

## IMPROVED BREEDING SUCCESS IN 2002

DAWN BALMER AND LINDA MILNE

*British Trust for Ornithology  
The National Centre for Ornithology  
The Nunnery, Thetford  
Norfolk, IP24 2PU, United Kingdom*

*Dawn Balmer* of the BTO's Demography Unit and *Linda Milne* of the Ringing Unit report on population and productivity changes between 2001 and 2002 and other news from the Constant Effort Sites Scheme.

### MEJORA EN EL ÉXITO REPRODUCTIVO EN 2002

Dawn Balmer de la Unidad de Demografía del BTO y Linda Milne de la Unidad de Anillamiento informan sobre cambios poblacionales y productivos entre 2001 y 2002 y otras noticias del programa de Sitios de Esfuerzo Constante (CES).

The Constant Effort Sites Scheme (CES) is an essential part of the BTO's Integrated Population Monitoring Programme and is an established and well-respected method for monitoring population size, breeding success and survival for common songbirds in scrub, woodland and reedbed habitats. CES ringing involves making 12 visits to each site, spread evenly between late April and the end of August, which means for most species both early and late breeding attempts are monitored.

Results from CES, together with information from other long-running BTO schemes, can be found in the Wider Countryside Report on the BTO web site ([www.bto.org/birdtrends](http://www.bto.org/birdtrends)).

New CES sites are welcomed from throughout Britain and Ireland, please contact Dawn Balmer at BTO Thetford HQ for further information. If you are interested in finding out more about ringing in general, then please contact the Ringing Unit at BTO Thetford HQ.

### COVERAGE IN 2002

The results that follow come from the 105 CES

sites that have submitted data for 2002 so far: 83 from England, 13 from Scotland, 4 from Wales and 5 from Ireland. Seven sites were operated for the first time in 2002. A few sites could not be covered in 2002 due to extensive flooding, but it seems likely that there has been a reduction in the number of sites in the scheme. We hope ringers will re-start their sites in 2003 and that new sites will join this important scheme. The habitats covered are comparable to previous years, with the majority of sites located in reedbed, wet and dry scrub and a small number of sites in deciduous woodland. As usual, 90% of the CES data were received in electronic format and we would like to thank all ringers and helpers who computerised their data so promptly.

### FEW ADULTS AFTER POOR BREEDING IN 2001

The last report on constant effort ringing (*BTO News* 239) documented a poor breeding season in 2001 for a broad range of species including both residents and migrants. For resident species, weather over the winter period was the

usual mix of cold, frosty and snowy conditions together with some milder, yet wet and windy periods. Many birdwatchers will remember the unseasonal warmth in late March bringing a whole host of early migrants and southern rarities to our shores, but also prompting a few resident species to initiate nesting. Given low productivity in 2001 and mixed winter weather, it is not too surprising that the adult population measured in 2002 was low compared with the previous year. Table 1 shows the changes in captures on CES sites from 2001–2002. There were statistically significant changes in adult abundance for nine species (one increase and

eight decreases). Bullfinch was the only species to show a statistically significant increase in adult numbers and is a welcome upturn for this species of high conservation concern which is in long-term decline. Of the eight species to show a significant decline in the numbers of adults caught between the two years, four were resident (Blackbird, Blue Tit, Great Tit and Chaffinch) and four were migrant species (Sedge Warbler, Reed Warbler, Garden Warbler and Willow Warbler). Although between year changes are of interest, it is the long-term trends for these species that are of far greater significance.

TABLE 1. Changes in captures on CES sites from 2001 to 2002.

Species	Adults		Juveniles		Adult Abundance		Productivity (juvs per adult)	
	n 2002	Total	n 2002	Total	% Change	Trend	% Change	Trend
Wren	104	640	102	1851	-5	→	+36 *	→
Dunnock	96	668	100	1063	0	→	+26 *	→
Robin	97	500	102	1796	-8	↑	+21 *	↓
Blackbird	99	921	89	653	-10 *	↓	+20 *	→
Song Thrush	77	300	71	229	+6	↓	0	→
Sedge Warbler	65	996	66	1471	-15 *	→	+34 *	↓
Reed Warbler	57	1524	54	1722	-20 *	↓	+31 *	→
Lesser Whitethroat	40	89	40	172	+6	↓	+15	→
Whitethroat	70	396	73	821	+5	→	+38 *	↓
Garden Warbler	67	278	67	314	-18 *	→	+21	↓
Blackcap	94	879	98	2232	-6	↑	+67 *	→
Chiffchaff	78	440	88	1671	+12	↑	+39 *	↓
Willow Warbler	76	1015	91	2013	-16 *	↓	+34 *	↓
Long-tailed Tit	90	436	86	1148	-7	→	+78 *	→
Willow Tit	10	18	20	66	-20	→	+140	→
Blue Tit	99	594	102	3132	-16 *	→	+127 *	↓
Great Tit	98	433	101	1706	-18 *	→	+59 *	↓
Treecreeper	38	74	77	273	-15	→	+55 *	→
Chaffinch	83	511	70	554	-32 *	→	+50 *	↓
Greenfinch	47	241	29	152	-12	↑	+43 *	↓
Goldfinch	31	99	20	53	-14	→	+42	↓
Linnet	10	22	5	9	-35	↓	-93 *	↓
Bullfinch	77	480	67	436	+17 *	↓	+50 *	→
Reed Bunting	65	358	45	374	-12	↓	+72 *	↓

n 2002 = number of sites operated in 2002 at which the species was captured

Total = total number of individuals captured on sites (for adults and juveniles separately)

% Change = percentage change between 2001 and 2002

\* = significant change at the 5% level

Long-term trend = long-term trend during the period of CES ringing See Wider Countryside Report on the BTO website for further details ([www.bto.org/birdtrends](http://www.bto.org/birdtrends))

↑ = long-term trend shows an increase

↓ = long-term trend shows a decline

→ = long-term trend shows stability

The CES Scheme probably provides the most comprehensive monitoring of Reed Warbler and Sedge Warbler populations because the methods are well suited for ringing in reedbed and wet scrub habitats. On CES sites, the numbers of adult Reed Warbler and Sedge Warbler caught show large inter-annual fluctuations. In the long-term, the trend for Sedge Warbler is fairly stable but the Reed Warbler trend shows a decline between 1983 and 2002 of 38%. Detailed analysis of BTO datasets has shown that much of the variation in population size for Sedge Warbler is related to changes in adult survival rates, which, in turn, are related to changes in rainfall on their wintering grounds in West Africa (Peach et al. 1991). The Migration Atlas has revealed that for Reed Warbler the extent of the wintering area is largely unknown. Further ringing expeditions to Africa are necessary.

Concern over the Willow Warbler population deepens as a further decline of 16% is recorded between 2001 and 2002 on the basis of the number of adults trapped. In the recent review *Population Status of Birds in the UK*, Willow Warbler was admitted to the Amber List and is now officially considered to be a species of medium conservation concern on the basis of the moderate (25–49%) decline in the UK breeding population in the last 25 years.

## BIRDS BREED BETTER IN 2002

After several years of poor or mixed breeding success, ringing on CES sites has shown improved productivity for a range of common songbirds (Table 1), resulting in record catches of juveniles on some long-running sites. Correspondence with ringers across the country, particularly those in Scotland, revealed that some areas had much better breeding success than others. Looking back at the weather in May, June and July in 2002 it is easy to see why breeding success can be so localised; torrential deluges, flash flooding and electrical storms affected some parts of the country but not others (it was also hot and sunny at times!). These conditions can quickly wipe out nests of ground-nesting species or soak open-nests as well as

making foraging for insects much more difficult.

There were statistically significant increases in productivity between 2001 and 2002 for 18 of the 24 species monitored, including both residents and migrants. Warm and settled weather in the second half of March prompted nest building and laying for early nesting species such as Robin and Blackbird and some early broods were evident in April.

Blue Tit and Great Tit, up 127% and 59% respectively between 2001 and 2002, were much more successful than the previous season and large roving tit flocks could be found during the autumn months. These short-term ups and downs in breeding success are interesting but generally relate to short-term weather patterns; the long-term trends for these species are of far greater significance. The CES Scheme continues to monitor Willow Tit, although the number of sites catching this species and the total number of birds caught is now very low. Willow Tit has recently been added to the Red List in the *Population Status of Birds in the UK* and is a species of high conservation concern.

Linnet was the only species to show a statistically significant decline in productivity. The number of Linnets caught on CES sites is very small, so the decline of 93% between 2001 and 2002 should be treated with caution.

## ACKNOWLEDGEMENTS

Many thanks to Dr Chris Wernham and Dr Rob Robinson for overseeing the running of the CES Scheme and to Dr Steve Freeman for developing the statistical procedure and for help with producing the results presented here. Jackie Coker and Viv Hiom kindly typed in CES data received in a non-computerised format.

The Constant Effort Sites Scheme is undertaken within the Partnership between the BTO and JNCC as part of its programme of research into nature conservation.

## REFERENCE

Peach, W J, Baillie, S R & Underhill, L. (1991). *Ibis* 133: 300–305.

### TRENDS OF OUR 'WINTER WARBLERS' ON CES SITES

Chiffchaff and Blackcap are now fairly familiar over-wintering species in the UK. The exact origins of the Chiffchaffs and Blackcaps that winter here have fascinated ornithologists for years.

Many of the Blackcaps originate from south central Europe; experiments by Peter Berthold in Germany and ringing recoveries have confirmed this. Interestingly a recent retrap of a Blackcap ringed as a juvenile on a CES site in Somerset (ringed 23 June 2001) and caught again at the same site on 26 December 2001 suggests that some locally hatched Blackcaps may be starting to winter in the same area. The origins of wintering Chiffchaffs are less clear because there are no winter recoveries in Britain and Ireland of birds ringed in the nest. We do know from other ringing, however, that a few Chiffchaffs present in Britain and Ireland during the breeding season are also found here in winter and given that a number of Scandinavian races have been identified in the winter months it is likely that our winter Chiffchaffs originate from many parts of the European range.

To summarise, we know that there is a wintering population of both species in Britain and Ireland and also that they both tend to be short-distance migrants, with the majority wintering in the Mediterranean basin and smaller numbers reaching North Africa and south of the Sahara. What do we know about them during the breeding season though? Looking at the long-term trends from CES has revealed some interesting patterns in both adult abundance (Figure 1) and productivity (Figure 2). Given that they winter in similar areas, they are likely to experience similar environmental conditions, which in turn will affect their chances of survival and ultimately the numbers of adult birds caught on CES sites. Figure 1 shows that changes in the number of Chiffchaff and Blackcap between years are indeed quite similar; both increased in numbers in 1987, remained stable and then numbers dropped sharply in 1992. Then followed a period of steady increase until the late 1990s when the numbers of adults caught dropped again. The pattern of productivity is also remarkably similar for the two species; both are insectivores and occupy scrub and woodland habitats. Chiffchaff starts breeding from late April, earlier than Blackcap which traditionally starts in late May, although there is evidence from the Nest Record Scheme that average laying date has advanced to early May. If the timing of breeding of these two species really has become more synchronised, then poor weather conditions during this period are likely to have a detrimental effect on the productivity of both species, which may in turn have implications for the number of wintering birds.

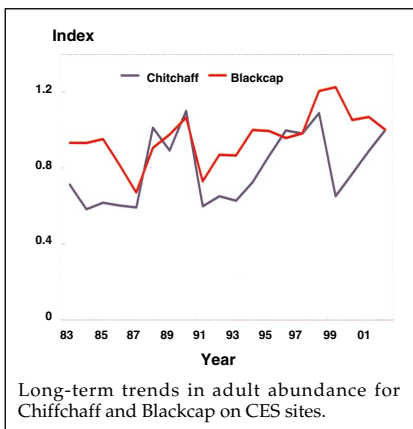


FIGURE 1. Chiffchaff and Blackcap trends in adult abundance.

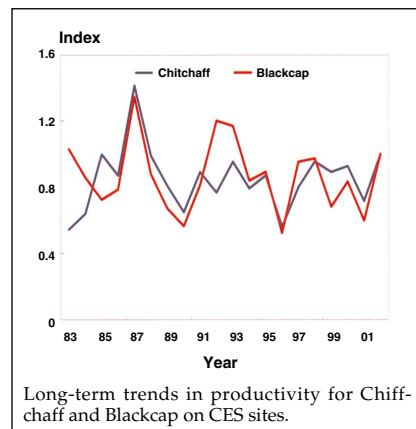


FIGURE 2. Chiffchaff and Blackcap trends in productivity.

## THANK YOU

As with all ongoing BTO projects, the success of the CES Scheme depends entirely on the dedication, enthusiasm and skill of its volunteers. We are grateful to all the ringers and helpers who participated in the scheme in 2002.

Whilst space prevents us from acknowledging all CES ringers, we would like to thank the following ringers and groups for their continued support: S R Baillie, N Brown, S Burton, C J Butterworth, Clyde RG, S G Dodd, S Downhill, Dubbs RG, J A G Dunlop, Durham RG, B Etheridge, Flyde RG, D M Francis, J Gates, G D O Grieve, P S Grosse, N Harrison, D R Hazard, Hersham RG, C J Hicks, P R Holmes, Hughenden RG, Ivel RG, B Kavanagh, Kenfig RG, Lackford RG, Leigh RG, Llangorse RG, B J Manton, Manx RG, Merseyside RG, D Mckee, M McNeely, Nat Hist Soc of Northumbria, Newbury RG, Northumbria RG, North Lancs RG, M E O'Donnell, R H Peart, R Proctor, D K Reed, D Roizer, Rye Meads RG, R M Shaw, R Smith, South West Lancs RG, C Stoate, Swaledale RG, Treswell Wood RG, R M A Ward-Smith, W J Webber, M Whitehouse.

(BO= Bird Observatory, RG= Ringing Group, RS= Ringing Station)