For further BBS information, visit our web site (www.bto.org/bbs), or visit BirdWeb for information about other bird surveys (www.bto.org/birdweb or www.rspb.org.uk/science/birdweb).

This report is provided free to all BBS fieldworkers and Regional Organisers. Further copies are available from BTO HQ at a cost of £5 (postage and packing included). The report can be downloaded, free of charge, from www.bto.org/bbs/results/bbsreport.htm.

The tenth annual report for the Breeding Bird Survey (BBS) allows us to look at the progress of the scheme over the past ten years, 1994–2004. We also present the survey coverage and bird population changes between the two most recent years, 2003–04. Data were collected from 2,512 squares in 2004, representing a massive effort from our volunteer fieldworkers and Regional Organisers (ROs). We would like to take this opportunity to thank everyone who has contributed to the success of the BBS.

The BBS is organised by the British Trust for Ornithology (BTO), and jointly funded by BTO, the Joint Nature Conservation Committee (JNCC, on behalf of English Nature, Scottish Natural Heritage, Countryside Council for Wales and the Environment and Heritage Service in Northern Ireland) and the Royal Society for the Protection of Birds (RSPB). The BBS Steering Group comprises Dr Helen Baker (JNCC), Dr Richard Gregory (RSPB), Dr Stephen Baillie (chair, BTO) and Dr David Noble (BTO). We are grateful to the following people who have provided assistance to the scheme since its inception: Dr Nicholas Aebischer, Dr Mark Avery, Dr Ian Bainbridge, Richard Bashford, George Boobyer, Prof. Steve Buckland, Dr Nick Carter, the late Dr Steve Carter, Dr Humphrey Crick, Anita Donaghy, Dr Iain Downie, Dr Steve Freeman, Dr Colin Galbraith, Dr David Gibbons, Dr John Goss-Custard, Dr Rhys Green, Prof. Jeremy Greenwood, Dr Richard Gregory, James Hall, Dr Andrew Joys, John Marchant, Dr Ian McLean, James Mackinnon, Mike Meharg, Dr Dorian Moss, Dr Stuart Newson, Dr Will Peach, Dr Ken Perry, Angela Rickard, Dr Ken Smith, David Stroud, Dr Derek Thomas, Richard Weyl and Karen Wright. We also acknowledge the support of the Environment and Heritage Service in Northern Ireland who generously funded two professional fieldworkers to cover 52 squares in the Province, and the help of staff from the RSPB office in Belfast who organised the fieldwork. Maps of coverage were produced using DMAP, which was written by Dr Alan Morton. The cover photograph of a Great Spotted Woodpecker is by Jill Pakenham and the BBS logo is by Andy Wilson. Other photographs in this report are by Derek Belsey and Tommy Holden. Report production and design are by Jane Waters.

PROFILES

Mike Raven is the National Organiser for the BBS and is responsible for the day-to-day running of the scheme, which involves liaison with BTO Regional Organisers and volunteers, promotion of the scheme and providing feedback by giving presentations around the country. Mike was previously responsible for the running of the BTO's Nest Record Scheme.

Dr David Noble is the Head of the Census Unit and oversees the running of bird surveys such as the WBS, WBBS and the BBS, as well as associated research on bird populations. Before joining the BTO he worked at Cambridge University on the relationships between cuckoos and their hosts, in the UK and in Africa.

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The Breeding Bird Survey 2004

Summary

- This is the tenth annual report of the BTO/JNCC/RSPB Breeding Bird Survey (BBS), covering the years 1994 to 2004. The primary aim of the survey is to provide population trends for a range of common and widespread bird species in the UK.
- Survey plots are based on '1-km squares' of the National Grid. Squares are chosen on the basis of a stratified random sampling design, with larger numbers of squares selected in regions with more potential volunteers. The aim is to survey the same squares each year.
- Volunteer observers visit their squares three times a year. The first visit is used to establish a transect route and to record details of land use and habitat type. The second and third visits are early morning counts to survey breeding birds. A line transect method is used, with birds recorded in distance bands. Each survey requires only 5–6 hours' fieldwork per year, enabling a large number of people to become involved across the UK.
- The scheme is administered centrally by BTO headquarters staff and organised by voluntary BTO Regional Organisers, who in most cases are BTO Regional Representatives, with help from the BTO's Welsh and Irish Officers and BTO Scotland. Regional Organisers play a vital role in coordinating and fostering local fieldwork effort.
- A total of 219 species and subspecies was recorded on 2,512 BBS squares in 2004. Population indices are calculated using methods that take regional differences in sampling effort into account. Across the UK, we were able to measure population changes with a medium to high degree of precision for 100 species.
- Trends for Cormorant, Grey Heron and Common Tern are reported with the caveat that counts may contain a high proportion of birds away from breeding sites, and the trend for Tawny Owl with the caveat that the BBS method monitors nocturnal species poorly.
- In the UK, 23 species declined and 49 species increased significantly between 1994 and 2004, with Wood Warbler and Willow Tit decreasing by more than 50%. Shelduck, Grey Partridge, Curlew, Turtle Dove, Tawny Owl, Yellow Wagtail, Lesser Whitethroat, Spotted Flycatcher, Pied Flycatcher, Starling and Siskin all showed moderate declines (25–50%). Greylag Goose, Canada Goose, Buzzard, Red-legged Partridge, Coot, Snipe, Great Spotted Woodpecker, Sand Martin, Stonechat, Grasshopper Warbler, Blackcap, Chiffchaff, Goldcrest, Nuthatch and Raven all showed increases in excess of 50% (Table 4).
- Sixteen widespread species monitored by the BBS have been red-listed on the basis of long-term population trends (see Gregory *et al* 2002) and of these, nine species declined significantly on BBS squares between 1994 and 2004 (Grey Partridge, Turtle Dove, Skylark, Spotted Flycatcher, Willow Tit, Starling, Linnet, Yellowhammer and Corn Bunting) and four species increased significantly (Song Thrush, Grasshopper Warbler, Marsh Tit and Tree Sparrow).
- Population changes are provided for all four constituent UK countries – England, Scotland, Wales and Northern Ireland and for each of the nine English Government Office Regions.
- In England, 23 species declined and 46 species increased significantly between 1994 and 2004. Willow Tit declined by more than 50%, and Grey Partridge, Turtle Dove, Cuckoo, Yellow Wagtail, Whinchat, Lesser Whitethroat, Willow Warbler, Spotted Flycatcher and Starling all showed moderate declines (25–50%). Increases greater than 50% were recorded for Greylag Goose, Canada Goose, Buzzard, Coot, Common Tern, Great Spotted Woodpecker, Sand Martin, Redstart, Stonechat, Blackcap, Chiffchaff, Nuthatch and Raven (Table 5).
- In Scotland, six species declined and 20 species increased significantly between 1994 and 2004. No species declined by more than 50%, but Kestrel, Lapwing, Curlew, Swift, Hooded Crow and Siskin showed moderate declines (25–50%). Increases greater than 50% were recorded for Grey Heron, Buzzard, Snipe, Cuckoo, House Martin, Wren, Mistle Thrush, Whitethroat, Blackcap, Goldcrest, Great Tit, Magpie, Raven and Goldfinch (Table 6).
- In Wales, five species declined and 20 species increased significantly between 1994 and 2004. Starling declined by more than 50% and Curlew, Goldcrest and Yellowhammer showed moderate declines (25–50%). Increases greater than 50% were recorded for Green Woodpecker, Great Spotted Woodpecker, Swallow, Blackcap, Chiffchaff, Treecreeper, House Sparrow and Goldfinch (Table 7).
- In Northern Ireland, no species were recorded as declining significantly whereas, between 1994 and 2004, 11 species increased. Increases greater than 50% were recorded for Wren, Dunnock, Willow Warbler, Blue Tit, Great Tit, Hooded Crow, Starling, Chaffinch and Greenfinch (Table 8).
- Within England, a number of species, showed declines in most of the regions for which population trends could be calculated, including Curlew, Cuckoo, Skylark, Willow Warbler, Starling, Bullfinch and Yellowhammer. Species that showed marked regional differences in population trends included Swift, House Martin, Wren, Song Thrush, Long-tailed Tit, Rook and House Sparrow, (Table 9).
- The BBS-online application allows BBS observers to submit their bird, habitat and mammal counts electronically via the web, and view historical data for their squares. The BBS web pages (available to everyone) provide the visitor with the latest results from the scheme (see www.bto.org/bbs).

Breeding Bird Survey

Background

The status of wild bird populations is an important indicator of the health of the countryside. The BTO/JNCC/RSPB Breeding Bird Survey (BBS) was launched in 1994, with the aim of improving the geographical scope of UK bird monitoring by including all habitats and, therefore, more species of breeding birds than had the previous Common Birds Census (CBC). Since the final year of the CBC in 2000, the BBS has become the primary scheme for monitoring the population changes of our common and widespread bird species in the UK. By surveying more than 2,000 sites each year, we are routinely able to generate UK population trends from BBS data for 100 species. BBS results are being used increasingly to set conservation priorities by the Government and non-governmental organisations.

The BBS and CBC ran alongside each other during 1994-2000 and this overlap period allowed us to develop methods to calculate long-term trends using data from both schemes. Joint CBC-BBS trends for England and the UK have been produced annually for a wide range of species. The most recent update includes joint CBC-BBS trends for 1966-2003, published in the *Breeding Birds in the Wider Countryside: their conservation status 2004* and available on the BTO website (www.bto.org/birdtrends).

Methods and organisation

The BBS uses a line-transect method in randomly selected 1-km squares. Each BBS observer makes two visits each breeding season to count all the birds seen and heard along two 1-km transects across their square. Birds are recorded in one of three distance bands, or in flight, the former to enable detectability to be assessed and species density calculated. A separate visit is required to record the habitat. Through its careful design, the BBS is able to provide precise population trends for a large proportion of our breeding species. Data from the BBS can also be summarised for individual countries, counties and habitats.

Population changes are estimated using a log-linear model with Poisson error terms. For these analyses, we use the higher count – from the two visits – for each species, first summed over all distance categories and transect sections. Counts are modelled as a function of year and site effects, weighted to account for differences in sampling intensity among regions of the UK, with standard errors adjusted for over-dispersion. Only squares that were counted in at least two years are included in the analyses. Counts for six species of wader (Oystercatcher, Lapwing, Golden Plover, Curlew, Redshank and Snipe) have been corrected to exclude counts of non-breeding flocks and, for Golden Plover, observations in unsuitable breeding habitat have also been excluded.

Work has been undertaken to assess the precision and reliability of BBS trends for all species, with the aim of developing a protocol to ensure that reported trends are based on reliable data and sufficient sample sizes. This has resulted in the population trends of five species of gull (Black-headed, Common, Herring, Lesser Black-backed and Great Black-backed) being dropped from the report as a large proportion of the counts are of non-breeding, wintering or migratory birds. Trends for other species with substantial wintering populations (e.g. Fieldfare) are excluded for the same reason. Trends for Cormorant, Grey Heron and

Common Tern are reported with the caveat that counts may contain a high proportion of birds away from breeding sites, and the trend for Tawny Owl is reported with the caveat that the BBS method monitors nocturnal species poorly.

The BBS National Organiser based at BTO HQ is responsible for the overall running of the scheme and acts as the main point of contact for the network of voluntary Regional Organisers (ROs). Each RO is responsible for allocating squares assigned to them from the sampling strategy to BBS observers in their particular region, and for finding new volunteers. They also manage incoming online submissions, and ensure that survey forms are collected and sent to BTO HQ as soon after the field season as possible. Since the success of the survey depends on volunteer surveyors, we are keen to provide them with up-to-date feedback. All BBS observers receive a copy of the annual report and those returning completed sets of forms are acknowledged by BTO HQ. Those with Internet access can also view BBS data and summaries of trends (see www.bto.org/bbs).

Survey coverage

To date, we have received 2,512 sets of completed BBS forms for 2004, a record number of surveyed squares since the survey was launched in 1994, and an encouraging increase on the total of 2,325 received for 2003 (Table 1). Only those squares that have been surveyed in two or more years between 1994 and 2004 are included in the calculation of trends, leading to bird counts from 3,198 sites being used in this analysis. BBS squares are randomly selected by computer, and can therefore turn up on any area of land in the UK.

Table 1. BBS coverage during 2002-04. The number of squares surveyed in each country and English Government Office Region.

| Country/GOR | 2002 coverage | 2003 coverage | 2004 coverage |
|------------------------|---------------|---------------|---------------|
| England | 1,652 | 1,737 | 1,868 |
| Scotland | 231 | 255 | 274 |
| Wales | 215 | 213 | 252 |
| Northern Ireland | 97 | 109 | 101 |
| Isle of Man | 3 | 4 | 6 |
| Channel Isles | 7 | 7 | 11 |
| North West England | 186 | 206 | 226 |
| North East England | 54 | 64 | 74 |
| Yorkshire & the Humber | 125 | 133 | 148 |
| East Midlands | 134 | 157 | 175 |
| East of England | 252 | 236 | 252 |
| West Midlands | 135 | 145 | 160 |
| South East England | 425 | 441 | 442 |
| South West England | 283 | 294 | 302 |
| London | 58 | 61 | 89 |
| Total: | 2,205 | 2,325 | 2,512 |

England

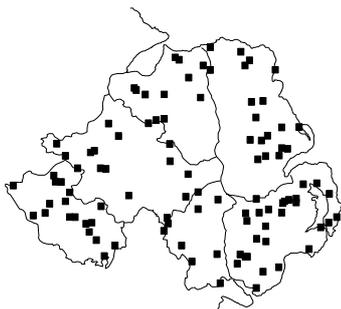
An impressive 1,868 squares were surveyed in England in 2004, representing the highest ever total since the survey started in 1994. Coverage increased in all nine English Government Office Regions between 2003 and 2004, and record totals were achieved in the North West, North East, Yorkshire and the Humber, East Midlands, South East and London regions.

ROs were particularly successful in a number of BTO regions in England, with record levels of coverage achieved in Cheshire (South), Cleveland, Cumbria (North), Derbyshire (South), Devon, County Durham, Gloucestershire, Huntingdonshire, Lancashire (North), Leicestershire, Lincolnshire (North), London, Northumberland, Warwickshire and the Yorkshire regions of Hull, North East, North West and Richmond.



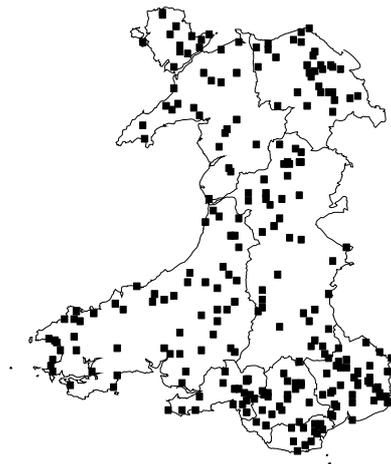
Wales

The 252 squares surveyed in Wales in 2004 represented the highest total since the survey started in 1994, and was an increase of 18% on the total for 2003. Record coverage was achieved in the BTO regions of Anglesey, Ceredigion, Carmarthenshire, Glamorgan (West) and Pembrokeshire. Previous record totals were matched in 2004 in Brecknock, Caernarfon, Clwyd (East), Glamorgan (South), Gwent, Merioneth and Montgomeryshire. Thanks must be given to all of the ROs in Wales who have contributed significantly towards achieving this success.



Scotland

The BBS had another very successful year in Scotland in 2004, with the total number of squares surveyed being 7% higher than that of 2003. Record coverage was achieved in the BTO regions of Fife, Lothian and Orkney, and good coverage was also reported from Aberdeenshire, Borders, Central, Dumfries, Inverness (East), Kincardine, Lanarkshire, Moray & Nairn, Ross-shire and Skye.



Northern Ireland

A total of 101 squares were surveyed in Northern Ireland in 2004, which was somewhat down on the record total of 109 achieved in 2003. Of these, 52 squares were surveyed by two professional fieldworkers, funded by the Environment & Heritage Service in Northern Ireland. As in previous years, coverage by volunteers was concentrated in the more populous eastern counties of Down and Antrim, with professional input centred in the more remote west.

Survey results

Species recorded

A total of 219 species, including a number of escapes, subspecies and domestic breeds was recorded on BBS visits in the UK in 2004. Of these, 108 species were recorded in 40 or more squares (Table 2) and a further 111 species in fewer than 40 squares (Table 3).

Increased coverage meant that although Red Kite, Peregrine, Barn Owl and Ring-necked Parakeet were recorded on 40 or more squares in 2004, their mean sample size over the entire survey period (1994–2004) remained under 40 squares, and thus, we were unable to produce reliable trends for these species. Two of the four species have increased enormously since the start of the survey: Red Kite was recorded on 65 squares (2.6% of the total) in 2004, compared to only 9 squares (0.6%) in 1994 and Ring-necked Parakeet increased from 4 to 76 squares (0.3% to 3.0% of the total) over the same period. Likewise, Little Egret increased from 1 (0.1%) to 32 (1.3%), Egyptian Goose from 2 (0.1%) to 14 (0.6%) and Mandarin from 5 (0.3%) to 25 (1.0%). Conversely, we are still able to produce UK trends for Pied Flycatcher, even though it was only recorded on 35 squares in 2004, although its continued decline may yet result in it dropping off the list of monitored species in the future. Goosander, Gadwall and Hobby were also recorded on 30–39 squares in 2004, and further increases in population or increase in BBS coverage may enable us to produce reliable trends for these species in years to come.

Three species were recorded for the first time on BBS squares in 2004 (Glossy Ibis in Oxfordshire, Wryneck in Hampshire and four records of Bittern from sites in Suffolk, Norfolk and North Lincolnshire). Following on from the survey's first Hoopoe that was seen in Hampshire in 2003, another individual was located in Sussex in 2004. On a less positive note, a wide range of presumably escaped species were recorded, including Black Swan, Red-breasted Goose, Bar-headed Goose, Ruddy Shelduck, Wood Duck, Muscovy Duck, Marbled Duck, Reeve's Pheasant, Guineafowl and Peacock. Whether this upturn in records reflects a genuine increase in numbers remains to be seen.

The Wood Pigeon continued to be the most abundant species on BBS squares, with 52,502 birds counted in the UK in 2004, followed by Starling (33,557), Blackbird (28,408) and Rook (28,167). However, the most widespread species was the Chaffinch, which was recorded on 2,306 or 92% of surveyed squares, closely followed by Blackbird (2,300), Wood Pigeon (2,297) and Wren (2,288). The most 'species rich' square was one in the West Midlands, where an impressive total of 66 species was recorded. This was closely followed by 64 species recorded on squares in Avon and Hampshire, compared to an overall average of 31 species. However, due credit must be given to observers who survey remote areas, which may hold important populations of a small number of specialist species; it is just as important to know where there are few birds as where there are many.

Table 2. Species recorded in 40 or more squares across the UK during the 2004 BBS survey. 'Number of squares' is the number of squares a species was recorded in, and '%' the percentage of squares the species was recorded in.

| Species | Number of squares | % | Species | Number of squares | % | Species | Number of squares | % |
|--------------------------|-------------------|-----|--------------------------|-------------------|-----|--------------------|-------------------|-----|
| Little Grebe | 65 | 3% | Wood Pigeon | 2297 | 92% | Whitethroat | 1280 | 51% |
| Great Crested Grebe | 73 | 3% | Collared Dove | 1315 | 52% | Garden Warbler | 403 | 16% |
| Cormorant | 270 | 11% | Turtle Dove | 160 | 6% | Blackcap | 1498 | 60% |
| Grey Heron | 628 | 25% | Ring-necked Parakeet | 76 | 3% | Wood Warbler | 47 | 2% |
| Mute Swan | 257 | 10% | Cuckoo | 709 | 28% | Chiffchaff | 1490 | 59% |
| Greylag Goose | 150 | 6% | Barn Owl | 44 | 2% | Willow Warbler | 1249 | 50% |
| Canada Goose | 480 | 19% | Little Owl | 92 | 4% | Goldcrest | 769 | 31% |
| Shelduck | 136 | 5% | Tawny Owl | 72 | 3% | Spotted Flycatcher | 204 | 8% |
| Mallard | 1230 | 49% | Swift | 973 | 39% | Long-tailed Tit | 868 | 35% |
| Tufted Duck | 134 | 5% | Kingfisher | 47 | 2% | Marsh Tit | 139 | 6% |
| Red Kite | 65 | 3% | Green Woodpecker | 771 | 31% | Willow Tit | 40 | 2% |
| Sparrowhawk | 307 | 12% | Great Spotted Woodpecker | 981 | 39% | Coal Tit | 759 | 30% |
| Buzzard | 855 | 34% | Skylark | 1553 | 62% | Blue Tit | 2162 | 86% |
| Kestrel | 577 | 23% | Sand Martin | 124 | 5% | Great Tit | 2040 | 81% |
| Peregrine | 40 | 2% | Swallow | 1823 | 73% | Nuthatch | 461 | 18% |
| Red Grouse | 113 | 5% | House Martin | 965 | 38% | Treecreeper | 308 | 12% |
| Red-legged Partridge | 575 | 23% | Tree Pipit | 114 | 5% | Jay | 724 | 29% |
| Grey Partridge | 206 | 8% | Meadow Pipit | 736 | 29% | Magpie | 1760 | 70% |
| Pheasant | 1692 | 67% | Yellow Wagtail | 152 | 6% | Jackdaw | 1584 | 63% |
| Moorhen | 632 | 25% | Grey Wagtail | 205 | 8% | Rook | 1183 | 47% |
| Coot | 269 | 11% | Pied Wagtail | 1210 | 48% | Carrion Crow | 2189 | 87% |
| Oystercatcher | 314 | 13% | Dipper | 54 | 2% | Hooded Crow | 142 | 6% |
| Golden Plover | 80 | 3% | Wren | 2288 | 91% | Raven | 257 | 10% |
| Lapwing | 654 | 26% | Dunnock | 1901 | 76% | Starling | 1658 | 66% |
| Snipe | 153 | 6% | Robin | 2222 | 89% | House Sparrow | 1509 | 60% |
| Curlew | 448 | 18% | Redstart | 138 | 6% | Tree Sparrow | 153 | 6% |
| Redshank | 94 | 4% | Whinchat | 54 | 2% | Chaffinch | 2306 | 92% |
| Common Sandpiper | 57 | 2% | Stonechat | 156 | 6% | Greenfinch | 1790 | 71% |
| Black-headed Gull | 477 | 19% | Wheatear | 284 | 11% | Goldfinch | 1459 | 58% |
| Common Gull | 122 | 5% | Blackbird | 2300 | 92% | Siskin | 107 | 4% |
| Lesser Black-backed Gull | 552 | 22% | Song Thrush | 1885 | 75% | Linnet | 1160 | 46% |
| Herring Gull | 617 | 25% | Mistle Thrush | 1147 | 46% | Lesser Redpoll | 131 | 5% |
| Great Black-backed Gull | 94 | 4% | Grasshopper Warbler | 81 | 3% | Bullfinch | 562 | 22% |
| Common Tern | 62 | 2% | Sedge Warbler | 294 | 12% | Yellowhammer | 1065 | 42% |
| Feral Pigeon | 669 | 27% | Reed Warbler | 122 | 5% | Reed Bunting | 438 | 17% |
| Stock Dove | 729 | 29% | Lesser Whitethroat | 244 | 10% | Corn Bunting | 113 | 5% |

Table 3. Species recorded on fewer than 40 squares for the whole of the UK during the 2004 survey. Species marked with an asterisk are feral or non-native species in Category E of the British Ornithologists' Union British List. Species in parenthesis are usually recognised as races or forms rather than full species.

| Species | Number of squares | Species | Number of squares | Species | Number of squares | Species | Number of squares |
|--|-------------------|------------------------|-------------------|----------------------|-------------------|---------------------------|-------------------|
| Red-throated Diver | 12 | Shoveler | 18 | Little Ringed Plover | 7 | Nightjar | 2 |
| Black-throated Diver | 4 | Marbled Duck* | 1 | Ringed Plover | 27 | Hoopoe | 1 |
| Great Northern Diver | 1 | Pochard | 19 | Grey Plover | 2 | Wryneck | 1 |
| Black-necked Grebe | 1 | Eider | 10 | Dunlin | 19 | Lesser Spotted Woodpecker | 20 |
| Fulmar | 24 | Goldeneye | 3 | Sanderling | 3 | Woodlark | 17 |
| Gannet | 15 | Red-breasted Merganser | 14 | Jack Snipe | 1 | Rock Pipit | 18 |
| Shag | 15 | Goosander | 36 | Woodcock | 15 | Nightingale | 24 |
| Bittern | 4 | Ruddy Duck | 16 | Black-tailed Godwit | 5 | Black Redstart | 2 |
| Little Egret | 32 | White-tailed Eagle | 1 | Bar-tailed Godwit | 2 | Ring Ouzel | 23 |
| Glossy Ibis | 1 | Marsh Harrier | 16 | Whimbrel | 30 | Fieldfare | 29 |
| Black Swan* | 2 | Hen Harrier | 10 | Spotted Redshank | 1 | Redwing | 6 |
| Whooper Swan | 3 | Montagu's Harrier | 3 | Greenshank | 11 | Cetti's Warbler | 14 |
| Pink-footed Goose | 9 | Goshawk | 7 | Green Sandpiper | 2 | Marsh Warbler | 1 |
| White-fronted Goose (Domestic Goose*) | 16 | Golden Eagle | 3 | Turnstone | 4 | Dartford Warbler | 8 |
| Bar-headed Goose* | 3 | Osprey | 7 | Red-necked Phalarope | 1 | Firecrest | 2 |
| Barnacle Goose | 9 | Merlin | 14 | Arctic Skua | 9 | Pied Flycatcher | 35 |
| Brent Goose | 3 | Hobby | 31 | Great Skua | 10 | Bearded Tit | 2 |
| Red-breasted Goose* | 1 | Black Grouse | 10 | Mediterranean Gull | 3 | Crested Tit | 1 |
| Egyptian Goose | 14 | Quail | 13 | Kittiwake | 4 | Short-toed Treecreeper | 2 |
| Ruddy Shelduck* | 1 | Golden Pheasant | 4 | Sandwich Tern | 12 | Great Grey Shrike | 1 |
| Wood Duck* | 2 | Reeve's Pheasant* | 1 | Arctic Tern | 9 | Chough | 8 |
| Mandarin | 25 | Helmetted Guineafowl* | 6 | Little Tern | 3 | Brambling | 6 |
| Muscovy Duck* | 2 | Peacock* | 18 | Guillemot | 3 | Twite | 13 |
| Wigeon | 13 | Water Rail | 7 | Razorbill | 2 | Crossbill | 37 |
| Gadwall | 37 | Corncrake | 2 | Black Guillemot | 3 | Hawfinch | 2 |
| Teal | 29 | Crane | 1 | Rock Dove | 10 | Cirl Bunting | 2 |
| (Domestic Mallard*) | 21 | Avocet | 4 | Long-eared Owl | 2 | Other cage bird species* | 1 |
| | | Stone-curlew | 2 | Short-eared Owl | 20 | | |

United Kingdom

Of the 100 species recorded on an average of 40 or more squares in the UK between 1994 and 2004 (Table 4), 23 declined significantly and 49 increased significantly between 1994 and 2004. The trends discussed in this section are for the period 1994–2004 unless otherwise stated.

Of 16 species red-listed in *Population Status of Birds in the UK* (Gregory *et al* 2002), because their UK breeding populations had declined by at least 50% during 1974–99, and for which we are able to calculate population trends, nine declined significantly and four increased significantly between 1994 and 2004. Those showing a significant decline during 1994–2004, include farmland specialists such as Skylark (down 10%), Grey Partridge (down 30%), Corn Bunting (down 24%) and Yellowhammer (down 22%). The only positive news for these birds was that the declines for the first three species had not increased since the last set of published results covering the 1994–2003 period. It is encouraging to note that an increase in Bullfinch numbers between 2003 and 2004 resulted in this species being removed from the list of species undergoing a significant decline for the entire survey period. Other changes from the last set of published results include a now significant decline in Linnet, and a significant increase in Grasshopper Warbler numbers (previously no significant change for either species).

Grasshopper Warbler populations, in common with those for many long-distance migrants, are prone to large annual variations and 2004 was a good year for many of these species. Of a total of 25 UK summer-visitor species monitored by the BBS, 22 increased in numbers between 2003 and 2004 (six increased significantly), and only the Yellow Wagtail showed a decline of any note.

The situation for several of our woodland specialists remains a concern, with numbers of Spotted Flycatcher, Pied Flycatcher, Willow Tit, Siskin and Tawny Owl all having declined significantly by more than 25% since 1994. Even with an increase in numbers between 2003–04, Wood Warbler still declined significantly by 52% over the entire survey period, 1994–2004.

A total of 30 species for which we are able to generate population trends are amber-listed in *Population Status of Birds in the UK*. These species are amber-listed on the basis of one or more criteria, including declines in breeding numbers, declines in breeding range, the UK breeding population forms a large proportion of the European total, or the species has an unfavourable status in Europe. Of twelve species amber-listed on the basis of moderate (25–49%) declines in the UK during 1974–99, two increased significantly (House Martin and Dunnock) and five decreased significantly (Kestrel, Lapwing, Cuckoo, Yellow Wagtail and Wood Warbler) during 1994–2004. Five species for which BBS trends are calculated are amber-listed on the basis that their UK breeding population forms at least 20% of the European population, and of these, Curlew and Lesser Redpoll declined significantly and Stock Dove increased significantly. Seven species are amber-listed partly because of their unfavourable status in Europe (i.e. 'Species of European Concern' (SPEC) 2 and 3), and of these, none had declined significantly, whilst Green Woodpecker, Swallow, Sand Martin, Redstart and Stonechat increased. Note that, these criteria were based on the SPEC classifications in the first version of *Birds in Europe*. The revised and original SPECs are provided in *Birds in Europe II* (Birdlife International 2004).

Conventions for the population trends tables (Tables 4-9)

The figures presented in the trends tables are the percentage changes in population levels for the respective time periods, marked with an asterisk where significant. For the 1994–2004 period, the lower and upper 95% confidence limits are given. The sample size indicated is the mean number of squares occupied each year over the survey period 1994–2004 (excluding squares where the species was recorded in only one year). Species in bold are red-listed and those in italics amber-listed in *Population Status of Birds in the UK*. Trends for species in parenthesis must be treated with caution, because it is considered that the species

is either poorly covered by the BBS method, or a high proportion of the counts were likely to have been made away from breeding sites. Trends tables and graphs are available on the BTO website (www.bto.org/bbs/trends).

England

A total of 195 species was recorded on BBS visits in England in 2004 and, of these, Wood Pigeon was the most widespread, being recorded on 96% of squares, closely followed by Blackbird and Carrion Crow (both 95%). Of the 93 species that were recorded on an average of 30 or more squares in England (Table 5), 23 had declined significantly and 46 had increased significantly between 1994 and 2004.

Table 4. UK. Population changes for species recorded on a mean of 40 or more squares per year for 2003-04 and 1994-2004.

| Species | Sample | Change 03-04 | Change 94-04 | lcl | ucl | Species | Sample | Change 03-04 | Change 94-04 | lcl | ucl |
|-------------------------|--------|--------------|--------------|-----|-----|----------------------------|--------|--------------|--------------|-----|-----|
| Little Grebe | 52 | -14 | 24 | -11 | 73 | <i>Dunnock</i> | 1568 | -8 | 13 * | 8 | 19 |
| Great Crested Grebe | 58 | 97 * | 38 * | 5 | 80 | Robin | 1813 | -3 | 15 * | 11 | 19 |
| (Cormorant) | 166 | 22 | 40 * | 19 | 66 | <i>Redstart</i> | 132 | 19 | 30 * | 10 | 55 |
| (Grey Heron) | 513 | -16 | 17 * | 5 | 31 | Whinchat | 74 | 4 | -15 | -33 | 8 |
| <i>Mute Swan</i> | 185 | -14 | 0 | -14 | 16 | <i>Stonechat</i> | 94 | 7 | 135 * | 78 | 209 |
| <i>Greylag Goose</i> | 99 | -5 | 179 * | 119 | 257 | Wheatear | 243 | 11 | 7 | -6 | 21 |
| Canada Goose | 331 | -31 * | 74 * | 53 | 98 | Blackbird | 1896 | -3 | 17 * | 14 | 20 |
| <i>Shelduck</i> | 118 | 2 | -38 * | -49 | -26 | Song Thrush | 1488 | -5 | 14 * | 8 | 20 |
| Mallard | 982 | -2 | 23 * | 15 | 31 | <i>Mistle Thrush</i> | 992 | -2 | -2 | -9 | 6 |
| Tufted Duck | 124 | -13 | 27 * | 4 | 56 | Grasshopper Warbler | 60 | 54 | 59 * | 17 | 118 |
| Sparrowhawk | 277 | -17 | -21 * | -32 | -8 | Sedge Warbler | 248 | 22 | 15 * | 2 | 1 |
| Buzzard | 544 | 0 | 53 * | 38 | 68 | Reed Warbler | 92 | 28 | 48 * | 22 | 78 |
| <i>Kestrel</i> | 528 | -14 | -19 * | -27 | -10 | Lesser Whitethroat | 209 | 13 | -30 * | -41 | -18 |
| <i>Red Grouse</i> | 101 | -22 | -4 | -23 | 19 | Whitethroat | 1024 | 19 * | 39 * | 31 | 48 |
| Red-legged Partridge | 404 | 18 | 53 * | 37 | 70 | Garden Warbler | 373 | 14 | -4 | -14 | 9 |
| Grey Partridge | 212 | 13 | -30 * | -40 | -17 | Blackcap | 1123 | 12 | 54 * | 45 | 63 |
| Pheasant | 1318 | 5 | 39 * | 32 | 46 | <i>Wood Warbler</i> | 53 | 109 * | -52 * | -64 | -35 |
| Moorhen | 526 | -5 | 25 * | 13 | 38 | Chiffchaff | 1040 | 17 * | 76 * | 66 | 86 |
| Coot | 205 | -11 | 77 * | 53 | 105 | <i>Willow Warbler</i> | 1205 | 12 * | 0 | -4 | 5 |
| <i>Oystercatcher</i> | 244 | 9 | -5 | -14 | 4 | <i>Goldcrest</i> | 582 | -4 | 60 * | 47 | 74 |
| Golden Plover | 53 | 12 | 2 | -23 | 36 | Spotted Flycatcher | 194 | 12 | -35 * | -45 | -23 |
| <i>Lapwing</i> | 559 | -1 | -13 * | -20 | -6 | Pied Flycatcher | 41 | 14 | -35 * | -53 | -10 |
| <i>Snipe</i> | 124 | 8 | 54 * | 29 | 84 | Long-tailed Tit | 677 | 0 | 12 * | 1 | 24 |
| <i>Curlew</i> | 431 | -10 | -34 * | -39 | -28 | Marsh Tit | 126 | 4 | 26 * | 1 | 56 |
| <i>Redshank</i> | 70 | 58 | 23 | -2 | 54 | Willow Tit | 54 | -26 | -65 * | -75 | -50 |
| Common Sandpiper | 60 | -4 | -15 | -34 | 8 | Coal Tit | 585 | -12 | 14 * | 5 | 23 |
| (Common Tern) | 48 | 19 | 17 | -14 | 59 | Blue Tit | 1772 | -2 | 17 * | 13 | 22 |
| Feral Pigeon | 555 | -5 | 7 | -3 | 17 | Great Tit | 1632 | 5 | 35 * | 29 | 41 |
| <i>Stock Dove</i> | 618 | 13 | 30 * | 18 | 43 | Nuthatch | 325 | 7 | 52 * | 34 | 73 |
| Wood Pigeon | 1913 | -2 | 12 * | 8 | 16 | Treecreeper | 276 | -5 | 7 | -8 | 25 |
| Collared Dove | 1044 | 8 | 41 * | 34 | 49 | Jay | 553 | 5 | 1 | -9 | 11 |
| Turtle Dove | 183 | 0 | -45 * | -54 | -34 | Magpie | 1470 | -3 | -1 | -5 | 4 |
| <i>Cuckoo</i> | 712 | 31 * | -19 * | -26 | -12 | Jackdaw | 1256 | -3 | 19 * | 12 | 26 |
| Little Owl | 91 | -17 | -14 | -34 | 12 | Rook | 1038 | -12 | -3 | -10 | 6 |
| (Tawny Owl) | 77 | -13 | -38 * | -54 | -18 | Carrion Crow | 1795 | 1 | 11 * | 6 | 17 |
| Swift | 870 | 8 | -22 * | -28 | -15 | Hooded Crow | 114 | -10 | -13 | -31 | 9 |
| <i>Kingfisher</i> | 43 | -25 | -11 | -40 | 32 | Raven | 182 | -6 | 91 * | 58 | 130 |
| <i>Green Woodpecker</i> | 592 | 6 | 34 * | 23 | 47 | Starling | 1499 | -5 | -30 * | -34 | -25 |
| Gt. Spotted Woodpecker | 666 | 13 | 108 * | 90 | 129 | House Sparrow | 1275 | -1 | -3 | -7 | 2 |
| Skylark | 1407 | 3 | -10 * | -13 | -6 | Tree Sparrow | 136 | -1 | 48 * | 22 | 80 |
| <i>Sand Martin</i> | 99 | 247 * | 84 * | 48 | 127 | Chaffinch | 1898 | 0 | 9 * | 6 | 12 |
| <i>Swallow</i> | 1486 | 11 | 22 * | 16 | 28 | Greenfinch | 1387 | 4 | 37 * | 30 | 44 |
| <i>House Martin</i> | 766 | 11 | 31 * | 20 | 42 | Goldfinch | 1104 | -6 | 28 * | 19 | 37 |
| <i>Tree Pipit</i> | 119 | 18 | 16 | -4 | 40 | Siskin | 112 | -12 | -40 * | -52 | -25 |
| <i>Meadow Pipit</i> | 640 | -4 | 0 | -5 | 5 | Linnet | 1045 | -14 * | -14 * | -20 | -8 |
| <i>Yellow Wagtail</i> | 152 | -13 | -27 * | -38 | -14 | <i>Lesser Redpoll</i> | 121 | -29 | -21 * | -37 | -1 |
| <i>Grey Wagtail</i> | 167 | -29 | 14 | -6 | 38 | Bullfinch | 463 | 11 | -9 | -18 | 2 |
| Pied Wagtail | 1015 | -10 | 21 * | 13 | 30 | Yellowhammer | 1008 | -7 | -22 * | -26 | -18 |
| Dipper | 46 | -22 | 4 | -29 | 52 | Reed Bunting | 351 | -9 | 4 | -6 | 16 |
| Wren | 1879 | -3 | 14 * | 11 | 18 | Corn Bunting | 138 | 21 | -24 * | -35 | -10 |

For several species that have a mainly English distribution in the UK, the trends for England and the UK are generally similar. However, the population trends for several species in England differed from those for the UK. Numbers of Oystercatcher increased significantly in England, whilst undergoing no significant change in the UK, and those for Lapwing also increased in England while declining significantly in the UK. In contrast, Mute Swan, Meadow Pipit, Whinchat, Mistle Thrush, Willow Warbler, House Sparrow and Bullfinch are not faring so well in England, with numbers declining significantly here, while showing no significant change in the UK since 1994. The declines for Cuckoo and Skylark were substantially greater in England than they were for the UK overall, while those for Curlew were less. Numbers of Wren, Long-tailed Tit and Marsh Tit all increased significantly in the UK, but showed no significant change in England.

Eight species were recorded on 20–29 squares in England, and hence too few squares for English population trends to be calculated (Gadwall, Hobby, Common Sandpiper, Ring-necked Parakeet, Lesser Spotted Woodpecker, Nightingale, Grasshopper Warbler and Wood Warbler).

Scotland

A total of 160 species was recorded on BBS visits in Scotland in 2004 and, of these, Wren and Chaffinch were the most widespread, both being recorded on 78% of squares, followed by Meadow Pipit, Skylark and Willow Warbler (all 68%). There were a large number of unusual records, including Marsh Harrier, Quail, Turtle Dove, Marsh Tit, Nuthatch and Chough, species that are rare or on the edge of their natural range in Scotland. A number of scarce or late winter visitors were also noted (e.g. Great Northern Diver, Jack Snipe

Table 5. ENGLAND. Population changes for species recorded on a mean of 30 or more squares per year for 2003-04 and 1994-2004.

| Species | Sample | Change | | | | Species | Sample | Change | | | |
|-------------------------|--------|--------|-------|-----|-----|---------------------------|--------|--------|-------|-----|-----|
| | | 03-04 | 94-04 | lcl | ucl | | | 03-04 | 94-04 | lcl | ucl |
| Little Grebe | 43 | -10 | 29 | -12 | 89 | <i>Dunnock</i> | 1279 | -6 | 8 * | 3 | 14 |
| Great Crested Grebe | 52 | 77 | 13 | -14 | 49 | Robin | 1424 | -6 | 20 * | 16 | 24 |
| (Cormorant) | 136 | 9 | 40 * | 17 | 67 | <i>Redstart</i> | 70 | 6 | 53 * | 19 | 95 |
| (Grey Heron) | 414 | -18 | 0 | -11 | 12 | Whinchat | 30 | -13 | -32 * | -51 | -6 |
| <i>Mute Swan</i> | 158 | -17 | -21 * | -32 | -8 | <i>Stonechat</i> | 37 | -9 | 184 * | 88 | 331 |
| <i>Greylag Goose</i> | 80 | -9 | 73 * | 38 | 117 | Wheatear | 117 | 26 | 11 | -8 | 32 |
| Canada Goose | 312 | -33 * | 65 * | 45 | 88 | Blackbird | 1510 | -3 | 15 * | 12 | 18 |
| <i>Shelduck</i> | 97 | -1 | -12 | -28 | 8 | Song Thrush | 1152 | -4 | 11 * | 5 | 17 |
| Mallard | 819 | 1 | 33 * | 24 | 42 | <i>Mistle Thrush</i> | 797 | -15 | -21 * | -27 | -13 |
| Tufted Duck | 107 | 9 | 35 * | 11 | 64 | Sedge Warbler | 158 | 30 | 31 * | 13 | 53 |
| Sparrowhawk | 231 | -15 | -21 * | -33 | -7 | Reed Warbler | 89 | 27 | 41 * | 17 | 71 |
| Buzzard | 310 | 13 | 79 * | 58 | 102 | Lesser Whitethroat | 199 | 10 | -32 * | -42 | -20 |
| <i>Kestrel</i> | 455 | -19 | -12 * | -22 | -2 | Whitethroat | 887 | 22 * | 39 * | 30 | 48 |
| <i>Red Grouse</i> | 41 | 8 | 9 | -16 | 40 | Garden Warbler | 303 | 9 | -13 | -24 | 0 |
| Red-legged Partridge | 397 | 16 | 46 * | 32 | 62 | Blackcap | 975 | 20 * | 50 * | 41 | 59 |
| Grey Partridge | 187 | 0 | -32 * | -42 | -19 | Chiffchaff | 880 | 17 * | 77 * | 67 | 87 |
| Pheasant | 1116 | 2 | 45 * | 38 | 52 | <i>Willow Warbler</i> | 828 | 10 | -31 * | -35 | -27 |
| Moorhen | 482 | -7 | 17 * | 6 | 29 | <i>Goldcrest</i> | 404 | -4 | 49 * | 34 | 66 |
| Coot | 185 | -12 | 87 * | 60 | 118 | Spotted Flycatcher | 141 | -7 | -44 * | -54 | -32 |
| <i>Oystercatcher</i> | 117 | -3 | 36 * | 14 | 63 | Long-tailed Tit | 595 | 4 | 3 | -7 | 14 |
| <i>Lapwing</i> | 452 | -5 | 11 * | 1 | 22 | Marsh Tit | 112 | -6 | 6 | -16 | 33 |
| <i>Snipe</i> | 56 | -23 | 13 | -13 | 46 | Willow Tit | 47 | -20 | -67 * | -77 | -52 |
| <i>Curlew</i> | 250 | -5 | -23 * | -30 | -15 | Coal Tit | 379 | 2 | 12 * | 1 | 25 |
| <i>Redshank</i> | 47 | 30 | 33 | -1 | 78 | Blue Tit | 1437 | -2 | 10 * | 6 | 15 |
| (Common Tern) | 43 | 29 | 88 * | 33 | 166 | Great Tit | 1325 | 8 | 30 * | 24 | 36 |
| Feral Pigeon | 466 | -12 | -2 | -11 | 8 | Nuthatch | 268 | 6 | 50 * | 31 | 73 |
| <i>Stock Dove</i> | 570 | 12 | 25 * | 13 | 38 | Treecreeper | 204 | -13 | -11 | -25 | 5 |
| Wood Pigeon | 1527 | 1 | 17 * | 12 | 22 | Jay | 479 | 7 | -9 | -18 | 1 |
| Collared Dove | 927 | 7 | 43 * | 35 | 51 | Magpie | 1226 | -4 | -4 | -8 | 1 |
| Turtle Dove | 180 | 0 | -45 * | -54 | -34 | Jackdaw | 989 | -2 | 28 * | 20 | 37 |
| <i>Cuckoo</i> | 574 | 10 | -43 * | -48 | -37 | Rook | 814 | 9 | 1 | -8 | 10 |
| Little Owl | 88 | -14 | -7 | -29 | 23 | Carrion Crow | 1466 | 0 | 20 * | 14 | 26 |
| (Tawny Owl) | 65 | -16 | -13 | -36 | 18 | Raven | 55 | 8 | 280 * | 178 | 420 |
| Swift | 752 | 8 | -22 * | -28 | -15 | Starling | 1232 | -9 | -41 * | -45 | -37 |
| <i>Kingfisher</i> | 38 | -14 | -3 | -35 | 44 | House Sparrow | 1059 | 1 | -10 * | -14 | -6 |
| <i>Green Woodpecker</i> | 546 | 4 | 42 * | 28 | 56 | Tree Sparrow | 113 | 7 | 30 * | 6 | 60 |
| Gt. Spotted Woodpecker | 594 | 7 | 98 * | 80 | 118 | Chaffinch | 1466 | -1 | 14 * | 11 | 18 |
| Skylark | 1101 | 0 | -19 * | -22 | -15 | Greenfinch | 1169 | 2 | 35 * | 28 | 43 |
| <i>Sand Martin</i> | 66 | 129 * | 56 * | 22 | 99 | Goldfinch | 909 | 0 | 18 * | 9 | 27 |
| <i>Swallow</i> | 1139 | 12 | 18 * | 11 | 25 | Siskin | 33 | 3 | -34 | -57 | 0 |
| <i>House Martin</i> | 608 | 9 | 16 * | 6 | 27 | Linnet | 852 | -8 | -15 * | -21 | -8 |
| <i>Tree Pipit</i> | 64 | 7 | -20 | -37 | 2 | <i>Lesser Redpoll</i> | 49 | 69 | -29 | -50 | 1 |
| <i>Meadow Pipit</i> | 317 | -7 | -9 * | -16 | -3 | Bullfinch | 360 | -1 | -17 * | -27 | -6 |
| <i>Yellow Wagtail</i> | 148 | -14 | -26 * | -37 | -12 | Yellowhammer | 877 | -10 | -24 * | -28 | -20 |
| <i>Grey Wagtail</i> | 107 | -20 | 31 * | 3 | 65 | Reed Bunting | 263 | 0 | -2 | -12 | 11 |
| <i>Pied Wagtail</i> | 767 | -13 | 18 * | 8 | 28 | Corn Bunting | 132 | 21 | -19 * | -31 | -4 |
| Wren | 1457 | -10 * | 0 | -3 | 4 | | | | | | |

and Great Grey Shrike), plus three flocks of Pink-footed Geese and single flocks of Barnacle and White-fronted Geese.

A total of 53 species was recorded on an average of 30 or more squares in Scotland (Table 6), and of these, six had declined significantly and 20 had increased significantly between 1994 and 2004. For many species, the trends in Scotland were broadly similar to those in England, including significant increases in Buzzard and Raven, and increases in the numbers of some of our familiar garden species such as Blue Tit, Great Tit, Goldfinch and Greenfinch. At the other end of the spectrum, numbers of Kestrel, Swift and Curlew all declined significantly in both countries.

A number of species continued to fare better in Scotland than in other parts of the country. Willow Warbler numbers increased significantly in Scotland during 1994–2004, whereas their counterparts in England and Wales declined. Likewise, Cuckoo, Mistle Thrush and House Sparrow all increased significantly north of the border, whilst showing a downward trend in England. Skylark, Meadow Pipit, Starling and Yellowhammer also declined significantly in England, but were relatively stable in Scotland.

Fourteen species were recorded on 20–29 squares in Scotland, and hence too few squares for Scottish population trends to be calculated. These include three UK Biodiversity Action Plan species (Grey Partridge, Spotted Flycatcher and Bullfinch) as well as Redshank, Stock Dove, Great Spotted Woodpecker, Tree Pipit, Grey Wagtail, Dipper, Whinchat, Stonechat, Chiffchaff, Long-tailed Tit and Treecreeper. However, as a result of increased coverage, the BBS is now able to monitor the trends of Blackcap in Scotland for the first time.

Wales

A total of 143 species was recorded on BBS visits in Wales in 2004, including several which had never been seen on Welsh BBS squares

before (Woodcock, Black-tailed Godwit, Sanderling, Kittiwake and Peacock!). Carrion Crow remained the most widespread species, being recorded on 94% of squares, closely followed by Chaffinch (93%), Blackbird (92%) and Robin (90%). Of the 51 species that were recorded on an average of 30 or more squares in Wales (Table 7), five had declined significantly and 20 had increased significantly between 1994 and 2004.

The Welsh trends for a number of species were similar in direction to those in England, with significant declines in Curlew, Willow Warbler, Starling and Yellowhammer. Starling underwent the greatest decline of any species monitored by the BBS in Wales, with numbers falling by 66% between 1994 and 2004. The Welsh trends for a range of typical garden and woodland species also matched the English pattern, with many increasing. Several of our summer visitors were also faring well, with numbers of Swallow, House Martin, Blackcap and Chiffchaff increasing in both Wales and England. However, Goldcrest numbers declined significantly in Wales, whilst increasing in England. In contrast, populations of House Sparrow and Meadow Pipit increased in Wales, but declined in England.

Nine species not shown in Table 7 were recorded on 20–29 squares in Wales and hence too few squares for Welsh indices to be generated (Kestrel, Feral Pigeon, Stock Dove, Grey Wagtail, Stonechat, Wood Warbler, Spotted Flycatcher, Pied Flycatcher and Reed Bunting).

Northern Ireland

A total of 97 species was recorded on BBS visits in Northern Ireland in 2004, including two species which had never been recorded on squares in the Province before (Shag and Brent Goose). Wren was the most widespread species, being recorded on 97% of squares, followed by Chaffinch (95%), Robin (93%)

Table 6. SCOTLAND. Population changes for species recorded on a mean of 30 or more squares per year for 2003-04 and 1994-2004.

| Species | Sample | Change | | lcl | ucl | Species | Sample | Change | | lcl | ucl |
|----------------------|--------|--------|-------|-----|-----|-----------------------|--------|--------|-------|-----|-----|
| | | 03-04 | 94-04 | | | | | 03-04 | 94-04 | | |
| (Grey Heron) | 42 | -7 | 84 * | 20 | 184 | Song Thrush | 134 | -6 | 22 * | 2 | 47 |
| Mallard | 85 | -21 | 4 | -19 | 34 | <i>Mistle Thrush</i> | 60 | 9 | 80 * | 31 | 149 |
| Buzzard | 101 | -8 | 63 * | 27 | 109 | Sedge Warbler | 47 | 5 | -1 | -29 | 36 |
| <i>Kestrel</i> | 41 | -1 | -31 * | -52 | -1 | Whitethroat | 57 | -6 | 63 * | 19 | 123 |
| <i>Red Grouse</i> | 55 | -34 | -12 | -37 | 23 | Blackcap | 31 | -24 | 77 * | 13 | 177 |
| Pheasant | 100 | 18 | 5 | -13 | 27 | <i>Willow Warbler</i> | 173 | 15 | 43 * | 26 | 63 |
| <i>Oystercatcher</i> | 116 | 13 | -12 | -24 | 2 | <i>Goldcrest</i> | 71 | 2 | 149 * | 91 | 226 |
| Golden Plover | 42 | 11 | -3 | -30 | 33 | Coal Tit | 97 | -17 | 18 | -3 | 45 |
| <i>Lapwing</i> | 84 | 8 | -35 * | -47 | -20 | Blue Tit | 123 | -7 | 46 * | 23 | 72 |
| <i>Snipe</i> | 51 | 17 | 69 * | 26 | 127 | Great Tit | 109 | 8 | 64 * | 33 | 101 |
| <i>Curlew</i> | 119 | -11 | -43 * | -52 | -33 | Magpie | 34 | 2 | 66 * | 20 | 129 |
| Common Sandpiper | 34 | -10 | -17 | -42 | 18 | Jackdaw | 91 | 7 | 15 | -9 | 44 |
| Feral Pigeon | 51 | 11 | 21 | -14 | 68 | Rook | 96 | -34 | -5 | -29 | 27 |
| Wood Pigeon | 159 | -15 | -13 | -24 | 0 | Carrion Crow | 150 | 11 | -3 | -19 | 16 |
| Collared Dove | 36 | 15 | -1 | -30 | 38 | Hooded Crow | 49 | -3 | -37 * | -53 | -14 |
| <i>Cuckoo</i> | 63 | 51 | 63 * | 23 | 115 | Raven | 37 | -3 | 76 * | 13 | 174 |
| Swift | 41 | 31 | -49 * | -64 | -27 | Starling | 122 | 9 | 13 | -11 | 44 |
| Skylark | 183 | 5 | 4 | -7 | 16 | House Sparrow | 73 | -17 | 39 * | 12 | 73 |
| <i>Swallow</i> | 133 | 3 | 3 | -12 | 22 | Chaffinch | 191 | 0 | 1 | -8 | 11 |
| <i>House Martin</i> | 45 | 22 | 201 * | 92 | 374 | Greenfinch | 82 | 25 | 35 * | 5 | 74 |
| <i>Meadow Pipit</i> | 191 | -5 | -5 | -14 | 6 | Goldfinch | 63 | -24 | 52 * | 7 | 117 |
| Pied Wagtail | 115 | -7 | 30 * | 5 | 60 | Siskin | 54 | -2 | -40 * | -58 | -15 |
| Wren | 178 | 18 | 87 * | 63 | 113 | Linnet | 79 | -38 | -23 | -41 | 2 |
| <i>Dunnock</i> | 104 | -19 | 20 | -5 | 51 | <i>Lesser Redpoll</i> | 35 | -34 | -20 | -48 | 22 |
| Robin | 152 | 10 | 8 | -6 | 25 | Yellowhammer | 86 | 2 | -9 | -24 | 10 |
| Wheatear | 71 | 8 | 10 | -14 | 41 | Reed Bunting | 41 | -24 | 3 | -28 | 47 |
| Blackbird | 148 | -4 | 11 | -1 | 25 | | | | | | |

Table 7. WALES. Population changes for species recorded on a mean of 30 or more squares per year for 2003-04 and 1994-2004.

| Species | Sample | Change 03-04 | Change 94-04 | lcl | ucl | Species | Sample | Change 03-04 | Change 94-04 | lcl | ucl |
|-------------------------|--------|--------------|--------------|-----|-----|-----------------------|--------|--------------|--------------|-----|-----|
| (Grey Heron) | 39 | -19 | 22 | -16 | 77 | Garden Warbler | 52 | 7 | -24 | -44 | 2 |
| Mallard | 55 | 43 | -3 | -27 | 29 | Blackcap | 95 | 2 | 62 * | 31 | 100 |
| Buzzard | 118 | -11 | -5 | -22 | 16 | Chiffchaff | 107 | 15 | 66 * | 41 | 95 |
| Pheasant | 69 | 5 | 37 * | 10 | 70 | <i>Willow Warbler</i> | 141 | 17 | -23 * | -32 | -12 |
| <i>Curlew</i> | 38 | -22 | -46 * | -63 | -20 | <i>Goldcrest</i> | 72 | -1 | -27 * | -42 | -9 |
| Wood Pigeon | 156 | 11 | 17 * | 3 | 33 | Long-tailed Tit | 48 | 25 | 1 | -35 | 57 |
| Collared Dove | 56 | 31 | 35 * | 3 | 77 | Coal Tit | 62 | 7 | -23 | -41 | 1 |
| <i>Cuckoo</i> | 55 | 55 | -21 | -42 | 6 | Blue Tit | 148 | 9 | 30 * | 14 | 47 |
| Swift | 60 | 0 | -11 | -36 | 24 | Great Tit | 139 | 6 | 42 * | 22 | 67 |
| <i>Green Woodpecker</i> | 40 | 34 | 61 * | 11 | 134 | Nuthatch | 57 | 4 | 48 * | 8 | 104 |
| Gt. Spotted Woodpecker | 51 | 0 | 67 * | 18 | 135 | Treecreeper | 38 | 24 | 69 * | 11 | 159 |
| Skylark | 90 | 1 | -8 | -20 | 6 | Jay | 57 | 3 | 11 | -19 | 54 |
| <i>Swallow</i> | 140 | 21 | 74 * | 47 | 105 | Magpie | 139 | -8 | -12 | -25 | 4 |
| <i>House Martin</i> | 78 | -2 | 43 * | 8 | 89 | Jackdaw | 116 | 1 | 14 | -6 | 37 |
| <i>Tree Pipit</i> | 30 | 106 | 7 | -27 | 56 | Rook | 70 | -16 | -11 | -36 | 25 |
| <i>Meadow Pipit</i> | 76 | 8 | 27 * | 10 | 46 | Carrion Crow | 169 | -4 | -4 | -17 | 11 |
| Pied Wagtail | 99 | 8 | 24 | 0 | 54 | Raven | 72 | -20 | 22 | -8 | 62 |
| Wren | 164 | 2 | 6 | -4 | 16 | Starling | 79 | -11 | -66 * | -74 | -55 |
| <i>Dunnock</i> | 124 | 8 | 41 * | 20 | 66 | House Sparrow | 99 | 5 | 100 * | 66 | 141 |
| Robin | 161 | -4 | 9 | -1 | 20 | Chaffinch | 165 | 9 | -7 | -16 | 3 |
| <i>Redstart</i> | 51 | 12 | -6 | -27 | 20 | Greenfinch | 91 | 12 | 30 * | 4 | 62 |
| Wheatear | 44 | 7 | -12 | -36 | 22 | Goldfinch | 101 | -14 | 82 * | 43 | 132 |
| Blackbird | 162 | 10 | 37 * | 25 | 50 | Linnet | 82 | -2 | 30 | -1 | 70 |
| Song Thrush | 137 | -11 | 18 * | 1 | 37 | Bullfinch | 53 | 25 | -11 | -34 | 18 |
| <i>Mistle Thrush</i> | 86 | 22 | 12 | -14 | 45 | Yellowhammer | 36 | 3 | -37 * | -54 | -14 |
| Whitethroat | 65 | 37 | 7 | -16 | 34 | | | | | | |

and Blackbird (92%). Of the 24 species that were recorded on an average of 30 or more squares in Northern Ireland (Table 8), no species had declined significantly and 11 species increased significantly between 1994 and 2004.

Because of the relatively small number of squares surveyed in Northern Ireland, we are able to produce population indices for only the most widespread and numerous species in the Province. Most of the birds that are declining in other parts of the UK cannot be monitored by the BBS in Northern Ireland. Several typical garden and woodland species continued to show a strong and significant upward trend. Willow Warbler numbers again followed their counterparts in Scotland by increasing significantly (up 60%), contrasting with the significant declines shown in England (down 31%) and Wales (down 23%). Hooded Crow numbers also increased significantly in Northern Ireland (up 100%), although this was in contrast to a decline in Scotland

(down 37%). Only Jackdaw (down 19%) and House Sparrow (down 28%) showed any evidence of a decline in numbers, although neither of these results were significant. Some species, which are still not recorded on enough squares in Northern Ireland for a trend to be calculated, nevertheless continue to increase in their occurrence, such as Buzzard, which was only recorded on a single square (4% of the total) in 1994, but recorded on 32 squares (32%) in 2004.

Ten species were recorded on 20–29 squares in Northern Ireland and hence too few squares for indices to be produced (Pheasant, Curlew, House Martin, Sedge Warbler, Chiffchaff, Goldfinch, Linnet, Lesser Redpoll, Bullfinch and Reed Bunting). However due to increased coverage, Northern Ireland trends for Skylark, Goldcrest and Greenfinch were produced for the first time last year (1994–2003) and for Pied Wagtail during this years' analysis.

Table 8. NORTHERN IRELAND. Population changes for species recorded on a mean of 30 or more squares per year for 2003-04 and 1994-2004.

| Species | Sample | Change 03-04 | Change 94-04 | lcl | ucl | Species | Sample | Change 03-04 | Change 94-04 | lcl | ucl |
|-----------------------|--------|--------------|--------------|-----|-----|----------------------|--------|--------------|--------------|-----|-----|
| Wood Pigeon | 62 | -34 | 17 | -13 | 56 | <i>Goldcrest</i> | 32 | -47 | 30 | -28 | 136 |
| Skylark | 31 | 34 | 29 | -7 | 80 | Coal Tit | 45 | -37 | 56 | -9 | 167 |
| <i>Swallow</i> | 64 | 2 | 11 | -18 | 51 | Blue Tit | 57 | 3 | 80 * | 32 | 146 |
| <i>Meadow Pipit</i> | 53 | 1 | 49 * | 14 | 96 | Great Tit | 50 | -29 | 78 * | 19 | 165 |
| Pied Wagtail | 31 | -29 | -4 | -47 | 74 | Magpie | 63 | -3 | 13 | -13 | 47 |
| Wren | 70 | -5 | 63 * | 28 | 108 | Jackdaw | 56 | -26 | -19 | -41 | 11 |
| <i>Dunnock</i> | 51 | -26 | 152 * | 60 | 297 | Rook | 56 | -26 | 0 | -31 | 47 |
| Robin | 67 | -15 | 5 | -17 | 33 | Hooded Crow | 60 | -15 | 100 * | 36 | 193 |
| Blackbird | 66 | -11 | 48 * | 17 | 87 | Starling | 58 | -3 | 83 * | 17 | 186 |
| Song Thrush | 57 | 4 | 35 | -3 | 88 | House Sparrow | 38 | 11 | -28 | -51 | 6 |
| <i>Mistle Thrush</i> | 45 | 23 | 8 | -29 | 65 | Chaffinch | 68 | -3 | 56 * | 19 | 104 |
| <i>Willow Warbler</i> | 60 | 3 | 60 * | 18 | 118 | Greenfinch | 36 | -23 | 134 * | 32 | 313 |

Isle of Man and the Channel Islands

A total of 61 species was recorded on six squares on the Isle of Man in 2004. Of these, eleven species were noted on all squares (Pheasant, Wood Pigeon, Swallow, Wren, Robin, Blackbird, Song Thrush, Magpie, Jackdaw, Hooded Crow and Chaffinch). A number of Manx specialities were also seen (Chough on three squares and Hen Harrier on two squares), plus a good range of seabirds.

A total of 68 species was recorded on a record total of eleven squares on the Channel Islands in 2004, including ten squares on Jersey and a single square on Alderney. Of these, only Wren, Carrion Crow and Greenfinch were noted on all squares. A wide range of species was recorded, including an island speciality Short-toed Treecreeper on two squares, a number of seabirds (Fulmar, Gannet and Shag) and three species new to the BBS on the islands (Marsh Harrier, Hobby and Sanderling).

The nine Government Office Regions are as follows:

GOR 1 (North West) – Cheshire (inc. Wirral), Cumbria, Lancashire, Greater Manchester and Merseyside

GOR 2 (North East) – Cleveland, Co Durham and Northumberland

GOR 3 (Yorkshire & The Humber) – East Yorkshire, North Lincolnshire, North Yorkshire, South Yorkshire and West Yorkshire

GOR 4 (East Midlands) – Derbyshire, Leicestershire & Rutland, Lincolnshire, Northamptonshire and Nottinghamshire

GOR 5 (East of England) – Bedfordshire, Cambridgeshire, Essex, Hertfordshire, Norfolk and Suffolk

GOR 6 (West Midlands) – Birmingham, Hereford, Shropshire, Staffordshire, Warwickshire and Worcestershire

GOR 7 (South East) – Berkshire, Buckinghamshire, Hampshire, Kent, Oxfordshire, Surrey and Sussex

GOR 8 (South West) – Avon, Cornwall, Devon, Dorset, Gloucestershire, Somerset and Wiltshire

GOR 9 London

Government Office Regions within England

The record level of coverage achieved in England in 2004 meant that we were able to calculate population trends for many species in the nine English Government Office Regions (Table 9). The nine regions are made up of the groups of counties listed above. Because climate, agriculture and habitats vary throughout England, major regional differences in population trends may point us towards possible reasons for population changes. Coverage varies considerably from one region to another, with the number of squares surveyed being largely dependent upon the number of BBS observers available in that area. As a result of the work done to determine how many occupied squares are needed to generate reliable population trends, we report trends only for species recorded on 30 or more squares. The variation in coverage and regional differences in the distribution of species meant that population trends could be generated for only 16 species in London and 20 species in the North East, compared to 62 species in the South East and 63 species in the East of England. For 71 species, there were records from enough squares for trends to be generated in at least one region, while for 46 species we could produce trends for five or more regions.

For a number of species distinctly different patterns of population change were seen in the English regions. Kestrel numbers declined in most of the eastern and southern regions of England, but were relatively stable in other areas. The two thrushes also showed a good deal of regional variation, with Song Thrush

numbers, in common with Swallow, declining significantly only in the East of England region, being stable in other eastern regions and increasing in all western regions. Mistle Thrush numbers declined in the southern and eastern regions, but showed no significant change in the north. Willow Warbler numbers declined significantly in all regions apart from the East Midlands and North West, where no change either way was reported. House Sparrow populations fared better in some areas than others, with an increase reported only in the East Midlands, but declines noted in the North West, East of England, South East and London, where numbers have fallen by 60% since 1994. After several years of increase, Wren declined significantly in the South East, East of England and South West regions, although these changes are probably related to the natural, annual variation in numbers of such an abundant species.

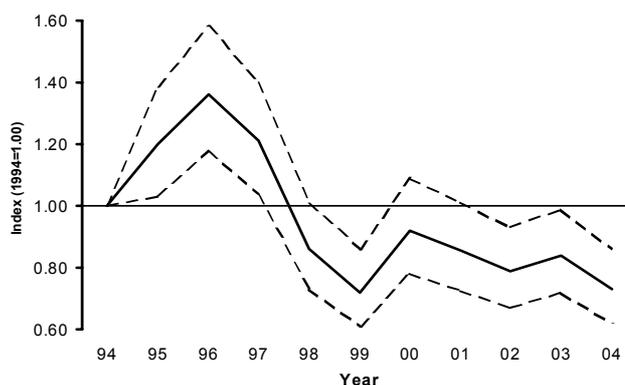
The increase in coverage has enabled us to calculate population trends for Moorhen in the Yorkshire region, Great Spotted Woodpecker in the East Midlands and Goldcrest in the West Midlands for the first time.



Photograph by Derek Belsey

Britain holds almost the entire population of the distinctive race flavissima, and so population changes in the UK are of special significance. Yellow Wagtails have been in decline since the early 1980s and have declined by 27% on BBS squares since 1994. A range contraction towards a core area in central England has also been identified. Farmland drainage, the conversion of pasture to arable land, the change from spring to winter cereals, and the loss of insects associated with cattle have been cited as potential causes of the decline.

BBS Index: Yellow Wagtail (UK)



BBS mammal monitoring in 2004

In 2004, mammal records were received for 83% of surveyed BBS squares (2,083 squares). Table 10 shows the fifteen most frequently recorded mammal species in 2004. For easily detectable diurnal species such as Rabbit, Grey Squirrel, Brown Hare and some of the deer, the vast majority of records were for individuals seen and counted during the two bird-count visits. However, for other mammals, a large proportion of the records were based on field signs, dead animals and local knowledge of the species' presence on that site. These include nocturnal or crepuscular species (seldom seen, but easily detected) such as Mole, Red Fox, Badger, Hedgehog, Stoat and Weasel.

Table 10. Occurrence of common mammal species on BBS squares in 2004. The figures in the 'Present' column indicate the number of squares each species was recorded in (both present and counted); those in the 'Seen' column, the number of squares in which the species was seen and counted; and 'individuals', the total number of individuals counted.

| Mammal species | No. squares | | Individuals |
|--------------------|-------------|-------|-------------|
| | Present | Seen | |
| Rabbit | 1,478 | 1,322 | 12,574 |
| Grey Squirrel | 783 | 664 | 1,440 |
| Brown Hare | 725 | 686 | 2,549 |
| Red Fox | 685 | 261 | 324 |
| Mole | 547 | 2 | 2 |
| Roe Deer | 461 | 346 | 823 |
| Feral/Domestic Cat | 413 | 322 | 619 |
| Badger | 379 | 14 | 18 |
| Brown Rat | 191 | 29 | 43 |
| Hedgehog | 181 | 7 | 7 |
| Muntjac Deer | 147 | 84 | 128 |
| Stoat | 127 | 32 | 34 |
| Weasel | 97 | 21 | 22 |
| Fallow Deer | 94 | 55 | 542 |
| Red Deer | 79 | 50 | 397 |

In addition to those listed above, a further 27 mammal species were recorded during the survey, including (number of squares in brackets): Mountain/Irish Hare (55), Otter (32), Red Squirrel (29), Mink (24), Field Vole (15), Pipistrelle bat spp. (14), Wood Mouse (14), Sika Deer (12), Water Vole (11), Common Shrew (8), Bank Vole (5), Chinese Water Deer (5), Pygmy Shrew (4), Common Seal (4), Grey Seal (4), Feral Goat (3), Orkney Vole (2), House Mouse (2), Pine Marten (2), Polecat (2), Wild Boar (2), Water Shrew (1), Lesser White-toothed Shrew (1), Daubenton's Bat (1), Brown Long-eared Bat (1), Ferret (1) and Prairie Dog (1).

Producing mammal population trends from BBS data - contribution from Jessa Battersby (JNCC)

The data collected by BBS observers provide important information for assessing population trends of certain mammal species. BTO is a member of the Tracking Mammals Partnership (TMP), a collaborative initiative involving 24 organisations, with varied interests in mammals. TMP aims to provide good quality trend data to guide conservation and wildlife management policy for mammals. There is also cooperation to recruit, train and support the network of volunteers who carry out the surveys.

TMP has recently published the first major report on UK mammal population trends, assessing population change for 33 species and one subspecies, representing over 50% of land mammals in the UK. The data are being collected in a programme of 17 surveillance schemes, including the BBS, which is providing trend data for 15 species.

The TMP report shows that overall, 40% of native mammal species are increasing, 12% are declining, 16% have stable populations and for 32% the trends are unclear at present, with more years of data required before population change can be reliably assessed. For non-native species, 66% are increasing, 11% are declining and 22% have stable populations. The Partnership plans to introduce new surveillance schemes over the next few years for as many of the remaining land mammal species as possible.

The BBS is an important component of the TMP surveillance programme and we would like to thank all the volunteers who have contributed mammal data and hope they will continue to do so in the future. *UK Mammals: Species Status and Population Trends. First Report by the Tracking Mammals Partnership* can be downloaded from the TMP website (www.trackingmammals.org) or can be purchased through NHBS, price £7.00.

Trends for seven species based on counts are summarised in Table 11. Work is continuing to analyse the data for two herding deer species (Red and Fallow) and six species monitored by signs of their presence, in order to produce more reliable trends.

Table 11. UK Mammal Trends. Population changes for species recorded on a mean of 40 or more squares per year for 1995–2003. For each species the sample size is given, together with the percentage change (marked with an asterisk if significant) and lower and upper 95% confidence limits. These results have been taken from BTO Research Report 404.

| Species | Sample | % Change | lcl | ucl |
|---------------------|--------|----------|-----|-----|
| Rabbit | 1057 | -27 * | -32 | -21 |
| Brown Hare | 526 | - 9 | -17 | 0 |
| Mountain/Irish Hare | 44 | -34 * | -51 | -10 |
| Grey Squirrel | 472 | 20 * | 7 | 35 |
| Red Fox | 227 | -44 * | -52 | -35 |
| Roe Deer | 239 | 31 * | 13 | 51 |
| Muntjac Deer | 45 | 21 | -11 | 64 |

BBS-online update (www.bto.org/bbs)

The BBS-online application was launched in November 2003 and provides the BBS observer with a quick and easy method to submit their bird, habitat and mammal data electronically via the web. The system also allows the user to view historical data for their squares and therefore, gain an insight into the changing fortunes of birds on their sites. A suite of BBS web pages provide all visitors to the site with a whole range of output from the scheme, including tables and graphs showing the latest trends, species distribution maps and species lists down to a county level. Information is also provided about methodology, research work undertaken using BBS data and how to participate.

Last year (2004) was the first full survey year for which BBS observers were able to submit their counts using BBS-online. Uptake of the new system was higher than anticipated, with data submitted electronically for 721 squares (29% of the total number surveyed). Electronic submission has substantially reduced data checking and entry costs and allowed us to provide BBS observers and general visitors to the BTO website with a greater quantity of more up-to-date results quicker than before.

The BTO's Information Systems Unit will continue to work towards dealing with all of the comments and problems highlighted by BBS-online users. Many thanks must be given to the RSPB for generously funding the development of BBS-online, and to the BTO's Information Systems Unit (Iain Downie, Karen Wright, James Hall, James Mackinnon and Luke Delve), for developing the system and providing technical support.

Habitat coverage

In total, the habitat details for 23,475 transect sections were completed in 2004. Table 12 shows a breakdown of the eight main habitat categories. The figures show the percentage of sections containing each habitat category (data from both first and second habitat choices are included). For example 23% of transect sections contained a woodland habitat category 'A' in either the first or second habitat choice. Some habitat categories, such as 'Water Bodies' are mainly assigned to the second habitat choice (12% of 'second habitat' sections contained habitat category 'G', but only 2% of 'first habitat'). These figures are not weighted to take account of differences in sampling intensity, and therefore, may not reflect the actual percentages of each habitat category within the UK.

Table 12. The percentage of 200 m transect sections containing each habitat category, in the first or second habitat choice.

| Habitat category | UK | Eng | Scot | Wales | NI |
|------------------|--------|--------|-------|-------|-----|
| Woodland (A) | 23 | 22 | 32 | 25 | 13 |
| Scrubland (B) | 5 | 5 | 9 | 8 | 6 |
| Grassland (C) | 7 | 6 | 14 | 14 | 7 |
| Heath & bog (D) | 7 | 3 | 29 | 7 | 15 |
| Farmland (E) | 75 | 80 | 50 | 64 | 79 |
| Human Sites (F) | 30 | 34 | 14 | 20 | 17 |
| Water Bodies (G) | 9 | 10 | 10 | 9 | 4 |
| Coastal (H) | 1 | 0.8 | 3 | 3 | 2 |
| No. of sections | 23,475 | 17,695 | 2,432 | 2,262 | 942 |

Work is being undertaken to produce habitat-specific population trends for a variety of species. These data have already been used to relate spatial variation in abundance to habitat, and estimate species density in different habitats for producing population estimates and other purposes.

BBS research and development

Pan-European Bird Monitoring

As part of a Pan-European initiative to assess the status of bird populations across Europe, BBS and CBC data were used to provide the UK trends for a selected group of farmland and woodland birds. UK trends were combined with trends from other countries and weighted by the relative national population sizes, to obtain Pan-European trends for each species. Species trends were then aggregated to obtain composite indicators for each landscape type (farmland or woodland) and regions (e.g. western Europe, northern Europe, eastern Europe, etc). A welcome and important development is that because of the quality of bird data compared to that for other taxa, the European Commission has recently adopted the Farmland and Woodland indicators as a potential means of monitoring biodiversity in Europe. It is hoped that this will help release funds to develop national monitoring schemes in countries without the capacity to fund them on their own (such as many of the new-accession countries). A description of this project, and examples of graphs showing the indicators are available on the website of the European Bird Census Council (www.ebcc.info) and have been published in Gregory *et al* 2005).

There has been much discussion between countries about the species composition of these indicators, because some species have different habitat associations in different parts of their range. Song Thrushes, for example, are found only in mature forests in northern Europe, but many wooded habitats in the UK. An international workshop to update national coordinators on the project, to review the species selection and regional divisions is planned for September 2005.



Photograph by Tommy Holden. Numbers of Lapwing have fallen by 64% in Europe since 1980.

Birds in Europe

Another international milestone this year was the publication of the second edition of *Birds in Europe: population estimates, trends and conservation status*, coordinated by Birdlife International. National population and trend data (covering the period 1990–2000) were collected from almost every European country and used to re-assess the SPEC (Species of European Conservation Concern) categories. For the UK, information on population estimates were collated by the national ornithological and bird conservation organisations responsible for the most recent national surveys, and by correcting previously published population sizes (for example in the Breeding Bird Atlas) for the effects of recent trends. The 1990 to 2000 trends for widespread species were calculated by the BTO from the joint CBC-BBS trend models where these were available, and from the BBS trends from 1994 to 2000 for species not covered by the CBC (e.g. Siskin). Trends for scarcer species (e.g. Black Grouse) were derived from specific national surveys mostly co-ordinated by RSPB. This valuable database, which will be used to influence bird conservation at an international scale, is the result of much effort by all national coordinators, and ultimately by the efforts of the tens of 1000's of volunteer and professional surveyors across Europe. For more information see the Birdlife International website (http://www.birdlife.net/action/science/species/birds_in_europe/index.html).

Analytical Developments

The work (reported previously) using BBS counts in the different distance bands to estimate national population sizes of a suite of species associated with farmland has been published in Bird Study (Newson *et al* 2005). Research has continued on spatial modelling, including the development of methods for producing annually updated maps of relative abundance for publication on BBS-online. Improved novel methods of analysing the spatial distribution patterns of birds are also being explored, with the aim of developing models that will reliably predict the effects of environmental processes such as climate change, as well as responses to changes in agricultural practices (cropping patterns, numbers of livestock, etc).

Regional Wild Bird Indicators

Data from the BBS (1994–2003) were recently used to produce updated BBS-based wild bird indicators for the nine English Government Office Regions, in a contract with Defra. This work included new protocols for estimating population changes for species in regions where they occur but where they are not monitored in sufficient numbers within the region to determine a reliable trend. These protocols, which involved the collation of data and estimation of trends from areas within and immediately adjacent to the region in question, resulted in greater similarities in the species composition of regional indicators, but meant that trends for a few regions could be based to a considerable extent on data from outside the region. Most English regions showed little change in farmland bird populations over the period 1994 to 2003. The exceptions were the South East and East of England, where the farmland index fell by 10–12%. Woodland bird populations in the South East, South West, and West Midlands showed declines of more than 10%, which contrasted with increases in most other regions, particularly in the North West (where the index rose by 24%) and East Midlands (where the index rose by 14%). The full report is available on the Defra (<http://www.defra.gov.uk/environment/statistics/wildlife/research/rwbi.htm>).

Farmland Bird Database Targeting Environmental Stewardship

The Farmland Bird Database – in which data from a variety of surveys (e.g. BBS, WFBS) and casual records (e.g. county bird recorders) are collated and summarised, as described in last year's BBS report – was used to identify key areas for a suite of restricted range farmland bird species such as Corn Bunting, Tree Sparrow, Turtle Dove, Curlew and Grey Partridge. This information was provided to assessors working for the Rural Development Service (part of Defra) in more than 160 Joint Character Areas in England (JCAs) to help in the writing of target statements. JCAs are small regions based on topography and soil type. The target statements for each JCA (available on the Defra website) highlight important populations of priority farmland birds likely to benefit from land management options in the new Higher Level Scheme, a component of the new Environmental Stewardship scheme launched by the government this year.

Assessing the Entry Level Scheme New farmland bird surveys

The new English Environmental Stewardship scheme (ES) has a number of primary objectives, including wildlife conservation. The Farmland Bird Index will be used to assess the progress of the new ES. This is a composite index of mainly BBS-based population trends for a suite of bird species associated strongly with farmland in the UK, which has been adopted by the government as one of 20 Framework Indicators. A target has been set to reverse declines in the index by 2020, and environmentally friendly land management under ES will be a key tool in achieving this goal. Although the BBS will provide much information, the BTO has been contracted by Defra to carry out an additional 1000 BBS-style bird surveys in lowland farmland areas of England in 2005. This will provide additional baseline data before management on the ground under ES is carried out. Funding permitting, the same squares will be resurveyed in 2008 and 2011, in time to feed into the ES review process and to influence fine-tuning of the management options to ensure they are achieving the desired conservation benefits. Given that scientists and policy-makers have been calling for

effective monitoring of ES, this crucially important survey is very welcome news. For more information on the ES see Defra's website (<http://www.defra.gov.uk/erdp/schemes/es/default.htm#4>).

Further reading

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The future

The 2004 fieldwork season was the most successful in the history of the BBS, with more squares being surveyed than in any other year since 1994. This increased coverage is enabling us to monitor the population trends of an increasing number of species. Uptake of BBS-online was higher than expected and it is hoped that this will continue to grow. BBS-online will allow us to process BBS data more efficiently and enable a greater quantity of more up-to-date feedback to be returned to observers. The web pages are proving to be a very successful way of promoting the scheme to potential new participants. To date, more than 170 people have enquired about taking part in BBS using the web application.

It is vitally important that we continue to monitor populations of our commoner birds across a wide variety of habitats and it is only by continuing to survey our BBS squares year after year that we can do this. Good coverage throughout the UK in future seasons will enable us to continue monitoring species that we have looked at over the past ten years, and hopefully expand our knowledge of the differing regional trends within individual species. With the continued support of our volunteers, BBS will be able to play an important role in assessing the effectiveness of wide-scale farmland management changes that have recently been put in place. It may also provide us with new insights into the effects of broader management approaches in other habitats on birds and also those of climate change.

SPECIAL THANKS

We would like to thank all BBS observers and ROs for making the survey the success it is today. Space does not permit all observers to be acknowledged individually, but we would especially like to thank the ROs for their efforts.

BBS Regional Organisers for 2004:

 **ENGLAND:** Avon – John Tully; Bedfordshire – Phil Cannings (now Judith Knight); Berkshire – Chris Robinson; **Birmingham & West Midlands** – vacant; Buckinghamshire – Mick A’Court; Cambridgeshire – John Le Gassick; Cheshire (mid) – Paul Miller; Cheshire (north & east) – Charles Hull; Cheshire (south) – Charles Hull; **Cleveland** – **Russell McAndrew (now vacant)**; **Cornwall** – vacant; Cumbria (north) – Clive Hartley; Cumbria (south) – Stephen Dunstan (now Clive Hartley); Derbyshire (north & south) – Dave Budworth; Devon – John Woodland; Dorset – Catherine Whitby; Durham – David Sowerbutts; Essex (north-east) – Peter Dwyer; Essex (north-west) – Roy Ledgerton; **Essex (south)** – vacant; Gloucestershire – Mike Smart; Hampshire – Glynne Evans; Herefordshire – Steve Coney; Hertfordshire – Chris Dee; Huntingdon & Peterborough – Philip Todd; Kent – Martin Coath; Lancashire (east) – Tony Cooper; Lancashire (north-west) – Keith Woods; Lancashire (south) – Philip Shearwood; Leicestershire & Rutland – Tim Grove; **Lincolnshire (east)** – **Rob Watson (now vacant)**; Lincolnshire (north) – John Turner; Lincolnshire (south) – Richard and Kay Heath; Lincolnshire (west) – Peter Overton; London & Middlesex – Derek Coleman; Manchester – Judith Smith; Merseyside – Bob Harris; Norfolk (north-east) – Chris Hudson; Norfolk (north-west) – Mike Barrett; Norfolk (south-east) – Chris Day; Norfolk (south-west) – Vincent Matthews; Northamptonshire – Bill Metcalfe; Northumberland – Tom and Muriel Cadwallender; Nottinghamshire – Lynda Milner; Oxfordshire (north) – Frances Buckel; Oxfordshire (south) – John Melling; Isles of Scilly – Will Wagstaff; Shropshire – Allan Dawes; Somerset – Eve Tigwell; Staffordshire (north, south & west) – Martin Godfrey (now Gilly Jones and Gerald Gittens); Suffolk – Mick Wright; Surrey – Hugh Evans; Sussex – Barrie Watson (now Helen Crabtree); Warwickshire – Mark Smith; Isle of Wight – James Gloyn; **Wiltshire (north)** – vacant; Wiltshire (south) – Andrew Carter; Wirral – Paul Miller; Worcestershire – Harry Green; Yorkshire (north-west) – Gerald Light; Yorkshire (Richmond) – John Edwards; Yorkshire (Harrogate) – Mike Brown; Yorkshire (east) – Cliff Carter; Yorkshire (Hull) – Martin Chadwick; Yorkshire (north-east) – Michael Carroll; Yorkshire (Bradford) – Mike Denton; Yorkshire (York) – Rob Chapman; Yorkshire (Leeds & Wakefield) – Peter Smale; Yorkshire (south-east & south-west) – Chris Falshaw.

 **SCOTLAND:** Aberdeen – John Littlejohn; Angus – Ken Slater; Argyll (south, Bute & Gigha) – vacant (now Richard Allan); Argyll (north, Mull, Coll, Tiree & Morvern) – Sue Dewar; Ayrshire – Brian Broadley; Benbecula & the Uists – Brian Rabbitts; Borders – Steve Hunt; Caithness – Hugh Clark; Central – Neil Bielby; **Dumfries** – **Duncan Irving (now vacant)**; Fife & Kinross – Norman Elkins; Inverness (east and west) – Hugh Insley; Islay, Jura & Colonsay – Malcolm Ogilvie; Kincardine & Deeside – Graham Cooper; Kirkcudbright – Andrew Bielinski; Lanark, Renfrew & Dunbarton – vacant (now John Knowler); Lewis & Harris – Tony Pendle (now Yvonne Benting); Lothian – Alan Heavisides; Moray & Nairn – Bob Proctor; Orkney – Colin Corse; **Perthshire** – vacant; Ross-shire – Simon Cohen; Shetland – Dave Okill; Skye – Robert McMillan; Small Isles (Rum, Eigg, Muck, Canna) – Bob Swann; Sutherland – David Devonport; Wigtown – Geoff Sheppard.

 **WALES:** Anglesey – Tony White; Brecon – John Lloyd; Caernarfon – John Barnes (now Geoff Gibbs); Cardigan – Moira Convery; Carmarthen – Colin Jones; Clwyd (east) – Anne Brenchley; Clwyd (west) – Mel Ab Owain; Glamorgan (west) – Rhian Evans; Glamorgan (mid & south) – Rob Nottage; Gwent – Jerry Lewis; Merioneth – Peter Haveland; Montgomery – Jane Kelsall; Pembrokeshire – Annie Poole; Radnorshire – Pete Jennings (now Brian Jones).

 **NORTHERN IRELAND:** Antrim – Ruth Wilson; Armagh – David Knight; Down – Alistair McIlwain; Fermanagh – Phil Grosse; Londonderry – Charles Stewart; Tyrone (south) – Phil Grosse; Tyrone (north) – Mary Mooney.

CHANNEL ISLANDS: Guernsey & Alderney – Jamie Hooper; Jersey – Tony Paintin. **ISLE OF MAN:** Pat Cullen.

Many thanks go especially to the following ROs who have retired during the last year and contributed significantly in developing BBS in their respective regions: John Barnes, Ian Buxton, Phil Cannings, Stephen Dunstan, Martin Godfrey, Duncan Irving, Pete Jennings, Russell McAndrew, Tony Pendle, Rob Watson and Barrie Watson. We would also like to thank Richard Allan, Yvonne Benting, Helen Crabtree, Geoff Gibbs, Gerald Gittens, Brian Jones, Gilly Jones, Judith Knight and John Knowler for kindly taking over as ROs since the 2004 season, and to Clive Hartley for taking on an additional region.

The success of the BBS is dependent on volunteer support throughout the UK. The most valuable data are collected from squares covered by the same observer year after year. We would also like to thank the farmers and landowners for their support and co-operation in allowing BBS volunteers onto their land. We greatly appreciate your continued support. Please spread the word to other birdwatchers you may know, or even consider taking on another square if you have time. Thanks once again for all your hard work. If you would like to take part in the BBS, we would be pleased to hear from you.

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