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RECENT CHANGES IN COMMON BIRD POPULATIONS

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The Breeding Bird Survey has now been running for more than a decade. *Mike Raven* and *David Noble* report on the results from 2004 and review the long-term trends.

CAMBIOS RECIENTES EN POBLACIONES DE AVES COMUNES
El conteo de aves reproductoras (BBS) en el Reino Unido ha sido implementado por más de una década. *Mike Raven* y *David Noble* informan sobre los resultados de 2004 y revisan las tendencias de largo plazo.

The BTO/JNCC/RSPB Breeding Bird Survey (BBS) is the main survey that tracks changes in numbers of widespread terrestrial bird species across the UK. Highquality information on the status of bird populations is fundamental to their conservation. BBS results are used by governments and non-governmental organizations to set conservation priorities.

Although many parts of the country have reached a near-optimum level of coverage, other areas are still in need of participants. We are particularly keen to increase the number of squares surveyed in Northern Ireland, Scotland and North East England, where increasing the coverage would allow us to monitor regional population changes of more bird species.

Do you live in one of these areas? Do you think you could help out? Contact your local Regional Organiser, Regional Representative or Mike Raven for more information about this survey.

SURVEY COVERAGE

Because of its careful design and simple methods, this survey continues to attract many participants. In the spring of 2004, more than 2,000 BBS observers collected information on bird numbers from a record total of 2,512 1-km squares. Record coverage was achieved in England (1,868 squares), Wales (252) and the Channel Islands (11), and there was good coverage in Scotland (274), Northern Ireland (101) and the Isle of Man (6). We are able to calculate population trends for a greater number of species, with trends produced for England, Scotland, Wales and Northern Ireland and the nine English Government Office Regions as well as for the UK overall.

SPECIES AND HABITAT COVERAGE

A total of 219 species was recorded in 2004 and, of these, 100 species were found in at least 40 squares. The population trends of five species of gull (Black-headed, Common, Herring, Lesser Black-backed and Great Black-backed) are no longer reported, as a large proportion of the counts are considered to be of non-breeding, wintering or migratory birds. 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.

Three species were recorded for the first time on BBS squares in 2004 (Glossy Ibis in Oxfordshire, Wryneck in Hampshire and records

of Bittern from four sites in Suffolk, Norfolk and North Lincolnshire), reflecting the upturn in the fortune of this species in the UK. Following on from the survey's first Hoopoe 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, Redbreasted Goose, Bar-headed Goose, Ruddy Shelduck, Wood Duck, Muscovy Duck, Marbled Duck, Reeves's Pheasant, Guineafowl and Peacock.

The habitat details from more than 23,000 200-m transect sections were recorded in 2004. Work is under way to use this extensive data set of habitat information to generate habitat-specific trends for individual species. This will further help us to identify possible reasons for population changes.

POPULATION TRENDS

Table 1 shows the population changes between the last two seasons (2003 and 2004) and for the entire survey period to date (1994 to 2004). Trends are estimated using a log–linear regression model that corrects for differences in coverage among regions. Across the UK, 49 species increased significantly, 23 species declined significantly, and 28 species showed no significant change in numbers between 1994 and 2004. The following are some of the more interesting ups and downs.

MIGRANTS BOUNCE BACK

Several migratory species of bird showed a marked increase in numbers between 2003 and 2004. Over three times as many Sand Martins were encountered (representing a massive increase of 247%) and numbers of Cuckoo (a species in long-term decline) were up by 31%. Whitethroats were up by 19%, Chiffchaff by 17% and Willow Warbler by 12%. Of 25 summer visitors from Africa that are monitored by the BBS, all but three increased in numbers between 2003 and 2004. For many migratory species, this year-to-year variation is driven predominantly by conditions on the African wintering grounds. Whitethroat, Cuckoo, Willow Warbler and Sand Martin all winter south of the Sahara, and years of poor rainfall have been shown to coincide with falls in the British breeding populations. The current increases presumably reflect better-than-averageconditions in Africa during the winter of 2003/04, a good breeding season in 2003, or maybe both.

LESSER REDPOLL

The Lesser Redpoll was newly classified as a distinct species as recently as 2001, and has been amber-listed in *Birds of Conservation Concern* on the basis that nearly one quarter of the European population resides in the UK. Numbers have declined significantly by 21% in the UK since 1994. Regionally, there have been declines of 29% in England and 20% in Scotland and, although neither of these results were significant, they do point towards a downward trend in both countries. Anecdotal evidence strongly suggests that Lesser Redpolls have declined dramatically as a breeding species in most southern and midland counties of England, to the point of near extinction in some. Historically, however, populations have shown cycles of expansion and contraction in lowland England. Numbers declined to a low point during the 1920s, after which an increase and expansion into lowland areas occurred from the 1950s until the mid-1970s, when the population was thought to be higher than at any time during the past 100 years. The joint Common Birds Census/BBS trend shows a massive 97% decline since 1977 and results from the Constant Effort Sites Scheme have shown that both productivity and survival rates have declined since the early 1980s.

YELLOW WAGTAIL

Of the 25 summer-visitor species monitored by the BBS, the Yellow Wagtail was the only one to show a substantial decline in numbers (down 13%) between 2003 and 2004. Numbers of Yellow Wagtail have declined by 27% in the UK since 1994, continuing a trend that started in the 1970s. Britain holds almost the entire population of the distinctive race *flavissima*, (aptly translated as "the yellowest") and so population changes in the UK are of special significance. This species has disappeared or become very scarce in many of the lowland wet meadow haunts where it was traditionally found only 20 years ago. Farmland drainage, the conversion of pasture to arable

land, the change from spring-sown to winter-sown cereals, and the loss of insects associated with cattle have been cited as potential causes. However, this species remains locally common in some intensively farmed areas, such as parts of the East Anglian fens.

SPARROWHAWK

Numbers of one of our most commonly encountered predators, the Sparrowhawk, fell by 17% between 2003 and 2004, accounting for most of the decline of 21% over the entire survey period (1994– 2004). Numbers fell by 21% in England over the same period, and in the English regions where enough records were obtained to calculate a trend, declines were noted in the East of England (down 41%) and South West (down 31%). Sparrowhawk numbers increased strongly in the UK during the 1970s and 1980s as the population recovered from the crash caused by organochlorine pesticides in the 1950s and 1960s. During the recovery period, many eastern counties from which it had all but disappeared were recolonised. Numbers reached a peak in the mid-1990s, after which they have remained relatively stable, until now.

GOOD NEWS FOR CORN BUNTING?

Numbers of Corn Bunting increased by 21% between 2003 and 2004. After many years of decline, the first signs of a possible recovery are emerging from BBS data (see Figure 1). In the period between the mid- 1970s and 2000, Corn Bunting numbers fell by nearly 90%, with many parts of the country being abandoned. The causes of this dramatic decline are linked to agricultural intensification, and in particular, the reduced amount of seed available to them in the winter. However, numbers have begun to stabilise in the last four years, possibly in response to conservation efforts and sympathetic farm management. With the anticipated widespread adoption of newly introduced Government-funded agri-environment schemes, such as the Entry Level Scheme (ELS) in England, which encourage farmers to adopt more 'wildlife friendly' farm management options, we may yet see a recovery in the fortunes of our largest bunting.

PIED FLYCATCHER

Numbers of Pied Flycatcher have declined significantly by 35% on BBS sites in the UK since 1994 (see Figure 2). In common with Wood Warbler, which has experienced a decline of 55% over the same period (see Figure 3), both species have predominantly western distributions. A

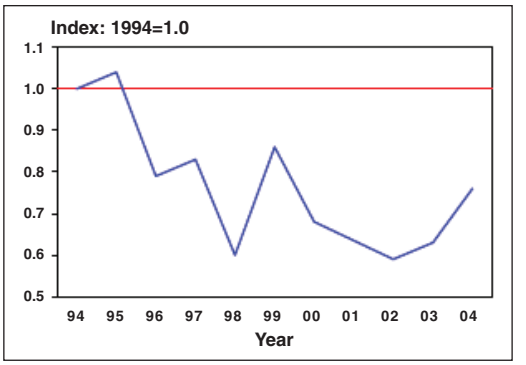

FIGURE 1. Corn Bunting: UK BBS index 1994–2004.

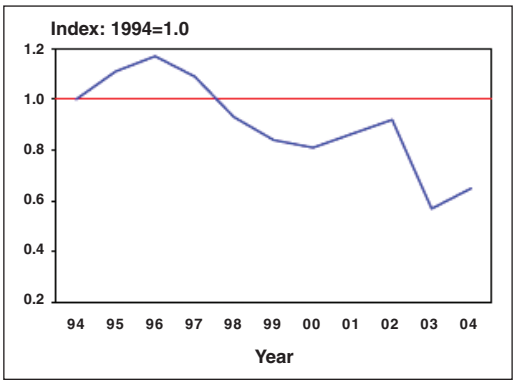

FIGURE 2 .Pied Flycatcher: UK BBS index 1994–2004.

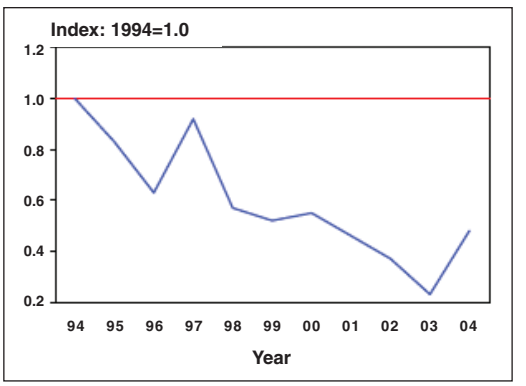

FIGURE 3. Wood Warbler: UK BBS index 1994–2004.

TABLE 1. Population changes of common and widespread species 2003–04 and 1994–2004.

Species	Sample	Change 2003-2004	Change 1994-2004	lcl 1994-2004	ucl 1994-2004
Little Grebe	52	–14	24	–11	73
Great Crested Grebe	58	97*	38*	5	80
Cormorant	166	22	40*	19	66
Grey Heron	513	–16	17*	5	31
Mute Swan	185	–14	0	–14	16
Greylag Goose	99	–5	179*	119	257
Canada Goose	331	–31*	74*	53	98
Shelduck	118	2	–38*	–49	–26
Mallard	982	–2	23*	15	31
Tufted Duck	124	–13	27*	4	56
Sparrowhawk	277	–17	–21*	–32	–8
Buzzard	544	0	53*	38	68
Kestrel	528	–14	–19*	–27	–10
Red Grouse	101	–22	–4	–23	19
Red-legged Partridge	404	18	53*	37	70
Grey Partridge	212	13	–30*	–40	–17
Pheasant	1318	5	39*	32	46
Moorhen	526	–5	25*	13	38
Coot	205	–11	77*	53	105
Oystercatcher	244	9	–5	–14	4
Golden Plover	53	12	2	–23	36
Lapwing	559	–1	–13*	–20	–6
Snipe	124	8	54*	29	84
Curlew	431	–10	–34*	–39	–28
Redshank	70	58	23	–2	54
Common Sandpiper	60	–4	–15	–34	8
Common Tern	48	19	17	–14	59
Feral Pigeon	555	–5	7	–3	17
Stock Dove	618	13	30*	18	43
Wood Pigeon	1913	–2	12*	8	16
Collared Dove	1044	8	41*	34	49
Turtle Dove	183	0	–45*	–54	–34
Cuckoo	712	31*	–19*	–26	–12
Little Owl	91	–17	–14	–34	12
Tawny Owl	77	–13	–38*	–54	–18
Swift	870	8	–22*	–28	–15
Kingfisher	43	–25	–11	–40	32
Green Woodpecker	592	6	34*	23	47
Gt. Spotted Woodpecker	666	13	108*	90	129
Skylark	1407	3	–10*	–13	–6
Sand Martin	99	247*	84*	48	127
Swallow	1486	11	22*	16	28
House Martin	766	11	31*	20	42
Tree Pipit	119	18	16	–4	40
Meadow Pipit	640	–4	0	–5	5
Yellow Wagtail	152	–13	–27*	–38	–14
Grey Wagtail	167	–29	14	–6	38
Pied Wagtail	1015	–10	21*	13	30
Dipper	46	–22	4	–29	52
Wren	1879	–3	14*	11	18
Dunnock	1568	–8	13*	8	19
Robin	1813	–3	15*	11	19
Redstart	132	19	30*	10	55

TABLE 1. (Continued)

Species	Sample	Change 2003-2004	Change 1994-2004	lcl 1994-2004	ucl 1994-2004
Whinchat	74	4	–15	–33	8
Stonechat	94	7	135*	78	209
Wheatear	243	11	7	–6	21
Blackbird	1896	–3	17*	14	20
Song Thrush	1488	–5	14*	8	20
Mistle Thrush	992	–2	–2	–9	6
Grasshopper Warbler	60	54	59*	17	118
Sedge Warbler	248	22	15*	2	31
Reed Warbler	92	28	48*	22	78
Lesser Whitethroat	209	13	–30*	–41	–18
Whitethroat	1024	19*	39*	31	48
Garden Warbler	373	14	–4	–14	9
Blackcap	1123	12	54*	45	63
Wood Warbler	53	109*	–52*	–64	–35
Chiffchaff	1040	17*	76*	66	86
Willow Warbler	1205	12*	0	–4	5
Goldcrest	582	–4	60*	47	74
Spotted Flycatcher	194	12	–35*	–45	–23
Pied Flycatcher	41	14	–35*	–53	–10
Long-tailed Tit	677	0	12*	1	24
Marsh Tit	126	4	26*	1	56
Willow Tit	54	–26	–65*	–75	–50
Coal Tit	585	–12	14*	5	23
Blue Tit	1772	–2	17*	13	22
Great Tit	1632	5	35*	29	41
Nuthatch	325	7	52*	34	73
Treecreeper	276	–5	7	–8	25
Jay	553	5	1	–9	11
Magpie	1470	–3	–1	–5	4
Jackdaw	1256	–3	19*	12	26
Rook	1038	–12	–3	–10	6
Carrion Crow	1795	1	11*	6	17
Hooded Crow	114	–10	–13	–31	9
Raven	182	–6	91*	58	130
Starling	1499	–5	–30*	–34	–25
House Sparrow	1275	–1	–3	–7	2
Tree Sparrow	136	–1	48*	22	80
Chaffinch	1898	0	9*	6	12
Greenfinch	1387	4	37*	30	44
Goldfinch	1104	–6	28*	19	37
Siskin	112	–12	–40*	–52	–25
Linnet	1045	–14*	–14*	–20	–8
Lesser Redpoll	121	–29	–21*	–37	–1
Bullfinch	463	11	–9	–18	2
Yellowhammer	1008	–7	–22*	–26	–18
Reed Bunting	351	–9	4	–6	16
Corn Bunting	138	21	–24*	–35	–10

Population changes of widespread species 2003–04 and 1994–2004. The sample size indicated is the mean number of squares occupied each year over the 10 years (excluding 2001, and squares which were surveyed in only one year). The figures presented are the percentage changes in population levels for the respective time periods: those marked with an asterisk were significantly different at a 5% level. For the 1994–2004 period, the lower and upper 95% confidence limits (lcl, ucl) are given. Species in bold are red-listed, and species in italics amber-listed in *The Population Status of Birds in the UK, Birds of conservation concern: 2002–2007.*

large proportion of the UK Pied Flycatcher population resides in Wales, with smaller numbers in southwest England, the Lake District and southwest Scotland. Even in the Welsh strongholds, where there is not quite enough data to produce trends, the occurrence of this species has declined from 20% of squares in 1994 to only 8% in 2004. Very little historical data exist for Pied Flycatcher, although a small expansion in range was noted between the two BTO breeding atlases (1968–72 and 1988–91), possibly aided by the provision of nest boxes at new sites. The cause of this decline remains largely unknown, but hopefully, results from the Scarce Woodland Bird Survey being run in 2005 and 2006 will shed light on the habitat needs of this species.

BBS-ONLINE UPDATE

Last year (2004) was the first full survey year for which BBS observers were able to submit their counts electronically using the BBS-Online application. Uptake of the new system was higher than anticipated, with data submitted electronically for 29% of the total number of squares surveyed. As well as allowing BBS observers to submit their BBS bird, habitat and mammal data electronically, the application also allows the user to view historical data for their squares. The BBS web pages, which are available to all visitors to the BTO website, provide a wide range of information about the scheme, including details on how to participate, species distribution maps, trends tables and graphs and county and regional species lists. 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 to take part in BBS using the web application. Many thanks to the RSPB for generously funding the development of BBS-Online, and to members of the BTO's Information Systems Unit who have continued to develop the system and provided technical support over the past year. For more information about BBS-Online, visit www.bto.org/bbs

THE FUTURE

The success of BBS in 2004 is mainly due to the BTO's network of Regional Organisers who have recruited many new BBS observers across the UK. Other new volunteers have been encouraged to participate in the scheme via the BTO's website, and by e-mailing Migration Watch users. By continuing to increase BBS coverage across the UK and in a variety of other habitats, we are improving our ability to monitor what is happening to bird populations. Birdwatchers can make few greater contributions to conservation science.

ACKNOWLEDGEMENTS

We are extremely grateful to all the ROs, observers and BTO members who took part in the BBS last year. We would also like to thank the farmers and landowners for their support and co-operation in allowing BBS volunteers onto their land. The BBS continues to be an enormous success and is now the primary source of information on national and regional trends in common breeding birds.

If you would like to take part in the scheme, please contact your local RO, Regional Representative or Mike Raven at BTO HQ (e-mail: bbs@bto.org).

The BBS is a partnership between the BTO, JNCC and RSPB.

FURTHER READING

Baillie, *et al.* (2005) *Breeding Birds in the Wider Countryside: their conservation status 2004.* BTO Research Report 385. BTO, Thetford. (www.bto.org/birdtrends)

Raven, M J, Noble, D G & Baillie, S R (2005). *The Breeding Bird Survey 2004.* BTO Research Report 403. BTO, Thetford. (www.bto.org/bbs/results).

BBS METHODS

The BBS is an annual survey with randomly selected 1-km squares allocated to participants within each BTO Region by volunteer Regional Organisers (ROs). It uses line-transect methods, with each observer visiting their square on two occasions between April and June to count all the birds they see and hear along a 2-km route.