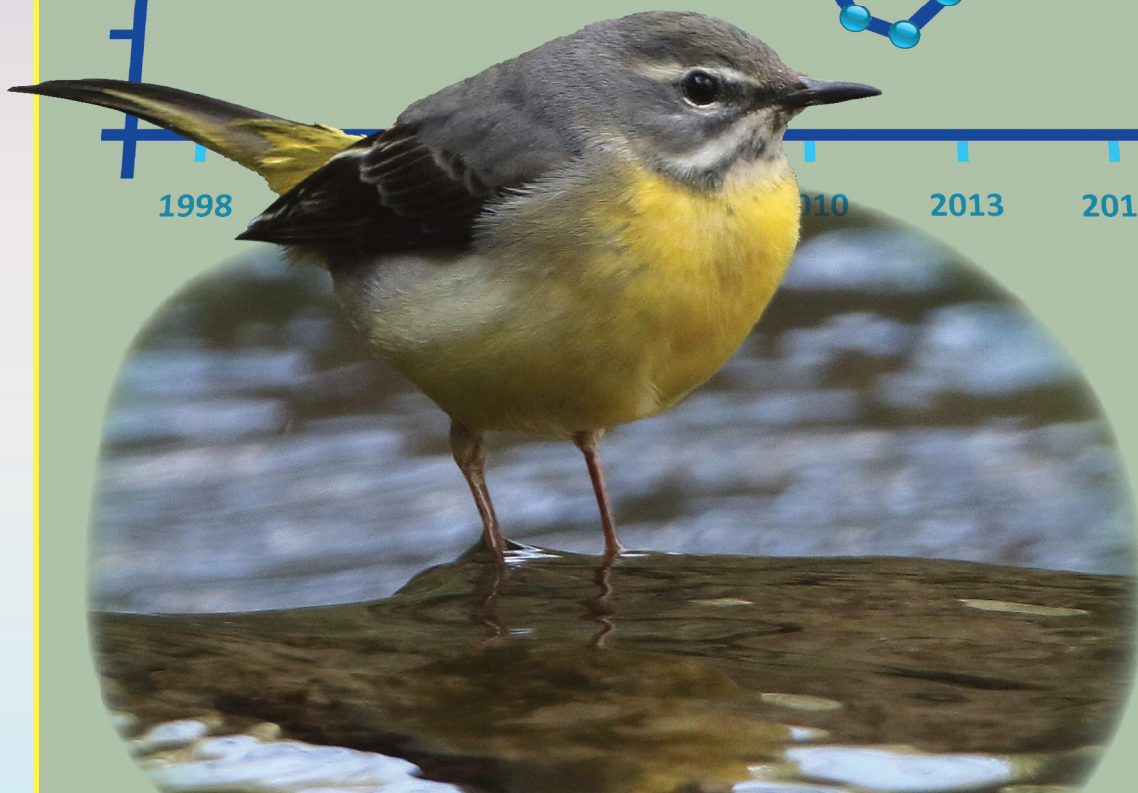
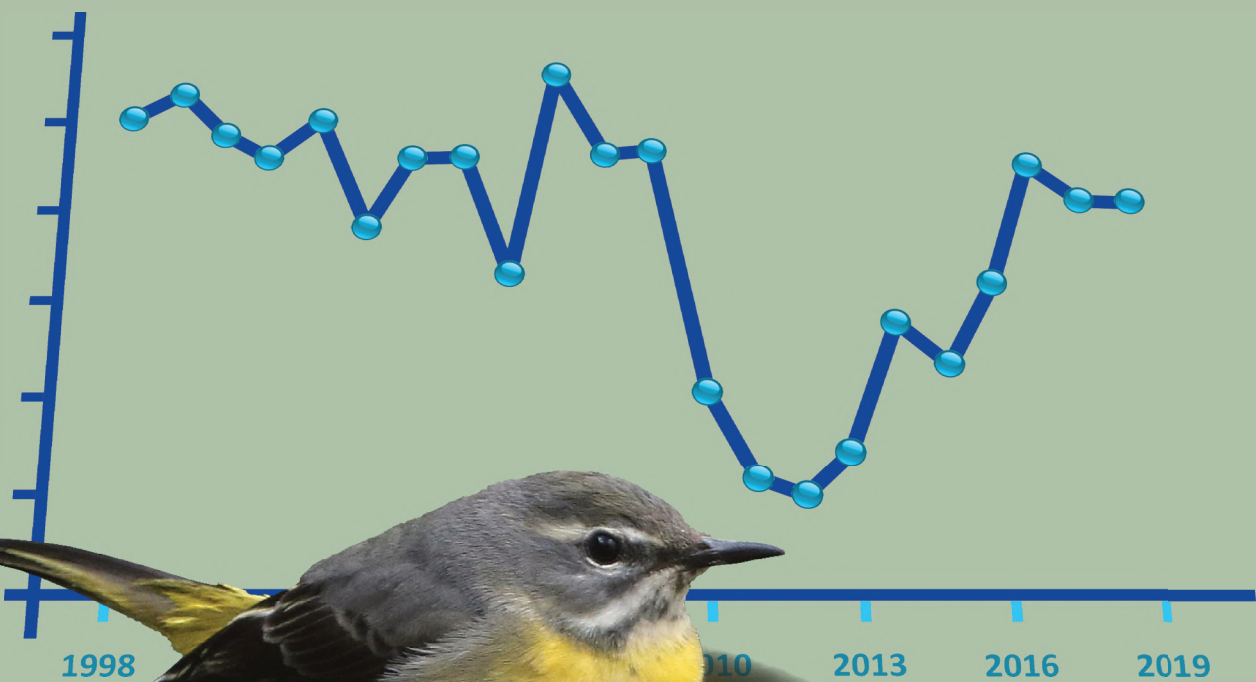




# Countryside Bird Survey Report

1998–2019





## Countryside Bird Survey

### Summary

The Countryside Bird Survey (CBS) has been in operation since 1998. Its primary aim is to monitor breeding bird populations in the Republic of Ireland.

A random sample of 10km squares was selected, and within each, the most south-westerly 1km square was surveyed twice during each breeding season. Bird counts were carried out along two roughly parallel 1km transects in each square.

This CBS report presents a summary of bird species trends within the CBS over the 22-year period from 1998 to 2019 inclusive. For the first time, this report also includes wild bird indicators for the Republic of Ireland, namely the 'Common Bird Index' and the 'Common Farmland Bird Index.'

- In total, 402 1km squares were surveyed between 1998 and 2019, all of which have been surveyed in two or more years. The number of squares covered in any one season ranged from 259 in 1998 to 329 in 2019.

- Species trends are reported for bird species recorded in 30 or more squares per year on average. Within the current reporting period, a total of 48 bird species exceeded this threshold comprising 36 residents and 12 summer migrants.

- Wren (*Troglodytes troglodytes*) was the most widespread species occurring in 94% of squares, followed by Blackbird (*Turdus merula*), Robin (*Erithacus rubecula*), and Chaffinch (*Fringilla coelebs*), that occurred in at least 90% of squares. Average abundance was highest for Rook (*Corvus frugilegus*) followed by Wren and Starling (*Sturnus vulgaris*).

- Overall, 29 species showed population increases, seven species declined, while the remaining 12 species have relatively stable trends. Greatest increases were seen in Blackcap (*Sylvia atricapilla*) and Goldfinch (*Carduelis carduelis*). Greatest declines were in Greenfinch (*Chloris chloris*) and Grey Wagtail (*Motacilla cinerea*). The remaining declining trends were for Swift (*Apus apus*), Kestrel (*Falco tinnunculus*), Stonechat (*Saxicola torquata*), Rook and Magpie (*Pica pica*).

- The Common Bird Index (CBI) was based on 50 common and widespread breeding birds which are monitored as part of the CBS. The indicator has increased overall (1998 – 2019), with the 2019 index at 126% of the baseline index (2000), meaning that, on average, the population size of the species included in the indicator has increased by 26 per cent.

- The Common Farmland Bird Index (CFBI) was based on 18 common and widespread breeding farmland birds which are monitored by the CBS. The CFBI in 2019 was 111% of the baseline index in 2000, representing an increase relative to the baseline. Among the constituent farmland bird species, increases were shown in ten species and declines in a further six species, while the remaining two species were stable.

- Importantly, despite the largely positive trends for many species monitored through the CBS, both the species trends and the wild bird indicators reported here should be viewed with caution and seen against the backdrop of drastic declines that occurred in the 1970s and 1980s in Ireland and Britain, before the CBS began. In many cases, population increases for species, albeit welcomed, should be viewed as the recovery of populations rather than increases *per se*.

### Report Number 6

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**BirdWatchIreland**



An Roinn Tithíochta,  
Rialtais Áitiúil agus Oidhreachta  
Department of Housing,  
Local Government and Heritage

## Introduction

The distribution of terrestrial breeding birds in Ireland was first described in a breeding bird atlas carried out between 1968 and 1972 (Sharrock 1976). A second breeding bird atlas survey carried out between 1988 and 1991 (Gibbons *et al.* 1993) showed that significant range contractions had occurred over the intervening 20-year period which had obvious implications for changes in population levels (Crowe *et al.* 2017). These declines coincided with a period of increased agricultural intensification and land use change. Similar declines in bird populations occurred throughout Europe over the same period and were attributed to agricultural intensification brought about by an increased demand for agricultural productivity following the Second World War (e.g. Krebs *et al.* 1999). While the two bird atlases, and a third one carried out between 2007 and 2011 (Balmer *et al.* 2013), flagged changes in the status of some species over time, they focused mainly on distribution. Abundance was recorded in the second and third atlases, providing indications of population changes over that twenty-year period but as these atlases were carried out at twenty-year intervals, there was clearly a need for a long-term monitoring programme to track changes of terrestrial breeding birds on an annual basis. The Countryside Bird Survey (CBS) was therefore initiated in 1998 with the primary objective of monitoring the trends of common and widespread breeding bird species in the Republic of Ireland (Crowe *et al.* 2010). The CBS has been undertaken during all years since 1998 with the exception of 2001 and 2020, when Foot-and-Mouth and Covid-19 restrictions respectively, prevented survey work.

The CBS is an annual survey that is underpinned by the efforts of around 225 mostly volunteer, observers each year. The survey aims to measure



**Collared Dove.**  
A species, which only began colonising Ireland in the late 1950s, has steadily increased since the CBS began in 1998.

changes in bird numbers based on a random selection of 1km sample plots, stratified by region, surveyed from year to year (Lewis *et al.* 2019). The resulting data are the species diversity and species abundance of each survey square each year. Following statistical analysis, a series of annual indices are produced for each individual bird species based on the results of each annual survey. These indices relate the population in a given year to a 'baseline' – the first year that data are available (1998 in CBS), which is given a value of 100. Thereafter, the index expresses the population as a percentage of this 'baseline'. The word 'index' is derived from the Latin *indicare*, meaning to 'point out' or 'to show', hence the population index shows how the population is faring over time i.e. the population trend for each species.

In addition to individual species indices, annual indices can also be used to produce 'wild bird indicators' (e.g. Gregory *et al.* 2003; Gregory *et al.* 2005; Gregory & van Strien 2010). Indicators are a useful way of presenting complex information as visual summaries (Gregory *et al.* 2003). To be effective, biodiversity indicators should be quantitative, scientifically credible, ecologically relevant and

sensitive to specialised habitats, and respond quickly to the changes to their environments (Gregory *et al.* 2003; van Strien *et al.* 2012). Indicator species have been used for decades as a way of assessing environmental conditions (Thomas 1972). Wild birds satisfy many of the criteria of being useful biodiversity indicators in that they occur high in food chains, are sensitive to environmental change, are widespread, diverse and mobile, and are relatively easy to census and collect data for, through well developed and standardised methodology (Gregory & van Strien 2010).

A wild bird indicator is a composite index whereby the indicator shows the year-to-year fluctuations in population trends across all species that are included. Thus, the index is the average trend of a group of species, generally grouped by country, region, habitat type or guild in a standard way. This index then serves to indicate the state of bird populations within these broad habitats/groups.

Wild bird indicators were first produced in the UK in 1999 using data mostly from the Common Bird Census, the Breeding Bird Atlases, and the





Seabird Monitoring Programme. Within the Republic of Ireland, the CBS has produced indicators previously for farmland and countryside birds and these data have been used by the Environmental Protection Agency and the Central Statistics Office for environmental reporting. Importantly, CBS data are provided to the Pan-European Common Bird Monitoring Scheme (PECBMS) for European Wild Bird Indicators and the PECBMS common bird indicators are part of the Indicators of Sustainable Development of the EU, while the European farmland bird indicator has been accepted as biodiversity indicator for EU's Structural Indicator, amongst other policy purposes.

This 2020 CBS report represents a summary of bird species trends within the CBS over the 22-year period from 1998 to 2019 inclusive. For the first time, this report also includes wild bird indicators for the Republic of Ireland, namely the 'Common Bird Index' and the 'Common Farmland Bird Index.'

## Methods

At the commencement of the survey, the Republic of Ireland was divided into eight regions, based on the administrative divisions of the National Parks and Wildlife Service at that time. Ten km squares (based on the Irish National Grid) were randomly selected within each region for survey coverage. For each 10km square selected, the 1km square at the extreme south-west corner is then surveyed. Those squares with less than 50% land, for example coastal areas or lake shores, were excluded, leaving some 700 possible survey squares. The survey aims to achieve coverage of the same 1km squares every year, ideally by the same observer, although there is some turnover of survey participants. There is a target of a minimum of 300 squares to be covered each year.

Within each square, the ideal survey route comprises two parallel transects,



Richard T. Mills

**Greenfinch.**  
Steadily declining – believed to be due to the parasitic organism *Trichomonas gallinae*, which affects the birds' digestive system.

each 1km in length, about 500m apart, and about 250m from the edge of the square (line-transect method). Two bird-recording visits to each survey square per year are undertaken. These visits are timed so that the first is in the early part of the breeding season (April to mid-May) and the second at least four weeks later (from mid-May to the end of June). This timing captures the abundance of residents and early migrants, which tend to be more easily detected during first visits, and later migrants, which are more abundant during second visits. Observers are asked to begin their counts between 06.00 and 07.00 hours to coincide with maximum bird

activity, but to avoid concentrated song activity at dawn. Observers are also encouraged to record only adult birds they see or hear as they walk along their transect routes. Bird counts in heavy rain, poor visibility, or strong winds are discouraged. For further details of the survey design, please refer to Lewis *et al.* 2019. For full details of the data analyses used to produce both individual species indices and trends as well as wild bird indicators, please see Appendix 1.

The Latin names of species that underwent analysis are given in Table 1, other Latin names are given at first mention in the text.



## Results

### Coverage

The CBS continues to be undertaken by a combination of BirdWatch Ireland volunteers and professional staff of the National Parks and Wildlife Service and BirdWatch Ireland. A total of 683 observers have taken part in the CBS between 1998 and 2019.

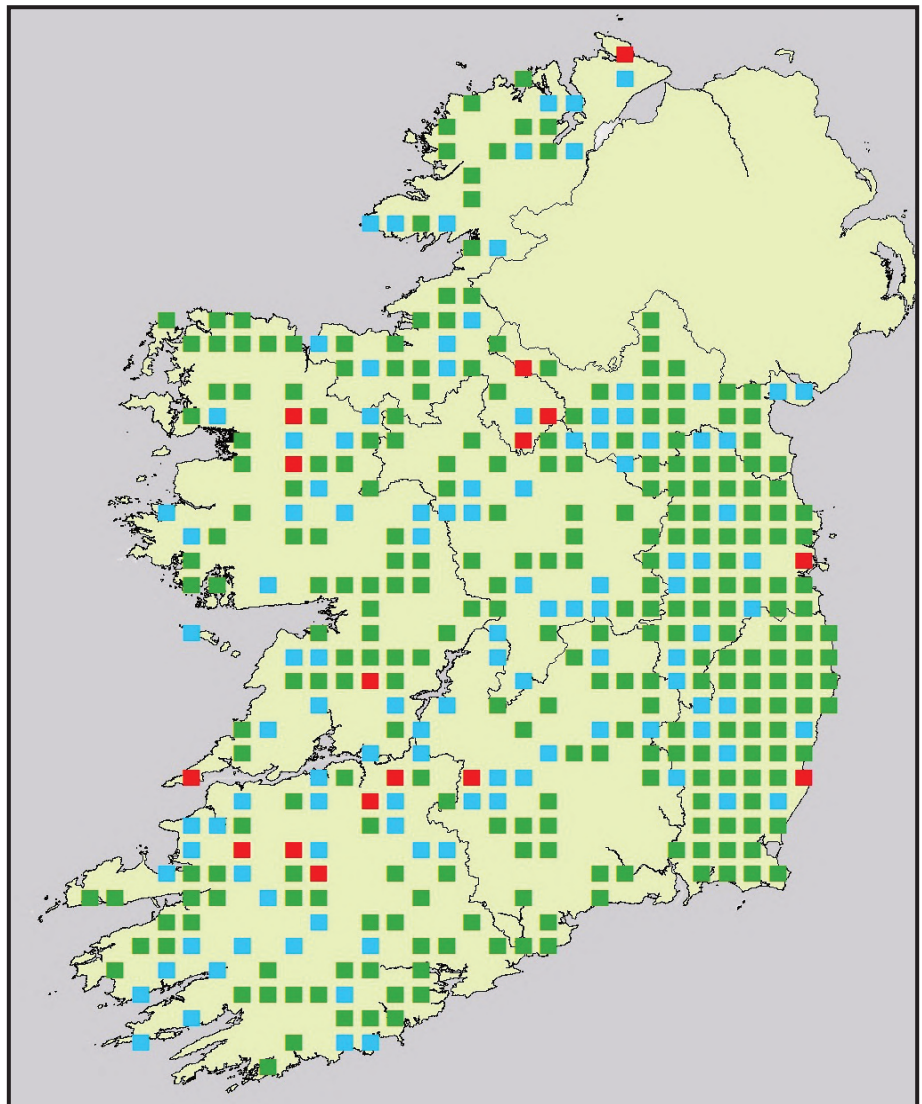
In total, 402 1km squares were surveyed between 1998 and 2019 (Figure 1), all of which have been surveyed in two or more years. The number of squares covered in any one season ranged from 259 in 1998 to 329 in 2019. Overall, 14% of squares were covered in all 21 years, 68% of squares were covered in at least 15 years, and 91% of squares in 10 years or more.

### Species trends

The CBS is largely targeted at monitoring species with widespread distributions across the island. The large number of sample plots surveyed in the CBS (over 300 annually) ensures that all common and widespread breeding species are surveyed across a wide range of habitats and geographical locations.

Species recorded in 30 or more 1km squares per year are included in trend analyses. Within the current reporting period, a total of 48 bird species exceeded this threshold (and therefore robust estimates could be derived for them), comprising 36 residents and 12 summer migrants (Table 1). Two species reported previously (Sparrowhawk (*Accipiter nisus*) and Stock Dove (*Columba oenas*) now occur in less than 30 squares per season and were excluded from analyses.

Of the total 48 species listed in Table 1, 17 species occurred on average in greater than 200 squares. Wren was the most widespread species occurring in 94% of squares, followed by Blackbird, Robin, Chaffinch, that all



**Figure 1.** Map showing survey coverage during the CBS between 1998 and 2019, illustrating the eight sampling regions and also showing the extent of coverage within each ranging from red (1-7 years), blue (8-14 years) and green (15-21 years).

### Meadow Pipit.

Badly hit in the cold winters between 2010 and 2012, but numbers have bounced back well.



Dick Coombes



**Table 1.** Species recorded in 30 squares or more during the CBS between 1998 and 2019, indicating the mean number and proportion of squares in which each species was recorded, mean abundance per square and the mean annual change (trend). Where the trend has changed when compared with the last report (to 2017), an indication of the direction is given. Red- and amber-listed species of Birds of Conservation Concern in Ireland (BoCCI) are also indicated. Significant trends are represented by asterisks. A \*\* indicates a highly significant trend ( $p < 0.01$ ), and \* of moderate significance ( $p < 0.05$ ).

Species	BoCCI <sup>1</sup>	Average no. squares (%)	Average abundance <sup>2</sup>	Mean annual change	Trend	Change in trend <sup>3</sup>
Pheasant		240 (78)	3	1.59**	Moderate increase	
Kestrel	A	35 (12)	1	-2.34**	Moderate decline	
Feral Pigeon		36 (12)	5	2.03**	Moderate increase	
Woodpigeon		269 (88)	12	1.74**	Moderate increase	
Collared Dove		67 (22)	2	4.01**	Moderate increase	
Cuckoo		74 (24)	2	1.26*	Moderate increase	
Swift	A	34 (11)	3	-2.82**	Moderate decline	
Magpie		252 (82)	4	-0.53**	Moderate decline	
Jackdaw		227 (74)	11	1.2**	Moderate increase	
Rook		245 (80)	26	-0.55**	Moderate decline	
Hooded Crow		243 (79))	4	2.37**	Moderate increase	
Raven		70 (23)	2	1.12*	Moderate increase	*
Goldcrest	A	155 (50)	3	0.45	Stable	
Blue Tit		244 (80)	4	1.47**	Moderate increase	
Great Tit		225 (73)	3	2.58**	Moderate increase	
Coal Tit		179 (58)	3	1.59**	Moderate increase	
Skylark	A	120 (39)	5	-0.28	Stable	*
Sand Martin	A	33 (11)	6	0.54	Stable	
Swallow	A	269 (88)	10	0.03	Stable	
House Martin	A	94 (31)	4	2.82**	Moderate increase	*
Long-tailed Tit		52 (17)	3	1.42*	Moderate increase	
Chiffchaff		143 (47)	3	4.26**	Moderate increase	
Willow Warbler		225 (73)	7	2.97**	Moderate increase	
Blackcap		128 (42)	3	14.82**	Strong increase	
Whitethroat		66 (22)	2	2.23**	Moderate increase	
Grasshopper Warbler		37 (12)	2	-0.29	Stable	
Sedge Warbler		65 (21)	2	0.45	Stable	
Wren		287 (94)	14	0.93**	Moderate increase	
Starling	A	222 (72)	13	1.31	Moderate increase	*
Blackbird		282 (92)	12	0.88**	Moderate increase	
Song Thrush		256 (84)	5	-0.11	Stable	
Mistle Thrush	A	135 (44)	2	0.05	Moderate increase	*
Robin	A	282 (92)	9	0.15	Stable	*
Stonechat	A	63 (20)	2	-1.03*	Moderate decline	
Wheatear	A	30 (10)	2	-0.86	Stable	
Duncock		230 (75)	4	1.3**	Moderate increase	
House Sparrow	A	152 (50)	6	3.13**	Moderate increase	
Grey Wagtail	R	36 (12)	1	-3.27**	Moderate decline	
Pied Wagtail		158 (52)	2	2.55**	Moderate increase	
Meadow Pipit	R	174 (57)	8	-0.34	Moderate increase	*
Chaffinch		278 (91)	9	1.73**	Moderate increase	
Greenfinch	A	158 (52)	3	-3.47**	Moderate decline	
Goldfinch		153 (50)	3	5.76**	Strong increase	
Linnet	A	124 (41)	4	1.02**	Moderate increase	
Redpoll		61 (20)	3	3.73**	Moderate increase	*
Bullfinch		140 (46)	2	2.79**	Moderate increase	
Yellowhammer	R	75 (25)	4	0.35	Stable	
Reed Bunting		89 (29)	2	0.96*	Moderate increase	

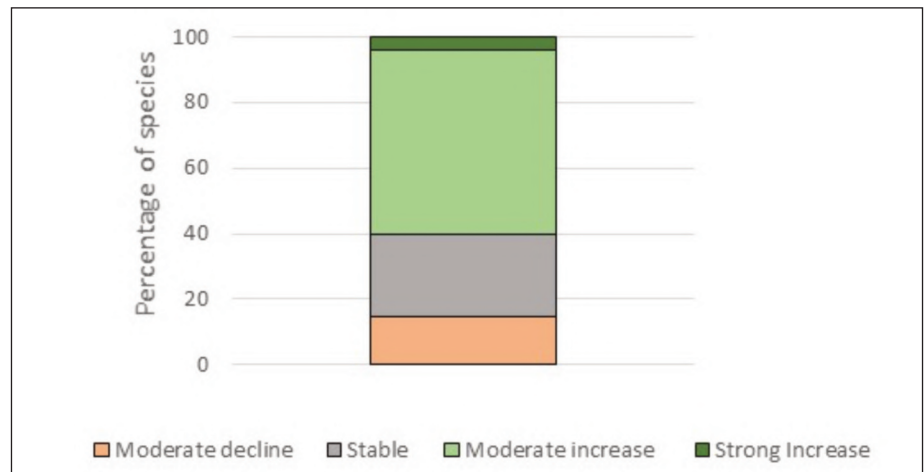
<sup>1</sup> After Birds of Conservation Concern in Ireland (Colhoun & Cummins 2013).

<sup>2</sup> Based on squares where the respective species were present only.

<sup>3</sup> Compared with that published in the last report (Crowe *et al.* 2017). A '+' indicates an improvement in trend, from significantly declining to stable or from stable to significantly increasing, while a '-' indicates the converse.

occurred in at least 90% of squares. Mean abundance was highest for Rook (average 26 per square), followed by Wren and Starling. Most species assessed by the CBS are currently exhibiting trends for moderate increases in population size (Figure 2).

A total of seven species declined between 1998 and 2019, the largest declining trends observed were for Greenfinch and Grey Wagtail, the latter a red-listed species on the Birds of Conservation Concern (Colhoun & Cummins 2013) (Figure 3). The remaining declining trends were for Swift, Kestrel, Stonechat, Rook and Magpie. The largest observed increases were for Blackcap and Goldfinch (strong increase), with a further 27 species having moderate increases over time, the largest being for Chiffchaff and Collared Dove (Figure 4). A further 12 species have stable trends throughout the CBS.



**Figure 2.** Percentage of species exhibiting declining, stable and increasing trends.

When compared to the previous report (Crowe *et al.* 2017), the status of eight species has improved, namely Skylark, Mistle Thrush, Robin and Meadow Pipit (moderate decline to stable), and Raven, Long-tailed Tit, Starling and Redpoll (stable to moderate increase). The status of one

species (Rook) has dis-improved, from stable to a moderate decline (Figure 5). The trends for three species previously reported to have declined following the cold winters of 2009/10 and 2010/11 (Skylark, Meadow Pipit and Goldcrest), are now stable. Skylark and Meadow Pipit have moved from a



**Figure 3.** Trends for species that have shown the greatest declines 1998-2019.



**Figure 4.** Trends for species that have shown the greatest increases 1998-2019..



**Figure 5.** Trends for a selection of species 1998-2019.



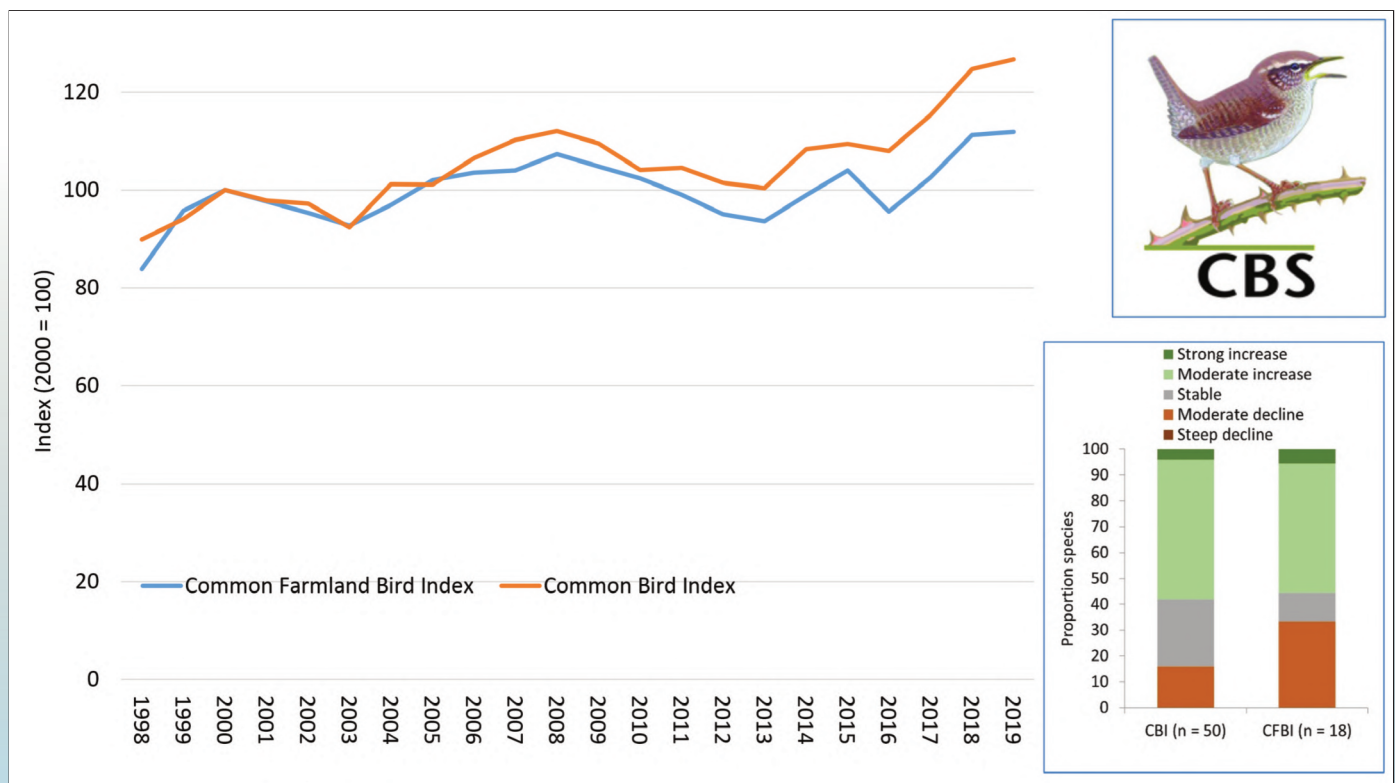
moderate decline to stable since the previous report, as above. The status of Song Thrush remains stable and this species appears to have recovered fully since a downturn around 2010/11. The trend for Stonechat remains a moderate decline, although the species population index has recovered well since 2010/11. While the trend for Mistle Thrush is stable, numbers in the recent two years (2018 and 2019) have increased substantially above baseline level (Figure 5).

### Indicators

The Common Bird Index (CBI) was based on 50 common and widespread breeding birds which are monitored as part of the CBS. The indicator has increased overall (1998 – 2019), with the 2019 index at 126% of the baseline index (2000), meaning that, on average, the population size of the species included in the indicator has increased by 26 per cent. Overall, there have been increases in 29 species, declines in eight species with the remaining 13 constituent species showing stable trends throughout the course of the CBS (Figure 6).

The Common Farmland Bird Index (CFBI) was based on 18 breeding farmland birds which are monitored by the CBS (Appendix 1). The CFBI in 2019 was 111% of the baseline index in 2000, representing a marginal increase relative to the baseline.

Among the constituent farmland bird species, increases were shown in ten species and declines in a further six species, while the remaining two species were stable (Figure 6).



**Figure 6.** The Common Bird Index and Common Farmland Bird Index 1998 – 2019.





Brian Burke

**Blackcap  
Dramatic increase continues  
across Ireland.**

## Discussion

The data gathered over the 22 years of the CBS have provided us with a valuable picture of how a large number of our common and widespread breeding birds are faring. As the time series of the survey continues to extend, the results become more robust and relevant. Overall, most species are doing well, showing either increasing or stable trends. When compared to the last report (Crowe *et al.* 2017), three more species are showing increasing trends (29 compared to 26) and there are five fewer species showing declines (7 compared to 12), while the number

showing stable trends is slightly fewer at 12 (compared to 15).

Goldfinch and Blackcap both continue to thrive – these are the only species classed as showing a strong increase. Goldfinches may be benefitting from an increased amount of provisioned food in gardens during winter while the increases in Blackcap are believed to be related to climate change. Of particular note is the on-going positive trend pattern for five finch species and Reed Bunting and the continuing stable trend for Yellowhammer, a Red-listed species under BoCCI (Birds of Conservation Concern in Ireland 2014-2019

(Colhoun & Cummins 2013).

However, positive CBS trends for several farmland birds, such as some of those mentioned above, need to be viewed with caution and seen against the backdrop of drastic declines that occurred in the 1970s and 1980s in Britain and Ireland, before the CBS began (Donald *et al.* 2002, Balmer *et al.* 2013). These declines, in some cases at least, can be attributed to changes in farming methods. Yellowhammer, for example, although stable over the 22 years of CBS, was already at a very low base in 1998, when the CBS was launched. The 2007-2011 bird atlas (Balmer *et al.* 2013) showed that Yellowhammer had contracted its



range on the island of Ireland by 61% over the preceding 40 years and is now mainly found in the cereal growing regions of the south-east. Cuckoo too, although stable in the CBS, suffered a 26% range reduction in the same 40-year span, probably due to agricultural intensification depleting its main food – caterpillars. Although these may be extreme examples, there are likely to be other farmland species which started at a similar low base in the CBS, so any gains they are making, albeit welcomed, should perhaps be viewed as the restoring of populations to former levels, rather than increases *per se*.

Similar caution needs to be extended to the wild bird indicators. The common bird and common farmland indicators are composite indicators designed to show broad trends in the constituent species. Being used as a proxy for the state of biodiversity, indicators are often used to indicate the status of bird populations within the broad habitats/groups used. However, given the largely positive trends of species within the CBS, the indicators generally follow suit, and as above, the increasing indicators are indicative of recovering populations in many of the constituent species, and not true increases. As an example, the UK farmland bird indicator in 2016

was less than half its value at the start point of 1970, with rapid declines from 1975 to 1985 attributed to changes in farmland management (Hayhow *et al.* 2017).

Over the lifetime of the CBS, the most sudden and indeed steepest declines recorded were for Stonechat, Grey Wagtail and Meadow Pipit in the 2010 and 2011 seasons. The winters preceding both these breeding seasons had been particularly harsh and it is considered that the sustained cold weather was the cause of the heavy losses.



Richard T. Mills

**Yellowhammer.** Highly dependent on arable farmland, especially cereal growing areas. Numbers stable despite considerable losses in the decades before the CBS.





A similar sharp, though less severe, pattern of decline was found at that time in several other species including Skylark, Robin, Song Thrush, Mistle Thrush, Wren and Goldcrest. All these species have since staged recoveries to varying degrees. It is interesting to note that the cold winter weather seems to have had greatest impact on resident insectivores and/or small-bodied species.

Species which have shown long-term, steady declines are of greater concern than those that may succumb to severe winter weather and subsequently bounce back. Swift is one

such species which is steadily declining. Depleted availability of aerial insects both during the breeding season and on its migration route and wintering grounds may be a factor in its decline, but the loss of traditional nest sites in old buildings due to restoration work is also considered to be contributing to this iconic summer bird's decline (e.g. Whelan *et al.* 2019). The trend for Kestrel has also been steadily downward, the reasons are unclear. Perhaps competition from the ever-increasing population of Buzzard (*Buteo buteo*) is a contributing factor. The latest bird atlas (Balmer *et al.* 2013) shows a 6% contraction in

the Kestrel's range in 40 years, but interestingly also a shift in abundance from the northern half of the country to the south and south-west. Of note is that Buzzards are likely to be included in the next trend reporting as they are now on the cusp of the 30-square threshold for inclusion in trend analyses.

The decline in Rook numbers has been gradual but ongoing and may bear out anecdotal reports of long-established rookeries diminishing in size or even disappearing altogether in recent years. Changes in agriculture may be a factor here too.

**Buzzard.**  
Increasingly being recorded in the CBS, but not quite in a sufficient number of squares to be accurately monitored by CBS yet.



The downward trend in Greenfinch has continued since it began in 2008. Studies in Britain found that the parasite trichomonosis was responsible for a major crash in the Greenfinch population, which began in 2005 (Robinson *et al.* 2010). The disease appears to have gained a foothold in Ireland and it is the likely cause of the downward CBS trend. In the last CBS report, Stock Dove, a species closely associated with arable farmland, had shown a steady decline up to 2016 (Crowe *et al.* 2017). It is now recorded in fewer than 30 squares annually and therefore falls below the threshold for monitoring in the CBS. This in itself is worrying and reflects that the ongoing trend continues downwards.

On the plus side, it is encouraging to see that, with the exception of Swift, all our regular summer migrants are doing well, with four species of warbler and House Martin showing increasing trends, while Swallow, Sand Martin, Wheatear, Grasshopper Warbler and Sedge Warbler are stable. However, counts of summer migrants can fluctuate considerably from year to year, most likely in response to adverse weather either on the African wintering grounds or on migration.

The CBS continues to be a valuable tool in monitoring the state of our breeding countryside birds and helps to highlight pressures and threats on an ongoing basis to both birds and their habitats.

## Acknowledgements

The Irish Countryside Bird Survey (CBS) is funded by the National Parks and Wildlife Service (Department of Housing, Local Government and Heritage) and coordinated by BirdWatch Ireland. The CBS Steering Group is comprised of Dick Coombes (National Coordinator), Lesley Lewis and Brian Burke of BirdWatch Ireland, David Tierney, Sinéad Cummins and Alyn Walsh of the National Parks and Wildlife Service, John O'Halloran of University College Cork, and Niall Ryan of the Department of Agriculture, Food and the Marine.

The success of the survey relies on the hard work, passion and time dedicated by the numerous volunteer fieldworkers, and staff of NPWS and BWI that carry out visits to squares each year. We thank all of you. A list of all valued participants of the CBS since 1998 is shown in Appendix 2.

## References

- Balmer, D. E., S. Gillings, B. J. Caffrey, R. L. Swann, I. S. Downie & R. J. Fuller. 2013. *Bird Atlas 2007-2011: the breeding and wintering birds of Britain and Ireland*. BTO Books, Thetford, UK.
- Buckland, S. T., Magurran, A.E., Green, R.E. & Fewster, R.M. 2005. Monitoring change in biodiversity through composite indices. *Philosophical Transactions of the Royal Society of London. Series B, Biological Sciences* 360, 243-254. DOI: 10.1098/rstb.2004.1589.
- Colhoun, K. & S. Cummins. 2013. Birds of Conservation Concern in Ireland 2014-2019. *Irish Birds* 9, 523-544.
- Crick, H.Q.P. 1992. A bird-habitat coding system for use in Britain and Ireland incorporating aspects of land management and human activity. *Bird Study* 39, 1-12.
- Crowe, O., Coombes, R.H., Lysaght, L., O'Brien, C., Choudhury, K.R., Walsh, A.J., Wilson, H.J. & O'Halloran, J. 2010. Population trends of widespread breeding birds in the Republic of Ireland 1998-2008. *Bird Study* 57, 267-280.
- Crowe, O., Coombes, R. H., Tierney, T. D., Walsh, A. J. & O'Halloran, J. 2017. *Countryside Bird Survey Report 1998-2016*. BirdWatch Ireland, Wicklow.
- Donald, P.F., G. Pisano, M. D. Rayment & D. J. Pain. 2002. The Common Agricultural Policy, EU enlargement and the conservation of Europe's farmland birds. *Agriculture, Ecosystems and Environment* 89, 16-182.
- Gibbons, D. W., J. B. Reid & R. A. Chapman. 1993. *The New Atlas of Breeding Birds in Britain and Ireland: 1988-1991*. T. & A. D. Poyser, London.
- Gregory, R. D., Noble, D., Field, R., Marchant, J., Raven, M. & Gibbons, D. W. 2003. Using birds as indicators of biodiversity. *Ornis Hungarica*, 12-13, 11-24.
- Gregory, R. D. & van Strein, A. 2010. Wild bird indicators: using composite population trends of birds as measures of environmental health. *Ornithological Science*, 3-22.
- Gregory, R. D., A. van Strien, P. Vorisek, A. W. Gmelig Meyling, D. G. Noble, R. P. B. Foppen and D. W. Gibbons. 2005. Developing indicators for European birds. *Philosophical Transactions of the Royal Society B* 360, 269-288.
- Hayhow, D. B., Ausden, M. A., Bradbury, R. B., Burnell, D., Copeland, A.I., Crick, H. Q. P., Eaton, M.A., Frost, T., Grice, P.V., Hall, C., Harris, S.J., Morecroft, M.D., Noble, D.G., Pearce-Higgins, J.W., Watts, O. & Williams, J.M. 2017. *The state of the UK's birds 2017*. The RSPB, BTO, WWF, DAERA, JNCC, NE and NRW, Sandy, Bedfordshire.
- Joys, A. C., D. G. Noble & S. R. Baillie. 2003. *Evaluation of species coverage and precision using the BBS indexing method*. BTO Research Report No. 317. Thetford, UK.
- Krebs, J. R., J. D. Wilson, R. B. Bradbury & G. M. Siriwardena. 1999. The second silent spring? *Nature* 400, 611-612.
- Lewis, L. J., Coombes, D., Burke, B., O'Halloran, J., Walsh, A., Tierney, T. D. & Cummins, S. 2019. Countryside Bird Survey: Status and trends of common and widespread breeding birds 1998-2016. *Irish Wildlife Manuals*, No. 115. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland.
- Pannekoek, J. & A. J. van Strien. 1996. *TRIM - Trends & Indices for Monitoring Data*. Research Paper No. 9634, Statistics Netherlands, Voorburg.
- Robinson, R. A., B. Lawson, M. P. Toms, K. M. Peck, J. K. Kirkwood, J. Chantrey, I. R. Clatworthy, A.D. Evans, L. A. Hughes, O. C. Hutchinson, S. K. John, T. W. Pennycott, M. W. Perkins, P. S. Rowley, V. R. Simpson, K. M. Tyler & A. A. Cunningham. 2010. Emerging infectious disease leads to population declines of common British Birds. *PLoS ONE* 5: e12215
- Sharrock, J. T. R. 1976. *The Atlas of Breeding Birds in Britain and Ireland*. Poyser, Berkhamsted.
- Thomas, W. A. 1972. Indicators of environmental quality: an overview. In: (W. A. Thomas eds): *Indicators of environmental quality*. Plenum Press. New York. P 1 - 5.
- Van Strien, A. J., Soldaat, L. L. & Gregory, R. D. 2012. Desirable mathematical properties of indicators for biodiversity change. *Ecological Indicators* 14, 202-208.
- Whelan, R., Hayes, W. & Caffrey, B. 2019. *Saving Swifts*. Publication funded by The Department of Culture, Heritage and the Gaeltacht through the National Parks and Wildlife Service's National Biodiversity Action Plan Fund.



## Appendix 1

### Survey design and field methods

The CBS is based on a random stratified sampling approach. At the commencement of the survey, the Republic of Ireland was divided into eight regions, based on the administrative divisions of the National Parks and Wildlife Service at that time. These regions varied in size, and each contained between three and four counties. Ten km squares (based on the Irish National Grid) were randomly selected within each region for coverage. Those squares with less than 50% land, for example coastal areas or lake shores, were excluded, leaving some 700 possible survey squares. For each 10km square selected, the 1km square at the extreme south-west corner is then included for possible survey. The survey aims to achieve coverage of the same 1km squares every year, ideally by the same observer, although there is some turnover of survey participants. Within each square, the ideal survey route comprises two parallel transects, each 1km in length, about 500m apart, and about 250m from the edge of the square. However, for practical reasons there is sometimes deviation from the ideal route (Crowe *et al.* 2010). Each 1km transect is divided into five 200 m sections, at which level all information is collected. Three visits to each survey square per year are undertaken. During a reconnaissance visit, the transect routes are planned and habitat information recorded. Habitat data are recorded using codes from an established hierarchical system common to a range of bird surveys in the UK (Crick 1992). Bird counts are undertaken on the second and third visits.

### Data analyses – species trends

The total numbers of adult birds of each species detected in each 1km square were calculated for each year. The maximum of the two counts (from early and late visits) was used as the annual measure of relative abundance for each species. Annual population indices were calculated using TRIM (Trends & Indices for Monitoring Data), a programme used for the analysis of time series of counts with missing observations (Pannekoek & van Strien 1996). Counts are modelled as a function of square (site) and year effects, with interpolated estimates for site-year combinations with missing data. The stratified sampling design results in unequal representation of regions across Ireland, so annual counts were weighted by the inverse of the proportion of the area of each region that was surveyed that year.

Population trends for species occurring in a mean of 30 or more squares over the duration of the survey were estimated by examining the overall rate of annual change, precision below this threshold considered to be low (Joys *et al.* 2003).

Population change is shown in the form of annual indices, where the result from the first season (1998) is constrained to a value of 100, and results for all other years are expressed relative to this baseline. A constant rate of decline is exponential when illustrated. For example, if a population is declining by 50% each year, then if the initial index is 1, the index at timepoint 2 is 0.5, and at timepoint 3 is 0.25. If the population doubles each year, then the index values for the respective timepoints are 2, 4 and 8. Index values are thus measures of relative abundance for a species, and usually the relationship between this and the absolute abundance is unknown.

The mean annual change was calculated as the slope of the line of best fit through the annual indices and was extrapolated across the time series 1998-2019 to generate modelled values assuming a linear fit.

### Data analyses – wild bird indicators (index)

A wild bird indicator is a composite index whereby the indicator shows the year-to-year fluctuations in



Dick Coombes

**Whitethroat.**  
A summer migrant on the increase – one of four warbler species showing upward trends.



population trends across all species that are included. The Common Bird Index (CBI) was based on 50 common and widespread breeding birds, while the Common Farmland Bird Index (CFBI) was based on 18 common and widespread breeding farmland birds which are monitored by the CBS (Table A1). Thus, the index is the average trend of a group of species, grouped by, in this case (1) common and widespread breeding birds, and (2) common farmland birds. Note that despite the trend for Sparrowhawk and Stock Dove not being reported because these species now occur in less than 30 squares per year (29), they were included in the CFBI to provide consistency with previous indicator calculations.

The composite index was calculated as the geometric mean of all the individual indices of the constituent species, with no weightings - so that each species has the same relative effect on the indicator. The geometric mean is used to ensure that a doubling in the population index of one species (e.g. 100 to 200) is balanced by a halving (e.g. 100 to 50).

The indicators serve to indicate the state of bird populations within the wider countryside. However, it should be borne in mind that they are based on data from common and widespread breeding bird species only. Certain species groupings, for example, breeding wading birds and birds of prey are not included in the Common Farmland Bird Index and the indicator cannot adequately represent these species.

### Key points to understanding the indicators

- An increase in the indicator from 100 to 110 would mean an average change of +10% in each of the species indices that make up the

indicator. This is the same as saying that, on average, there are 10% more individuals in the population of each species.

- Conversely, a decrease in the indicator from 100 to 90 would mean that the average change in each species index included in the indicator is -10%.
- It is important to remember that the indicator is an aggregate of individual species indices and hence masks a lot of variation among individual species and groups of species. Therefore, increases in some species and decreases in other species can balance one another.
- An increasing indicator does not mean that the majority of species included has increased because the index can be strongly influenced by a large magnitude change in one or more of the species included.
- The indicator treats every species as equivalent and does not weight trends by the population size of each species. The use of equal weights across species ensures changes in the indicator are not completely dominated by the trends in the most common species.
- The geometric mean is used in calculations because it is less influenced by outlying single values (outliers). In this case the use of the arithmetic mean is inappropriate because species that are increasing by a constant proportion per year carry greater weight than species that are decreasing at the same proportional rate (Buckland *et al.* 2005). Thus, the geometric mean is more appropriate because outliers in population increases are relatively common. The geometric mean is also invariant to the choice of weights, avoiding the need to specify subjective weights that have no rigorous scientific basis (Buckland *et al.* 2005).

**Table A1.** Species included in composite indicators - The Common Bird Index (CBI) and Common Farmland Bird Index (CFBI).

Species	CBI	FBI
Sparrowhawk	✓	
Kestrel	✓	✓
Pheasant	✓	✓
Feral Pigeon	✓	
Stock Dove	✓	✓
Woodpigeon	✓	✓
Collared Dove	✓	
Cuckoo	✓	
Swift	✓	
Skylark	✓	
Sand Martin	✓	
Swallow	✓	✓
House Martin	✓	
Meadow Pipit	✓	
Grey Wagtail	✓	
Pied Wagtail	✓	✓
Wren	✓	
Dunnock	✓	
Robin	✓	
Stonechat	✓	✓
Wheatear	✓	
Blackbird	✓	
Song Thrush	✓	
Mistle Thrush	✓	
Grasshopper Warbler	✓	
Sedge Warbler	✓	
Whitethroat	✓	
Blackcap	✓	
Chiffchaff	✓	
Willow Warbler	✓	
Goldcrest	✓	
Long-tailed Tit	✓	
Coal Tit	✓	
Blue Tit	✓	
Great Tit	✓	
Magpie	✓	✓
Jackdaw	✓	✓
Rook	✓	✓
Hooded Crow	✓	✓
Raven	✓	
Starling	✓	✓
House Sparrow	✓	✓
Chaffinch	✓	✓
Greenfinch	✓	✓
Goldfinch	✓	✓
Linnet	✓	✓
Redpoll	✓	
Bullfinch	✓	
Yellowhammer	✓	✓
Reed Bunting	✓	



## Appendix 2

### We thank all of the dedicated observers who have participated in the CBS

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