

## 30 years of Constant Effort Site ringing at Castlemorton Common 1994-2023

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Constant Effort Site (CES) ringing started in the UK in 1983, building on practices followed by a few ringing groups from the mid-1960s. The basic principle of CES ringing is that the same length of mist nets is put in the exact same locations for the same length of time in each of 12 ringing visits between May and August, over a number of years. The 12 sessions have alternating 10 or 11 day intervals between them (so Sunday to Wednesday followed by Thursday to Saturday), with one visit in each period and a minimum of six days between visits. CES sites are generally in wetlands or scrub, with a few in woodlands.

The aim of CES ringing is to provide key information on population dynamics for common species of smaller, mainly passerine bird species, such as productivity and adult and juvenile survival rates. This is carried out on an annual basis.

There are currently around 120 CES sites in Britain, including Castlemorton Common and another in our area at Malvern Sewage Treatment Works. I started a CES site on Castlemorton Common in 1994, after moving to Malvern in 1993, and some of the results of that 30-year period are presented here.

The habitat of a CES site needs to be reasonably stable over time. This is difficult on Castlemorton Common, where a significant reduction in grazing by the Commoners in the past allowed scrub (mainly hawthorn and willow) to develop widely across the common. Scrub was managed mechanically by the Malvern Hills Trust's predecessors, and although the Trust has managed to increase grazing significantly, the level of grazing is still insufficient to fully control scrub regrowth, so mechanical interventions continue.

The result within the CES area has been pulses of scrub regrowth, so that it has repeatedly become more wooded before being heavily cleared back. The nature of the clearance works does mean that the positioning of the nets has been somewhat less constant than desirable, but all movements of these nets have been relatively small and are considered acceptable by the CES organisers.

The scrub management and increase in grazing are hugely beneficial to the wildlife of the Common, but nets and cows are somewhat incompatible, so a significant amount of time in ringing sessions is devoted to cow wrangling!

There are a lot of data from the 30 years, which can make interpretation difficult and trends not easy to spot. Fluctuations in numbers in part reflect the presence of more or less scrub over the years. The overall habitat had probably become more scrub-dominated recently than in 1994, but recent works have significantly reduced a large part of this, with more work planned.

### A few species do show longer term trends:

**Willow Warbler** *Phylloscopus trochilus*. This was the commonest warbler, indeed the commonest species, in the adult total of 1994, but by 2023 it was down to just two individuals. The juvenile totals are similarly now very low. Comparison with the breeding bird survey data shows how this compares with relatively stable numbers overall in our area, but almost all of these are now on the hills not the lower commons.

**Chiffchaff** *Phylloscopus collybita*. There is not a marked increasing trend of breeding Chiffchaffs to match the Willow Warbler decline.

Unlike Willow Warblers, Chiffchaffs are double brooded, which means they are somewhat more insulated against periods of unseasonably cold or wet weather, and in good years can be very productive with numbers of young getting to three figures.

**Blackcap** *Sylvia atricapilla*. There is no doubt that Blackcaps are a species bucking the national trend of overall decline; in 2022 Blackcap was the species with the second highest national ringing total, only beaten by Blue Tit *Cyanistes caeruleus*, but in 1994 it was only the 14th most ringed species! On the Common the somewhat woodier habitat may also favour Blackcaps.

**Garden Warbler** *Sylvia borin*. The woodier conditions on the Common may conversely not be as good for Garden Warblers, which have declined in the CES totals. The Breeding Bird Survey also may suggest a small decline in Garden Warbler numbers.

**Robin** *Erithacus rubecula*. A slightly increasing trend in numbers of Robin adults and juveniles may also be habitat related.

**Bullfinch** *Pyrrhula pyrrhula*. Numbers of adults do seem to have reduced over recent years, although there is less obviously a trend in juvenile numbers. Bullfinches suffer badly from 'scaly leg disease', which can be caused by either or both of a species of mite and a virus. This develops into a disabling condition, which must reduce survival. My personal observation is that the overwhelming majority are infected birds are in their first year, suggesting that the disease is picked up in the nest. This may play a part in the trend of decline observed on the Common, but Bullfinches are declining nationally so there may be some other factors in play.

Whilst it might not be easy to pick too many trends from a single site's data, the real power of CES ringing comes from the accumulation of data from all 120 sites. Not only does this make national trends clearer, but the spread of CES sites can allow regional analyses as well. So CES ringing has revealed that whilst there is a major decline generally in Willow Warbler numbers in southern Britain, the numbers are actually increasing in Scotland. Research has clearly demonstrated that this is a climate change driven process, with Willow Warblers requiring cooler conditions than that now prevalent in southern England (Martay et al 2022).

The CES only gives information about smaller species, but whilst carrying out the CES visits two other major trends have been recorded. In 1994 there were several Cuckoos calling at once, and the bubbling call of the female was frequently heard. There was only one Cuckoo present this year, and that was only heard occasionally. But the most significant change to the aural landscape has been the loss of the sound that surrounded me as I sat ringing. In 1994 I was surrounded by calling Turtle Doves. I doubt if I will ever hear one again on the Common.

### References

- BTO Constant Effort Sites. Available at: <https://www.bto.org/our-science/projects/bird-ringing-scheme/ringing-surveys/constant-effort-sites> [Accessed 07.07.24].
- BTO Breeding Bird Survey. Available at: <https://www.bto.org/our-science/projects/breeding-bird-survey/latest-results> [Accessed 07.07.24].
- Martay, B, Pearce-Higgins, J W, Harris, S J, & Gillings, S. 2022. Breeding ground temperature rises, more than habitat change, are associated with spatially variable population trends in two species of migratory bird. *Ibis* **165**:34-54
- Jones, J. & Tavener, J. (eds). 2024. *Birds and Butterflies Around the Malverns January - December 2023*. Malvern Bird Group.

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**Tables (below)**

1. Castlemorton Common Constant Effort Site 1994-2023. Results from 12 standardised visits each year made between May and August - Juveniles.
2. Castlemorton Common Constant Effort Site 1994-2023. Results from 12 standardised visits each year made between May and August – Adults.

Year {	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
<b>Juveniles</b>																														
Tawny Owl																								1	1					
Woodpigeon																													1	
Kingfisher									1																					
G.S. Woodpecker				1	1			1	2	1					1		2										2		1	
Green Woodpecker		1		2					1	2	2				1		1					1								
Swallow																						1								
Tree Pipit							1																							
Wren	8	12	8	16	12	10	13	10	19	11	6	10	9	13	12	14	7	4	13	8	14	12	15	8	6	13	11	12	15	8
Dunnock	1	4	7	7	9	4	3	13	9	4	11	8	3	4	12	10	7	4	6	6	6	7	4	7	9	7	3	6	7	8
Robin	5	12	7	11	10	15	12	14	16	11	12	20	17	24	14	17	12	12	18	11	21	14	12	13	11	30	11	26	14	21
Redstart							2	1				1		1	2	3	1	1												3
Stonechat															1															
Blackbird	1	5	6	2	4	4	7	11	8	3	4	13	12	14	8	10	14	9	13	10	16	7	7	5		9	3	7	4	5
Song Thrush	1	1	1	1	1		4	5	1	1	2	1	1	2	2	1	2	4	4	1	1	2	3	2	1	4	1	8	2	4
Grasshopper Warbler			1								3								1							1	1			1
Reed Warbler																1					1		1		2					
Sedge Warbler																														1
Lesser Whitethroat	2	8	3	2	3	2	3	5	10	3	3	4	6	5	5	3	18	2		6	7	1	5		4	4	3	12		4
Whitethroat	13	16	9	15	4	20	15	12	13	11	36	9	30	2	9	8	31	22	5	9	9		2	6		5	5	11	4	24
Garden Warbler	4	2	2	2			1	3	1	3	2	3	3	2	4	3	4			3	3				3	1		4		9
Blackcap	8	2	4	8	6	6	11	12	7	12	10	20	9	12	21	27	34	30	6	16	24	14	2	5	5	25	16	11	12	20
Chiffchaff	24	25	32	66	63	29	39	37	100	26	45	25	40	37	72	63	120	62	25	79	64	41	35	52	35	155	41	48	22	59
Willow Warbler	12	36	7	18	17	13	21	11	17	20	19	24	15	19	27	12	28	13	5	15	19	4	8		3	1		5	1	3
Goldcrest																						2	2							
Spotted Flycatcher	1	1							1																					
Long-tailed Tit	13	13	7	12	11	4	9	3	8	1	4	11	8	34	10	12	20	2	13	16	7	12	7	19	8	12	3	10		4
Marsh Tit	2	2																	2							1				
Willow Tit			1																											
Coal Tit		2																												
Blue Tit	7	8	10	17	9	5	10	13	15	5	17	9	17	8	21	26	54	21	10	9	17	3	5	8	3	12	9	15	2	13
Great Tit	3	16	4	10	18	5	17	12	11	2	9	9	38	17	14	8	24	14	9	9	5	1	3	7	7	8	7	12	4	2
Nuthatch													1					1												
Treecreeper				2	1				1		1	1		1		1	1	1		1		1		1		2			2	2
Jay											1																			
Magpie																	1					1								2
Jackdaw														1																
Chaffinch		3		2		1		2		1								1									2			
Greenfinch						2	1	1	1				1	1							1					1				1
Siskin				1																										
Goldfinch						2											2			1						9	7	5	1	6
Linnet																											1			
Bullfinch	2	5	6	16	4	4	5	3	11	10	10	11	4	12	5	16	4	28	18	15	11	10	10	2	9	9	4	4	14	8
Reed Bunting					1								1																	
<b>TOTAL</b>	<b>107</b>	<b>174</b>	<b>115</b>	<b>211</b>	<b>174</b>	<b>122</b>	<b>177</b>	<b>169</b>	<b>253</b>	<b>128</b>	<b>196</b>	<b>180</b>	<b>215</b>	<b>208</b>	<b>242</b>	<b>235</b>	<b>384</b>	<b>235</b>	<b>147</b>	<b>214</b>	<b>226</b>	<b>134</b>	<b>122</b>	<b>136</b>	<b>107</b>	<b>312</b>	<b>125</b>	<b>198</b>	<b>106</b>	<b>208</b>

Table 1. Castlemorton Common Constant Effort Site 1994-2023.

Results from 12 standardised visits each year made between May and August - Juveniles.

# Worcestershire Record | Number 53 (Summer 2024) | Worcestershire Recorders

Year {	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Adults																														
Sparrowhawk																			1											
Woodpigeon	2							1																				1		
Long-eared Owl									1																					
G.S. Woodpecker			1					1						1		1	1	1		1		1		1			1			
Green Woodpecker		1	2				1	1		1					1															
Swallow																1					3			1	1					
Wren	1	9	4	3	4	7	8	8	6	6	3	4	4	4	2	3	3	3	2	6	6	3	8	7	5	7	1	4	7	4
Dunnock	4	5	4	6	9	5	7	5	6	5	3	5	4	9	6	7	7	3	4	4	7	1	5	7	4	4	7	2	6	8
Robin	3	2	6	4	2	4	3	5	5	1	4	6	7	5	2	7	2	4	5	4	4	4	7	5	3	5	1	6	6	4
Redstart																					1					1				
Stonechat																											1			2
Blackbird	8	1	7	8	13	8	6	11	4	9	5	8	8	7	6	5	6	7	8	8	9	8	2	9	5	6	3	6	9	5
Song Thrush	4	3	5	4	2		5	7	4	2	5	3	2	4	2	2	2	2	2	5	4		7	4		1	3	3	3	4
Redwing												1																		
Grasshopper Warbler	4		2		1			1		1	1	1						2			1									
Sedge Warbler			1			1																								
Lesser Whitethroat	3	7	4	2	2	3	4	6	7		3	5	5	2	3	4	3	6	3	6	4	6	10	3	2	7	4	8	2	8
Whitethroat	14	21	20	14	5	11	10	15	8	8	15	13	12	9	12	6	15	19	7	7	9	5	7	3	1	2	8	15	8	13
Garden Warbler	2	3	5	3	3	5	5	5	3	1	4	3	8	5	5	2	3		5	4	4	4	5	1	3	5	2	1		2
Blackcap	4	1		6	6	7	2	1	6	1	4	7	9	7	8	7	16	6	18	3	9	9	6	13	10	14	12	17	18	13
Chiffchaff	14	17	28	18	29	14	16	13	11	18	16	7	7	13	17	10	14	22	16	17	24	17	21	22	15	18	23	16	15	23
Willow Warbler	29	21	21	14	11	21	12	17	14	16	24	24	16	13	11	16	19	9	10	10	12	10	9	4		3	2	4	4	2
Goldcrest																								2						
Spotted Flycatcher								1																					1	
Long-tailed Tit	1	12	9	12	3	5	6	2	5	5	2	5	4	10	6	2	7	14	5	7	1	8	2	4	2	6	3	10	4	5
Blue Tit	4	1	1	5	2	2	2	1	2	6	3	4	7	6	5	6	6	9	7	3	2		4	3	5	5	4	3	6	5
Great Tit		3	4	5		1	3	1		2	3	1	4	8	2	3	5	6	5	2	1	2	3	1	3	6	1	6	2	3
Treecreeper			1																		1									
Jay	1							2			2									2								1		
Magpie			1									1																		
Chaffinch		5	5	2		1	2	2													1									1
Greenfinch		1					1		3	1	5	2		1		1	1									5	1			2
Goldfinch		1				1															1		5			5	8	6		1
Linnet	3																			1										
Bullfinch	11	18	11	6	8	8	5	8	4	3	8	8	6	5	2	6	7	8	7	13	8	5	12	7	8	6	7	6	3	6
Reed Bunting												1																		
Waxbill																		1												
TOTAL	112	132	142	112	100	103	99	114	88	85	111	109	104	109	90	89	117	122	105	104	108	86	113	97	67	106	92	115	94	111

2. Castlemorton Common Constant Effort Site 1994-2023.

Results from 12 standardised visits each year made between May and August – Adults.