



BTO Research Report No. 352

**Breeding periods for
selected bird species
in England**

A. C. Joys & H. Q. P. Crick

A report to JNCC|

March 2004

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1. INTRODUCTION

With the designation of large areas of bird breeding habitat as SSSI and, latterly, as SPA/Ramsar site, English Nature is increasingly called upon to assess the implications of proposed activities that may potentially affect breeding birds. Where such assessments are part of a formal request for consent, either from English Nature or a local planning authority, then reasonable justification for refusal will often be required. Additionally, under the Part 1 of the Wildlife and Countryside Act 1981 (WCA), all birds' nests are protected and it is an offence to take, damage or destroy the nest of any wild bird while it is in use or being built. Furthermore, for certain rare and vulnerable species (listed on WCA Schedule 1) it is an offence to intentionally or recklessly disturb birds while nest building or at or near a nest with eggs or young. Clearly, when advising on the implications of activities under SSSI/SPA legislation or under Part 1 of the WCA, it is important to have reliable information on bird breeding periods.

At present, assessments of activities affecting breeding birds are made with reference to the available published information on bird breeding periods (for example *Birds of the Western Palearctic*). However, this approach has several limitations: firstly, as the breeding period is generally defined as the period between earliest egg-laying and latest fledging, there is no information on the core period which holds the greatest proportion of breeding attempts; secondly, the period of breeding is likely to vary greatly depending on region, with birds in northern England breeding perhaps weeks later than those in the south; and finally, with climatic changes as a result of global warming, it is possible that breeding periods for many species are now earlier than they were at the time when standard reference texts were produced. For these reasons, this report carries out a review of current breeding periods for a selection of breeding bird species across a range of habitats throughout England.

2. METHODS

Data from the BTO's Nest Record Scheme (NRS) were used to identify breeding periods for the species listed in Appendix 1 using only Nest Record Cards (NRC) from England. However, analyses were not conducted for all species as sample sizes were too small and data was not available for some species for England (Red-throated Diver and Greenshank). To identify breeding periods, the first egg laying date and first fledging dates were estimated for each NRC. Laying and fledging dates are generally not recorded on NRCs and have to be estimated by back-calculation, using information on the nest contents at each with reference to standard information on the timing of events within the nesting cycle (e.g. length of incubation and egg-laying periods, see Crick *et al.* 2003 for details). For each nest a range of possible laying and fledging dates are calculated and the mid-point used when the range is less than 10 days. Sample sizes differ between egg laying and fledging date estimates for each species because the uncertainty in their estimation depends on the timing of the visits to a nest. (For example, if nest visits occur mainly at the end of the nesting cycle, then fledging dates will be more precisely measured than egg laying dates). Initially, only records after 1990 were included, but when there were less than 100 nest records, all records before 1990 were also included in the analysis to increase the sample size.

For each species, 5, 50, 95 and 100 percentiles for first egg laying dates and fledging dates were used to identify the main breeding periods within the defined period (post-1990 or all records) where the sample size was greater than 50 estimable dates. When the sample of at least 100 records is available for the post-1990 period then percentiles are provided for this period only. In cases where the sample size is between 50 and 100 records for the post-1990 period then percentiles are provided for the entire time period also. A caveat of small sample size was placed on species with sample sizes of between 50 and 100 estimable dates.

To ascertain whether breeding was significantly different between regions, a Kruskal-Wallis test (Sokal & Rohlf, 1981) was used on the median value for first egg laying date and fledging date. To ensure that there were sufficient samples within each region, all records were used in the analysis (pre- and post-1990) and regions were excluded from the test if they had less than 100 records. For some species this left only two regions and so the equivalent test was the Mann-Whitney U test. Results are reported for those species which showed a significant result for the regional analysis based on Government Office Regions (GORs). These English GORs follow long-established county boundaries and include varying number of counties and Unitary Authorities and can be viewed graphically at http://www.statistics.gov.uk/geography/downloads/uk_gor_cty.pdf

3. RESULTS

The numbers of nest record cards for which first egg laying date and fledging dates could be estimated, and the years from which data were derived, are detailed in Table 3.1 and 3.2 respectively. This includes all species for which there was at least one estimable laying or fledging date. There were seven species which were not considered in the analysis for first egg laying date as they had less than 50 estimable dates: Hen Harrier, Buzzard, Dunlin, Short-eared Owl, Green Woodpecker, Lesser Spotted Woodpecker and Sand Martin. There were also seven species which were excluded from the analysis for fledging dates as they had less than 50 estimable dates or are nidifugous; Mute Swan, Hen Harrier, Moorhen, Lapwing, Dunlin, Green Woodpecker and Raven. There were no nest record cards in England available for Red-Throated Diver and Greenshank.

The 5, 50, 95 and 100 percentiles for the first egg laying date and fledging date for England as a whole are given in Table 3.3 and 3.4 for those species which had 50 or more nest record cards. Both first egg laying dates and fledging dates are expressed as numbers of days since 1 January (see Appendix 2 for a look-up table).

Appendices 3 and 4 gives the results of the significance test on the median first egg laying date and fledging date respectively for all those species which had sufficient sample size in at least two GORs. Forty-eight out of 64 species analysed showed a significant difference in first egg laying date between GORs, and 51 species out of 68 analysed showed a significant difference in fledging date between GORs. For those species which had a significant difference in median first egg laying date and fledging date, 5, 50, 95 and 100% percentiles are given for each GOR for first egg laying date and fledging date in appendices 5 and 6 respectively.

4. CONCLUSION

In assessing breeding periods for a large proportion of species in England, it would seem desirable to use the results from the BTO's Nest Record Scheme at the level of the individual GOR; for the majority of species where sample size allowed there was significant differences in the median first egg laying date and median fledging date between GORs. For the other species it is unclear as to whether breeding periods based on each individual GOR may be more accurate than a national breeding period for England as samples sizes were too small for a robust analysis at the present time. Breeding periods based on first egg laying dates and fledging dates can be determined for England based on the availability of percentiles for first egg laying dates for 87 species and for 97 species for fledging dates. For fledging dates, 63 species had sufficient sample size to enable the restriction of the analysis to those cards obtained after 1990. For first egg laying date, this is restricted to 61 species.

5. ACKNOWLEDGEMENTS

We are particularly grateful to the thousands of volunteer nest recorders who, over the years, have contributed their records to the NRS. We are also grateful to Alan Drewitt for his help with the project. The NRS is funded under the JNCC/BTO partnership that the JNCC undertakes on behalf of English Nature, Scottish Natural Heritage, Countryside Council for Wales and the Environment and Heritage Service in Northern Ireland. We are grateful to Angela Rickard for her expertise in formatting and presenting the report.

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Table 3.1 Number of nest record cards from England for which **first egg laying dates** could be estimated and years for which data were derived for all species for the post 1990 period and for all records, indicating years used in the analysis and period of records (NA means species not included in analysis).

Species	No. records within period		Period/s used in analysis	Years from which data derived for analysis	Caveats based on sample sizes 50-100	
	Post 1990	All			Post	All 1990
Grey Heron	569	859	post 1990	1990-2002		
Mute Swan	70	386	both	1966-2002	*	
Hen Harrier	10	13	NA			
Sparrowhawk	194	456	post 1990	1990-2002		
Buzzard	8	32	NA			
Kestrel	233	583	post 1990	1990-2002		
Merlin	85	138	both	1968-2002	*	
Hobby	20	57	all	1967-2001		*
Peregrine	44	66	all	1971-2002		*
Moorhen	819	2261	post 1990	1990-2002		
Oystercatcher	223	913	post 1990	1990-2002		
Ringed Plover	389	1257	post 1990	1990-2002		
Golden Plover	23	102	all	1966-2002		
Lapwing	274	917	post 1990	1990-2002		
Dunlin	3	28	NA			
Snipe	94	173	both	1966-2002	*	
Curlew	35	104	all	1966-2001		
Redshank	141	281	post 1990	1990-2002		
Common Sandpiper	46	103	all	1966-2002		
Stock Dove	221	457	post 1990	1990-2002		
Collared Dove	740	1364	post 1990	1990-2002		
Turtle Dove	109	502	post 1990	1990-2002		
Barn Owl	37	91	all	1966-2002		*
Little Owl	109	182	post 1990	1990-2002		
Tawny Owl	86	250	both	1966-2002	*	
Long-eared Owl	26	52	all	1967-1997		*
Short-eared Owl	2	11	NA			
Nightjar	219	534	post 1990	1990-2002		
Kingfisher	10	54	all	1971-2002		*
Green Woodpecker	11	38	NA			
Great Spotted Woodpecker	10	54	all	1970-2002		*
Lesser Spotted Woodpecker	6	20	NA			
Woodlark	306	489	post 1990	1990-2002		
Skylark	129	576	post 1990	1990-2001		
Sand Martin	8	35	NA			
Swallow	554	2194	post 1990	1990-2002		
Tree Pipit	304	603	post 1990	1990-2002		
Meadow Pipit	210	845	post 1990	1990-2002		
Rock Pipit	80	111	both	1966-2001	*	
Yellow Wagtail	49	202	all	1966-2001		
Grey Wagtail	352	1120	post 1990	1990-2002		
Pied Wagtail	705	1978	post 1990	1990-2002		
Dipper	299	789	post 1990	1990-2002		
Wren	816	2786	post 1990	1990-2002		
Dunnock	840	2458	post 1990	1990-2002		
Robin	931	3828	post 1990	1990-2002		
Nightingale	47	187	all	1966-2002		
Redstart	347	1041	post 1990	1990-2002		

Table 3.1 First egg laying date continued.

Species	No. records within period		Period/s used in analysis	Years from which data derived for analysis	Caveats based on sample sizes 50-100	
	Post 1990	All			Post 1990	All
Whinchat	134	383	post 1990	1990-2002		
Stonechat	484	821	post 1990	1990-2002		
Wheatear	26	141	all	1966-1999		
Ring Ouzel	61	336	both	1966-2002	*	
Blackbird	1344	3454	post 1990	1990-2002		
Song Thrush	1558	5732	post 1990	1990-2002		
Mistle Thrush	283	1000	post 1990	1990-2002		
Grasshopper Warbler	61	198	both	1966-2001	*	
Sedge Warbler	538	1801	post 1990	1990-2002		
Reed Warbler	1526	5163	post 1990	1990-2002		
Lesser Whitethroat	91	300	both	1966-2002	*	
Whitethroat	220	596	post 1990	1990-2002		
Garden Warbler	307	683	post 1990	1990-2002		
Blackcap	476	1225	post 1990	1990-2002		
Wood Warbler	205	809	post 1990	1990-2002		
Chiffchaff	677	1322	post 1990	1990-2002		
Willow Warbler	596	2523	post 1990	1990-2002		
Goldcrest	24	125	all	1967-2001		
Spotted Flycatcher	656	2224	post 1990	1990-2002		
Long-tailed Tit	608	1347	post 1990	1990-2002		
Marsh Tit	151	439	post 1990	1990-2002		
Willow Tit	16	62	all	1966-2001		*
Blue Tit	1390	3420	post 1990	1990-2002		
Great Tit	1211	3449	post 1990	1990-2002		
Nuthatch	402	768	post 1990	1990-2002		
Treecreeper	109	355	post 1990	1990-2002		
Jay	82	212	both	1966-2002	*	
Magpie	577	1138	post 1990	1990-2002		
Jackdaw	271	621	post 1990	1990-2002		
Rook	128	320	post 1990	1990-2001		
Carrion Crow	320	747	post 1990	1990-2002		
Raven	10	56	all	1966-1999		*
Starling	567	2877	post 1990	1990-2002		
House Sparrow	373	1481	post 1990	1990-2002		
Tree Sparrow	1125	3334	post 1990	1990-2002		
Chaffinch	729	3227	post 1990	1990-2002		
Greenfinch	723	3200	post 1990	1990-2002		
Goldfinch	196	710	post 1990	1990-2002		
Linnet	1050	3616	post 1990	1990-2002		
Twite	4	284	all	1966-1999		
Lesser Redpoll	30	244	all	1970-2002		
Bullfinch	241	1171	post 1990	1990-2002		
Yellowhammer	251	912	post 1990	1990-2002		
Cirl Bunting	135	151	post 1990	1990-1993		
Reed Bunting	372	1754	post 1990	1990-2002		
Corn Bunting	269	473	post 1990	1990-2002		

Table 3.2 Number of nest record cards from England for which **first fledging dates** could be estimated and years for which data were derived for all species for the post 1990 period and for all records, indicating years used in the analysis and period of records (NA means species not included in analysis).

Species	No. records within period		Period/s used in analysis	Years from which data derived for analysis	Caveats based on sample sizes 50-100	
	Post 1990	All			Post 1990	All
Grey Heron	626	1034	post 1990	1990-2002		
Mute Swan		1	NA			
Hen Harrier	11	16	NA			
Sparrowhawk	181	435	post 1990	1990-2002		
Buzzard	38	113	all	1966-2002		
Kestrel	156	421	post 1990	1990-2002		
Merlin	157	232	post 1990	1990-2002		
Hobby	94	232	both	1966-2002	*	
Peregrine	78	105	both	1971-2002	*	
Moorhen	20	36	NA			
Oystercatcher	201	657	post 1990	1990-2002		
Ringed Plover	319	1117	post 1990	1990-2002		
Golden Plover	30	129	all	1966-2002		
Lapwing	17	27	NA			
Dunlin	3	30	NA			
Snipe	102	171	post 1990	1990-2002		
Curlew	57	147	both	1966-2002	*	
Redshank	98	169	both	1966-2002	*	
Common Sandpiper	44	91	all	1966-2002		*
Stock Dove	273	506	post 1990	1990-2002		
Collared Dove	759	1316	post 1990	1990-2002		
Turtle Dove	107	469	post 1990	1990-2002		
Barn Owl	166	277	post 1990	1990-2002		
Little Owl	89	208	both	1966-2002	*	
Tawny Owl	399	1518	post 1990	1990-2002		
Long-eared Owl	60	160	both	1966-2002	*	
Short-eared Owl	18	51	all	1968-2000		*
Nightjar	283	676	post 1990	1990-2002		
Kingfisher	38	142	all	1967-2002		
Green Woodpecker	10	39	NA			
Great Spotted Woodpecker	45	143	all	1967-2002		
Lesser Spotted Woodpecker	14	63	all	1966-2002		*
Woodlark	634	878	post 1990	1990-2002		
Skylark	249	683	post 1990	1990-2002		
Sand Martin	44	92	all	1966-2002		*
Swallow	632	2285	post 1990	1990-2002		
Tree Pipit	394	1055	post 1990	1990-2002		
Meadow Pipit	437	1656	post 1990	1990-2002		
Rock Pipit	93	139	both	1966-2001	*	
Yellow Wagtail	95	478	both	1966-2001	*	
Grey Wagtail	417	1335	post 1990	1990-2002		
Pied Wagtail	927	2377	post 1990	1990-2002		
Dipper	232	560	post 1990	1990-2002		
Wren	572	1880	post 1990	1990-2002		
Dunnock	1152	3103	post 1990	1990-2002		
Robin	807	2556	post 1990	1990-2002		
Nightingale	48	267	all	1966-2002		
Redstart	277	752	post 1990	1990-2002		

Table 3.2 Fledging date continued.

Species	No. records within period		Period/s used in analysis	Years from which data derived for analysis	Caveats based on sample sizes 50-100	
	Post 1990	All			Post 1990	All 1990
Whinchat	161	502	post 1990	1990-2002		
Stonechat	775	1384	post 1990	1990-2002		
Wheatear	108	452	post 1990	1990-1999		
Ring Ouzel	63	355	both	1966-2002	*	*
Blackbird	1495	3399	post 1990	1990-2002		
Song Thrush	1635	5911	post 1990	1990-2002		
Mistle Thrush	494	1306	post 1990	1990-2002		
Grasshopper Warbler	67	219	both	1966-2001	*	*
Sedge Warbler	698	2114	post 1990	1990-2002		
Reed Warbler	1588	5375	post 1990	1990-2002		
Lesser Whitethroat	105	334	post 1990	1990-2002		
Whitethroat	719	1855	post 1990	1990-2002		
Garden Warbler	354	851	post 1990	1990-2002		
Blackcap	515	1402	post 1990	1990-2002		
Wood Warbler	252	993	post 1990	1990-2002		
Chiffchaff	625	1241	post 1990	1990-2002		
Willow Warbler	924	3635	post 1990	1990-2002		
Goldcrest	19	91	all	1967-2002		*
Spotted Flycatcher	693	2095	post 1990	1990-2002		
Long-tailed Tit	692	1463	post 1990	1990-2002		
Marsh Tit	156	412	post 1990	1990-2002		
Willow Tit	29	150	all	1966-2002		
Blue Tit	1168	2740	post 1990	1990-2002		
Great Tit	1244	3158	post 1990	1990-2002		
Nuthatch	697	1349	post 1990	1990-2002		
Treecreeper	180	579	post 1990	1990-2002		
Jay	91	195	both	1967-2002	*	
Magpie	486	675	post 1990	1990-2002		
Jackdaw	346	819	post 1990	1990-2002		
Rook	889	1844	post 1990	1990-2002		
Carrion Crow	194	352	post 1990	1990-2002		
Raven	20	39	NA			
Starling	456	1496	post 1990	1990-2002		
House Sparrow	641	1896	post 1990	1990-2002		
Tree Sparrow	957	2239	post 1990	1990-2002		
Chaffinch	587	2079	post 1990	1990-2002		
Greenfinch	465	1741	post 1990	1990-2002		
Goldfinch	181	631	post 1990	1990-2002		
Linnet	860	2563	post 1990	1990-2002		
Twite	5	348	all	1966-2001		
Lesser Redpoll	23	229	all	1967-2002		
Bullfinch	183	865	post 1990	1990-2002		
Yellowhammer	319	841	post 1990	1990-2002		
Cirl Bunting	151	167	post 1990	1990-1993		
Reed Bunting	449	1877	post 1990	1990-2002		
Corn Bunting	261	461	post 1990	1990-2002		

Table 3.3 5%, 50%, 95% and 100% percentiles for **first egg laying dates** for those species analysed (>50 nest record cards from England).

Species	No. records		Years data derived		Percentiles for post 1990				Percentiles for all records			
	Post 1990	All	Post 1990	All	5	50	95	100	5	50	95	100
Grey Heron	569	859	1990-2002	1967-2002	50	71	122	167				
Mute Swan	70	386	1990-2002	1966-2002	<i>69</i>	<i>108.5</i>	<i>143</i>	<i>147</i>	82	104	134	162
Sparrowhawk	194	456	1990-2002	1966-2002	120	131	149	164				
Kestrel	233	583	1990-2002	1966-2002	105	121	134	150				
Merlin	85	138	1990-2002	1968-2002	<i>117</i>	<i>126</i>	<i>149</i>	<i>162</i>	115	126	149	162
Hobby	20	57	1990-2001	1967-2001					<i>149</i>	<i>163</i>	<i>183</i>	<i>191</i>
Peregrine	44	66	1990-2002	1971-2002					82	96	118	139
Moorhen	819	2261	1990-2002	1966-2002	87	121	181	223				
Oystercatcher	223	913	1990-2002	1966-2002	105	139	160	207				
Ringed Plover	389	1257	1990-2002	1966-2002	111	134	179	197				
Golden Plover	23	102	1990-2002	1966-2002					93	114.5	157	166
Lapwing	274	917	1990-2002	1966-2002	84	102	145	157				
Snipe	94	173	1990-2002	1966-2002	<i>90</i>	<i>120.5</i>	<i>175</i>	<i>194</i>	90	119	172	194
Curlew	35	104	1990-2001	1966-2001					107	122.5	151	158
Redshank	141	281	1990-2002	1966-2002	104	121	158	177				
Common Sandpiper	46	103	1990-2002	1966-2002					125	139	157	167
Stock Dove	221	457	1990-2002	1966-2002	96	155	236	262				
Collared Dove	740	1364	1990-2002	1966-2002	53	120	232	307				
Turtle Dove	109	502	1990-2002	1966-2002	135	163	208	222				
Barn Owl	37	91	1990-2002	1966-2002					89	126	185	237
Little Owl	109	182	1990-2002	1966-2002	101	113	128	142				
Tawny Owl	86	250	1990-2002	1966-2002	<i>64</i>	<i>82</i>	<i>124</i>	<i>132</i>	62	85	117	146
Long-eared Owl	26	52	1990-1997	1967-1997					<i>78</i>	<i>102.5</i>	<i>129</i>	<i>135</i>
Nightjar	219	534	1990-2002	1966-2002	143	174	204	209				
Kingfisher	10	54	1990-2002	1971-2002					<i>91</i>	<i>115.5</i>	<i>201</i>	<i>206</i>
Great Spotted Woodpecker	10	54	1990-2002	1970-2002					<i>106</i>	<i>124.5</i>	<i>142</i>	<i>151</i>
Woodlark	306	489	1990-2002	1966-2002	76	98	154	190				
Skylark	129	576	1990-2001	1966-2001	110	139	187	205				
Swallow	554	2194	1990-2002	1966-2002	129	156.5	212	237				
Tree Pipit	304	603	1990-2002	1966-2002	118	132	167	189				
Meadow Pipit	210	845	1990-2002	1966-2002	108	127	167	192				
Rock Pipit	80	111	1990-2001	1966-2001	<i>115.5</i>	<i>126.5</i>	<i>178.5</i>	<i>188</i>	114	128	173	188
Yellow Wagtail	49	202	1990-2001	1966-2001					127	144	184	195
Grey Wagtail	352	1120	1990-2002	1966-2002	90	117	167	187				
Pied Wagtail	705	1978	1990-2002	1966-2002	105	137	182	207				
Dipper	299	789	1990-2002	1966-2002	71	96	135	150				
Wren	816	2786	1990-2002	1966-2002	104	122	172	213				
Duncock	840	2458	1990-2002	1966-2002	91	117	166.5	206				
Robin	931	3828	1990-2002	1966-2002	78	108	161	199				
Nightingale	47	187	1990-2002	1966-2002					125	133	157	168
Redstart	347	1041	1990-2002	1966-2002	122	133	158	191				
Whinchat	134	383	1990-2002	1966-2002	135	145	167	182				
Stonechat	484	821	1990-2002	1966-2002	84	115	177	201				
Wheatear	26	141	1990-1999	1966-1999					114	131	162	175
Ring Ouzel	61	336	1990-2002	1966-2002	<i>109</i>	<i>124</i>	<i>159</i>	<i>166</i>	109	127	162	179
Blackbird	1344	3454	1990-2002	1966-2002	81	112	165	205				

Percentiles italicised represent those species with sample sizes between 50 and 100 nest record cards. Dates are number of days since 1 January (see Appendix 2 for conversion to calendar days). Species names in bold letter face have a significant difference in their median first egg laying date between the nine Government Office Regions (GOR) in England. For significance of the test and the percentiles at the GOR level see appendix 3 and 5 respectively.

Table 3.3 First egg laying dates continued.

Species	No. records		Years data derived		Percentiles for post 1990				Percentiles for all records			
	Post 1990	All	Post 1990	All	5	50	95	100	5	50	95	100
Song Thrush	1558	5732	1990-2002	1966-2002	80	111	172	225				
Mistle Thrush	283	1000	1990-2002	1966-2002	76	97	142	170				
Grasshopper Warbler	61	198	1990-2001	1966-2001	<i>126</i>	<i>141</i>	<i>188</i>	<i>200</i>	123	139	194	209
Sedge Warbler	538	1801	1990-2002	1966-2002	127	143	186	207				
Reed Warbler	1526	5163	1990-2002	1966-2002	135	161	202	224				
Lesser Whitethroat	91	300	1990-2002	1966-2002	<i>127</i>	<i>139</i>	<i>178</i>	<i>190</i>	126	139	167	190
Whitethroat	220	596	1990-2002	1966-2002	125	142	187	201				
Garden Warbler	307	683	1990-2002	1966-2002	128	141	172	197				
Blackcap	476	1225	1990-2002	1966-2002	116	130	170	190				
Wood Warbler	205	809	1990-2002	1966-2002	129	139	168	200				
Chiffchaff	677	1322	1990-2002	1966-2002	109	122	165	200				
Willow Warbler	596	2523	1990-2002	1966-2002	122	132	162	187				
Goldcrest	24	125	1990-2001	1967-2001					104	122	164	186
Spotted Flycatcher	656	2224	1990-2002	1966-2002	141	157	196	215				
Long-tailed Tit	608	1347	1990-2002	1966-2002	83	98	119	149				
Marsh Tit	151	439	1990-2002	1966-2002	99	110	126	155				
Willow Tit	16	62	1990-2001	1966-2001					<i>106</i>	<i>118.5</i>	<i>138</i>	<i>166</i>
Blue Tit	1390	3420	1990-2002	1966-2002	102	116	131	161				
Great Tit	1211	3449	1990-2002	1966-2002	100	116	137	168				
Nuthatch	402	768	1990-2002	1966-2002	100	113	126	140				
Treecreeper	109	355	1990-2002	1966-2002	95	117	149	164				
Jay	82	212	1990-2002	1966-2002	<i>110</i>	<i>119</i>	<i>140</i>	<i>157</i>	112	124	147	219
Magpie	577	1138	1990-2002	1966-2002	60	90	120	152				
Jackdaw	271	621	1990-2002	1966-2002	98	112	124	174				
Rook	128	320	1990-2001	1966-2001	71	89	108	117				
Carrion/Hooded Crow (unspecified)	320	747	1990-2002	1966-2002	73	97	119	175				
Raven	10	56	1995-1999	1966-1999					<i>51</i>	<i>64</i>	<i>96</i>	<i>99</i>
Starling	567	2877	1990-2002	1966-2002	96	109	150	166				
House Sparrow	373	1481	1990-2002	1966-2002	86	134	192	215				
Tree Sparrow	1125	3334	1990-2002	1966-2002	113	137	197	219				
Chaffinch	729	3227	1990-2002	1966-2002	102	120	150	183				
Greenfinch	723	3200	1990-2002	1966-2002	95	130	186	220				
Goldfinch	196	710	1990-2002	1966-2002	116	145	200	213				
Linnet	1050	3616	1990-2002	1966-2002	110	133	194	222				
Twite	4	284	1999-1999	1966-1999					132	147	188	199
Lesser Redpoll	30	244	1990-2002	1970-2202					129	149.5	195	217
Bullfinch	241	1171	1990-2002	1966-2002	119	137	202	227				
Yellowhammer	251	912	1990-2002	1966-2002	122	149	203	222				
Cirl Bunting	135	151	1990-1993	1966-1993	126	172	217	231				
Reed Bunting	372	1754	1990-2002	1966-2002	115	132	181	197				
Corn Bunting	269	473	1990-2002	1966-2002	141	167	202	214				

Percentiles italicised represent those species with sample sizes between 50 and 100 nest record cards. Dates are number of days since 1 January (see Appendix 2 for conversion to calendar days). Species names in bold letter face have a significant difference in their median first egg laying date between the nine Government Office Regions (GOR) in England. For significance of the test and the percentiles at the GOR level see appendix 3 and 5 respectively.

Table 3.4 5%, 50%, 95% and 100% percentiles for **fledging dates** for those species analysed (>50 nest record cards from England).

Species	No. records		Years data derived		Percentiles for post 1990				Percentiles for all records				
	Post 1990	All	Post 1990	All	5	50	95	100	5	50	95	100	
Grey Heron	626	1034	1990-2002	1966-2002	140	162	208	268					
Sparrowhawk	181	435	1990-2002	1966-2002	184	197	213	268					
Buzzard	38	113	1990-2002	1966-2002					174	191	213	236	
Kestrel	156	421	1990-2002	1966-2002	158	186	205	240					
Merlin	157	232	1990-2002	1967-2002	176	188	205	221					
Hobby	94	232	1990-2002	1966-2002	215	227	243	247	215	227	243	254	
Peregrine	78	105	1990-2002	1971-2002	<i>151</i>	<i>170.5</i>	<i>193</i>	<i>212</i>	158	171	192	212	
Oystercatcher	201	657	1990-2002	1966-2002	165	198	223	241					
Ringed Plover	319	1117	1990-2002	1966-2002	153	187	231	255					
Golden Plover	30	129	1990-2002	1966-2002					156	176	219	229	
Snipe	102	171	1990-2002	1966-2002	127	159	216	234					
Curlew	57	147	1990-2002	1966-2002	<i>174</i>	<i>188</i>	<i>213</i>	<i>214</i>	174	189	213	227	
Redshank	98	169	1990-2002	1966-2002	<i>158</i>	<i>176</i>	<i>210</i>	<i>220</i>	158	174	205	220	
Common Sandpiper	44	91	1990-2002	1966-2002					<i>167</i>	<i>183</i>	<i>200</i>	<i>206</i>	
Stock Dove	273	506	1990-2002	1966-2002	133	200	282	300					
Collared Dove	759	1316	1990-2002	1966-2002	89	157	268	340					
Turtle Dove	107	469	1990-2002	1966-2002	170	197	242	254					
Barn Owl	166	277	1990-2002	1966-2002	184	214.5	281	333					
Little Owl	89	208	1990-2002	1966-2002	<i>154</i>	<i>173</i>	<i>196</i>	<i>218</i>	157	177	198	218	
Tawny Owl	399	1518	1990-2002	1966-2002	127	148	173	205					
Long-eared Owl	60	160	1990-2002	1966-2002	<i>133</i>	<i>160.5</i>	<i>189</i>	<i>203</i>	130.	5	157	190	206
Short-eared Owl	18	51	1992-2000	1968-2000					<i>139</i>	<i>168</i>	<i>200</i>	<i>261</i>	
Nightjar	283	676	1990-2002	1966-2002	183	212	242	257					
Kingfisher	38	142	1990-2002	1967-2002					138	175.5	236	254	
Great Spotted Woodpecker	45	143	1990-2002	1967-2002					145	163	186	222	
Lesser Spotted Woodpecker	14	63	1990-2002	1966-2002					<i>153</i>	<i>166</i>	<i>180</i>	<i>204</i>	
Woodlark	634	878	1990-2002	1966-2002	105	129	186	218					
Skylark	249	683	1990-2002	1966-2002	137	167	211	226					
Sand Martin	44	92	1990-2002	1966-2002					<i>164</i>	<i>194</i>	<i>245</i>	<i>263</i>	
Swallow	632	2285	1990-2002	1966-2002	167	198	250	277					
Tree Pipit	394	1055	1990-2002	1966-2002	149	164	198	223					
Meadow Pipit	437	1656	1990-2002	1966-2002	138	155	202	226					
Rock Pipit	93	139	1990-2001	1966-2001	<i>147</i>	<i>161</i>	<i>209</i>	<i>222</i>	146	162	208	222	
Yellow Wagtail	95	478	1990-2001	1966-2001	<i>153</i>	<i>180</i>	<i>213</i>	<i>224</i>	158	176	213	233	
Grey Wagtail	417	1335	1990-2002	1966-2002	121	148	198	218					
Pied Wagtail	927	2377	1990-2002	1966-2002	136	169	215	240					
Dipper	232	560	1990-2002	1966-2002	112	136.5	178	192					
Wren	572	1880	1990-2002	1966-2002	135	161	214	249					
Duncock	1152	3103	1990-2002	1966-2002	117	147	209	237					
Robin	807	2556	1990-2002	1966-2002	112	141	193	218					
Nightingale	48	267	1990-2002	1966-2002					155	164	185	197	
Redstart	277	752	1990-2002	1966-2002	155	167	196	221					
Whinchat	161	502	1990-2002	1966-2002	167	177	199	212					
Stonechat	775	1384	1990-2002	1966-2002	117	150	214	235					

Percentiles italicised represent those species with sample sizes between 50 and 100 nest record cards. Dates are number of days since 1 January (see Appendix 2 for conversion to calendar days). Species names in bold letter face have a significant difference in their median fledging date between the nine Government Office Regions (GOR) in England. For significance of the test and the percentiles at the GOR level see appendix 4 and 6 respectively.

Table 3.4 Fledging dates continued.

Species	No. records		Years data derived		Percentiles for post 1990				Percentiles for all records			
	Post 1990	All	Post 1990	All	5	50	95	100	5	50	95	100
Wheatear	108	452	1990-1999	1966-1999	146	160	184	208				
Ring Ouzel	63	355	1990-2002	1966-2002	<i>138</i>	<i>154</i>	<i>189</i>	<i>197</i>	139	159	193	212
Blackbird	1495	3399	1990-2002	1966-2002	109	144	203	241				
Song Thrush	1635	5911	1990-2002	1966-2002	110	142	206	254				
Mistle Thrush	494	1306	1990-2002	1966-2002	107	125	174	206				
Grasshopper Warbler	67	219	1990-2001	1966-2001	<i>156</i>	<i>172</i>	<i>220</i>	<i>231</i>	155	170	226	241
Sedge Warbler	698	2114	1990-2002	1966-2002	159	174	216	236				
Reed Warbler	1588	5375	1990-2002	1966-2002	163	188	228	250				
Lesser Whitethroat	105	334	1990-2002	1966-2002	153	167	205	215				
Whitethroat	719	1855	1990-2002	1966-2002	152	167	214	241				
Garden Warbler	354	851	1990-2002	1966-2002	156	167	199	221				
Blackcap	515	1402	1990-2002	1966-2002	145	157	199	224				
Wood Warbler	252	993	1990-2002	1966-2002	161	170	197	231				
Chiffchaff	625	1241	1990-2002	1966-2002	142	156	198	231				
Willow Warbler	924	3635	1990-2002	1966-2002	155	166	193	221				
Goldcrest	19	91	1990-2002	1967-2002					<i>141</i>	<i>164</i>	<i>218</i>	<i>231</i>
Spotted Flycatcher	693	2095	1990-2002	1966-2002	172	189	226	244				
Long-tailed Tit	692	1463	1990-2002	1966-2002	122	136	154	189				
Marsh Tit	156	412	1990-2002	1966-2002	141	151	162	194				
Willow Tit	29	150	1990-2002	1966-2002					145	158.5	176	204
Blue Tit	1168	2740	1990-2002	1966-2002	145	158	173	202				
Great Tit	1244	3158	1990-2002	1966-2002	140	156	177	204				
Nuthatch	697	1349	1990-2002	1966-2002	145	158	170	192				
Treecreeper	180	579	1990-2002	1966-2002	128	148	182	188				
Jay	91	195	1990-2002	1967-2002	<i>147</i>	<i>161</i>	<i>184</i>	<i>201</i>	149	165	189	201
Magpie	486	675	1990-2002	1966-2002	110	139	173	213				
Jackdaw	346	819	1990-2002	1966-2002	152	165	176	231				
Rook	889	1844	1990-2002	1966-2002	125	146	158	195				
Carrion/Hooded Crow (unspecified)	194	352	1990-2002	1966-2002	118	147	178	222				
Starling	456	1496	1990-2002	1966-2002	130	144	184	232				
House Sparrow	641	1896	1990-2002	1966-2002	121	166	227	300				
Tree Sparrow	957	2239	1990-2002	1966-2002	145	175	228	249				
Chaffinch	587	2079	1990-2002	1966-2002	130	152	184	208				
Greenfinch	465	1741	1990-2002	1966-2002	125	169	223	245				
Goldfinch	181	631	1990-2002	1966-2002	146	184	235	245				
Linnet	860	2563	1990-2002	1966-2002	137	165	224	256				
Twite	5	348	1999-2001	1966-2001					165	180	220	231
Lesser Redpoll	23	229	1990-2002	1967-2002					159	182	233	255
Bullfinch	183	865	1990-2002	1966-2002	152	183	235	258				
Yellowhammer	319	841	1990-2002	1966-2002	151	183	227	250				
Cirl Bunting	151	167	1990-1993	1966-1993	155	203	244	258				
Reed Bunting	449	1877	1990-2002	1966-2002	145	161	206	231				
Corn Bunting	261	461	1990-2002	1966-2002	161	193	222	237				

Percentiles italicised represent those species with sample sizes between 50 and 100 nest record cards. Dates are number of days since 1 January (see Appendix 2 for conversion to calendar days). Species names in bold letter face have a significant difference in their median fledging date between the nine Government Office Regions (GOR) in England. For significance of the test and the percentiles at the GOR level see appendix 4 and 6 respectively.

APPENDIX 1 List of species considered for analysis and their conservation status in the UK

Red-throated Diver	Amber	Nightingale	Amber
Grey Heron	Green	Redstart	Amber
Mute Swan	Amber	Whinchat	Green
Hen Harrier	Red	Stonechat	Amber
Sparrowhawk	Green	Wheatear	Green
Common Buzzard	Green	Ring Ouzel	Red
Kestrel	Amber	Blackbird	Green
Merlin	Amber	Song Thrush	Red
Hobby	Green	Mistle Thrush	Amber
Peregrine	Amber	Grasshopper Warbler	Red
Moorhen	Green	Sedge Warbler	Green
Oystercatcher	Amber	Reed Warbler	Green
Ringed Plover	Amber	Lesser Whitethroat	Green
Golden Plover	Green	Whitethroat	Green
Lapwing	Amber	Garden Warbler	Green
Dunlin	Amber	Blackcap	Green
Common Snipe	Amber	Wood Warbler	Amber
Curllew	Amber	Chiffchaff	Green
Redshank	Amber	Willow Warbler	Amber
Greenshank	Green	Goldcrest	Amber
Common Sandpiper	Green	Spotted Flycatcher	Red
Stock Dove	Amber	Long-tailed Tit	Green
Collared dove	Green	Marsh Tit	Red
Turtle Dove	Red	Willow Tit	Red
Barn Owl	Amber	Blue Tit	Green
Little Owl	Green	Great Tit	Green
Tawny Owl	Green	Nuthatch	Green
Long-eared Owl	Green	Treecreeper	Green
Short-eared Owl	Amber	Jay	Green
Nightjar	Red	Magpie	Green
Kingfisher	Amber	Jackdaw	Green
Green Woodpecker	Amber	Rook	Green
Gt. Spotted Woodpecker	Green	Carrion Crow	Green
Ls. Spotted Woodpecker	Red	Raven	Green
Woodlark	Red	Starling	Red
Skylark	Red	House Sparrow	Red
Sand Martin	Amber	Tree Sparrow	Red
Swallow	Amber	Chaffinch	Green
Tree Pipit	Amber	Greenfinch	Green
Meadow Pipit	Amber	Goldfinch	Green
Rock Pipit	Green	Linnet	Red
Yellow Wagtail	Amber	Twite	Red
Grey Wagtail	Amber	Lesser Redpoll	Amber
Pied Wagtail	Green	Bullfinch	Red
Dipper	Green	Yellowhammer	Red
Wren	Green	Cirl Bunting	Red
Duncock	Amber	Reed Bunting	Red
Robin	Green	Corn Bunting	Red

APPENDIX 2 Look up table for egg laying dates and fledging dates and equivalent calendar days

Date	Day	Month	Date	Day	Month	Date	Day	Month	Date	Day	Month
1 to 31 January											
32 to 59 February											
60	1	March	121	1	May	182	1	July	244	1	Sep
61	2	March	122	2	May	183	2	July	245	2	Sep
62	3	March	123	3	May	184	3	July	246	3	Sep
63	4	March	124	4	May	185	4	July	247	4	Sep
64	5	March	125	5	May	186	5	July	248	5	Sep
65	6	March	126	6	May	187	6	July	249	6	Sep
66	7	March	127	7	May	188	7	July	250	7	Sep
67	8	March	128	8	May	189	8	July	251	8	Sep
68	9	March	129	9	May	190	9	July	252	9	Sep
69	10	March	130	10	May	191	10	July	253	10	Sep
70	11	March	131	11	May	192	11	July	254	11	Sep
71	12	March	132	12	May	193	12	July	255	12	Sep
72	13	March	133	13	May	194	13	July	256	13	Sep
73	14	March	134	14	May	195	14	July	257	14	Sep
74	15	March	135	15	May	196	15	July	258	15	Sep
75	16	March	136	16	May	197	16	July	259	16	Sep
76	17	March	137	17	May	198	17	July	260	17	Sep
77	18	March	138	18	May	199	18	July	261	18	Sep
78	19	March	139	19	May	200	19	July	262	19	Sep
79	20	March	140	20	May	201	20	July	263	20	Sep
80	21	March	141	21	May	202	21	July	264	21	Sep
81	22	March	142	22	May	203	22	July	265	22	Sep
82	23	March	143	23	May	204	23	July	266	23	Sep
83	24	March	144	24	May	205	24	July	267	24	Sep
84	25	March	145	25	May	206	25	July	268	25	Sep
85	26	March	146	26	May	207	26	July	269	26	Sep
86	27	March	147	27	May	208	27	July	270	27	Sep
87	28	March	148	28	May	209	28	July	271	28	Sep
88	29	March	149	29	May	210	29	July	272	29	Sep
89	30	March	150	30	May	211	30	July	273	30	Sep
90	31	March	151	31	May	212	31	July	274	1	Oct
91	1	April	152	1	June	213	1	Aug	275	2	Oct
92	2	April	153	2	June	214	2	Aug	276	3	Oct
93	3	April	154	3	June	215	3	Aug	277	4	Oct
94	4	April	155	4	June	216	4	Aug	278	5	Oct
95	5	April	156	5	June	217	5	Aug	279	6	Oct
96	6	April	157	6	June	218	6	Aug	280	7	Oct
97	7	April	158	7	June	219	7	Aug	281	8	Oct
98	8	April	159	8	June	220	8	Aug	282	9	Oct
99	9	April	160	9	June	221	9	Aug	283	10	Oct
100	10	April	161	10	June	222	10	Aug	284	11	Oct
101	11	April	162	11	June	223	11	Aug	285	12	Oct
102	12	April	163	12	June	224	12	Aug	286	13	Oct
103	13	April	164	13	June	225	13	Aug	287	14	Oct
104	14	April	165	14	June	226	14	Aug	288	15	Oct
105	15	April	166	15	June	227	15	Aug	289	16	Oct
106	16	April	167	16	June	228	16	Aug	290	17	Oct
107	17	April	168	17	June	229	17	Aug	291	18	Oct
108	18	April	169	18	June	230	18	Aug	292	19	Oct
109	19	April	170	19	June	231	19	Aug	293	20	Oct
110	20	April	171	20	June	232	20	Aug	294	21	Oct
111	21	April	172	21	June	233	21	Aug	295	22	Oct
112	22	April	173	22	June	234	22	Aug	296	23	Oct
113	23	April	174	23	June	235	23	Aug	297	24	Oct
114	24	April	175	24	June	236	24	Aug	298	25	Oct
115	25	April	176	25	June	237	25	Aug	299	26	Oct
116	26	April	177	26	June	238	26	Aug	300	27	Oct
117	27	April	178	27	June	239	27	Aug	301	28	Oct
118	28	April	179	28	June	240	28	Aug	302	29	Oct
119	29	April	180	29	June	241	29	Aug	303	30	Oct
120	30	April	181	30	June	242	30	Aug	304	31	Oct
						243	31	Aug	305 to 334 November		
									335 to 365 December		

APPENDIX 3 Significance of the difference in median value for **first egg laying date** between the nine Government Office Regions (GOR) in England (species names in bold letter face are significant at 0.05 level).

Species	Chi-square value	No. of GOR regions	P value
Grey Heron	99.17	6	<.0001
Mute Swan	8.00	4	0.046
Sparrowhawk	12.29	4	0.0064
Kestrel	15.39	6	0.0088
Merlin	1.63	2	0.2014
Moorhen	34.24	8	<.0001
Oystercatcher	55.84	4	<.0001
Ringed Plover	7.71	5	0.1028
Lapwing	11.55	5	0.0211
Redshank	7.13	2	0.0076
Stock Dove	4.45	4	0.2164
Collared Dove	9.21	8	0.2377
Turtle Dove	4.04	3	0.1328
Nightjar	18.78	3	<.0001
Woodlark	2.46	2	0.1169
Skylark	41.98	4	<.0001
Swallow	51.54	8	<.0001
Tree Pipit	34.15	4	<.0001
Meadow Pipit	29.43	6	<.0001
Grey Wagtail	8.70	7	0.1913
Pied Wagtail	24.76	8	0.0008
Dipper	13.58	6	0.0185
Wren	47.71	8	<.0001
Dunnock	14.13	8	0.0489
Robin	56.33	9	<.0001
Redstart	65.49	7	<.0001
Whinchat	0.52	4	0.9144
Stonechat	14.05	3	0.0009
Ring Ouzel	24.49	4	<.0001
Blackbird	49.93	9	<.0001
Song Thrush	39.90	9	<.0001
Mistle Thrush	32.34	8	<.0001
Grasshopper Warbler	0.20	2	0.6541
Sedge Warbler	263.84	6	<.0001
Reed Warbler	261.32	7	<.0001
Lesser Whitethroat	1.96	2	0.161
Whitethroat	10.12	5	0.0385
Garden Warbler	8.97	6	0.1101
Blackcap	29.71	8	0.0001
Wood Warbler	25.73	4	<.0001
Chiffchaff	18.49	6	0.0024
Willow Warbler	136.95	8	<.0001

APPENDIX 3 First egg laying date continued.

Species	Chi-square value	No. of GOR regions	P value
Spotted Flycatcher	11.69	8	0.1111
Long-tailed Tit	36.90	8	<.0001
Marsh Tit	14.07	3	0.0009
Blue Tit	331.17	9	<.0001
Great Tit	264.12	9	<.0001
Nuthatch	5.36	4	0.1474
Magpie	392.03	7	<.0001
Jackdaw	59.34	5	<.0001
Rook	27.44	2	<.0001
Carrion Crow	125.24	5	<.0001
Starling	43.16	9	<.0001
House Sparrow	47.37	6	<.0001
Tree Sparrow	75.85	8	<.0001
Chaffinch	88.66	8	<.0001
Greenfinch	54.60	9	<.0001
Goldfinch	18.94	6	0.002
Linnet	6.09	8	0.529
Twite	2.02	2	0.1549
Bullfinch	10.79	7	0.0952
Yellowhammer	37.68	7	<.0001
Reed Bunting	25.07	7	0.0003
Corn Bunting	23.13	3	<.0001

APPENDIX 4 Significance of the difference in median value for **fledging date** between the nine Government Office Regions (GOR) in England (species names in bold letter face are significant at 0.05 level).

Species	Chi-square value	No. of GOR regions	P value
Grey Heron	162.51	6	<.0001
Sparrowhawk	3.62	3	0.1633
Kestrel	1.54	3	0.4636
Merlin	0.35	2	0.5554
Hobby	4.39	2	0.0363
Oystercatcher	26.75	3	<.0001
Ringed Plover	44.11	5	<.0001
Curlew	1.22	2	0.2684
Stock Dove	10.64	6	0.0591
Collared Dove	26.12	8	0.0005
Turtle Dove	11.69	3	0.0029
Little Owl	5.14	2	0.0234
Tawny Owl	116.00	8	<.0001
Nightjar	19.61	3	<.0001
Woodlark	0.00	2	0.9681
Skylark	103.57	5	<.0001
Swallow	19.45	8	0.0069
Tree Pipit	28.70	4	<.0001
Meadow Pipit	46.84	8	<.0001
Yellow Wagtail	12.09	4	0.0071
Grey Wagtail	6.70	8	0.4603
Pied Wagtail	23.55	8	0.0014
Dipper	9.11	5	0.0584
Wren	17.52	7	0.0076
Dunnock	24.19	8	0.0011
Robin	30.17	8	<.0001
Nightingale	0.04	2	0.8433
Redstart	33.66	7	<.0001
Whinchat	2.61	4	0.455
Stonechat	9.68	3	0.0079
Wheatear	14.26	3	0.0008
Ring Ouzel	21.95	4	<.0001
Blackbird	47.62	8	<.0001
Song Thrush	25.13	9	0.0015
Mistle Thrush	46.57	8	<.0001
Grasshopper Warbler	0.35	2	0.5526
Sedge Warbler	324.84	7	<.0001
Reed Warbler	258.18	7	<.0001
Lesser Whitethroat	1.98	2	0.1599
Whitethroat	40.34	8	<.0001
Garden Warbler	13.12	7	0.0412
Blackcap	42.23	8	<.0001
Wood Warbler	35.64	5	<.0001
Chiffchaff	17.42	6	0.0038

APPENDIX 4 Fledging date continued.

Species	Chi-square value	No. of GOR regions	P value
Willow Warbler	193.04	8	<.0001
Spotted Flycatcher	17.46	8	0.0147
Long-tailed Tit	25.92	8	0.0005
Marsh Tit	2.57	3	0.277
Blue Tit	210.42	8	<.0001
Great Tit	147.01	8	<.0001
Nuthatch	13.99	6	0.0157
Treecreeper	8.85	6	0.115
Magpie	165.51	5	<.0001
Jackdaw	28.94	6	<.0001
Rook	420.76	5	<.0001
Carrion Crow	69.79	3	<.0001
Starling	61.56	8	<.0001
House Sparrow	22.45	7	0.001
Tree Sparrow	37.54	8	<.0001
Chaffinch	28.86	8	0.0002
Greenfinch	21.06	8	0.0037
Goldfinch	10.21	6	0.0696
Linnet	16.59	8	0.0202
Twite	0.02	2	0.8818
Bullfinch	5.89	5	0.2078
Yellowhammer	49.84	6	<.0001
Reed Bunting	35.65	8	<.0001
Corn Bunting	20.31	3	<.0001

APPENDIX 5 5%, 50%, 95% and 100% percentiles for first egg laying dates for those species which showed a significant difference in their median **first egg laying dates** between the GORs in England.

Species	Region	Percentiles				No. records	caveat
		5	50	95	100		
Grey Heron	North West	49	70	114	152	346	
Grey Heron	North East	42	82	147	152	68	*
Grey Heron	Yorkshire/Humber	51	70	125	167	65	*
Grey Heron	East Midlands	59	79	130	146	132	
Grey Heron	East England	57	78	110	130	103	
Grey Heron	West Midlands	71	76	111	118	86	*
Mute Swan	North West	86	108	130	139	50	*
Mute Swan	East England	81	100	131	147	69	*
Mute Swan	South East	82	103	131	149	127	
Mute Swan	South West	85	104.5	144	162	50	*
Sparrowhawk	North West	123	130	142	156	69	*
Sparrowhawk	Yorkshire/Humber	124	132	148	155	133	
Sparrowhawk	East Midlands	123	130	147	154	64	*
Sparrowhawk	South East	118	131	146	161	121	
Kestrel	North West	103	122	145	154	88	*
Kestrel	Yorkshire/Humber	105	117	132	134	63	*
Kestrel	East Midlands	102	123	137	151	58	*
Kestrel	East England	109	122	136	158	133	
Kestrel	South East	109	123	141	148	108	
Kestrel	South West	101	121	138	144	59	*
Moorhen	North West	84	121	172	214	371	
Moorhen	North East	87	134.5	200	212	88	*
Moorhen	Yorkshire/Humber	89	121	169	189	120	
Moorhen	East Midlands	96	126	179	215	223	
Moorhen	East England	91	125	185	223	465	
Moorhen	West Midlands	92	119	179	223	262	
Moorhen	South East	86	129	187	211	493	
Moorhen	South West	91	124	168	196	221	
Oystercatcher	North West	107	135	162	188	487	
Oystercatcher	North East	117	140	158	177	186	
Oystercatcher	East Midlands	117	149.5	175	183	50	*
Oystercatcher	East England	122	139	171	187	110	
Lapwing	North West	85	102	147	173	395	
Lapwing	North East	82	98.5	146	153	80	*
Lapwing	Yorkshire/Humber	85	105	146	158	173	
Lapwing	East England	86	102	142	150	63	*
Lapwing	South East	84	98	141	153	98	*
Redshank	North West	104	120	156	165	78	*
Redshank	East England	109	126	160	177	111	
Nightjar	East Midlands	144	173	204	208	131	
Nightjar	East England	148	181	208	219	113	
Nightjar	South East	142	167	201	209	258	
Skylark	North West	104	126	164	180	111	
Skylark	East Midlands	106	149	178	192	78	*
Skylark	East England	112	147	192	214	185	
Skylark	South East	109	137	180	201	88	*

Dates are number of days since 1 January (see Appendix 2 for conversion to calendar days).

APPENDIX 5 First egg laying dates continued.

Species	Region	Percentiles				No. records	caveat
		5	50	95	100		
Swallow	North West	131	162	214	235	426	
Swallow	North East	135	172	220	242	234	
Swallow	Yorkshire/Humber	135	166	220	235	205	
Swallow	East Midlands	133	166	216	233	283	
Swallow	East England	136	167	216	235	334	
Swallow	West Midlands	127	152	208	229	119	
Swallow	South East	132	163	212	234	332	
Swallow	South West	126	158	208	230	252	
Tree Pipit	East Midlands	129	142	176	181	52	*
Tree Pipit	East England	119	134	166	187	99	*
Tree Pipit	South East	119	135	173	190	301	
Tree Pipit	South West	117	130	165	174	78	*
Meadow Pipit	North West	112	130	172	199	255	
Meadow Pipit	North East	115	128	179	193	82	*
Meadow Pipit	Yorkshire/Humber	114	132	170	179	116	
Meadow Pipit	East Midlands	108	133	172	184	95	*
Meadow Pipit	East England	107	124	180	190	91	*
Meadow Pipit	South East	105	121	179	195	161	
Pied Wagtail	North West	112	131	179	207	242	
Pied Wagtail	North East	116	136	179	191	101	
Pied Wagtail	Yorkshire/Humber	112	140	188	197	105	
Pied Wagtail	East Midlands	109	136	181	204	201	
Pied Wagtail	East England	108	140.5	189	214	346	
Pied Wagtail	West Midlands	114	135.5	183	203	104	
Pied Wagtail	South East	104	134	183	218	716	
Pied Wagtail	South West	105	133	177	195	156	
Dipper	North West	77	101	138	151	207	
Dipper	North East	72	100	139	159	211	
Dipper	Yorkshire/Humber	77	104.5	139	149	64	*
Dipper	East Midlands	82	102	143	151	51	*
Dipper	West Midlands	76	100.5	135	159	106	
Dipper	South West	73	97	130	141	145	
Wren	North West	108	127	178	211	426	
Wren	North East	113	131	182	210	98	*
Wren	Yorkshire/Humber	106	129	177	213	139	
Wren	East Midlands	111	130	180	206	448	
Wren	East England	97	125	177	208	358	
Wren	West Midlands	106	127	180	201	276	
Wren	South East	107	126	172	204	582	
Wren	South West	106	124	169	205	418	
Dunnock	North West	97	118	156	180	303	
Dunnock	North East	93	118	169	201	155	
Dunnock	Yorkshire/Humber	93	118	166	206	195	
Dunnock	East Midlands	95	114	164	213	399	
Dunnock	East England	81	114	175	219	312	
Dunnock	West Midlands	94	117	156	202	283	
Dunnock	South East	93	118	170	202	629	
Dunnock	South West	93	116	162	199	162	

Dates are number of days since 1 January (see Appendix 2 for conversion to calendar days).

APPENDIX 5 First egg laying dates continued.

Species	Region	Percentiles				No. records	caveat
		5	50	95	100		
Robin	North West	91	112.5	161	192	498	
Robin	North East	87	116	164.5	176	100	
Robin	Yorkshire/Humber	84	114	159	187	199	
Robin	East Midlands	85	113	162	194	356	
Robin	East England	80	109	161	199	590	
Robin	West Midlands	82	108	159	187	389	
Robin	South East	79	110	162	185	1110	
Robin	South West	79	106	155	188	524	
Robin	London	88	111.5	172	189	62	*
Redstart	North West	125	138	160	173	290	
Redstart	North East	126	139	158	191	205	
Redstart	Yorkshire/Humber	124	137	159	166	115	
Redstart	East Midlands	124	143	166	167	51	*
Redstart	West Midlands	123	138	160	173	73	*
Redstart	South East	121	132	161	175	147	
Redstart	South West	121	132.5	158	171	142	
Stonechat	North West	85	116.5	179	201	336	
Stonechat	South East	90	120	180	206	397	
Stonechat	South West	84	106.5	151	182	68	*
Ring Ouzel	North West	111	137	163	179	93	*
Ring Ouzel	North East	109	131	164	168	57	*
Ring Ouzel	Yorkshire/Humber	110	124.5	159	169	68	*
Ring Ouzel	East Midlands	104	118	158	170	74	*
Blackbird	North West	86	116	164	195	410	
Blackbird	North East	88	113	158	192	203	
Blackbird	Yorkshire/Humber	86	116.5	168	184	342	
Blackbird	East Midlands	83	115	165	205	425	
Blackbird	East England	80	112	166	217	609	
Blackbird	West Midlands	82	109	156	187	280	
Blackbird	South East	77	110	161	209	776	
Blackbird	South West	80	109	160	200	357	
Blackbird	London	79	105.5	150	167	52	*
Song Thrush	North West	85	113	170	208	695	
Song Thrush	North East	88	112	163	191	346	
Song Thrush	Yorkshire/Humber	85	116	169	199	459	
Song Thrush	East Midlands	83.5	111	167	207	860	
Song Thrush	East England	80	111	176	220	822	
Song Thrush	West Midlands	79	105	162	203	503	
Song Thrush	South East	79	112	169	225	1570	
Song Thrush	South West	80	109	164	198	391	
Song Thrush	London	82	113.5	159	209	86	*
Mistle Thrush	North West	77	99	141	160	183	
Mistle Thrush	North East	80	99	134	163	71	*
Mistle Thrush	Yorkshire/Humber	77	102	149	165	102	
Mistle Thrush	East Midlands	80	108	140	163	87	
Mistle Thrush	East England	72	97	133	143	81	
Mistle Thrush	West Midlands	74	95	133	156	101	
Mistle Thrush	South East	72	94	133	170	235	
Mistle Thrush	South West	76	103	145	175	129	

Dates are number of days since 1 January (see Appendix 2 for conversion to calendar days).

APPENDIX 5 First egg laying dates continued.

Species	Region	Percentiles				No. records	caveat
		5	50	95	100		
Sedge Warbler	North West	133	150	194	207	400	
Sedge Warbler	North East	145	151	201	209	63	*
Sedge Warbler	East Midlands	132	148	189	200	185	
Sedge Warbler	East England	128	138	166	198	582	
Sedge Warbler	South East	128	147	187	202	416	
Sedge Warbler	South West	128	143.5	178	189	90	*
Reed Warbler	North West	143	170	210	229	374	
Reed Warbler	Yorkshire/Humber	140	166.5	201	207	76	*
Reed Warbler	East Midlands	142	169	203	217	395	
Reed Warbler	East England	142	164	200	237	1720	
Reed Warbler	West Midlands	147	170	203	235	284	
Reed Warbler	South East	142	172	206	229	1238	
Reed Warbler	South West	134	159	193	214	1047	
Whitethroat	North West	128	141	187	197	67	*
Whitethroat	East Midlands	131	144	180	186	55	*
Whitethroat	East England	127	143	182	202	89	*
Whitethroat	West Midlands	126	141	175	191	79	*
Whitethroat	South East	125	145	187	201	205	
Blackcap	North West	117	132	164	176	116	
Blackcap	North East	118	134.5	161	169	86	*
Blackcap	Yorkshire/Humber	121	139	181	189	54	*
Blackcap	East Midlands	122	138	180	196	141	
Blackcap	East England	120	135.5	175	191	130	
Blackcap	West Midlands	116	132	166	191	82	*
Blackcap	South East	119	135	179	195	518	
Blackcap	South West	114	130	156	183	85	*
Wood Warbler	North West	130	144	170	182	95	*
Wood Warbler	West Midlands	130	146	166	167	53	*
Wood Warbler	South East	129	140	163	186	352	
Wood Warbler	South West	131	139	166	200	193	
Chiffchaff	North West	113	126.5	163	193	94	*
Chiffchaff	East Midlands	114	129	168	186	53	*
Chiffchaff	East England	109	124.5	157	168	106	
Chiffchaff	West Midlands	112	126	174	208	76	*
Chiffchaff	South East	111	124	171	201	698	
Chiffchaff	South West	108	122.5	157	185	230	
Willow Warbler	North West	125	135	166	184	478	
Willow Warbler	North East	126	139	165	178	159	
Willow Warbler	Yorkshire/Humber	125	136	161	181	222	
Willow Warbler	East Midlands	124	135	166	180	290	
Willow Warbler	East England	122	133	162	172	226	
Willow Warbler	West Midlands	126	135	171	175	119	
Willow Warbler	South East	122	132	160	187	823	
Willow Warbler	South West	122	133	149	169	196	
Long-tailed Tit	North West	90	104	127	145	170	
Long-tailed Tit	North East	89	101	123	136	123	
Long-tailed Tit	Yorkshire/Humber	85	99	127	155	108	
Long-tailed Tit	East Midlands	91	106	134	153	153	
Long-tailed Tit	East England	84	106	129	149	159	
Long-tailed Tit	West Midlands	85	101	125	136	182	
Long-tailed Tit	South East	82	104	128	145	297	
Long-tailed Tit	South West	84	101	123	137	148	

Dates are number of days since 1 January (see Appendix 2 for conversion to calendar days).

APPENDIX 5 First egg laying dates continued.

Species	Region	Percentiles				No. records	caveat
		5	50	95	100		
Marsh Tit	West Midlands	101	112	124	130	85	*
Marsh Tit	South East	98	110	126	130	54	*
Marsh Tit	South West	105	114	130	139	204	
Blue Tit	North West	108	122	136	156	542	
Blue Tit	North East	115	127	142	154	149	
Blue Tit	Yorkshire/Humber	108	121	135	161	173	
Blue Tit	East Midlands	104	120	138	162	395	
Blue Tit	East England	103	116	130	151	369	
Blue Tit	West Midlands	103	118	133	150	333	
Blue Tit	South East	103	116	132	147	739	
Blue Tit	South West	105	118	133	154	669	
Blue Tit	London	97	111	131	143	51	*
Great Tit	North West	106.5	122	143	172	340	
Great Tit	North East	113	130	147	152	143	
Great Tit	Yorkshire/Humber	107	120	141	153	111	
Great Tit	East Midlands	106	120	141	156	373	
Great Tit	East England	102	119	139	175	419	
Great Tit	West Midlands	105	121	140	167	357	
Great Tit	South East	100	116	134	169	855	
Great Tit	South West	105	121	136	160	792	
Great Tit	London	97	115	143	145	59	*
Magpie	North West	92	108	136	152	213	
Magpie	North East	88	107.5	139	155	50	*
Magpie	East Midlands	85	107	133	154	72	*
Magpie	East England	56	82	117	154	359	
Magpie	West Midlands	81	93	119	147	190	
Magpie	South East	88	104	123	143	150	
Magpie	South West	88	105	127	131	54	*
Jackdaw	North West	104	111	122	130	122	
Jackdaw	East Midlands	110	118	133	139	70	*
Jackdaw	West Midlands	98	111	123	131	89	*
Jackdaw	South East	105	112	125	174	161	
Jackdaw	South West	102	112	128	131	90	*
Rook	East Midlands	75	96	115	126	79	*
Rook	East England	72	84	103	128	126	
Carrion Crow	North West	91	103	123	135	168	
Carrion Crow	East England	72	93	119	175	205	
Carrion Crow	West Midlands	85	101	119	136	70	*
Carrion Crow	South East	92	106	127	141	107	
Carrion Crow	South West	90	105	129	151	89	*
Starling	North West	102	113	153	166	299	
Starling	North East	107	114	138	157	190	
Starling	Yorkshire/Humber	101	113.5	153	158	84	*
Starling	East Midlands	101	113	145	164	196	
Starling	East England	100	110	157	168	555	
Starling	West Midlands	100	111	149	166	189	
Starling	South East	98	110	152	176	1115	
Starling	South West	95	110	146	155	156	
Starling	London	94	108	146	156	93	*

Dates are number of days since 1 January (see Appendix 2 for conversion to calendar days).

APPENDIX 5 First egg laying dates continued.

Species	Region	Percentiles				No. records	caveat
		5	50	95	100		
House Sparrow	North West	100	124	189	206	134	
House Sparrow	East Midlands	113	141	185	204	156	
House Sparrow	East England	88	145	199	227	458	
House Sparrow	West Midlands	98	131	186	212	102	
House Sparrow	South East	106	139	195	215	444	
House Sparrow	South West	106	133.5	190	193	84	*
Tree Sparrow	North West	118	142	201	213	715	
Tree Sparrow	North East	122	149	200	217	103	
Tree Sparrow	Yorkshire/Humber	116	135	198	219	246	
Tree Sparrow	East Midlands	115	136	185	216	755	
Tree Sparrow	East England	121	142	200	215	683	
Tree Sparrow	West Midlands	121	135	181	214	194	
Tree Sparrow	South East	122	138	197	213	430	
Tree Sparrow	London	111	131	186	193	159	
Chaffinch	North West	110	129	153	181	478	
Chaffinch	North East	113	131	157	172	211	
Chaffinch	Yorkshire/Humber	110	127	157	179	206	
Chaffinch	East Midlands	105	125	149	174	404	
Chaffinch	East England	103	125	151	183	315	
Chaffinch	West Midlands	108	123	151	176	283	
Chaffinch	South East	108	127	156	197	861	
Chaffinch	South West	106	123.5	151	171	452	
Greenfinch	North West	105	138.5	195	214	358	
Greenfinch	North East	106	133.5	179	220	150	
Greenfinch	Yorkshire/Humber	103	138	196	227	214	
Greenfinch	East Midlands	108	138	194	247	353	
Greenfinch	East England	106	135	188	223	635	
Greenfinch	West Midlands	98	132	197	230	409	
Greenfinch	South East	104	139	194	232	785	
Greenfinch	South West	105	134	195	220	212	
Greenfinch	London	99	125	188	203	84	*
Goldfinch	North West	123	147	203	217	74	*
Goldfinch	East Midlands	125	151	198	225	62	*
Goldfinch	East England	128	150.5	199	227	158	
Goldfinch	West Midlands	118	142	201	210	57	*
Goldfinch	South East	124	155	208	223	181	
Goldfinch	South West	118	142	202	219	124	
Yellowhammer	North West	118	135	189	195	50	*
Yellowhammer	North East	119	140.5	188	204	50	*
Yellowhammer	East Midlands	119	145	191	219	117	
Yellowhammer	East England	125	151	205	225	93	*
Yellowhammer	West Midlands	116	141	206	233	101	
Yellowhammer	South East	125	149.5	203	226	354	
Yellowhammer	South West	128	154	206	222	102	
Reed Bunting	North West	117	134.5	177	203	266	
Reed Bunting	North East	121	140	182	200	59	*
Reed Bunting	East Midlands	119	135	181	214	450	
Reed Bunting	East England	119	132	173	201	394	
Reed Bunting	West Midlands	120	136	181	202	103	
Reed Bunting	South East	116	136	178	194	339	
Reed Bunting	South West	116	130	169	195	82	*
Corn Bunting	East England	126	161	204	214	50	*
Corn Bunting	South East	154	177	208	225	138	
Corn Bunting	South West	148	167	196	210	153	

Dates are number of days since 1 January (see Appendix 2 for conversion to calendar days).

APPENDIX 6 5%, 50%, 95% and 100% percentiles for fledging dates for those species which showed a significant difference in their median **fledging dates** between the GORs in England.

Species	Region	Percentiles				No. records	caveat
		5	50	95	100		
Grey Heron	North West	138	161	192	242	419	
Grey Heron	North East	146	174	235	238	124	
Grey Heron	Yorkshire/Humber	143	161	226	268	73	*
Grey Heron	East Midlands	153	171	222	245	147	
Grey Heron	East England	142	169	197	218	120	
Grey Heron	West Midlands	160	168	197	203	78	*
Hobby	East Midlands	213	227	244	247	70	*
Hobby	South East	217	228	240	254	112	
Oystercatcher	North West	165	194	224	239	272	
Oystercatcher	North East	175	201	222	241	185	
Oystercatcher	East England	174	197	232	243	102	
Ringed Plover	North West	156	178.5	226	239	170	
Ringed Plover	North East	162	195	234	242	132	
Ringed Plover	East Midlands	161	194	232	248	279	
Ringed Plover	East England	160	194	233	255	403	
Ringed Plover	South East	150	182	230	246	87	*
Collared Dove	North West	95	151	250	284	127	
Collared Dove	North East	95	167	285	309	50	*
Collared Dove	Yorkshire/Humber	99	149	253	294	111	
Collared Dove	East Midlands	96	155	262	334	112	
Collared Dove	East England	97	159	269	315	382	
Collared Dove	West Midlands	94	170.5	279	308	194	
Collared Dove	South East	80	151	259	340	217	
Collared Dove	South West	83	160	269	280	117	
Turtle Dove	East Midlands	174	195.5	243	259	92	*
Turtle Dove	East England	164	194	241	257	206	
Turtle Dove	South East	169	208	245	254	103	
Little Owl	North West	160	180	198	200	51	*
Little Owl	West Midlands	153	173.5	187	199	50	*
Tawny Owl	North West	132	150	173	194	354	
Tawny Owl	North East	139	155	178	201	193	
Tawny Owl	Yorkshire/Humber	132	152	173	186	147	
Tawny Owl	East Midlands	135	151	179	221	167	
Tawny Owl	East England	131	150	177	190	92	*
Tawny Owl	West Midlands	127	146	172	195	151	
Tawny Owl	South East	127	145	174	205	273	
Tawny Owl	South West	124	145	168	197	136	
Nightjar	East Midlands	183	210	238	248	163	
Nightjar	East England	186	218	244	257	144	
Nightjar	South East	181	205	240	257	327	
Skylark	North West	123	149	191	212	152	
Skylark	East Midlands	140	175.5	205	222	66	*
Skylark	East England	142	180	216	239	207	
Skylark	West Midlands	136	167	201	215	52	*
Skylark	South East	139	171	203	227	89	*

Dates are number of days since 1 January (see Appendix 2 for conversion to calendar days).

APPENDIX 6 Fledging dates continued.

Species	Region	Percentiles				No. records	caveat
		5	50	95	100		
Swallow	North West	171	200.5	257	280	458	
Swallow	North East	175	201	259	279	211	
Swallow	Yorkshire/Humber	175	201.5	264	282	238	
Swallow	East Midlands	170	198	258	271	274	
Swallow	East England	171	202	257	273	232	
Swallow	West Midlands	165	198	251	265	198	
Swallow	South East	169	207	256	271	378	
Swallow	South West	166	194.5	250	274	290	
Tree Pipit	East Midlands	161	172	200	212	76	*
Tree Pipit	East England	151	165	201	222	125	
Tree Pipit	South East	150	167	205	223	636	
Tree Pipit	South West	149	163	197	204	108	
Meadow Pipit	North West	141	159	203	228	426	
Meadow Pipit	North East	145	158.5	207	222	148	
Meadow Pipit	Yorkshire/Humber	144	160	203	224	179	
Meadow Pipit	East Midlands	142	162	205	222	179	
Meadow Pipit	East England	137	153	218	240	227	
Meadow Pipit	West Midlands	132	161	199	215	56	*
Meadow Pipit	South East	132	152	204	227	369	
Meadow Pipit	South West	138	155	210	214	72	*
Yellow Wagtail	North West	159	176	202	209	118	
Yellow Wagtail	East Midlands	162	177.5	219.5	224	80	*
Yellow Wagtail	East England	156	176	211	219	95	*
Yellow Wagtail	South East	159	171	213	216	90	*
Pied Wagtail	North West	143	163	211	240	323	
Pied Wagtail	North East	146	172	212	227	112	
Pied Wagtail	Yorkshire/Humber	146	169	214	228	146	
Pied Wagtail	East Midlands	139	170	215	234	253	
Pied Wagtail	East England	139	171	220	237	400	
Pied Wagtail	West Midlands	143	171	218	238	157	
Pied Wagtail	South East	135	168	218	250	767	
Pied Wagtail	South West	139	166	215	235	210	
Wren	North West	144	166	220	252	275	
Wren	Yorkshire/Humber	148	165	214	249	117	
Wren	East Midlands	148	168	216	240	308	
Wren	East England	119	163	215	246	293	
Wren	West Midlands	145	166	212	244	190	
Wren	South East	143	164	216	238	391	
Wren	South West	145	165	219	235	244	
Dunnock	North West	126	148	201	236	428	
Dunnock	North East	129	151	206	251	176	
Dunnock	Yorkshire/Humber	123	145	200	224	262	
Dunnock	East Midlands	120	146	207	247	537	
Dunnock	East England	115	145	207	251	474	
Dunnock	West Midlands	122	146	206	237	310	
Dunnock	South East	120	149	213	234	655	
Dunnock	South West	122	146	197	230	229	

Dates are number of days since 1 January (see Appendix 2 for conversion to calendar days).

APPENDIX 6 Fledging dates continued.

Species	Region	Percentiles				No. records	caveat
		5	50	95	100		
Robin	North West	122	144	193	219	361	
Robin	North East	118	154	200	208	59	*
Robin	Yorkshire/Humber	121	146	198	218	122	
Robin	East Midlands	118	143	198	229	289	
Robin	East England	113	142	200	232	399	
Robin	West Midlands	116	142	190	218	247	
Robin	South East	113	142	192	214	696	
Robin	South West	111	138	186	223	343	
Redstart	North West	159	171	196	206	169	
Redstart	North East	160	172.5	193	221	106	
Redstart	Yorkshire/Humber	158	170	192	197	95	*
Redstart	East Midlands	159	174	193	203	70	*
Redstart	West Midlands	158	170	195	199	53	*
Redstart	South East	153	168	198	208	134	
Redstart	South West	155	167	191	203	112	
Stonechat	North West	119	152	215	260	552	
Stonechat	South East	124	151	215	241	670	
Stonechat	South West	120	142	199	228	130	
Wheatear	North West	150	162	184	208	157	
Wheatear	East England	144	157	196	203	93	*
Wheatear	West Midlands	153	163	184	203	104	
Ring Ouzel	North West	142	168	194	210	97	*
Ring Ouzel	North East	139	161	193	198	61	*
Ring Ouzel	Yorkshire/Humber	141	155	197	212	76	*
Ring Ouzel	East Midlands	135	149	188	200	75	*
Blackbird	North West	115	150	201	228	406	
Blackbird	North East	119	150	195	226	191	
Blackbird	Yorkshire/Humber	115	147	203	222	337	
Blackbird	East Midlands	113	147	205	240	435	
Blackbird	East England	110	145	209	248	646	
Blackbird	West Midlands	112	144.5	202	241	260	
Blackbird	South East	107	140	198	242	701	
Blackbird	South West	108	138	193.5	230	380	
Song Thrush	North West	115	143	201	239	692	
Song Thrush	North East	118	143	197	214	321	
Song Thrush	Yorkshire/Humber	115	146	204	231	478	
Song Thrush	East Midlands	112	142	202	239	975	
Song Thrush	East England	110	143	210	251	967	
Song Thrush	West Midlands	108	140	194	231	504	
Song Thrush	South East	108	143	207	254	1494	
Song Thrush	South West	110	141	201	241	400	
Song Thrush	London	110.5	149.5	203	239	80	*
Mistle Thrush	North West	108	128	179	206	270	
Mistle Thrush	North East	110	129	187	198	83	*
Mistle Thrush	Yorkshire/Humber	106	126	176	194	152	
Mistle Thrush	East Midlands	107	125.5	165	197	130	
Mistle Thrush	East England	105	127	169	203	151	
Mistle Thrush	West Midlands	110	128	180	193	128	
Mistle Thrush	South East	102	122	161	207	259	
Mistle Thrush	South West	108	129	181	208	125	

Dates are number of days since 1 January (see Appendix 2 for conversion to calendar days).

APPENDIX 6 Fledging dates continued.

Species	Region	Percentiles				No. records	caveat
		5	50	95	100		
Sedge Warbler	North West	164	181	223	236	532	
Sedge Warbler	North East	174	182	229	238	72	*
Sedge Warbler	East Midlands	163	178	219	232	198	
Sedge Warbler	East England	159	169	201	233	663	
Sedge Warbler	West Midlands	164	182	215	218	55	*
Sedge Warbler	South East	159	175.5	218	232	474	
Sedge Warbler	South West	160	174	208	223	92	*
Reed Warbler	North West	171	197	238	251	392	
Reed Warbler	Yorkshire/Humber	169	190	227	234	85	*
Reed Warbler	East Midlands	170	196	231	243	416	
Reed Warbler	East England	169	191	228	265	1730	
Reed Warbler	West Midlands	172	197	230	258	305	
Reed Warbler	South East	170	199	230	255	1364	
Reed Warbler	South West	162	186	220	240	1055	
Whitethroat	North West	154	167	214	241	285	
Whitethroat	North East	159	176	223	238	73	*
Whitethroat	Yorkshire/Humber	155	168	203	232	67	*
Whitethroat	East Midlands	158	173	214	225	176	
Whitethroat	East England	156	171	210	233	270	
Whitethroat	West Midlands	152	171	207	215	136	
Whitethroat	South East	153	170	211	230	662	
Whitethroat	South West	152	166	217	235	179	
Garden Warbler	North West	157	171	206	221	79	*
Garden Warbler	North East	158	168	194	205	65	*
Garden Warbler	East Midlands	154	169	193	207	111	
Garden Warbler	East England	157	167.5	196	221	98	*
Garden Warbler	West Midlands	150.5	167.5	202.5	206	60	*
Garden Warbler	South East	156	168	203	221	324	
Garden Warbler	South West	154	167	193	210	76	*
Blackcap	North West	147	159	190	203	121	
Blackcap	North East	145	159	189	220	84	*
Blackcap	Yorkshire/Humber	149	161.5	209	209	58	*
Blackcap	East Midlands	149	165	207	220	163	
Blackcap	East England	146	160	194	215	169	
Blackcap	West Midlands	145	162	191	217	87	*
Blackcap	South East	147	164	205	224	584	
Blackcap	South West	143	157	183	213	119	
Wood Warbler	North West	161	175	200	207	122	
Wood Warbler	Yorkshire/Humber	166	175	194	198	51	*
Wood Warbler	West Midlands	161	174	196	199	76	*
Wood Warbler	South East	161	171	193	216	399	
Wood Warbler	South West	162	170	194	231	253	
Chiffchaff	North West	144	160	206	225	113	
Chiffchaff	East Midlands	149	162	200	216	53	*
Chiffchaff	East England	143	160	190	209	115	
Chiffchaff	West Midlands	148	161.5	208	240	68	*
Chiffchaff	South East	144	158	206	232	605	
Chiffchaff	South West	140	156	191	204	226	

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APPENDIX 6 Fledging dates continued.

Species	Region	Percentiles				No. records	caveat
		5	50	95	100		
Willow Warbler	North West	158	169	197	217	664	
Willow Warbler	North East	159	173	196	213	169	
Willow Warbler	Yorkshire/Humber	158	169	193	214	264	
Willow Warbler	East Midlands	157	169	195	212	483	
Willow Warbler	East England	156	167	196	211	312	
Willow Warbler	West Midlands	157	168.5	201	207	152	
Willow Warbler	South East	154	165	193	221	1273	
Willow Warbler	South West	154	166	183	217	307	
Spotted Flycatcher	North West	175	187	225	241	240	
Spotted Flycatcher	North East	174	194	232	240	191	
Spotted Flycatcher	Yorkshire/Humber	175	190	224	229	107	
Spotted Flycatcher	East Midlands	173	188	223	242	168	
Spotted Flycatcher	East England	173	191	226	246	245	
Spotted Flycatcher	West Midlands	166	189	223	244	308	
Spotted Flycatcher	South East	171	188	224	242	451	
Spotted Flycatcher	South West	170	188	223.5	240	380	
Long-tailed Tit	North West	126	142	160	175	196	
Long-tailed Tit	North East	128	140	161	169	101	
Long-tailed Tit	Yorkshire/Humber	125	139	163	182	133	
Long-tailed Tit	East Midlands	128	142	162	189	212	
Long-tailed Tit	East England	121	142	163	177	171	
Long-tailed Tit	West Midlands	125	140	160	178	169	
Long-tailed Tit	South East	121	140	159	175	322	
Long-tailed Tit	South West	120	139	154	164	152	
Blue Tit	North West	149	164	177	187	434	
Blue Tit	North East	154	170	186	190	98	*
Blue Tit	Yorkshire/Humber	149	163	177	193	179	
Blue Tit	East Midlands	147	163	178	202	319	
Blue Tit	East England	146	157	172	189	288	
Blue Tit	West Midlands	149	160.5	178	204	268	
Blue Tit	South East	146	159	173	186	563	
Blue Tit	South West	149	161	175	192	550	
Great Tit	North West	148	162	182	210	340	
Great Tit	North East	154	167	188	194	102	
Great Tit	Yorkshire/Humber	146	160	180	183	127	
Great Tit	East Midlands	146	161	180	211	339	
Great Tit	East England	142	160	183	215	406	
Great Tit	West Midlands	144	162	186	204	354	
Great Tit	South East	141	157	177	209	793	
Great Tit	South West	145	160	177	196	652	
Nuthatch	North West	148	161	175	184	74	*
Nuthatch	East Midlands	150	161	176	181	119	
Nuthatch	East England	150	162	183	217	74	*
Nuthatch	West Midlands	143	160	177	187	155	
Nuthatch	South East	144	159	174	199	327	
Nuthatch	South West	148	160	173	203	526	
Magpie	North West	138	157	182	205	64	*
Magpie	East Midlands	127	146	182	204	51	*
Magpie	East England	101	125	181	213	222	
Magpie	West Midlands	121	142	165	189	216	
Magpie	South East	124	146	174	184	68	*

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APPENDIX 6 Fledging dates continued.

Species	Region	Percentiles				No. records	caveat
		5	50	95	100		
Jackdaw	North West	155	165	174	179	148	
Jackdaw	Yorkshire/Humber	151	167	177	180	59	*
Jackdaw	East Midlands	152	168	180	194	110	
Jackdaw	West Midlands	155	166	178	183	113	
Jackdaw	South East	154	164	175	231	177	
Jackdaw	South West	153	164	180	191	139	
Rook	North West	120	141	159	171	50	*
Rook	East Midlands	132	151	164	173	665	
Rook	East England	122	135	153	183	299	
Rook	West Midlands	126	146	155	167	585	
Rook	South East	118	135	157	170	169	
Carrion Crow	East England	113	133	187	222	101	
Carrion Crow	West Midlands	133	154	175	180	51	*
Carrion Crow	South West	137	154	168	177	58	*
Starling	North West	133	146	181	194	159	
Starling	North East	140	151	179	198	135	
Starling	Yorkshire/Humber	135	146	187	192	61	*
Starling	East Midlands	137	145	183	193	111	
Starling	East England	131	145	182	192	223	
Starling	West Midlands	133	150	184	232	222	
Starling	South East	131	143	185	205	476	
Starling	South West	133	146	167	188	76	*
House Sparrow	North West	129	161.5	233	249	194	
House Sparrow	Yorkshire/Humber	127	166.5	220	265	68	*
House Sparrow	East Midlands	144	176	223	240	247	
House Sparrow	East England	118	174	228	300	523	
House Sparrow	West Midlands	134	170	218	252	167	
House Sparrow	South East	136	171	229	273	489	
House Sparrow	South West	129	172	221	245	131	
Tree Sparrow	North West	149	177	230	241	539	
Tree Sparrow	North East	148	173.5	220.5	229	80	*
Tree Sparrow	Yorkshire/Humber	148	168	231	243	189	
Tree Sparrow	East Midlands	146	169	218	246	487	
Tree Sparrow	East England	153	177	237	249	369	
Tree Sparrow	West Midlands	150	170	212	243	130	
Tree Sparrow	South East	153	171	227	245	267	
Tree Sparrow	London	145	175	220	224	139	
Chaffinch	North West	138	158	182	223	275	
Chaffinch	North East	143	161.5	186	199	124	
Chaffinch	Yorkshire/Humber	136	158	185	206	167	
Chaffinch	East Midlands	135	158	185	214	306	
Chaffinch	East England	133	155	199	230	248	
Chaffinch	West Midlands	137	158	188	233	172	
Chaffinch	South East	136	158	190	225	535	
Chaffinch	South West	133	154	185	217	248	

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APPENDIX 6 Fledging dates continued.

Species	Region	Percentiles				No. records	caveat
		5	50	95	100		
Greenfinch	North West	129	169	232	252	210	
Greenfinch	North East	143	175	242	265	61	*
Greenfinch	Yorkshire/Humber	137	170.5	221	258	126	
Greenfinch	East Midlands	141	173	238	258	222	
Greenfinch	East England	139	177	236	258	337	
Greenfinch	West Midlands	137	176	237	257	218	
Greenfinch	South East	134	175	230	267	415	
Greenfinch	South West	133	171	226	259	121	
Linnet	North West	141	164	220	242	387	
Linnet	North East	142	166	214	235	125	
Linnet	Yorkshire/Humber	135	165	224	242	197	
Linnet	East Midlands	144	165	221	253	401	
Linnet	East England	145	167	235	260	448	
Linnet	West Midlands	144	172	228	258	223	
Linnet	South East	140	165	223	250	599	
Linnet	South West	145	171.5	224	236	172	
Yellowhammer	North West	140	161	217	231	54	*
Yellowhammer	East Midlands	152	180	230	256	126	
Yellowhammer	East England	152	187.5	238	251	86	*
Yellowhammer	West Midlands	149	176	223	255	96	*
Yellowhammer	South East	153	188	236	254	253	
Yellowhammer	South West	156	187.5	229	237	136	
Reed Bunting	North West	147	162	204	232	356	
Reed Bunting	North East	150	168	204	230	55	*
Reed Bunting	Yorkshire/Humber	148	168	213	218	57	*
Reed Bunting	East Midlands	149	166	210	238	397	
Reed Bunting	East England	148	162	200	233	411	
Reed Bunting	West Midlands	152	166	212	233	103	
Reed Bunting	South East	147	164	207	224	395	
Reed Bunting	South West	146	159	196	227	87	*
Corn Bunting	East England	154	195	233	236	58	*
Corn Bunting	South East	181	206.5	235	249	128	
Corn Bunting	South West	177	195	225	237	141	

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