

CHANGES IN BREEDING BIRD POPULATIONS, 1998-99

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The 1998-99 Common Birds Census revealed significant annual increases for a number of species. *Fiona Sanderson, John Marchant and David Glue* report the results of the penultimate year of this long-running survey

CAMBIOS EN LAS POBLACIONES DE AVES REPRODUCTORAS, 1998-99

El Censo de Aves Comunes (Common Bird Census) de 1998-99 mostró aumentos anuales significativos en varias especies. *Fiona Anderson, John Marchant y David Glue* informan sobre los resultados del penúltimo año de este largo muestreo.

EVOLUTION DES POPULATIONS D'OISEAU NICHEURS, 1998-99

Le Common Bird Census de 1998-99 a révélé un accroissement annuel significatif des populations de plusieurs espèces. *Fiona Sanderson, John Marchant et David Glue* exposent les derniers résultats de cette étude à long terme.

VERÄNDERUNGEN DER BRUTBESTÄNDE VON 1998-99.

Das Monitoring häufiger Brutvogelarten CBC ergab von 1998-99 signifikante Bestandszunahmen bei einer Reihe von Arten. *Fiona Sanderson, John Marchant und David Glue* berichten über die Ergebnisse des vorletzten Jahres dieses Langzeit-Monitoring programms.

The Common Birds Census (CBC) has been monitoring common and widespread breeding birds in the UK since 1962. Its main focus is on farmland and woodland habitats. The data generated by the CBC are used for a wide variety of applications, from alerting the government to significant changes in bird populations to research on the details of bird-habitat interactions. One of the most recent uses of CBC data was a report published jointly by the RSPB and BTO, *The State of the UK's Birds 1999*. This used information from the CBC and other surveys to show population trends amongst UK

birds and to highlight species most in need of conservation action due to declines in numbers or very small populations. A number of species monitored by the CBC are UK Biodiversity Action Plan priority species — particularly farmland species such as Grey Partridge, Tree Sparrow, Reed Bunting and Corn Bunting.

CHANGES FOR THE CBC

In 1994, the BTO/JNCC/RSPB Breeding Bird Survey (BBS) was introduced. This survey also monitors common and widespread breeding

birds. It does so in a different way to the CBC, and is more appropriate for the role of a national bird monitoring scheme for several reasons. Firstly, the design of the BBS allows us to sample all habitats, rather than just farmland and woodland. This means that species such as Song Thrush and Starling, which we know to have been declining on farmland for some time and which use urban and suburban sites extensively, can be more effectively monitored. Secondly, the BBS uses a random sampling strategy and therefore achieves a more complete and representative coverage of the UK, again improving the accuracy of our monitoring. We have been running the two surveys concurrently in order to obtain a period of overlap in the two data series. This will enable us to link the population indices generated by the two schemes and to produce an unbroken index for many species extending back to 1962.

The CBC will cease to run as a national monitoring scheme after the 2000 breeding season — as those of you who read David Noble’s article “End of an era? Common Birds Census — the final year” in *BTO News* 227 will know — and the BBS will take over. However, there is a great deal of potential for CBC-type surveys to be used in other ways and we see this as an opportunity to expand upon its usefulness in the future. Of course all the data already collected over the past 30-plus years will continue to be extremely important, both in linking indices with the BBS data and in their own right for research projects.

TERRITORY MAPPING

The CBC is a mapping census. CBC volunteers select a patch of farmland or woodland that is

typical for their area, and survey the plot eight or more times each breeding season, mapping all birds that they come into contact with. Species maps, showing the contacts with each species during all the visits, are compiled and analysed to assess the number and positions of territories held by each species. Mapping censuses provide us with very detailed information about the numbers, location, habitat preferences and density of birds.

We have so far received 212 CBC returns for 1999. Table 1 shows the geographical distribution and habitat composition of CBC plots used in calculating the population indices. Woods and farms are represented about equally. There is a slight bias towards south and east England for CBC plots, reflecting the higher availability of volunteers in these regions.

SIGNIFICANT CHANGES

The results of the 1998 to 1999 comparison are shown in Table 2 for all plots, and Tables 3 and 4 respectively for selected species for which we have presented the results for farmland and woodland plots separately. These species are those that show a slightly different long-term trend on farmland and woodland.

There were 16 species that showed significant population changes on all CBC plots that were surveyed in both 1998 and 1999. Fourteen of these increased. These changes are significant in the sense that the 95% confidence limits both show the same directional component as the estimate of the trend shown — we are therefore 95% sure that the increase or decrease is a genuine indication of population change rather than just a chance event. The only significant decreases were for Red-legged Partridge and

TABLE 1. Geographical distribution and habitat composition of plots used in the 1998-99 comparison.

Region	Farmland		Woodland		Special		All plots	
	No. of plots	%	No. of plots	%	No. of plots	%	No. of plots	%
Southern England	22	30	28	36	8	62	58	35
Eastern England	22	30	16	21	1	8	39	24
Western England	11	15	9	12	1	8	21	13
Northern England	12	16	14	18	2	15	28	17
Wales	4	5	3	4	0	0	7	4
Scotland	2	3	6	8	1	8	9	5
Northern Ireland	1	1	1	1	0	0	2	1
Totals + % of all plots	74	45	77	47	13	8	164	100

TABLE 2. Population changes as measured by the CBC on all habitats, 1998-99.

Species	25-year trend 1973-98	1998 totals	1999 totals	% change
Little Grebe	⇒	12	12	0 !
Mute Swan	↑	31	30	-3 !
<i>Shelduck</i>	↗	30	41	+37 !
Mallard	↗	299	332	+11
Tufted Duck	↑	34	32	-6 !
Sparrowhawk	↑	29	37	+28
Buzzard	↑	53	59	+11
<i>Kestrel</i>	↘	63	57	-10
Red-legged Partridge	↘	82	64	-22 ! *
Grey Partridge	↓	41	37	-10 !
Pheasant	⇒	427	405	-5
Moorhen	⇒	180	190	+6
Coot	⇒	76	84	+11 !
<i>Lapwing</i>	↘	77	85	+10 !
<i>Woodcock</i>	↓	10	12	+20 !
<i>Curlew</i>	↘	42	38	-10 !
<i>Stock Dove</i>	↗	149	181	+21 *
Woodpigeon	↑	1124	1164	+4
Collared Dove	↑	136	152	+12
Turtle Dove	↓	54	63	+17 !
Cuckoo	↘	70	75	+7
Little Owl	⇒	19	20	+5 !
Tawny Owl	⇒	46	48	+4
Green Woodpecker	↗	123	136	+11
Great Spotted Woodpecker	↗	145	154	+6
Lesser Spotted Woodpecker	↓	9	8	-11 !
Skylark	↓	665	627	-6
<i>Swallow</i>	↗	226	280	+24 *
House Martin	⇒	78	99	+27 !
Tree Pipit	↓	28	34	+21 !
Meadow Pipit	↘	111	127	+14
Yellow Wagtail	↘	60	56	-7 !
Grey Wagtail	⇒	15	20	+33 !
Pied Wagtail	⇒	104	115	+11
Wren	⇒	3056	3823	+2 *
<i>Duncock</i>	↘	968	1045	+8 *
Robin	⇒	2900	3220	+11 *
<i>Redstart</i>	↑	96	110	+15 !
<i>Blackbird</i>	↘	2167	2304	+6 *
Song Thrush	↓	503	541	+8
Mistle Thrush	↘	150	148	-1
Sedge Warbler	⇒	205	231	+13
Reed Warbler	↑	423	413	-2 !
Lesser Whitethroat	⇒	48	72	+50 *
Whitethroat	⇒	572	556	-3
Garden Warbler	↗	242	239	-1
Blackcap	↗	952	998	+5
Chiffchaff	↗	821	582	-29 *
Willow Warbler	↘	1117	1184	+6
Goldcrest	↓	230	314	+37 *
Spotted Flycatcher	↓	49	57	+16
Long-tailed Tit	⇒	213	276	+30 *
<i>Marsh Tit</i>	↓	81	81	0

TABLE 2. Continued.

Species	25-year trend 1973-98	1998 totals	1999 totals	% change
<i>Willow Tit</i>	↓	17	12	-29 !
Coal Tit	⇒	325	317	-2
Blue Tit	⇒	2212	2151	-3
Great Tit	⇒	1310	1415	+8 *
Nuthatch	↑	194	183	-6
Treecreeper	⇒	140	159	+14
Jay	⇒	145	133	-8
Magpie	↗	398	405	+2
Jackdaw	↗	274	330	+20 *
Carriion Crow	↗	406	454	+12 *
<i>Starling</i>	↓	313	303	-3
House Sparrow	↓	235	262	+11
Tree Sparrow	↓	16	20	+25 !
Chaffinch	⇒	2601	2642	+2
Greenfinch	⇒	328	377	+15 *
<i>Goldfinch</i>	⇒	176	209	+19
Linnet	↓	240	299	+2 *
Bullfinch	↓	152	163	+7
Yellowhammer	↓	431	449	+4
Reed Bunting	↓	168	162	-4
Corn Bunting	↓	38	46	+21 !

Key to Tables 2, 3 and 4

25-year trend, 1973-98:

- ↓ = strong decrease > 50%
- ↘ = moderate decrease 25 to 50%
- ⇒ = little change -25 to +33⅓%
- ↗ = moderate increase 33⅓ to 100%
- ↑ = strong increase > 100%

Significance:

- * significant at the 5% level or above
- ! small sample size (between 10 and 29 plots)

Species in **bold** are *Birds of Conservation Concern* red-listed or within Tables 1-3 on the list of *Birds of Conservation Importance* (high conservation concern)

Species in *italics* are *Birds of Conservation Concern* amber-listed or within Table 4 on the list of *Birds of Conservation Importance* (medium conservation concern)

TABLE 3. Population changes of selected species in farmland habitats as measured by the CBC.

Species	25-year trend 1973-98	1998 totals	1999 totals	% change
Cuckoo	⇒	39	47	+21
<i>Green Woodpecker</i>	↗	47	45	-4
<i>Blackbird</i>	↘	1040	1088	+5
Song Thrush	↓	174	193	+11
Mistle Thrush	↘	67	61	-9
Whitethroat	↑	397	378	-5
Garden Warbler	↗	78	77	-1
Willow Warbler	⇒	421	470	+12 *
Goldcrest	↘	38	59	+55 *
Treecreeper	↘	24	36	+50 ! *
Jay	⇒	32	31	-3 !
Greenfinch	⇒	229	275	+20 *
Bullfinch	↓	40	42	+5
Yellowhammer	↘	352	361	+3

For Key to symbols, see Table 2

TABLE 4. Population changes of selected species in woodland habitats as measured by the CBC.

Species	25-year trend 1973-98	1998 totals	1999 totals	% change
Cuckoo	↘	22	20	-9 !
<i>Green Woodpecker</i>	⇒	68	81	+19 *
<i>Blackbird</i>	⇒	981	1056	+8 *
Song Thrush	↘	289	310	+7
Mistle Thrush	⇒	76	80	+5
Whitethroat	⇒	91	97	+7 !
Garden Warbler	⇒	140	136	-3
Willow Warbler	↘	622	637	+2
Goldcrest	↓	190	251	+32 *
Treecreeper	⇒	111	115	+4
Jay	⇒	105	97	-8
Greenfinch	⇒	72	72	0
Bullfinch	↓	98	107	+9
Yellowhammer	↓	40	46	+15 !

For Key to symbols, see Table 2

Chiffchaff. Chiffchaff was also down on Constant Effort Sites in 1999 (see *BTO News* 227, "Wrens rocketing and Robins bobbin"), but the reasons for this are unclear. However, Chiffchaff populations have been buoyant in recent years and we expect this bird to bounce back from 1999's losses.

Of the 14 species where indices are shown separately for farmland and woodland (see Tables 3 and 4), Willow Warbler and Treecreeper were additional species that showed significant increases on farmland alone, whilst on woodland plots alone Green Woodpecker was up significantly. Tables 3 and 4 also illustrate that the significant change in Greenfinch populations is attributable to increase on farmland alone.

END OF THE CENTURY ALERTS

Nineteen species monitored by the CBC have shown population decreases of more than 50% during the 25 years 1973–98. Six of these declined by more than 50% in just ten years 1988–98: Tree Sparrow, Grey Partridge, Spotted Flycatcher, Tree Pipit, Willow Tit and Lesser Spotted Woodpecker. We have recently issued high national alerts for these 19 species, based on CBC data. In addition we have issued alerts for Redpoll (not tabulated here because it is now too scarce on CBC plots to have been well monitored in 1998–99) and Whitethroat, which

shows a historical decline of more than 50% since 1968 but has been slowly increasing since the early 1970s.

Ten of these species are already red-listed Birds of Conservation Concern. Of these species the numbers of Grey Partridge, Skylark and Reed Bunting were down in 1999 on 1998's totals. Turtle Dove, Song Thrush, Spotted Flycatcher, Tree Sparrow, Linnet, Bullfinch and Corn Bunting all increased in number — Linnet significantly.

As well as these red-listed species, we also issued high alerts for Tree Pipit, Willow Tit, Lesser Spotted Woodpecker, Woodcock, Starling, Goldcrest, Yellowhammer, Marsh Tit and House Sparrow. Of these species, Willow Tit, Lesser Spotted Woodpecker and Starling continued to decrease between 1998 and 1999; Tree Pipit, Yellowhammer and House Sparrow numbers went up slightly and Goldcrest increased significantly. Marsh Tit counts remained about the same.

Although Linnet increased in number significantly between 1998 and 1999, the long-term trend is still downward, as can be seen in Figure 1. Although we are interested in year-to-year fluctuations too, it is the long-term changes in populations that are most relevant for conservation purposes. Year-to-year factors such as particularly harsh or mild winters can have significant short-term effects on populations of birds, particularly small-bodied resident species

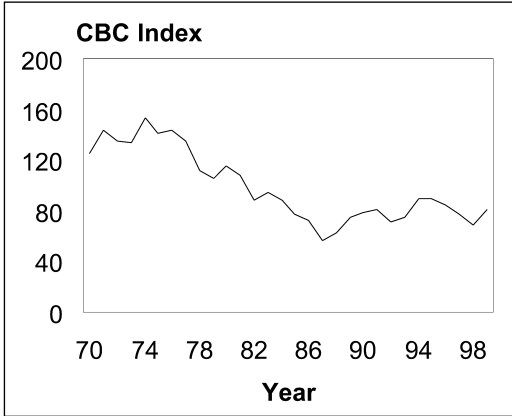


FIGURE 1. CBC index for Linnet, 1970-99.

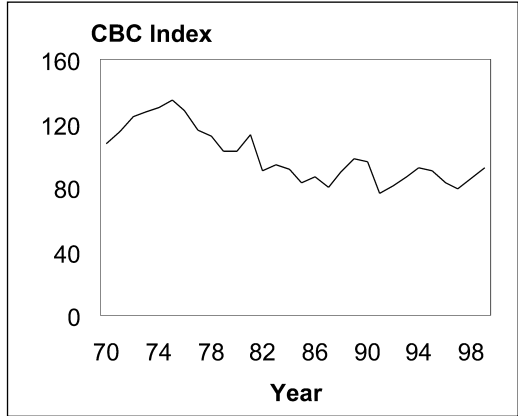


FIGURE 2. CBC index for Dunnock, 1970-99.

such as Wren and Goldcrest. Although Linnet populations may be stabilising, it is too soon to be complacent with regard to their recovery. The decrease in Linnet populations is linked to an increase in herbicide use, which kills the weeds that they feed on. However, Linnets may benefit from increased sowing of oilseed rape, which they can use as a food source, and from set-aside, a preferred feeding habitat (see *BTO News*

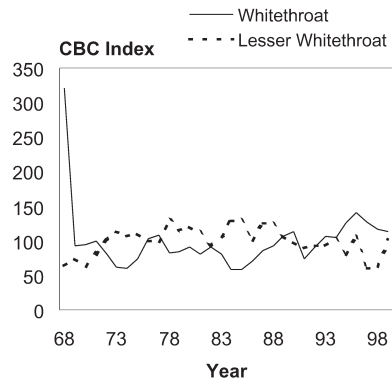
216/217, "The 1996-97 Set-aside project: the final reckoning"). We shall continue to observe populations of this attractive species closely.

WOODLAND BIRDS

Recent research has rightly focused on the dramatic declines in farmland birds since the 1970s. However, the *State of the UK's Birds 1999*

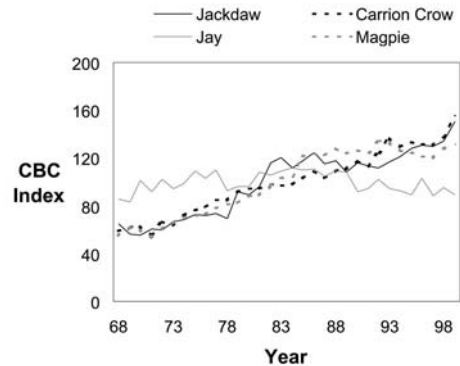
WHITETHROATS' FORTUNES CROSS A CONTINENT

Surely no other two UK birds, taxonomically so close as Common and Lesser Whitethroat, and breeding alongside one another in summer, can boast such striking contrasts in status in the short-term — governed largely, it seems, from different wintering quarters. Formerly one of the commonest of hedgerow species on CBC plots, the Common Whitethroat population plummeted between the 1968 and 1969 breeding seasons, drawing attention to the now well-documented impact of African drought on this and other trans-Saharan migrants, including Sedge Warbler and Yellow Wagtail, that winter largely in West Africa. Common Whitethroat populations have fluctuated around a new lower level following the 1969 crash and subsequent gains have been related to improved rainfall in drought-stricken areas. For Lesser Whitethroat, the CBC has detected a series of population decreases, sometimes between adjacent years (e.g. 38% 1966-67, 22% 1986-87 and, most recently, 43% 1996-97). Population upturns of 30% in 1987 and 50% in 1999 have helped maintain overall stability. Lesser Whitethroats migrate southeastwards in autumn to winter in Sudan and Ethiopia, and have been completely unaffected by the rainfall changes in West Africa. It may be that the periodic and well-publicised rainfall deficits in the Horn of Africa are linked to the population fluctuations we observe, or perhaps spring weather across Europe influences the numbers that reach the UK. These theories deserve further study. *David Glue*



CORVIDS ADAPT BY VARYING DEGREES

Intelligent and versatile, members of the crow family in general have benefited to varying degrees from reduced levels of systematic persecution from game-preserving interests since World War II, as detected for four species with contrasting life-styles by the CBC (see graph). The omnivorous and opportunistic Magpie has increased strongly in numbers in farm, wood and urban habitats alike, since the start of the CBC in the 1960s, though population levels have stabilised in the 1990s. Jackdaw numbers surged from the mid 1970s, and again following mild wet winters of the 1990s. Carrion Crow populations have demonstrated a steady increase as birds have spread into urban habitats and into open and even tree-less country. This corvid trio, along with Rook, have shown a willing ability to exploit foods provided in gardens or on rubbish tips at times of stress during the year, especially while feeding young or in severe winter weather. The arboreal Jay has spilled over increasingly into farmland and some gardens in the breeding season, but a relatively more restricted diet, and generally more cautious nature, may well have contributed towards a population that is generally stable. The CBC population findings for 1999 reflect these general trends in corvid fortunes: Magpie a small increase (2%), Jay a modest reduction (-8%), and increases for Jackdaw (20%) and Carrion Crow (12%) in the combined habitats surveyed. *David Glue*



report shows that woodland birds demonstrate a similar, if shallower, decline over the same period. This is not to say that many of the familiar, common woodland species are not doing well. In 1998-99, Wren, Robin, Dunnock, Great Tit and Long-tailed Tit were all up significantly. Dunnock has been decreasing in population long-term, but Figure 2 shows that this decline may now be levelling out, although this species has clearly been subject to recent short-term population fluctuations. Long-term, species such as Nuthatch, Green and Great Spotted Woodpecker have increased by more than 50% over the last 25 years. Many small woodland residents, particularly species like Goldcrest and Wren, and probably Dunnock, have benefited from the mild winters of the last few years.

However, a variety of woodland species measured by the CBC have shown a downward trend. These include Woodcock, Spotted Flycatcher, Marsh Tit, Willow Tit and Lesser Spotted Woodpecker. It is not clear why these species have declined so substantially whilst

others are doing so well. Possible reasons suggested include wet springs affecting breeding success (Spotted Flycatcher) and interspecific competition (between Marsh Tit and other tit species). For farmland birds, agricultural intensification is implicated in the decline of many species, but in woodland species the reasons may be more complex. Hopefully, current and future research by the BTO may elucidate the factors involved.

MANY THANKS

As ever, we are extremely grateful to all our CBC surveyors for their continued hard work. The following observers began new CBCs in 1999: Bedfordshire R Buisson; Buckinghamshire I Bell; Cambridgeshire C Gilbert; R Scott; Lancashire P Kenyon; Lothian I Mitchell; Merseyside P Greenslade; Northumberland D Ogle; North Yorkshire A Shadrack; Nottinghamshire J Nixon.

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