

# The Breeding Bird Survey 2005



### The Breeding Bird Survey partnership comprises:

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For further BBS information, visit our web site ([www.bto.org/bbs](http://www.bto.org/bbs)), or visit BirdWeb for information about other bird surveys ([www.bto.org/birdweb](http://www.bto.org/birdweb) or [www.rspb.org.uk/science/birdweb](http://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](http://www.bto.org/bbs/results/bbsreport.htm).*

The eleventh annual report for the Breeding Bird Survey (BBS) allows us to look at the progress of the scheme over the past twelve years, 1994–2005. We also present the survey coverage and bird population changes between the two most recent years, 2004–05. Data were collected from 2,879 1-km squares in 2005, 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 51 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 Robin is by John Harding and the BBS logo is by Andy Wilson. Other photographs in this report are by Derek Belsey, Tommy Holden and Rob Nottage. Report production and design are by Mandy T Andrews.

## 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 2005*

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## Summary

- This is the eleventh annual report of the BTO/JNCC/RSPB Breeding Bird Survey (BBS), covering the years 1994 to 2005. 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 221 species and subspecies was recorded on 2,879 BBS squares in 2005. Population indices are calculated using methods that take regional differences in sampling effort into account. We were able to measure population changes with a medium to high degree of precision for 101 species across the UK.
- 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, 22 species declined and 51 species increased significantly between 1994 and 2005, with Willow Tit and Wood Warbler decreasing by more than 50%. Grey Partridge, Curlew, Turtle Dove, Cuckoo, Tree Pipit, Yellow Wagtail, Whinchat, Lesser Whitethroat, Spotted Flycatcher, Pied Flycatcher and Corn Bunting all showed moderate declines (25–50%). Greylag Goose, Canada Goose, Shelduck, Red-legged Partridge, Little Grebe, Buzzard, Coot, Great Spotted Woodpecker, Grey Wagtail, Stonechat, Grasshopper Warbler, Blackcap, 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 2005 (Grey Partridge, Turtle Dove, Skylark, Spotted Flycatcher, Willow Tit, Starling, Linnet, Yellowhammer and Corn Bunting) and five species increased significantly (Song Thrush, Grasshopper Warbler, Marsh Tit, Tree Sparrow and Reed Bunting).
- 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, 20 species declined and 44 species increased significantly between 1994 and 2005. Willow Tit declined by more than 50%, and Grey Partridge, Turtle Dove, Cuckoo, Tree Pipit, Yellow Wagtail, Lesser Whitethroat, Willow Warbler, Spotted Flycatcher, Starling and Corn Bunting all showed moderate declines (25–50%). Increases greater than 50% were recorded for Greylag Goose, Canada Goose, Shelduck, Little Grebe, Buzzard, Coot, Great Spotted Woodpecker, Grey Wagtail, Stonechat, Blackcap, Goldcrest, Nuthatch and Raven (Table 5).
- In Scotland, 7 species declined and 23 species increased significantly between 1994 and 2005. No species declined by more than 50%, but Kestrel, Lapwing, Curlew, Swift and Hooded Crow showed moderate declines (25–50%). Increases greater than 50% were recorded for Grey Heron, Buzzard, Snipe, House Martin, Wren, Mistle Thrush, Whitethroat, Blackcap, Goldcrest, Great Tit and Goldfinch (Table 6).
- In Wales, 7 species declined and 23 species increased significantly between 1994 and 2005. No species declined by more than 50%, but Curlew, Cuckoo, Garden Warbler, Willow Warbler, Starling and Yellowhammer showed moderate declines (25–50%). Increases greater than 50% were recorded for Great Spotted Woodpecker, Swallow, House Martin, Blackcap, Long-tailed Tit, Blue Tit, Great Tit, Nuthatch, Treecreeper, Jackdaw, Raven, House Sparrow and Goldfinch (Table 7).
- In Northern Ireland, no species were recorded as declining significantly whereas, between 1994 and 2005, 17 species increased. Increases greater than 50% were recorded for Wood Pigeon, House Martin, Meadow Pipit, Wren, Dunnock, Blackbird, Willow Warbler, Goldcrest, Coal Tit, Blue Tit, Great Tit, Hooded Crow, Starling, Chaffinch and Greenfinch (Table 8).
- In 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 and Yellowhammer. Species that showed marked regional differences in population trends included Meadow Pipit, Song Thrush, Mistle Thrush, Long-tailed Tit, Jay, Magpie, Rook, Goldfinch and House Sparrow.
- 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. 2005 was the second year in which this system was available and data for 40% of squares was submitted using BBS-online. The BBS web pages (available to everyone) provide the visitor with the latest results from the scheme (see [www.bto.org/bbs](http://www.bto.org/bbs)).

# 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 more than 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 included joint CBC/BBS trends for 1966–2004, published in the Breeding Birds in the Wider Countryside: their conservation status 2005 and available on the BTO website ([www.bto.org/birdtrends](http://www.bto.org/birdtrends)).

## Methods and organisation

The BBS uses a line-transect method of surveying birds 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 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](http://www.bto.org/bbs)).

## Survey coverage

To date, we have received 2,879 sets of completed BBS forms for 2005, the greatest number of surveyed squares since the survey was launched in 1994, and an encouraging increase on the total of 2,526 received for 2004 (Table 1). Only those squares that have been surveyed in two or more years between 1994 and 2005 are included in the calculation of trends, leading to bird counts from 3,366 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. A few squares can never be surveyed and truly 'uncoverable' sites are removed from the system. However, squares that are temporarily inaccessible, or which are not taken up because of their remote location, are retained in order to maintain the integrity of the sampling design, although we recognise that some will seldom be surveyed.

**Table 1. BBS coverage during 2003–05.** The number of squares surveyed in each country and English Government Office Region (GOR).

Country/GOR	2003 coverage	2004 coverage	2005 coverage
England	1,738	1,882	2,172
Scotland	255	272	302
Wales	214	252	269
Northern Ireland	109	103	120
Isle of Man	4	6	3
Channel Isles	7	11	13
North West England	198	220	254
North East England	65	75	84
Yorkshire & the Humber	138	158	183
East Midlands	153	170	198
East of England	243	261	320
West Midlands	146	160	191
South East England	440	446	517
South West England	292	300	332
London	63	92	93
<b>Total:</b>	<b>2,327</b>	<b>2,526</b>	<b>2,879</b>

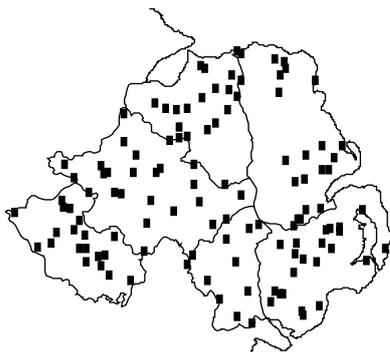
## England

An impressive 2,172 squares were surveyed in England in 2005, representing the highest-ever total since the survey started in 1994. Record coverage was also achieved in all nine English Government Office Regions. ROs were particularly successful in a number of BTO regions in England, with record levels of coverage achieved in 34 of the 75 regions, including substantial increases in Sussex, Berkshire, Birmingham and Cambridgeshire.



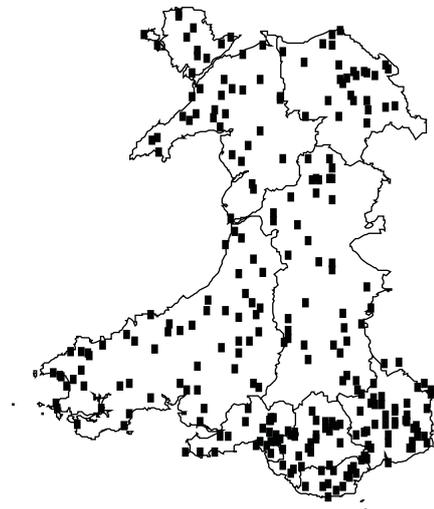
## Wales

The 269 squares surveyed in Wales in 2005 represented another high point in the scheme's history in this country, exceeding the best-ever coverage achieved in 2004. Record coverage was achieved in the BTO regions of Gwent, Caernarfon, West Glamorgan, Mid Glamorgan, Pembrokeshire, East Clwyd and South Glamorgan.



## Scotland

The BBS had another very successful year in Scotland in 2005, with more than 300 squares being surveyed by volunteers for the first time. Record coverage was achieved in the BTO regions of Fife, Lanark, Renfrew & Dunbarton, Lothian, Islay, Ayrshire, Benbecula & the Uists and Lewis & Harris.



## Northern Ireland

A total of 120 squares were surveyed in Northern Ireland in 2005, representing record coverage and including a welcome increase in volunteer participation. Best-ever coverage was achieved in four of the six BTO regions in the Province. A total of 51 squares was 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 221 species, including a number of escapes, subspecies and domestic breeds was recorded on BBS visits in the UK in 2005. Of these, 112 species were recorded in 40 or more squares (Table 2) and a further 109 species in fewer than 40 squares (Table 3).

Gadwall, Little Egret, Red Kite, Hobby, Peregrine, Barn Owl, Ring-necked Parakeet and Crossbill were all recorded on 40 or more squares in 2005, although their mean sample size over the entire survey period (1994–2005) remained under 40 squares, and thus, we were unable to produce reliable trends for these species. However, if present levels of coverage are maintained, we will be able to calculate trends for some of these species in the near future. Conversely, we are still able to produce UK trends for Pied Flycatcher, even though it was only recorded on 38 squares in 2005, although its continued decline may yet result in it dropping off the list of species monitored by the BBS in the future. Teal, Goosander, Nightingale and Indian Peafowl (Peacock) were all recorded on 30–39 squares in 2005, and further increases in population or increase in BBS coverage may enable us to produce reliable trends for these species in years to come.

Red Kite, Little Egret and Egyptian Goose all continued to increase in occurrence on BBS squares in 2005, while Quail were recorded on 21 squares, indicating that better-than-average numbers were present in the UK. However, late-lingering winter visitors such as Fieldfare and Redwing were noted on relatively few squares compared to previous years. Two species were recorded for the first time on BBS squares in 2005: a very late Lapland Bunting seen on the Inner Hebrides on 19th April and three Little Stints in Cheshire on a more typical date in late April. At the other end of the spectrum, the Wood Pigeon continued to be much the most abundant species on BBS squares in the UK, with 64,011 birds counted and distantly followed by Starling (41,189), Blackbird (33,342) and Rook (33,274). Wood Pigeon was also the most widely recorded species in the UK, being noted on 2,651 or 93% of surveyed squares but followed very closely by Blackbird (2,649), Chaffinch (also 2,649) and Wren (2,638).

The most 'species rich' square was again a gravel-pit site in the West Midlands, where an impressive total of 70 species was recorded in 2005. This was followed by 65 species recorded on single squares

Table 2. Species recorded in 40 or more squares across the UK during the 2005 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	%
Mute Swan	272	10%	Stock Dove	826	29%	Lesser Whitethroat	272	10%
Greylag Goose	193	7%	Wood Pigeon	2651	93%	Whitethroat	1440	50%
Canada Goose	530	19%	Collared Dove	1512	53%	Wood Warbler	49	2%
Shelduck	151	5%	Turtle Dove	169	6%	Chiffchaff	1549	54%
Gadwall	41	1%	Ring-necked Parakeet	71	2%	Willow Warbler	1361	48%
Mallard	1414	49%	Cuckoo	727	25%	Goldcrest	955	33%
Tufted Duck	161	6%	Barn Owl	53	2%	Spotted Flycatcher	203	7%
Red Grouse	111	4%	Little Owl	98	3%	Long-tailed Tit	1010	35%
Red-legged Partridge	620	22%	Tawny Owl	106	4%	Blue Tit	2504	88%
Grey Partridge	249	9%	Swift	1206	42%	Great Tit	2398	84%
Pheasant	1974	69%	Kingfisher	62	2%	Coal Tit	868	30%
Little Grebe	89	3%	Green Woodpecker	902	32%	Willow Tit	51	2%
Great Crested Grebe	82	3%	Great Spotted Woodpecker	1173	41%	Marsh Tit	165	6%
Cormorant	283	10%	Skylark	1802	63%	Nuthatch	543	19%
Little Egret	44	2%	Sand Martin	143	5%	Treecreeper	369	13%
Grey Heron	795	28%	Swallow	2120	74%	Jay	806	28%
Red Kite	95	3%	House Martin	1053	37%	Magpie	2045	72%
Sparrowhawk	423	15%	Tree Pipit	122	4%	Jackdaw	1823	64%
Buzzard	992	35%	Meadow Pipit	872	31%	Rook	1333	47%
Kestrel	768	27%	Yellow Wagtail	150	5%	Carrion Crow	2496	87%
Hobby	42	1%	Grey Wagtail	280	10%	Hooded Crow	156	5%
Peregrine	55	2%	Pied Wagtail	1467	51%	Raven	294	10%
Moorhen	702	25%	Dipper	64	2%	Starling	1921	67%
Coot	297	10%	Wren	2638	92%	House Sparrow	1751	61%
Oystercatcher	343	12%	Dunnock	2250	79%	Tree Sparrow	156	5%
Golden Plover	91	3%	Robin	2544	89%	Chaffinch	2649	93%
Lapwing	786	28%	Redstart	148	5%	Greenfinch	2082	73%
Snipe	144	5%	Whinchat	62	2%	Goldfinch	1730	61%
Curlew	473	17%	Stonechat	215	8%	Siskin	123	4%
Redshank	89	3%	Wheatear	332	12%	Linnet	1298	45%
Common Sandpiper	56	2%	Blackbird	2649	93%	Lesser Redpoll	157	5%
Black-headed Gull	542	19%	Song Thrush	2144	75%	Crossbill	44	2%
Common Gull	151	5%	Mistle Thrush	1316	46%	Bullfinch	726	25%
Lesser Black-backed Gull	636	22%	Grasshopper Warbler	77	3%	Yellowhammer	1215	43%
Herring Gull	737	26%	Sedge Warbler	294	10%	Reed Bunting	559	20%
Great Black-backed Gull	119	4%	Reed Warbler	137	5%	Corn Bunting	135	5%
Common Tern	76	3%	Blackcap	1700	59%			
Feral pigeon	749	26%	Garden Warbler	476	17%			

**Table 3. Species recorded on fewer than 40 squares in the UK during the 2005 survey.** Species in parenthesis are feral or non-native species in Category E of the British Ornithologists' Union British List. Species marked with an asterisk 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
Whooper Swan	1	Bittern	1	Spotted Redshank	1	Redwing	10
Pink-footed Goose	7	Honey Buzzard	1	Greenshank	17	Cetti's Warbler	23
White-fronted Goose	1	White-tailed Eagle	2	Green Sandpiper	2	Dartford Warbler	11
Barnacle Goose	4	Marsh Harrier	25	Turnstone	6	Firecrest	3
Brent Goose	3	Hen Harrier	12	Red-necked Phalarope	1	Pied Flycatcher	38
Egyptian Goose	20	Montagu's Harrier	2	Arctic Skua	6	Bearded Tit	3
Mandarin	17	Goshawk	10	Great Skua	10	Crested Tit	4
Wigeon	6	Golden Eagle	7	Mediterranean Gull	1	Short-toed Treecreeper	3
Teal	30	Osprey	7	Little Gull	1	Golden Oriole	1
Garganey	2	Merlin	10	Kittiwake	2	Red-backed Shrike	1
Shoveler	19	Water Rail	10	Little Tern	4	Chough	6
Pochard	25	Corncrake	1	Sandwich Tern	17	Hybrid Carrion/Hooded Crow*	1
Eider	12	Crane	1	Arctic Tern	7	Brambling	4
Common Scoter	2	Avocet	4	Guillemot	4	Twite	17
Goldeneye	5	Stone-curlew	2	Razorbill	7	Scottish Crossbill	3
Red-breasted Merganser	11	Little Ringed Plover	15	Black Guillemot	2	Hawfinch	1
Goosander	36	Ringed Plover	29	Rock Dove*	10	Lapland Bunting	1
Ruddy Duck	19	Grey Plover	1	Long-eared Owl	6	Cirl Bunting	2
Black Grouse	7	Knot	1	Short-eared Owl	20		
Quail	21	Sanderling	2	Nightjar	2	[Black Swan]	3
Golden Pheasant	3	Little Stint	1	Hoopoe	1	Feral/hybrid Mallard*	22
Red-throated Diver	15	Purple Sandpiper	1	Lesser Spotted Woodpecker	23	Feral/hybrid goose*	15
Black-throated Diver	5	Dunlin	26	Woodlark	23	[Reeves's Pheasant]	1
Great Northern Diver	3	Ruff	2	Rock Pipit	17	[Peacock]	30
Black-necked Grebe	1	Woodcock	11	Waxwing	1	[Helmeted Guineafowl]	11
Fulmar	26	Black-tailed Godwit	8	Nightingale	30	[Cockatiel]	1
Gannet	14	Bar-tailed Godwit	2	Ring Ouzel	22		
Shag	14	Whimbrel	23	Fieldfare	13		

in Hampshire and Kent, which compares well to an overall average of 31 species. Species richness by county also varied widely, with Berkshire squares recording an average of 35 species, compared to only 14 species in the Highland Region of Scotland. 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.

### 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 1994-2005 period, the lower and upper 95% confidence limits are given. The sample is the mean number of squares occupied each year over the survey period 1994-2005 (excluding squares that were surveyed 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](http://www.bto.org/bbs/trends)).

### United Kingdom

Of the 100 species recorded on an average of 40 or more squares in the UK between 1994 and 2005 (Table 4), 22 declined significantly and 51 increased significantly between 1994 and 2005. The trends

discussed in this section are for the period 1994-2005 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 five increased significantly between 1994 and 2005. Those showing a significant decline during this period include farmland specialists such as Grey Partridge (down 40%), Turtle Dove (down 45%), Skylark (down 13%), Yellowhammer (down 17%) and Corn Bunting (down 32%). Unfortunately, none of these species have shown a significant improvement in numbers since 2004. The recent upward trend in Tree Sparrow seems to have been short-lived, with numbers falling by 15% between 2004 and 2005, although the species still shows a significant increase of 23% over the entire survey period. In contrast, the Starling, which has also undergone a long-term decline, showed a welcome upturn in its fortunes, with numbers increasing significantly by 20% between 2004 and 2005. However, over the entire survey period, numbers are still down by 21%.

Of the woodland specialists that are red-listed, Spotted Flycatcher and Willow Tit continue to show a downward trend over the entire survey period, although neither species declined significantly between 2004 and 2005. On a more positive note, Marsh Tits have increased by 33% since 1994 and numbers of Bullfinch have increased in every year since 2002, although there was no significant change during 1994-2005.

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, three increased significantly (House Martin, Grey Wagtail and Dunnock) and six decreased significantly (Kestrel, Lapwing, Cuckoo, Meadow Pipit, Yellow Wagtail and Wood Warbler) during 1994–2005. 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, Oystercatcher and Curlew declined significantly and Mute Swan and Lesser Redpoll 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 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 a new Birds in Europe (Birdlife International 2004).

The increase reported for many of our summer-visitor species between 2003 and 2004 was unfortunately not repeated between 2004 and 2005, with 17 of the 26 species monitored by the BBS showing a decline in numbers. This included a significant decline in Tree Pipit and Chiffchaff, with the latter species also declining on Constant Effort Sites over the same period. Numbers of our long-

Table 4. UK Population changes for species recorded on a mean of 40 or more squares per year for 2004–05 and 1994–2005.

Species	Change					Species	Change				
	Sample	04–05	94–05	lcl	ucl		Sample	04–05	94–05	lcl	ucl
Mute Swan	192	21	26*	8	45	Dunnock	1618	8	22*	17	28
Greylag Goose	107	31	255*	183	345	Robin	1867	4	17*	13	21
Canada Goose	346	43*	153*	123	187	Redstart	133	-9	18	0	40
Shelduck	120	134*	59*	36	87	Whinchat	72	-28	-36*	-50	-18
Mallard	1013	1	25*	17	33	Stonechat	104	28	227*	153	322
Tufted Duck	127	5	38*	13	68	Wheatear	250	-9	-4	-15	9
Red Grouse	102	-11	-15	-32	6	Blackbird	1952	4	22*	18	25
Red-legged Partridge	421	2	55*	40	72	<b>Song Thrush</b>	1538	4	18*	12	24
<b>Grey Partridge</b>	215	-14	-40*	-49	-29	Mistle Thrush	1014	-4	-7	-14	0
Pheasant	1370	-4	32*	25	38	<b>Grasshopper Warbler</b>	62	-4	50*	11	104
Little Grebe	55	30	56*	15	113	Sedge Warbler	251	-7	10	-3	25
Great Crested Grebe	59	-24	7	-18	41	Reed Warbler	95	-3	43*	19	72
(Cormorant)	175	-12	22*	4	43	Blackcap	1167	5	61*	52	71
(Grey Heron)	535	7	29*	17	43	Garden Warbler	381	-4	-8	-18	3
Sparrowhawk	288	21	-2	-15	13	Lesser Whitethroat	214	-6	-35*	-44	-23
Buzzard	582	5	60*	46	76	Whitethroat	1057	-9	27*	19	35
Kestrel	545	5	-18*	-26	-9	Wood Warbler	53	-15	-65*	-74	-54
Hobby	31	-13	-23	-49	17	Chiffchaff	1081	-27*	30*	22	38
Moorhen	538	-2	20*	9	32	Willow Warbler	1215	2	1	-4	5
Coot	212	7	79*	55	107	Goldcrest	613	9	71*	57	85
Oystercatcher	251	-5	-12*	-21	-3	<b>Spotted Flycatcher</b>	195	21	-26*	-37	-14
Golden Plover	52	-6	-8	-31	22	Pied Flycatcher	41	8	-30*	-48	-5
Lapwing	573	-9	-21*	-27	-14	Long-tailed Tit	701	-7	0	-10	11
Snipe	125	-12	36*	13	62	Blue Tit	1825	6	24*	19	28
Curlew	433	-3	-36*	-41	-31	Great Tit	1689	7	44*	38	50
Redshank	71	-28	-12	-31	12	Coal Tit	607	24*	35*	25	45
Common Sandpiper	59	14	-5	-25	19	<b>Willow Tit</b>	53	-5	-65*	-75	-51
(Common Tern)	50	-32	-20	-42	11	<b>Marsh Tit</b>	129	8	33*	8	64
Feral Pigeon	567	2	7	-3	17	Nuthatch	340	10	71*	51	93
Stock Dove	633	-15	9	-2	20	Treecreeper	283	13	23*	6	41
Wood Pigeon	1967	6	19*	15	24	Jay	571	-6	-5	-14	5
Collared Dove	1077	-2	38*	31	46	Magpie	1511	4	3	-1	8
<b>Turtle Dove</b>	182	2	-45*	-54	-34	Jackdaw	1298	19*	40*	33	49
Cuckoo	711	-9	-29*	-35	-23	Rook	1059	-3	-7	-14	1
Little Owl	91	-4	-19	-38	6	Carrion Crow	1847	-1	12*	7	18
(Tawny Owl)	79	51	-2	-23	26	Hooded Crow	117	-1	-15	-32	5
Swift	895	1	-21*	-27	-15	Raven	192	7	124*	87	168
Kingfisher	45	9	-5	-35	38	<b>Starling</b>	1527	20*	-21*	-26	-16
Green Woodpecker	615	-2	31*	20	44	<b>House Sparrow</b>	1309	4	1	-3	5
Great Spotted Woodpecker	705	11	120*	101	141	<b>Tree Sparrow</b>	137	-15	23*	1	50
<b>Skylark</b>	1434	-3	-13*	-17	-10	Chaffinch	1953	6	15*	11	18
Sand Martin	102	-25	38*	11	71	Greenfinch	1440	4	43*	35	50
Swallow	1535	6	32*	26	39	Goldfinch	1153	6	35*	26	45
House Martin	786	5	38*	27	50	Siskin	112	59*	-3	-20	17
Tree Pipit	119	-37*	-27*	-40	-10	<b>Linnet</b>	1064	6	-7*	-14	-1
Meadow Pipit	656	-6	-6*	-11	-2	Lesser Redpoll	125	71*	40*	15	71
Yellow Wagtail	151	-11	-33*	-43	-20	<b>Bullfinch</b>	484	15	-1	-10	10
Grey Wagtail	177	52*	75*	46	109	<b>Yellowhammer</b>	1022	6	-17*	-21	-12
Pied Wagtail	1048	0	21*	13	29	<b>Red Bunting</b>	366	23	30*	17	43
Dipper	47	8	6	-25	50	<b>Corn Bunting</b>	136	-8	-32*	-43	-19
Wren	1936	9*	24*	20	28						

distance migrants are prone to large annual variations, driven by a number of factors including breeding productivity and conditions on their wintering grounds and migration routes.

Please note that the UK trend for Hobby, which was recorded on fewer than 40 squares has been included in Table 4, because this species meets the criteria for reporting trends in England where most of the population resides.

## England

A total of 197 species was recorded on BBS visits in England in 2005 and, of these, Wood Pigeon was again the most widespread, being recorded on 97% of squares, closely followed by Blackbird (96%), Chaffinch and Carrion Crow (both 95%). Of the 93 species that were recorded on an average of 30 or more squares in England (Table 5), 20 have declined significantly and 44 have increased significantly between 1994 and 2005.

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 and Lapwing increased significantly in England, but declined in the UK overall. In contrast, Mistle Thrush, Willow Warbler, Jay and House Sparrow are not faring so well in England, with numbers declining here, while showing no significant change in the UK. The declines for Cuckoo, Tree Pipit, Spotted Flycatcher, Starling and Linnet were substantially greater in England than they were for the UK overall, while those for Curlew were less. Numbers of Grey Heron, Mute Swan, Snipe, Sand Martin, Marsh Tit, Treecreeper, Tree Sparrow and Lesser Redpoll all increased significantly in the UK, but showed no significant change in England.

Due to the increase in survey coverage in England over the past four years, we are now able to calculate trends for Hobby in England for the first time. Hobbies were recorded on 41 squares in England

Table 5. ENGLAND. Population changes for species recorded on a mean of 30 or more squares per year for 2004–05 and 1994–2005.

Species	Sample	Change Change				Species	Sample	Change Change			
		04–05	94–05	lcl	ucl			04–05	94–05	lcl	ucl
Mute Swan	163	28	6	-8	22	Wren	1498	9 *	9 *	5	12
Greylag Goose	86	-3	56 *	25	95	Dunnock	1316	6	15 *	10	21
Canada Goose	324	45 *	144 *	115	177	Robin	1463	0	20 *	15	24
Shelduck	98	184 *	175 *	130	229	Redstart	70	-21	17	-9	51
Mallard	844	-3	30 *	22	40	Stonechat	41	-0	183 *	90	322
Tufted Duck	110	4	41 *	17	71	Wheatear	121	-15	-10	-24	7
Red Grouse	44	-19	-13	-32	12	Blackbird	1549	3	19 *	16	22
Red-legged Partridge	413	2	49 *	34	65	<b>Song Thrush</b>	1188	3	14 *	8	20
<b>Grey Partridge</b>	190	-12	-39 *	-48	-27	<i>Mistle Thrush</i>	812	4	-18 *	-25	-11
Pheasant	1156	-3	39 *	32	46	Sedge Warbler	159	-27	-6	-20	10
Little Grebe	45	44	69 *	18	141	Reed Warbler	91	-6	34 *	11	62
Great Crested Grebe	54	-19	-10	-32	20	Blackcap	1010	2	52 *	43	61
(Cormorant)	143	1	42 *	19	68	Garden Warbler	310	2	-12	-23	0
(Grey Heron)	432	9	10	-1	23	Lesser Whitethroat	204	-6	-37 *	-46	-26
Sparrowhawk	240	23	-2	-16	14	Whitethroat	913	-9	25 *	17	33
Buzzard	337	8	94 *	72	119	Chiffchaff	910	-28 *	28 *	20	36
Kestrel	470	12	-5	-15	5	<i>Willow Warbler</i>	829	4	-29 *	-32	-24
Hobby	30	-18	-21	-48	20	Goldcrest	425	3	51 *	37	68
Moorhen	493	2	18 *	7	30	<b>Spotted Flycatcher</b>	140	-2	-45 *	-54	-33
Coot	191	9	89 *	63	120	Long-tailed Tit	615	-9	-9	-18	1
<i>Oystercatcher</i>	122	7	47 *	24	73	Blue Tit	1476	5	16 *	11	20
<i>Lapwing</i>	466	0	12 *	2	23	Great Tit	1367	6	37 *	30	43
<i>Snipe</i>	57	-17	-5	-27	24	Coal Tit	394	7	19 *	7	32
<i>Curlew</i>	253	8	-19 *	-27	-11	<b>Willow Tit</b>	46	-3	-66 *	-77	-52
<i>Redshank</i>	48	-16	8	-19	45	<b>Marsh Tit</b>	115	5	7	-13	33
(Common Tern)	45	-40	14	-21	64	Nuthatch	280	4	60 *	40	82
Feral Pigeon	475	2	1	-9	11	Treecreeper	209	12	2	-13	20
Stock Dove	584	-15	6	-5	17	Jay	494	-8	-15 *	-24	-6
Wood Pigeon	1566	3	22 *	17	27	Magpie	1256	3	0	-4	5
Collared Dove	953	-4	38 *	30	46	Jackdaw	1022	8	36 *	28	45
<b>Turtle Dove</b>	179	4	-44 *	-54	-33	Rook	829	-7	-8	-16	0
<i>Cuckoo</i>	572	-4	-46 *	-51	-41	Carrion Crow	1507	-1	21 *	15	28
Little Owl	88	-2	-11	-32	16	Raven	60	10	337 *	222	493
(Tawny Owl)	67	20	9	-17	44	<b>Starling</b>	1251	10	-35 *	-39	-31
Swift	772	-1	-22 *	-28	-15	<b>House Sparrow</b>	1082	1	-9 *	-12	-4
<i>Kingfisher</i>	39	14	8	-25	56	<b>Tree Sparrow</b>	114	-18	8	-12	32
<i>Green Woodpecker</i>	567	-3	38 *	26	52	Chaffinch	1506	4	18 *	15	22
Great Spotted Woodpecker	627	5	102 *	84	122	Greenfinch	1211	9	47 *	39	55
<b>Skylark</b>	1124	0	-18 *	-22	-15	Goldfinch	944	2	19 *	11	28
<i>Sand Martin</i>	68	-29	12	-13	43	Siskin	32	63	6	-27	55
<i>Swallow</i>	1173	6	26 *	19	33	<b>Linnet</b>	864	-6	-19 *	-25	-12
<i>House Martin</i>	622	3	20 *	10	31	<i>Lesser Redpoll</i>	49	3	-26	-48	4
<i>Tree Pipit</i>	64	-36	-46 *	-59	-30	<b>Bullfinch</b>	374	11	-9	-19	2
<i>Meadow Pipit</i>	329	-2	-13 *	-19	-7	<b>Yellowhammer</b>	891	7	-19 *	-23	-15
<i>Yellow Wagtail</i>	148	-10	-31 *	-42	-18	<b>Reed Bunting</b>	274	13	15 *	2	28
<i>Grey Wagtail</i>	113	32	82 *	47	127	<b>Corn Bunting</b>	130	-8	-27 *	-38	-14
<i>Pied Wagtail</i>	793	5	24 *	15	34						

in 2005, compared to only 21 in 1994 and on an average of 30 over the entire survey period. Although there is strong evidence to suggest that this species has increased in both numbers and range over the past 30–40 years, numbers have shown no significant change on BBS sites since 1994. On a less positive note, Whinchat is now recorded on too few squares in England for accurate trends to be calculated, being noted on only 1.2% of surveyed squares in 2005, compared to 2.3% in 1994. This species has now largely disappeared as a breeding species from much of lowland England. In addition to the Whinchat, another nine species were recorded on an average of 20–29 squares in England over the entire survey period and hence, too few squares for English trends to be calculated (Gadwall, Common Sandpiper, Ring-necked Parakeet, Barn Owl, Lesser Spotted Woodpecker, Nightingale, Fieldfare, Grasshopper Warbler and Wood Warbler).

## Scotland

A total of 166 species was recorded on BBS visits in Scotland in 2005 and, of these, Chaffinch was the most widespread, being noted on 78% of surveyed squares, followed by Wren (77%), Skylark (68%), Meadow Pipit and Blackbird (both 67%). Four species were recorded for the first time on BBS squares in Scotland: Mandarin, Black-tailed Godwit, Ring-necked Parakeet and Lapland Bunting. A number of species that are on the edge of their natural range in Scotland were also noted (Reed Warbler, Lesser Whitethroat, Nuthatch and Marsh Tit), plus a selection of late winter visitors (Whooper Swan, White-fronted Goose, Pink-footed Goose, Great Northern Diver, Purple Sandpiper, Sanderling, Turnstone and Brambling) some of which are potential breeders in Scotland.

A total of 54 species was recorded on an average of 30 or more squares in Scotland (Table 6), and of these, seven had declined significantly and 23 had increased significantly between 1994 and 2005. For many species, the trends in Scotland were broadly similar to those in England, including significant increases in

Buzzard, Swallow, House Martin, Robin, Blackbird, Song Thrush, Whitethroat, Blackcap, Goldcrest, Coal Tit, Blue Tit, Great Tit and Goldfinch. Blackcap and Goldfinch have expanded their range northwards in Scotland in recent years. At the other end of the spectrum, numbers of Curlew, Swift and Meadow Pipit all declined significantly in both countries.

A number of species continue to fare better in Scotland than in other parts of the country. Willow Warbler numbers increased significantly in Scotland and Northern Ireland during 1994–2005, whereas their counterparts in England and Wales declined. Likewise, Mistle Thrush, Starling, House Sparrow and Linnet all increased significantly north of the border, whilst showing a downward trend in England. Cuckoo, Skylark and Yellowhammer also declined significantly in England, but showed no significant trend in Scotland.

Fourteen species were recorded on an average of 20–29 squares in Scotland over the entire survey period, and hence too few squares for Scottish population trends to be calculated (Grey Partridge, Redshank, Stock Dove, Great Spotted Woodpecker, Sand Martin, Tree Pipit, Grey Wagtail, Dipper, Whinchat, Stonechat, Chiffchaff, Spotted Flycatcher, Long-tailed Tit and Treecreeper). However, as a result of increased coverage, the BBS is now able to monitor the changing numbers of Bullfinch in Scotland for the first time.

## Wales

A total of 139 species was recorded on BBS visits in Wales in 2005, including four which had never been seen on Welsh BBS squares before (Goldeneye, Water Rail, Spotted Redshank and Dartford Warbler), the latter being a very recent addition to the list of breeding species in the country. Blackbird, Carrion Crow and Chaffinch were the most widespread species, all being recorded on 93% of squares, but closely followed by Robin on 92% of squares.

Table 6. SCOTLAND. Population changes for species recorded on a mean of 30 or more squares per year for 2004–05 and 1994–2005.

Species	Sample	Change				Species	Sample	Change			
		04–05	94–05	lcl	ucl			04–05	94–05	lcl	ucl
Mallard	87	11	15	-10	47	<b>Song Thrush</b>	138	5	26 *	5	51
Red Grouse	54	-9	-19	-43	14	Mistle Thrush	62	-5	69 *	23	133
Pheasant	104	-12	-10	-26	9	Sedge Warbler	47	10	22	-10	64
(Grey Heron)	44	-8	87 *	22	186	Blackcap	33	23	134 *	49	268
Buzzard	106	-7	50 *	17	91	Whitethroat	60	1	89 *	38	159
Kestrel	41	-15	-48 *	-65	-24	Willow Warbler	174	0	40 *	23	60
Oystercatcher	117	-9	-22 *	-33	-9	Goldcrest	74	5	155 *	97	229
Golden Plover	41	-6	-13	-38	20	Blue Tit	127	-1	38 *	17	63
Lapwing	84	-20	-48 *	-58	-36	Great Tit	113	-1	58 *	29	94
Snipe	52	-6	58 *	18	112	Coal Tit	100	29	44 *	19	73
Curlew	118	-9	-48 *	-56	-39	Magpie	35	-20	31	-7	85
Common Sandpiper	33	17	-4	-31	35	Jackdaw	93	4	10	-12	38
Feral Pigeon	53	14	21	-13	67	Rook	97	-4	-9	-31	21
Wood Pigeon	162	13	-4	-16	10	Carrion Crow	153	-6	-8	-23	10
Collared Dove	38	20	13	-19	57	Hooded Crow	49	0	-37 *	-53	-16
Cuckoo	64	-15	30	-2	71	Raven	37	-23	49	-6	135
Swift	43	40	-34 *	-52	-9	Starling	126	48	33 *	5	67
Skylark	184	-8	-5	-15	6	House Sparrow	75	11	47 *	19	82
Swallow	138	10	24 *	6	46	Chaffinch	195	7	6	-4	17
House Martin	47	-2	166 *	69	320	Greenfinch	85	-23	3	-20	33
Meadow Pipit	191	-14	-18 *	-26	-9	Goldfinch	67	5	57 *	10	124
Pied Wagtail	116	-8	14	-8	40	Siskin	54	57	-6	-31	28
Wren	183	6	97 *	72	125	Linnet	80	51	31 *	1	68
Duncock	107	25	49 *	19	86	Lesser Redpoll	36	82	49 *	3	116
Robin	156	15	17 *	2	33	Bullfinch	30	-8	50	-11	153
Wheatear	72	-16	-6	-27	21	Yellowhammer	87	13	3	-15	24
Blackbird	153	4	13 *	1	28	Reed Bunting	43	35	36	-2	90

Table 7. WALES. Population changes for species recorded on a mean of 30 or more squares per year for 2004–05 and 1994–2005.

Species	Sample	Change				Species	Sample	Change			
		04–05	94–05	lcl	ucl			04–05	94–05	lcl	ucl
Mallard	58	-20	-22	-42	4	Garden Warbler	53	-18	-37 *	-54	-15
Pheasant	74	1	42 *	16	75	Whitethroat	68	-22	-17	-34	5
(Grey Heron)	41	11	32	-7	88	Chiffchaff	113	-25	26 *	7	49
Buzzard	122	17	15	-5	39	<i>Willow Warbler</i>	144	-5	-27 *	-36	-17
<i>Curlew</i>	38	6	-48 *	-65	-22	<i>Goldcrest</i>	74	5	-23 *	-38	-4
Wood Pigeon	163	15	35 *	20	52	Long-tailed Tit	51	55	61 *	9	138
Collared Dove	58	-7	28	-2	68	Blue Tit	154	15	51 *	34	71
<i>Cuckoo</i>	55	-16	-32 *	-50	-8	Great Tit	145	6	53 *	31	78
Swift	61	-15	-26	-47	3	Coal Tit	63	10	-20	-38	3
<i>Green Woodpecker</i>	42	-16	32	-10	92	Nuthatch	59	30	96 *	45	166
Great Spotted Woodpecker	54	31	118 *	57	202	Treecreeper	38	-6	63 *	6	150
<b>Skylark</b>	93	11	0	-13	16	Jay	59	0	10	-19	51
<i>Swallow</i>	146	-2	72 *	45	103	Magpie	144	11	-3	-18	13
<i>House Martin</i>	79	17	76 *	33	132	Jackdaw	121	85 *	142 *	97	197
<i>Tree Pipit</i>	30	-35	-29	-53	6	Rook	72	-7	-17	-41	15
<i>Meadow Pipit</i>	78	-2	24 *	7	44	Carrion Crow	176	10	7	-7	24
Pied Wagtail	102	7	37 *	10	69	Raven	75	50	110 *	60	175
Wren	171	7	15 *	5	26	<b>Starling</b>	80	50	-43 *	-56	-26
<i>Dunnock</i>	130	-3	35 *	15	58	<b>House Sparrow</b>	104	2	107 *	72	149
Robin	168	-1	9	-1	20	Chaffinch	172	14	7	-3	19
<i>Redstart</i>	52	11	7	-16	36	Greenfinch	95	7	38 *	11	73
Wheatear	46	2	-10	-35	25	Goldfinch	107	17	110 *	66	164
Blackbird	169	2	40 *	28	53	<b>Linnet</b>	84	-9	23	-6	61
<b>Song Thrush</b>	143	15	36 *	17	57	<b>Bullfinch</b>	57	28	15	-12	51
<i>Mistle Thrush</i>	89	-11	-1	-23	29	<b>Yellowhammer</b>	36	-11	-44 *	-58	-25
Blackcap	99	7	76 *	43	117						

Of the 51 species that were recorded on an average of 30 or more squares in Wales (Table 7), seven had declined significantly and 23 had increased significantly between 1994 and 2005. Curlew underwent the greatest decline of any species monitored by the BBS in Wales, with numbers falling by 48%. Similar downward trends were also recorded for this species in Scotland (also down 48%) and England (down 19%). Cuckoo, Willow Warbler, Starling and Yellowhammer also declined significantly in both Wales and England, although they fared better in Scotland. However, the Welsh trends for Meadow Pipit did not match those in neighbouring England, with numbers increasing in the former country, but declining in the latter. Several predominantly woodland species continue to prosper in Wales, with numbers of Great Spotted Woodpecker, Blackcap, Chiffchaff, Blue Tit, Great Tit, Nuthatch and Treecreeper all significantly higher in 2005 than at the start of the survey in 1994. Great Spotted Woodpecker numbers have more than doubled over this period, in common

with other populations throughout Britain. In contrast, the numbers of some woodland birds have declined in Wales, with Garden Warbler down by 37% and Goldcrest down by 23% since 1994. However, the BBS is only able to monitor the more common woodland species in Wales.

Eleven species were recorded on an average of 20–29 squares in Wales over the entire survey period, and hence too few squares for Welsh trends to be calculated (Kestrel, Feral Pigeon, Stock Dove, Grey Wagtail, Stonechat, Sedge Warbler, Wood Warbler, Spotted Flycatcher, Pied Flycatcher, Siskin and Reed Bunting).

### Northern Ireland

A total of 108 species was recorded on BBS visits in Northern Ireland in 2005, including three which had never been recorded on BBS squares in the Province before (Fulmar, Quail and Razorbill). Wren was the most widespread species, being recorded on 98% of squares, followed by Chaffinch (94%), Robin and Blackbird

Table 8. NORTHERN IRELAND. Population changes for species recorded on a mean of 30 or more squares per year for 2004–05 and 1994–2005.

Species	Sample	Change				Species	Sample	Change			
		04–05	94–05	lcl	ucl			04–05	94–05	lcl	ucl
Wood Pigeon	65	58	85 *	41	144	<i>Goldcrest</i>	34	94	152 *	47	332
<b>Skylark</b>	32	-34	-13	-37	21	Blue Tit	60	28	127 *	68	206
<i>Swallow</i>	67	22	38 *	3	84	Great Tit	53	76	216 *	121	353
<i>House Martin</i>	31	79	204 *	81	410	Coal Tit	48	72	169 *	64	340
<i>Meadow Pipit</i>	55	27	95 *	54	146	Magpie	66	22	35 *	6	72
Pied Wagtail	33	20	12	-35	95	Jackdaw	58	18	-8	-31	24
Wren	73	14	90 *	51	139	Rook	59	30	29	-10	85
<i>Dunnock</i>	54	15	187 *	87	342	Hooded Crow	63	-9	77 *	23	155
Robin	70	11	18	-6	48	<b>Starling</b>	62	-9	56 *	3	138
Blackbird	69	28	91 *	54	137	<b>House Sparrow</b>	40	46	-1	-30	40
<b>Song Thrush</b>	60	-4	29	-6	77	Chaffinch	71	8	67 *	30	114
<i>Mistle Thrush</i>	48	-32	-25	-51	15	Greenfinch	39	32	188 *	68	392
<i>Willow Warbler</i>	63	7	78 *	33	139						

(both 90%). Of the 25 species that were recorded on an average of 30 or more squares in Northern Ireland (Table 8), no species had declined significantly and 17 species increased significantly between 1994 and 2005.

Several typical garden and woodland species continue to fare well in Northern Ireland, with numbers of Wren, Dunnock, Blackbird, Blue Tit, Great Tit and Greenfinch all significantly greater in 2005 compared to 1994. These species have also increased in England, Scotland and Wales over the same period. The trends for Willow Warbler and Starling show a different pattern, with numbers increasing in Northern Ireland and Scotland, but declining in England and Wales. The numbers of two familiar summer visitors (House Martin and Swallow) have also increased in Northern Ireland over the entire survey period, and had also increased between 2004 and 2005. Hooded Crow numbers are up by 77%, but show a decline in Scotland (down 37%) between 1994 and 2005.

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. Eleven species were recorded on an average of 20–29 squares in Northern Ireland over the entire survey period, and hence too few squares for trends to be calculated (Pheasant, Curlew, Collared Dove, Cuckoo, Sedge Warbler, Chiffchaff, Goldfinch, Linnets, Lesser Redpoll, Bullfinch and Reed Bunting). However, as a result of increased coverage, the BBS is now able to monitor the trends of House Martin in Northern Ireland for the first time. A continued increase in coverage will undoubtedly ensure that the BBS is able to monitor many of the species listed above in the near future.

### Isle of Man and the Channel Islands

A total of 49 species was recorded on three squares on the Isle of Man in 2005, including two that were new to the BBS on the island: Pink-footed Goose and Common Sandpiper. Sixty-four species were recorded on a record total of 13 squares on the Channel Islands in 2005, including 12 squares on Jersey and a single square on Alderney. Of these, Wood Pigeon, Wren, Blackbird, Great Tit, Carrion Crow and Greenfinch were noted on all squares. A wide range of species was recorded, including an island speciality, Short-toed Treecreeper, on three squares and two species that had not been recorded on BBS squares on the islands before (Peregrine and Common Sandpiper).

#### The nine English Government Office Regions are as follows:

**GOR1** (North West): Cheshire, Cumbria, Lancashire, Greater Manchester, Merseyside.

**GOR2** (North East): Cleveland, Co. Durham, Northumberland.

**GOR3** (Yorkshire & The Humber): East Yorkshire, North Lincolnshire, North Yorkshire, South Yorkshire, West Yorkshire.

**GOR4** (East Midlands): Derbyshire, Leicestershire & Rutland, Lincolnshire, Northamptonshire, Nottinghamshire.

**GOR5** (East of England): Bedfordshire, Cambridgeshire, Essex, Hertfordshire, Norfolk, Suffolk.

**GOR6** (West Midlands): Birmingham, Herefordshire, Shropshire, Staffordshire, Warwickshire, Worcestershire.

**GOR7** (South East): Berkshire, Buckinghamshire, Hampshire, Isle of Wight, Kent, Oxfordshire, Surrey, Sussex.

**GOR8** (South West): Avon, Cornwall, Devon, Dorset, Gloucestershire, Somerset, Wiltshire.

**GOR9** London.



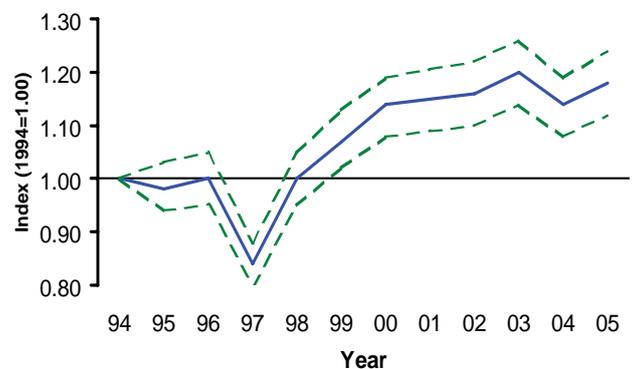
Photograph by Rob Nottage

The Song Thrush is 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. This decline was under way by the late 1960s, and became particularly severe during the 1970s and early 1980s. Since this period, the decline has slowed and numbers have begun to stabilise. Changes in survival of juveniles in

their first year of life probably drove the decline. The fall in abundance has been linked to agricultural intensification, but drainage of damp ground and the depletion of woodland shrub layers through canopy closure and deer browsing may also be implicated.

In 1998, results from the BBS showed the first tentative signs of recovery and numbers are now significantly higher in England, Scotland and Wales than they were in 1994. However, within England there are some distinct regional differences, with populations faring much better in the west than the east of the country. In the East of England Region a significant decline was reported between 1994 and 2005.

BBS Index: Song Thrush (UK)



### Government Office Regions within England

The record number of squares surveyed in England in 2005 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 in the shaded box. 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 distribution of each species within the UK and the number of squares surveyed within each region largely determines how many species we can monitor, from only 18 species in London and 23 species in the North East to 62 species in the South East and 63 species in the East of England. However, because record coverage was achieved in all nine regions in 2005, we were able to calculate trends for several species within their regions for the

Table 9. ENGLISH GOVERNMENT OFFICE REGIONS. Population changes for species recorded on a mean of 30 or more squares per year for 1994–2005. For each region the percentage change is given (marked with an asterisk if significant), and the sample size (in italics).

Species	N.West	N.East	Yorks	E.Mids	East	W.Mids	S.East	S.West	London
<i>Mute Swan</i>					96* 35		-26 40		
Canada Goose	304* 45			44 30	336* 44	29 49	72* 85	155* 33	
<i>Shelduck</i>					19 33				
Mallard	32* 123		27 64	7 78	7 156	30* 86	52* 170	74* 119	-4 30
Red-legged Partridge			50 34	-5 62	20* 154		165* 84	152* 37	
<b>Grey Partridge</b>					-30* 41		-43* 36		
Pheasant	121* 96	75* 39	42* 85	2 107	13* 225	29* 108	38* 285	73* 203	
( <i>Cormorant</i> )					64* 38				
(Grey Heron)	22 65			-5 40	-3 68	6 46	7 92	24 65	
Sparrowhawk					-32* 38		9 55	-2 42	
Buzzard	163* 32					105* 59	700* 56	14 159	
<i>Kestrel</i>	3 56		17 39	10 45	-16 90	12 35	-17 106	-10 68	
Moorhen	-9 61		90* 30	1 48	10 107	18 53	11 113	22 54	
Coot					88* 32		5 46		
<i>Oystercatcher</i>	7 41								
<i>Lapwing</i>	3 95		55* 70	3 50	29 63	-20 35	-9 96		
<i>Curlw</i>	-25* 75	-16 30	-23* 67			-58* 30			
Feral Pigeon	-32* 63		-8 47	74* 43	18 67	8 37	-7 91	-14 61	-9 52
<i>Stock Dove</i>	125* 38		93* 35	-46* 58	-3 117	23 68	-2 151	-4 98	
Wood Pigeon	39* 165	27 51	65* 110	-2 143	22* 265	25* 146	13* 360	23* 270	88* 57
Collared Dove	67* 99		2 57	39* 86	91* 174	2 100	38* 227	43* 153	71* 37
<b>Turtle Dove</b>					-46* 87		-40* 58		
<i>Cuckoo</i>	-43* 36		-34 37	-49* 55	-48* 118	-47* 61	-44* 162	-57* 84	
Swift	-3 93		0 61	2 73	-13 133	10 68	-35* 147	-44* 127	-11 45
<i>Green Woodpecker</i>					150* 119	4 47	28* 224	6 103	
Great Spotted Woodpecker	121* 55			77* 33	103* 107	122* 70	105* 201	99* 99	
<b>Skylark</b>	-9 103	-38* 43	15 94	-20* 120	-20* 231	-39* 98	-14* 249	-10 176	
<i>Swallow</i>	28* 151	51* 45	34* 102	30* 108	-5 182	-0 116	23* 235	46* 222	
<i>House Martin</i>	86* 82		122* 49	-7 45	-3 90	-4 70	-17 129	15 122	
<i>Meadow Pipit</i>	-32* 66	-9 33	-41* 64	-19 35	2 38		21 41	38* 38	
<i>Yellow Wagtail</i>				-54* 33	-32* 48				
Pied Wagtail	11 102	-10 32	10 72	27 77	48* 130	82* 74	17 165	28* 125	
Wren	76* 163	13 47	35* 112	19* 134	-0 243	19* 139	-10* 343	-4 265	37* 51
<i>Duncock</i>	26* 134	29 34	-1 86	1 123	18* 215	54* 130	4 316	14* 238	1 42
Robin	46* 154	51* 45	45* 97	7 129	25* 238	36* 143	6 345	7 260	64* 53
Wheatear	-46* 35								
Blackbird	43* 164	37* 43	42* 110	13* 140	3 258	26* 146	4 359	31* 272	-21* 57
<b>Song Thrush</b>	92* 120	1 38	46* 70	8 90	-18* 186	50* 115	-5 312	20* 219	-19 37
<i>Mistle Thrush</i>	44* 100		-19 60	2 70	-40* 134	-11 73	-37* 208	-38* 113	
Sedge Warbler					-8 43				
Reed Warbler					22 36				
Blackcap	145* 80		95* 51	64* 75	29* 182	52* 101	44* 274	46* 198	
Garden Warbler					-10 55	3 40	-12 82	17 53	
Lesser Whitethroat					-12 58		-58* 44	-54* 31	
Whitethroat	22 67		-5 53	44* 100	20* 199	5 82	62* 216	23* 155	
Chiffchaff	122* 60		111* 38	106* 50	29* 146	69* 104	3 254	10 219	
<i>Willow Warbler</i>	31* 119	-24* 44	-19* 84	-10 77	-61* 125	-47* 85	-56* 147	-48* 140	
<i>Goldcrest</i>					99* 57	107* 32	41* 142	48* 104	
<b>Spotted Flycatcher</b>							-67* 33		
Long-tailed Tit	44* 59		3 30	7 51	3 108	-1 67	-22* 173	-24* 99	
Blue Tit	21* 158	5 39	19 100	23* 129	30* 242	17* 143	19* 350	-1 259	64* 56
Great Tit	46* 142	51* 33	152* 83	53* 113	24* 226	26* 138	24* 338	41* 244	124* 50
Coal Tit	40 44				29 48	66* 35	-11 108	7 77	
<b>Marsh Tit</b>							-17 42		
Nuthatch						105* 33	35* 118	49* 60	
Treecreeper							2 69	-1 42	
Jay	44* 49				20 83	-54* 47	-28* 164	-16 81	
Magpie	-4 144		-15 71	3 104	44* 193	-15* 130	1 308	-3 229	38* 55
Jackdaw	53* 96	41* 38	73* 76	62* 73	84* 165	6 107	30* 253	15 205	
Rook	-48* 70	7 34	-49* 76	2 70	46* 149	-35* 74	-8 180	1 174	
Carrion Crow	63* 171	17 51	73* 114	27* 128	86* 237	15 144	-5 343	-1 263	85* 57
Raven								309* 30	
<b>Starling</b>	-35* 146	-38* 40	-40* 94	-6 111	-30* 213	-38* 119	-44* 286	-31* 185	-35* 57
<b>House Sparrow</b>	1 125		-8 70	25* 94	-24* 181	11 116	-24* 238	10 180	-65* 53
Chaffinch	43* 162	26* 50	46* 109	30* 137	38* 255	5 144	12* 350	-3 269	107* 30
Greenfinch	93* 120	35 30	39* 75	87* 107	75* 210	66* 115	2 292	43* 222	126* 40
Goldfinch	93* 109		14 67	17 77	-22* 150	53* 84	4 216	22* 185	
<b>Linnet</b>	14 81	-12 32	-14 70	-47* 96	-21* 157	-4 69	-24* 199	-8 150	
<b>Bullfinch</b>					-17 54	-11 42	-13 116	-5 83	
<b>Yellowhammer</b>	-3 54	-34* 30	-14 60	-23* 108	-24* 188	-25* 98	-23* 208	-5 141	
<b>Reed Bunting</b>	-4 45			13 40	20 64		-1 47		
<b>Corn Bunting</b>					-35* 40				

first time, including: Buzzard in North West England, Curlew, Greenfinch and Yellowhammer in North East England, Long-tailed Tit in Yorkshire, Canada Goose in the East Midlands, Raven in South West England and Mallard and Chaffinch in London. For 72 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 some species, the trends in the different regions were very similar. Red-legged Partridge, Pheasant, Collared Dove, Swallow, Robin, Blackbird, Whitethroat, Chiffchaff, Blue Tit, Jackdaw, Chaffinch and Greenfinch all showed a significant increase in the majority of the five or more English regions for which trends could be calculated. Great Spotted Woodpecker, Blackcap and Great Tit increased significantly in all of the regions for which trends could be produced. Cuckoo, Skylark, Willow Warbler, Starling and Yellowhammer declined significantly in the majority of the five or more regions for which trends could be produced.

For a number of species, however, distinctly different patterns of population change were seen in the English regions. Song Thrushes have declined significantly in the East of England, but increased or showed no significant change elsewhere. The Mistle Thrush has not fared so well, with numbers declining in most regions, particularly in southern and eastern ones, but increasing significantly in the North West. Jays have also increased in the North West but declined in the West Midlands and South East. BBS results for the Meadow Pipit are also presenting a varied picture in England, with numbers faring better in the south than the north where most northern regions are reporting a decline. In contrast, Stock Doves are increasing in northern regions but are generally stable in most southern and eastern areas, although a decline of 46% was recorded between 1994 and 2005 in the East Midlands. House Sparrow populations appear to be reasonably stable in the north and west of England, but show significant declines in the South East, London and East of England regions.

### BBS mammal monitoring in 2005

In 2005, mammal records were received for 84% of surveyed BBS squares (2,405 squares). Table 10 shows the fifteen most frequently recorded mammal species in 2005. 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.

In addition to those listed above, a further 25 mammal species were recorded during the survey, including (number of squares in brackets): Mountain or Irish Hare (65), American Mink (35), Red Squirrel (34), Otter (23), Common Shrew (22), Sika Deer (20), Wood Mouse (15), Water Vole (11), Field Vole (9), Chinese Water Deer (8), Bank Vole (5), Polecat (3), Feral Goat (3), Pygmy Shrew (2), Water Shrew (2), Harvest Mouse (2), Pine Marten (2), Common Seal (2), Grey Seal (2) and Pipistrelle sp., Orkney Vole, Dormouse, House Mouse, Minke Whale and Wild Boar on single squares.

A square in Suffolk proved to be the most diverse in 2005, with nine species of mammal being seen on the two transect counts. One or more species was seen during the two bird count visits on 2,137 squares (89% of squares surveyed for mammals). In addition, field signs were noted, or mammals were seen on additional visits on another 93 squares (4%), leaving 175 surveyed squares (7%) where no mammals were recorded. It is very important that we

receive completed mammal forms or online submissions for those squares where no mammals were recorded. These 'nil' returns are just as important as those where mammals were seen or field signs noted.

**Table 10. Occurrence of common mammal species on BBS squares in 2005.** The figures under the 'Present' heading 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	1,607	1,483	15,327
Grey Squirrel	950	848	1,990
Brown Hare	807	757	2,586
Red Fox	621	333	429
Roe Deer	489	413	955
Feral/Domestic Cat	427	350	605
Mole	376	7	5
Badger	283	9	9
Hedgehog	149	13	22
Brown Rat	143	31	42
Muntjac Deer	137	96	142
Stoat	130	49	49
Fallow Deer	102	71	771
Red Deer	84	66	821
Weasel	68	17	22

### Producing mammal population trends from BBS data

The BTO is a member of the Tracking Mammals Partnership (TMP), a collaborative initiative involving 25 organisations with varied interests in mammals. TMP aims to provide good quality trend data to guide conservation and wildlife management policy for mammals. The BBS is an important component of the TMP surveillance programme and BBS count data are now being used to routinely calculate population trends for seven mammal species (Table 11). The 2006 update of UK Mammals, which describes recent surveys organised by the partnership, is included with this report.

**Table 11. UK Mammal Trends.** Population changes for species recorded on a mean of 40 or more squares per year for 1995–2004. 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 428.

Species	Sample	% Change	lcl	ucl
Rabbit	1063	-30*	-35	-25
Brown Hare	522	-1	-10	9
Mountain/Irish Hare	43	-13	-35	16
Grey Squirrel	472	12	0	26
Red Fox	221	-43*	-51	-34
Roe Deer	235	0	-14	17
Muntjac Deer	44	6	-21	43

### BBS-online update ([www.bto.org/bbs](http://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 data from previous years 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 wide range of output, including tables and graphs showing the latest trends, species distribution maps and species lists down to a county level. Information is also provided about methods, research work and how to participate.

Data for 1,146 squares (40% of the total number surveyed) were submitted online in 2005, representing a considerable increase on the 721 squares (29% of the total) in 2004. Electronic submission continues to reduce data checking and entry costs and allows us to provide BBS observers and general visitors to the BTO website with up-to-date results. UK colour maps showing relative abundance for 78 species are now also available on the website (using geostatistical methods to predict abundance at non-surveyed sites).

The BTO's Information Systems Unit will continue to deal with comments and problems highlighted by BBS-online users. A complete review of the system and the comments received is undertaken at the end of each year, with a view to identifying possible improvements that can be made. Many thanks must be given to the RSPB for generously funding the development of BBS-online, and to members of the BTO's Information Systems Unit (Iain Downie, Karen Wright, James Hall and Luke Delve), who have developed the system and provided technical support over the past year.

## BBS research and development

### Wild Bird Indicators development

Apart from the UK Sustainable Development Wild Bird Indicators produced annually for Defra, along with the Farmland Bird Index for which there is a Public Service Agreement target to reverse the decline by 2020, further indicator development occurred in some of the UK's constituent countries.

**Scotland:** A set of terrestrial wild bird indicators for Scotland was developed for Scottish Natural Heritage in 2005. These are based largely on BBS data, and incorporate mainly habitat-specific trends for species associated with each of three major habitats (farmland, woodland and uplands). The indicators are currently being assessed by SNH, along with new indicators developed for wintering water birds and for coastal and marine bird populations in Scotland.

**Wales:** Wild bird indicators including one for 'farmed habitats' that includes characteristic species of Welsh uplands such as Curlew and Meadow Pipit were updated with BBS data for Wales between 1994 and 2004. This indicator along with one for woodland birds have been adopted by the Welsh Assembly as indicators of sustainable development and are published in *The State of Birds in Wales 2004*, [www.rspb.org.uk/wales/action/sobiw.asp](http://www.rspb.org.uk/wales/action/sobiw.asp).

**England:** BBS data from 1994 to 2004 were used to update the England Biodiversity Strategy wild bird indicators, published by Defra in March 2006. The farmland bird indicator, based largely on joint BBS/CBC trends for 19 species, has been relatively stable since 1998, but remains 50% lower than in 1970. The woodland bird indicator, based on joint CBC/BBS trends for 33 species, continues to fluctuate along a level almost 20% lower than in 1970. BBS data collected in urban and suburban habitats are used

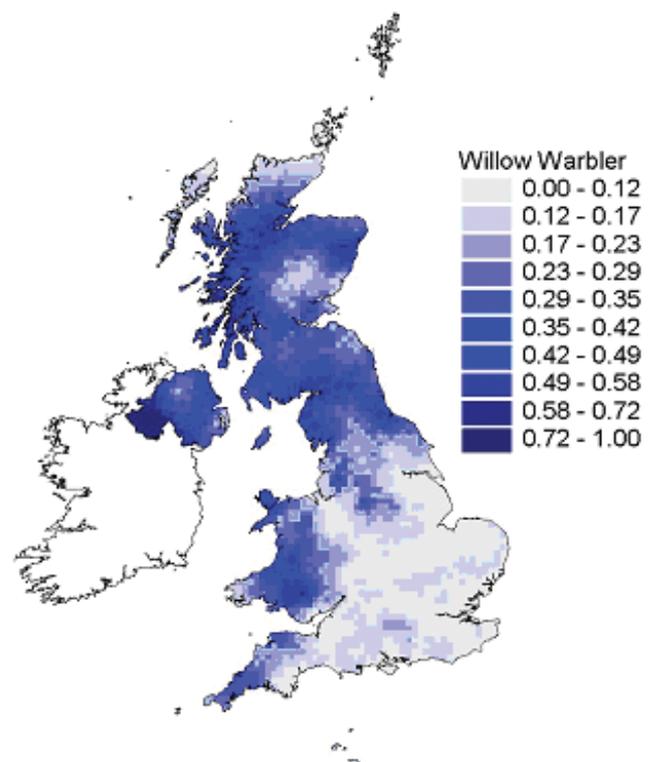
to produce an indicator for 27 bird species of towns and gardens from 1994 to 2004. This increased 10% over that period.

**Regional Wild Bird Indicators for England:** Data from the BBS (1994–2004) were recently used to update BBS-based wild bird indicators for the English Government Office Regions, also published by Defra in March 2006. Most northern regions showed small positive changes in farmland bird populations over the period 1994 to 2004 (up 15% in the North West region), whereas more southerly regions showed declines ranging from 8% in the South West region to 14% in the West Midlands. Woodland bird populations also showed increases in the north (up 28% in the North West region), and small declines further south (up 12% in the South East region). The full report is available on the Defra website

[www.defra.gov.uk/environment/statistics/wildlife/research/rwbi.htm](http://www.defra.gov.uk/environment/statistics/wildlife/research/rwbi.htm).

### Mapping the abundance of UK birds

Recent developments in geostatistical methods (in which counts at surveyed sites are used to predict numbers at unsurveyed sites) have improved the estimation and precision of predicting relative abundance. This approach has recently been applied to BBS data to produce maps of relative abundance for 78 widespread breeding bird species as a means of visualising broad geographic patterns in abundance for the entire UK (see <http://www.bto.org/bbs/results/bbs-countmaps.htm>). To illustrate, a map of relative abundance for Willow Warbler is presented below. Novel methods of analysing the spatial distribution patterns of birds are also being explored, in collaboration with researchers at the University of St. Andrews, with the aim of developing models that reliably predict the effects of environmental processes. These developments will help us to predict the effects of climate change on birds, as well as responses to future changes in agricultural and forest management practices (e.g. environmental stewardship and woodland grant schemes).

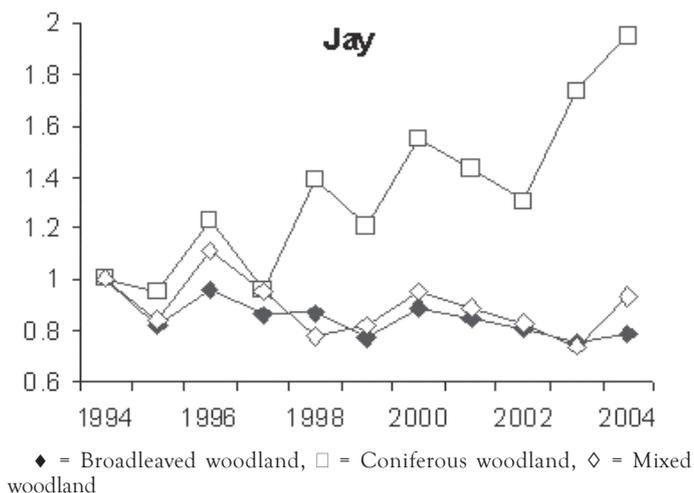


## BBS habitat recording and habitat-specific trends

While all wild bird species show some level of habitat preference, very few species are so specialised that they occur solely in a single habitat. In the UK for example, Lapwing, Turtle Dove, Skylark and Starling are widely regarded as farmland specialists, but more than 30% of their populations occur outside of farmland habitat during the breeding season (Newson et al. 2005).

The BTO's Common Birds Census (CBC), although extremely valuable in providing long-term trends for about 70 species of terrestrial birds since the 1960s, covered mainly farmland and woodland plots. This prevented analyses of the change in status of populations within broad habitats other than farmland or woodland (e.g. uplands or urban areas) and was one of the reasons for the introduction of the BBS, with its random sampling design and representative coverage of all UK landscape types. Recent work has taken advantage of the detailed habitat coverage and recording through the BBS to examine how the abundance of breeding birds in the UK has changed within habitats. In these analyses, counts are analysed at the transect section level according to the habitat recorded for each section. It is possible to generate habitat-specific trends for more than 60 species and as an example, we present trends for Jay in broad-leaved, coniferous and mixed woodland below. Interestingly, Jays appear to be increasing only in coniferous woodland, perhaps due to the maturation and increasing suitability of this habitat to this species.

BBS habitat data have already been used to compare bird abundance across habitats, and to estimate bird densities in different habitats for producing overall population estimates. Recording habitat is a vital part of the BBS and greatly increases the scientific and conservation value of the results. In 2007, the year in which the habitat details for the 'ideal' transect route across the BBS squares are next due for collection, we will also be reviewing the nature of the habitat information currently requested.



## Pan-European Bird Monitoring

The Pan-European Common Bird Monitoring (PECBM) initiative continued in 2005, with workshops attended by scheme organisers to assess habitat specificity across Europe and develop new ways of assembling indicators. UK trends based on CBC and BBS data are combined with trends from other countries, weighted by the relative national population sizes from Birdlife International's European Birds Database, to obtain pan-European trends for each species. Species trends are then aggregated to obtain composite indicators for each landscape type (farmland or woodland) and region (e.g.

western Europe). 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](http://www.ebcc.info)) and have been published by Gregory et al (2005). The status of this indicator as a EU Structural Indicator highlights its political significance, and has led to EU questioning its constituent countries about their capacity to monitor farmland birds. Already, EU funding has been received to help run PECBM operations and assist with capacity development in countries without bird monitoring schemes (previously funded entirely by RSPB). An additional grant from the Global Environment Facility (GEF) is being used to develop common bird monitoring and awareness in seven target countries (Belarus, Bulgaria, Lithuania, Macedonia, Poland, Romania and Turkey) and there may be opportunities for BBS and other UK bird survey volunteers to visit these countries and contribute to this project. The first ever report outlining results from the initiative has now been published in *The State of Europe's Common Birds 2005*.



In common with the UK, Pied Flycatchers have undergone a decline in Europe overall, with numbers down by 23% between 1990 and 2003. Photograph by Tommy Holden.

## Expanding the 'Farmland Bird Database' to Woodland Birds

We have previously reported on the Farmland Bird Database - in which data from surveys (e.g. BBS) and casual records are collated, summarised, and 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. The database was used by Defra's Rural Development Service to develop target statements for England's Joint Character Areas, and to develop products such as *Nature on the Map* which allows farmers to interrogate the database for information on farmland birds that would help them complete Environmental Stewardship applications. This project has been expanded to other species on farmland, restricted-range woodland birds, and to Scotland, Wales and Northern Ireland. As before, data from the BBS and other major surveys (e.g. Woodland Resurvey) will be used, and county bird recorders and bird clubs will be contacted by the project officer, based at RSPB, to provide new (since last requested) records on a suite of restricted-range farmland and woodland birds.

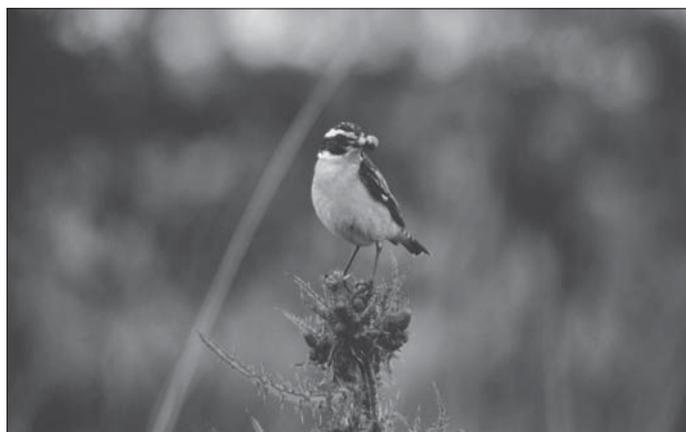
## Farmland bird surveys to assess the Entry Level Scheme

As reported last year, a team of fieldworkers were contracted to carry out BBS-style bird surveys in arable and pastoral lowland farmland squares in England. The aim of this work was to increase the amount of baseline data in advance of take-up of Defra's Entry Level Environmental Stewardship Scheme that was rolled out in 2005. The scheme has a number of primary objectives, including wildlife conservation, and the Farmland Bird Index will be used to assess progress. A Public Service Agreement target has been set to reverse declines in farmland birds by 2020, and environmentally friendly land management will be a key tool in achieving this goal.

In 2005, BBS volunteers covered more than 1,400 squares in the defined habitat within England and the ELS fieldworkers covered an additional 975 squares. This sample should provide sufficient power to evaluate statistically the effectiveness of the scheme in reversing the declines in farmland birds. 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. For more information on ES, see Defra's website [www.defra.gov.uk/erdp/schemes/es/default.htm#4](http://www.defra.gov.uk/erdp/schemes/es/default.htm#4).

## Upland Birds – new surveys to assess the possible affects on birds of greater access to the countryside under the Countryside & Rights of Way Act 2000

Due to growing interest in the fortunes of upland birds, there have been discussions between bird conservation organisations about developing ways of improving data. A possibility under consideration is an upland BBS carried out periodically on protected upland areas (e.g. SSSIs). Another area of interest in England is the possible impact of greater access to the countryside under the Countryside & Rights of Way (CRoW) Act 2000 on populations of breeding birds in open heath and moorland habitats. To this end, a small team of fieldworkers were contracted to conduct bird surveys in upland areas of England predicted to be accessible to visitors once the provisions of CRoW commence. More than 100 squares will be covered, with two adjacent squares to be surveyed at each of more than 50 sites. The results of this survey, in combination with BBS surveys in English upland sites will provide baseline data on the abundance of breeding upland birds in 2006. Resurveys of birds in subsequent years and associated research by Natural England on visitor use and public perceptions of Open



Whinchats have declined by 36% in the UK since 1994 and are now recorded on too few BBS squares for English trends to be calculated. Photograph by Derek Belsey.

Access, will help to determine whether CRoW has changed the use of the countryside and whether these changes are having any adverse effects on breeding birds.

## The future

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. 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 on birds of broader management approaches in other habitats and also those of climate change.

The 2005 fieldwork season was the most successful in the history of the BBS, with more squares being surveyed than in any other year since 1994. Record volunteer coverage was achieved in all four countries and all nine English Government Office Regions. An impressive and highest ever total of 735 trends are published in this report. The increase in coverage is enabling us to monitor the numbers of more species in more regions of the UK, including those for Hobby for the first time. If this level of coverage is maintained we will continue to report on an increasing number of trends for an increasing number of species.

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## 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 2005:

 **ENGLAND:** Avon - John Tully; Bedfordshire - Judith Knight; Berkshire - Chris Robinson; **Birmingham & West Midlands** - vacant; Buckinghamshire - Mick A'Court (now vacant); Cambridgeshire - John Le Gassick; Cheshire (mid) - Paul Miller; Cheshire (north & east) - Charles Hull; Cheshire (south) - Charles Hull; Cleveland - vacant (now Vic Fairbrother); Cornwall - vacant (now Stephen Jackson); Cumbria - Clive Hartley; Derbyshire (north & south) - Dave Budworth; Devon - John Woodland; Dorset - Catherine Whitby (now Mike Pleasants); Durham - David Sowerbutts; **Essex (north-east)** - Peter Dwyer (now vacant); **Essex (north-west)** - Roy Ledgerton (now vacant); **Essex (south)** - vacant; Gloucestershire - Mike Smart; Hampshire - Glynne Evans; Herefordshire - Steve Coney; Hertfordshire - Chris Dee; Huntingdon & Peterborough - Philip Todd; Kent - Martin Coath (now Sally Hunter); Lancashire (east) - Tony Cooper; Lancashire (north-west) - Keith Woods (now Jean Roberts); **Lancashire (south)** - Philip Shearwood (now vacant); Leicestershire & Rutland - Tim Grove; **Lincolnshire (east)** - vacant; **Lincolnshire (north)** - John Turner (now vacant); Lincolnshire (south) - Richard and Kay Heath; Lincolnshire (west) - Peter Overton; London & Middlesex - Derek Coleman (now Richard Arnold and Ian Woodward); Manchester - Judith Smith; Merseyside - Bob Harris; Norfolk (north-east) - Chris Hudson; Norfolk (north-west) - Mike Barrett; Norfolk (south-east) - Chris Day (now Rachel Warren); Norfolk (south-west) - Vincent Matthews; **Northamptonshire** - vacant; 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 (now Penny Allwright); Staffordshire (north, south & west) - Gerald Gittens; Suffolk - Mick Wright; Surrey - Hugh Evans; Sussex - Helen Crabtree; Warwickshire - Mark Smith; Isle of Wight - James Gloyn; Wiltshire (north) - vacant (now Bill Quantrill); Wiltshire (south) - Andrew Carter (now Bill Quantrill); Wirral - Paul Miller; Worcestershire - Harry Green; Yorkshire (north-west) - Gerald Light; Yorkshire (Richmond) - John Edwards; Yorkshire (Harrogate) - Mike Brown; **Yorkshire (east)** - Cliff Carter (now vacant); **Yorkshire (Hull)** - Martin Chadwick (now vacant); Yorkshire (north-east) - Michael Carroll; Yorkshire (Bradford) - Mike Denton; Yorkshire (York) - Rob Chapman; Yorkshire (Leeds & Wakefield) - Peter Smale (now Claire Callaghan); Yorkshire (south-east & south-west) - Chris Falshaw (now Peter Brown).

 **SCOTLAND:** Aberdeen - John Littlejohn; Angus - Ken Slater; Argyll (south, Bute & Gigha) - Richard Allan; Argyll (north, Mull, Coll, Tiree & Morvern) - Sue Dewar; Ayrshire - Brian Broadley; Benbecula & the Uists - Brian Rabbitts; Borders - Steve Hunt; Caithness - Hugh Clark (now Donald Omand); Central - Neil Bielby; Dumfries - vacant (now Edmund Fellowes); 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 - John Knowler; Lewis & Harris - Yvonne Bunting (now Chris Reynolds); Lothian - Alan Heavisides; Moray & Nairn - Bob Proctor; Orkney - Colin Corse; Perthshire - vacant (now Richard Paul); 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 - 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 (now Geoff Gibbs); Montgomery - Jane Kelsall; Pembrokeshire - Annie Haycock (formerly Poole); Radnorshire - 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 (now Declan Coney).

**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: Andrew Carter, Cliff Carter, Martin Chadwick, Hugh Clark, Mick A'Court, Martin Coath, Derek Coleman, Chris Day, Pete Dwyer, Chris Falshaw, Peter Haveland, Roy Ledgerton, Mary Mooney, Phil Shearwood, Peter Smale, Eve Tigwell and Catherine Whitby. We pay special tribute to John Turner and Keith Woods, who sadly both died in 2005. We would also like to thank Penny Allwright, Richard Arnold, Peter Brown, Claire Callaghan, Declan Coney, Vic Fairbrother, Edmund Fellowes, Colin Gay, Sally Hunter, Stephen Jackson, Donald Omand, Richard Paul, Dave Piercy, Mike Pleasants, Bill Quantrill, Jean Roberts, Rachel Warren, Stephen Westerberg and Ian Woodward for kindly taking over as ROs since the 2005 season, and to Geoff Gibbs 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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