

# Population estimates of birds in Great Britain and the United Kingdom

*Helen Baker, David A. Stroud, Nicholas J. Aebischer,  
Peter A. Cranswick, Richard D. Gregory,  
Claire A. McSorley, David G. Noble and  
Mark M. Rehfisch*



Goldfinch *Carduelis carduelis* by Rosemary Watts-Powell

**ABSTRACT** In 1997, the Avian Population Estimates Panel (APEP) published its first collation of British and UK bird population estimates (Stone *et al.* 1997).

This paper provides the first review of those estimates, drawing on information available prior to 2002 for most species. Several major surveys have reported estimates in the intervening period, including for breeding seabirds, wintering gulls, and wintering waterbirds. A new method of deriving estimates for many common species has been adopted, which relies on adjusting former estimates according to published trends. In recognition of the value of a single source of definitive population estimates, the estimates presented in this paper will be the primary reference for statutory conservation purposes until publication of the next review.

The principle of using qualifying thresholds (e.g. 1% of a population) as a mechanism to identify important areas for protecting birds and their habitats has been widely adopted in international conservation practice. Wetlands of International Importance (Ramsar sites) may be designated if they support 1% or more of the biogeographical population of a waterbird species (Ramsar Convention Secretariat 1999; Wetlands International 2002) and Important Bird Areas (IBA) may be identified on a similar basis for a wider variety of species (Heath & Evans 2000). In the UK, sites may be classified as Special Protection Areas (SPA), to meet the requirements of the EU Birds Directive (79/409/EEC), if they support 1% or more of the national population of a species listed in Annex I to the Directive (rare and vulnerable species within Europe) or 1% or more of the biogeographical population of a regularly occurring migratory species, or are important for other characteristics (JNCC 1999). At a national level, Sites of Special Scientific Interest (SSSI) in Britain and Areas of Special Scientific Interest (ASSI) in Northern Ireland may be designated, among other reasons, if an area supports 1% or more of the national population of any species (NCC 1989). In the UK, national populations have been defined as 'Great Britain (GB)' and 'All-Ireland' respectively, the latter being Northern Ireland and the Republic of Ireland combined (Stroud *et al.* 2001).

Trends in numbers of birds may be derived from national population estimates that are based on periodic or annual surveys. For many rarer species and other species surveyed infrequently, trends are derived from and reported with the results of each national survey. For many common species, annual monitoring schemes such as the BTO/JNCC/RSPB Breeding Bird Survey (BBS), the JNCC Seabird Monitoring Programme (SMP) and BTO/WWT/RSPB/JNCC Wetland Bird Survey (WeBS) provide information about trends. Trends are valuable indicators of the status of bird populations and the combined trends of species in ecological groupings, such as birds of farmland, are now recognised as valuable 'quality of life' indicators (UK Government 1999). This paper aims to provide definitive national population estimates; information on trends is published elsewhere, e.g. Pollitt *et al.* 2003, Crick *et al.* 2004, Mitchell *et al.* 2004, Raven *et al.* 2004.

Since the Avian Population Estimates Panel (APEP) published its first list (Stone *et al.* 1997; hereafter referred to as the APEP97 list), many new surveys have been completed or initiated, largely under the Statutory Conservation Agencies/RSPB Annual Breeding Bird Survey (SCARABBS), but large-scale census of many of our commoner breeding species has not been undertaken. To overcome this gap, previous estimates for commoner species, typically derived from Gibbons *et al.* (1993; hereafter referred to as 1988–91 *Atlas*), have been adjusted wherever possible in accordance with published trends. Another significant update to the APEP97 list is the inclusion of revised estimates for non-breeding waterbirds, following major analyses and reviews of a suite of surveys and reports, such as WeBS and national goose surveys (Kershaw & Cranswick 2003; Rehfishch *et al.* 2003b). In addition, new estimates from *Seabird 2000* (Mitchell *et al.* 2004) are also included.

The APEP97 list attempted both to widen the use of unpublished data and to reduce the inevitable confusion caused by having population estimates published in a wide range of papers and reports. In this current list we have limited the use of unpublished information as far as possible in order to improve accessibility to specific information, to establish a clearer audit of information, and thus to improve confidence in the population estimates presented. In recognition of the value of a single source of definitive population estimates, those presented in this paper will be the primary reference for statutory conservation purposes until revised (planned for 2008). However, for a small number of rarer species of high conservation concern, estimates may be adopted for statutory use earlier than they appear in the APEP list.

### *The Avian Population Estimates Panel*

The Panel comprises representatives of the British Trust for Ornithology (BTO), the Game Conservancy Trust (GCT), the Joint Nature Conservation Committee (JNCC), the Royal Society for the Protection of Birds (RSPB) and The Wildfowl & Wetlands Trust (WWT).

### *Coverage*

#### *Species coverage*

All regular breeding, passage or wintering species on the British List (see [www.bou.org.uk](http://www.bou.org.uk)) in categories A to C (including non-native species), and for which

estimates were available, were considered. Scarce migrants, with the exception of Aquatic Warbler *Acrocephalus paludicola* and those that have breeding populations, and vagrants were excluded. Recognised races or biogeographical populations of some species have been considered separately, for example many of the geese and the Fair Isle race of Wren *Troglodytes troglodytes fridariensis*.

### Geographical coverage

Estimates were collated for GB and the UK. For this purpose, GB included England, Scotland, Wales, and the Isle of Man, but excluded the Channel Islands. Estimates for the UK combined those for GB with those for Northern Ireland. This approach was consistent with that adopted for the APEP97 list. However, as the new list will have a formal statutory use in the UK, including as a source for deriving national 1% thresholds, the inclusion of the Isle of Man was problematic. To overcome this, GB estimates for a few key species, including Hen Harrier *Circus cyaneus*, Peregrine Falcon *Falco peregrinus* and Red-billed Chough *Pyrrhonorax pyrrhonorax*, were compiled to exclude the Isle of Man (noted in the list) and separate estimates for the Isle of Man have been listed for completeness. The UK estimates for these species include the Isle of Man. For the great majority of species, the inclusion of the relatively small populations in the Isle of Man did not affect the totals sufficiently to affect any derived thresholds; consequently, for the majority of species listed, GB includes the Isle of Man.

### Seasonal coverage

It was not possible to give population estimates for all species in all seasons. However, for some groups of species both breeding and wintering estimates are given, to provide information for implementing conservation policy, and to reflect the fact that numbers of birds present in different seasons may be influenced by migration and may involve different biogeographical populations. For a small number of species that occur principally during migration periods, we have presented estimates for either spring or autumn. For all other species, the term 'wintering' refers to the non-breeding period.

### Population estimates

#### Sources of population estimates

The majority of estimates included in this paper

were taken from the most contemporary original published sources available, or from papers accepted for publication in scientific journals. A key difference from the APEP97 list was that some estimates were adjusted according to the best available published population trends (detailed below); in these cases, both the original source and the trend used are indicated in the list. Some of the estimates were extrapolated from published information to provide fuller geographical coverage and these are clearly distinguished.

### Common breeding birds

A variety of sources of estimates for common breeding birds were drawn upon, but two were of particular significance: the 1988–91 *Atlas* and *Seabird 2000*.

The 1988–91 *Atlas* was the source of estimates for many species published in the APEP97 list. This remained the case, but with a significant change in approach: for many species we have used the best available smoothed trends to adjust previous estimates. The principal source of these trends was the BTO/JNCC *Breeding Birds in the Wider Countryside Report* (Crick *et al.* 2004). For species that occur throughout the UK, the analysis for the trend adjustment was done at the UK level and the ratio of the GB to UK population in APEP97 was then used to derive adjusted GB estimates.

The updated figure for Red Grouse *Lagopus lagopus* was obtained by multiplying the 1988–91 *Atlas* figure of 250,000 pairs by the 1990–2000 change estimated from the GCT's National Gamebag Census, based on 205 UK upland estates that contributed data on grouse bags during this period. The Gamebag Census trend in bag/km<sup>2</sup> was adjusted to reflect the trend in grouse abundance using the relationship between bag and density described in Hudson (1992).

*Seabird 2000* was the third complete seabird census conducted in Great Britain and Ireland (including the Channel Islands and Isle of Man). In contrast to previous national censuses, inland colonies of Great Cormorants *Phalacrocorax carbo*, gulls and terns were surveyed. Estimates of breeding seabirds were made from counts of birds or nest areas, or using 'playback' methods for burrowing nocturnal species (Ratcliffe *et al.* 1998). A full description of counting methods and count units is given in Mitchell *et*

*al.* (2004). Owing to problems arising from lack of site fidelity, the majority of terns were surveyed within a single year (2000). A complete census of Northern Gannets *Morus bassanus* was not undertaken for *Seabird 2000*, but a national survey was carried out in 2003–04 and we have favoured the use of the estimates from the latter (Wanless *et al.* 2005).

### Rare breeding birds

Published estimates from SCARABBS or, when these are not available, estimates derived from published reports of the Rare Breeding Birds Panel (RBBP) have been used. To take natural fluctuation into account we have typically presented the means of published RBBP estimates from the five-year period 1998–02. For most species, a range is given representing a minimum (confirmed pairs or other appropriate breeding unit) and a maximum (representing the sum total of confirmed, probable and possible breeding pairs/units). For some species this was not possible and a single value represents a 'best estimate'. A few species are intermittent breeders in the UK and have five-year means of less than one, so we have expressed the populations of these as 0–1 pairs/units. However, species with five-year means of less than one *and* that bred only in one year of the five-year period used were excluded. Estimates for rarer breeding seabirds were taken from Mitchell *et al.* (2004).

### Wintering birds

Two key papers containing new national population estimates allowed us to include the most recent GB estimates for many non-breeding waterbirds (Kershaw & Cranswick 2003 and Rehfish *et al.* 2003b). The UK estimates for waders were calculated using the same methods for the GB estimates, but with inclusion of data from Northern Ireland (Rehfish *et al.* 2003a,b). UK estimates for waterfowl were derived either from collation of GB and NI estimates or from extrapolation of the GB estimate using a multiplier based on the ratio of populations in GB and UK derived from the APEP97 list. NI estimates for waterfowl were derived primarily from WeBS (Pollitt *et al.* 2000).

Estimates for non-breeding gulls came from the 1993 BTO Winter Gull Roost Survey, as in the APEP97 list. However, the 1993 survey has since been fully analysed and published leading to slight revisions in figures for gulls (Burton *et al.* 2003). Nonetheless, the estimates for gulls

remain minima as a result of incomplete coverage and the data being unsuitable for extrapolation.

Population estimates and trends for wintering populations of non-waterbirds are rarely produced and we chose to repeat most of the estimates reported in the APEP97 list, based largely on the BTO *Winter Atlas* (Lack 1986).

### Passage birds

At present, population estimates for waterbirds on passage are of limited value because turnover of individuals may be high in some species and hence the accuracy of estimates is low. For this reason, APEP decided to largely exclude passage population estimates until further work to improve methods of estimation is completed. Some species occur only during passage periods, however, so despite the possible poor quality of the data, we have reported estimates for these species. For waterbirds, the figures are derived from the most recent five-year peak mean from the WeBS; the rounded counts are adjusted to take account of WeBS coverage by multiplying by two for GB and four for NI (see APEP97 for fuller explanation). The estimate for Aquatic Warbler was derived from a variety of sources, including relevant County Bird Reports.

### Units of population measure

For the majority of species, the simplest units of population measure – individuals and pairs – are appropriate ways to express population estimates. However, for species with more complex breeding biology, or where the identification of discrete 'pairs' is difficult, it is useful to describe the population in other units, as identified in table 1.

### Rounding conventions

If population estimates were rounded in the source publication, these rounded figures have been given here. When (non-rounded) estimates were of high reliability (code 1 or 2; see below) then the exact published estimate has been reproduced. However, for estimates of poor reliability (code 3) we adopted the following rounding convention (consistent with the APEP97 list): >1,000,000 to nearest 100,000; 100,000–1,000,000 to nearest 10,000; 10,000–100,000 to nearest 1,000; 1,000–10,000 to nearest 100; 100–1,000 to the nearest 10; <100 as published.

### Using the table

#### Type of estimate

- Best estimate (Best est.): the best available single figure or range.
- Five-year mean (5-y mean): the average minimum–maximum of published RBBP figures for 1996–00 or the five-year peak mean for non-breeding waterbirds.
- Best estimate with 95% confidence limits (95%): estimates derived from sample surveys in which confidence limits could be calculated.
- Minimum (Min.): for estimates where insufficient data exist to provide an accurate estimate, but where that given is known to be a considerable underestimate.

#### Derivation (Der)

Numbered from 1 to 7 with following meanings (estimates may be derived from a combination of these):

- 1 = complete count – a full or near-full census;
- 2 = expert estimate – the best estimate in the opinion of experts studying the population of the species concerned;
- 3 = compilation – an estimate derived from a number of sources;
- 4 = extrapolation – derived from extrapolating from sample surveys and methods based on abundance and distribution data (see above);
- 5 = extrapolation – derived from extrapolating from an existing estimate using the most representative smoothed trend available; either Common Birds Census (CBC), Breeding Bird Survey (BBS) or a combined CBC/BBS trend;
- 6 = extrapolation – derived from extrapolating from an existing estimate using the National Gamebag Census trend (see above);
- 7 = extrapolation – derived from extrapolating from an existing estimate using the Waterways Bird Survey smoothed 1974–00 trend.

#### Reliability (Rel)

A simple reliability score has been included in the list of estimates, where 1 is good and 3 is poor; this relates to the reliability of the estimate at the time it was made. This score is a judgment by APEP and is intended to indicate one aspect of the quality of an estimate. Quality also depends on how recently the estimate was made and its derivation; consequently, a judgment on the *overall* quality of any one estimate

should take all these factors into account.

#### Change (+/-)

The column headed '+/-' in the list indicates where, in the opinion of APEP, the estimate given is either an under- or overestimate of the current population as a result of changes since the estimate was made; it does not reflect the reliability of the listed estimate. This is used typically when the estimate provided is old and the current population is thought, on the basis of available information and/or expert opinion, to have changed and is now either larger (+) or smaller (-) than that reported in this list.

#### Use of data

In the opinion of APEP, the estimates presented in the list were the best available at the time of collation. The population estimates were from a number of different surveys with different methods and, in some cases, additional calculations have been made. For this reason, comparisons between figures presented here and those in other sources should be made with caution. Before drawing any conclusions, it is important to pay careful attention to the date of the estimate, its assessed reliability, its method of collection and analytical derivation, and its source. In particular, it is not always possible to derive a Northern Ireland estimate by simply subtracting the GB estimate from the UK estimate. This is because the NI populations are often so small that their identity is lost in the rounding of the other estimates.

Conclusions about population trends should not generally be drawn from the comparison of estimates for the same species between the APEP97 list and the present list. For example, the wintering wader population estimates presented here tend to be systematically higher than those in the APEP97 list, owing to a new method of calculation that estimates the size of any missing counts (Rehfishch *et al.* 2003b). Trend information is published elsewhere, but when this is lacking it may be possible to gain some understanding of population change from the lists, although this requires caution; a review of the methods of derivation is necessary to ensure that the comparison is valid.

The APEP list will be used as a source for deriving national 1% estimates. However, there are a number of rules that need to be applied and these rules, along with thresholds, will be published elsewhere (for example, by JNCC for statutory use).

Population estimates of birds in Great Britain

**Table 1.** Population estimates of birds in Great Britain and the United Kingdom.

Key to table as follows. Region: (GB = Great Britain; GB\* = GB excluding Isle of Man; IoM = Isle of Man; UK = United Kingdom). Season: A = Autumn migration; B = Breeding; S = Spring migration; W = Wintering.

Unit: A = individual adults; F = females; I = individuals; M = males; N = nests; P = pairs; T = territories;

TP = territorial pairs; W = wild pairs. +/-: + = population known to be larger than estimate listed, but no better estimate available (++ = considerably larger); - = population known to be smaller than estimate listed, but no better estimate available.

Type (Type of estimate): See 'Using the table' for full explanation. Rel (Reliability): 1 (good) to 3 (poor); see text for full explanation. Der (Derivation): See 'Using the table' for full explanation. Ref: numbers refer to those given in References. Note: Numbers refer to the footnote of the table.

Species/population	Region	Season	Number	Unit	Date	+/-	Type	Rel	Der	Ref	Note
Mute Swan	GB	B	5,299	P	1990		Best est.	1	1,4	16,28	
<i>Cygnus olor</i>	GB	W	37,500	I	1994-99		5-y mean	2	1	33	
	UK	B	28,000-30,000	A	1988-91		Best est.	2	1,4	16,23	
	UK	W	43,500	I	1994-99		5-y mean	2	1	33	
Bewick's Swan	GB	W	8,070	I	1994-99		5-y mean	1	4	33	
<i>Cygnus columbianus</i>	UK	W	8,240	I	1994-99		5-y mean	1	3,4	33	
Whooper Swan	GB	B	3-7	W	1996-2000		5-y mean	2	3	51	
<i>Cygnus cygnus</i>	GB	W	5,720	I	1994-99		5-y mean	1	4	33	
	UK	B	3-7	W	1996-2000		5-y mean	2	3	51	
	UK	W	6,920	I	1994-99		5-y mean	1	4	33	
'Taiga' Bean Goose	GB	W	400	I	1994-99		5-y mean	1	1	33	
<i>Anser fabalis fabalis</i>	UK	W	400	I	1994-99		5-y mean	1	1	33	
'Tunda' Bean Goose	GB	W	100	I	1994-99		Best est.	2	3	33	
<i>Anser f. rossicus</i>	UK	W	100	I	1994-99		Best est.	2	3	33	
Pink-footed Goose	GB	W	241,000	I	1994-99		5-y mean	1	1	33	
<i>Anser brachyrhynchus</i>	UK	W	241,000	I	1994-99		5-y mean	1	1	33	
'European' White-fronted Goose	GB	W	5,790	I	1994-99		5-y mean	1	1	33	
<i>Anser albifrons albifrons</i> (Baltic-North Sea)	UK	W	5,790	I	1994-99		5-y mean	1	1	33	
'Greenland' White-fronted Goose	GB	W	20,900	I	1994-99		5-y mean	1	1	33	
<i>Anser a. flavirostris</i>	UK	W	21,000	I	1994-99		5-y mean	1	1	33	
Greylag Goose	GB	W	81,900	I	1994-99		5-y mean	1	1	33	
<i>Anser anser</i> (Iceland)	UK	W	81,900	I	1994-99		5-y mean	1	1	33	
Greylag Goose	GB	B	3,200	P	1997		Best est.	2	1	40	
(NW Scotland)	GB	W	9,620	I	1997		Best est.	2	1	40	
	UK	B	3,200	P	1997		Best est.	2	1	40	
	UK	W	9,620	I	1997		Best est.	2	1	40	
Greylag Goose	GB	B	29,900	A	1999	-	Best est.	2	4	59	
(re-established)	GB	W	29,900	A	1999	-	Best est.	2	4	59	
	UK	B	30,900	A	1999	-	Best est.	2	4	59	
	UK	W	30,900	A	1999	-	Best est.	2	4	59	
Snow Goose	GB	B	19	P	1996-2000		5-y mean	3	3	50	1
<i>Anser caerulescens</i>	UK	B	19	P	1996-2000		5-y mean	3	3	50	1
Greater Canada Goose	GB	B	82,000	A	1999	-	Best est.	2	4	59	
<i>Branta canadensis</i>	GB	W	82,000	A	1999	-	Best est.	2	4	59	
	UK	B	82,550	A	1999	-	Best est.	2	4	59	
	UK	W	82,550	A	1999	-	Best est.	2	3,4	59	
Barnacle Goose	GB	W	45,000	I	1999		Best est.	1	1	11,33	
<i>Branta leucopsis</i> (E Greenland)	GB	W	1,000	I	1991-99		Best est.	2	1	33	
	UK	W	45,000	I	1999		Best est.	1	1	11,33	
	UK	W	1,120	I	1991-99		Best est.	2	1	33	
Barnacle Goose	GB	W	22,000	I	1994-99		5-y mean	1	1	33	
(Svalbard)	UK	W	22,000	I	1994-99		5-y mean	1	1	33	
'Dark-bellied' Brent Goose	GB	W	98,100	I	1994-99		5-y mean	1	1	33	
<i>Branta b. bernicla</i>	UK	W	98,100	I	1994-99		5-y mean	1	1	33	
Light-bellied' Brent Goose	UK	W	20,000	I	1990s		Best est.	1	1	39	
<i>Branta bernicla hrota</i> (East Canadian High Arctic)											

Population estimates of birds in Great Britain

Species/population	Region	Season	Number	Unit	Date	+/-	Type	Rel	Der	Ref	Note
'Light-bellied' Brent Goose (Svalbard/N Greenland)	GB	W	2,900	I	1994-99		5-y mean	1	1	33	
	UK	W	2,900	I	1994-99		5-y mean	1	1	33	
Egyptian Goose <i>Aloochen aegyptiaca</i>	GB	W	1,000	I	1991-99		Best est.	2	1	33	
	UK	W	1,000	I	1991-99		Best est.	2	1	33	
Ruddy Shelduck <i>Tadorna ferruginea</i>	GB	B	1	P	1996-2000		5-y mean	3	3	50	
	UK	B	1	P	1996-2000		5-y mean	3	3	50	
Common Shelduck <i>Tadorna tadorna</i>	GB	B	10,600	P	1988-91		Best est.	2	4	23	
	GB	W	78,200	I	1994-99		5-y mean	1	4	33	
	UK	B	10,900	P	1988-91		Best est.	2	4	23	
	UK	W	81,300	I	1994-99		5-y mean	1	4	33	
Mandarin Duck <i>Aix galericulata</i>	GB	B	7,000	A	1970-87	-	Best est.	3	3,4	15	
	GB	W	7,000	I	1970-87	-	Best est.	3	3,4	15	
	UK	B	7,000	A	1970-87	-	Best est.	3	3,4	15	
	UK	W	7,000	I	1970-87	-	Best est.	3	3,4	15	
Eurasian Wigeon <i>Anas penelope</i>	GB	B	300-500	P	1988-91		Best est.	2	2	23	
	GB	W	406,000	I	1994-99		5-y mean	1	4	33	
	UK	B	300-500	P	1988-91		Best est.	2	4	23	
	UK	W	426,000	I	1994-99		5-y mean	1	4	33	
Gadwall <i>Anas strepera</i>	GB	B	770	P	1990	+	Best est.	2	4	21,23	
	GB	W	17,100	I	1994-99		5-y mean	2	4	33	
	UK	B	790	P	1990	+	Best est.	2	4	21,23	
	UK	W	17,500	I	1994-99		5-y mean	2	4	33	
Eurasian Teal <i>Anas crecca</i>	GB	B	1,500-2,600	P	1988-91		Best est.	3	4	23	
	GB	W	192,000	I	1994-99		5-y mean	2	4	33	
	UK	B	1,600-2,800	P	1988-91		Best est.	3	4	23	
	UK	W	197,000	I	1994-99		5-y mean	2	3,4	33	
Mallard <i>Anas platyrhynchos</i>	GB	B	47,700-114,400	P	1988-91		Best est.	3	2	23	2
	GB	W	352,000	I	1994-99		5-y mean	3	2	33	
	UK	B	50,400-127,100	P	1988-91		Best est.	3	2	23	2
	UK	W	371,000	I	1994-99		5-y mean	3	2	33	
Pintail <i>Anas acuta</i>	GB	B	10-34	P	1998-2002		5-y mean	2	3	52	3
	GB	W	27,900	I	1994-99		5-y mean	1	4	33	
	UK	B	10-34	P	1998-2002		5-y mean	2	3	52	3
	UK	W	28,180	I	1994-99		5-y mean	1	3,4	33	
Garganey <i>Anas querquedula</i>	GB	B	23-115	P	1997-2001		5-y mean	2	3	52	3,4
	UK	B	23-115	P	1997-2001		5-y mean	2	3	52	3,4
Shoveler <i>Anas clypeata</i>	GB	B	1,000-1,500	P	1985-90		Best est.	2	2	34,23	
	GB	W	14,800	I	1994-99		5-y mean	2	4	33	
	UK	B	1,000-1,500	P	1988-91		Best est.	2	4	34,23	
	UK	W	15,200	I	1994-99		5-y mean	2	4	33	
Red-crested Pochard <i>Netta rufina</i>	GB	B	29	P	1996-2000	-	5-y mean	3	3	50	1
	UK	B	29	P	1996-2000	-	5-y mean	3	3	50	1
Common Pochard <i>Aythya ferina</i>	GB	B	457	P	1998-2002		5-y mean	2	3	52	5
	GB	W	59,500	I	1994-99		5-y mean	2	4	33	
	UK	B	472	P	1998-2002		5-y mean	2	3	52	5
	UK	W	85,500	I	1994-99		5-y mean	2	4	33	
Tufted Duck <i>Aythya fuligula</i>	GB	B	7,000-8,000	P	1979-83		Best est.	2	4	53	
	GB	W	90,100	I	1994-99		5-y mean	2	4	33	
	UK	W	120,000	I	1994-99		5-y mean	2	4	33	
Greater Scaup <i>Aythya marila</i>	GB	W	7,560	I	1990-99		Best est.	2	1	33	
	UK	W	9,200	I	1990-99		Best est.	2	1	33	
Common Eider <i>Somateria mollissima</i>	GB	B	31,200	P	1988-91		Best est.	2	4	23	
	GB	W	73,000	I	1990-99		Best est.	2	1	33	
	UK	B	31,650	P	1988-91		Best est.	2	4	23	
	UK	W	80,000	I	1990-99		Best est.	2	1	33	
Long-tailed Duck <i>Clangula hyemalis</i>	GB	W	16,000	I	1990-2000		Best est.	3	1	33	
	UK	W	16,250	I	1990-2000		Best est.	3	1	33	
Common Scoter <i>Melanitta nigra</i>	GB	B	95	P	1995		Best est.	1	1	72	
	GB	W	50,000	I	1990-99		Best est.	3	1	33	
	UK	B	95	P	1995		Best est.	1	1	72	
	UK	W	50,000	I	1990-99		Best est.	3	1	33	

Population estimates of birds in Great Britain

Species/population	Region	Season	Number	Unit	Date	+/-	Type	Rel	Der	Ref	Note
Velvet Scoter	GB	W	3,000	I	1990-99		Best est.	2	1	33	
<i>Melanitta fusca</i>	UK	W	3,000	I	1990-99		Best est.	2	1	33	
Common Goldeneye	GB	B	200	P	1998		Best est.	2	3	49	
<i>Bucephala clangula</i>	GB	W	24,900	I	1994-99		5-y mean	2	4	33	
	UK	B	200	P	1998		Best est.	2	3	49	
	UK	W	35,000	I	1994-99		5-y mean	2	4	33	
Smew	GB	W	370	I	1994-99		Best est.	2	2	33	
<i>Mergellus albellus</i>	UK	W	390	I	1994-99		Best est.	2	2	33	
Red-breasted Merganser	GB	B	2,150	P	1988-91		Best est.	2	4	23	
<i>Mergus serrator</i>	GB	W	9,840	I	1986-91		Best est.	3	1	35	
	UK	B	2,370	P	1988-91		Best est.	2	4	23	
	UK	W	10,500	I	1986-91		Best est.	3	3	35	
Goosander	GB	B	2,600 (2,300-2,900)	P	1987	+	Best est.	2	4	29	
<i>Mergus merganser</i>	GB	W	16,100	I	1994-99		5-y mean	2	4	33	
	UK	B	2,600 (2,300-2,900)	P	1987	+	Best est.	2	4	29	
	UK	W	16,100	I	1994-99		5-y mean	2	4	33	
Ruddy Duck	GB	B	641-687	P	1994		Best est.	1	4	32	
<i>Oxyura jamaicensis</i>	GB	W	4,110	I	1994-99		5-y mean	2	1	33	
	UK	B	661-707	P	1988-94		Best est.	2	4	32,23	
	UK	W	4,170	I	1994-99		5-y mean	2	1	33	
Red Grouse	GB	B	154,700	P	2000		Best est.	3	2,6	23	
<i>Lagopus lagopus</i>	UK	B	155,000	P	2000		Best est.	3	4,6	23	
Ptarmigan	GB	B	10,000	P	1990		Best est.	3	2	56	
<i>Lagopus muta</i>	UK	B	10,000	P	1990		Best est.	3	4	56	
Black Grouse	UK	B	6,510 (5,000-8,100)	M	1995-96	-	Best est.	1	4	31	
<i>Tetrao tetrix</i>	UK	B	6,510 (5,000-8,100)	M	1995-96	-	Best est.	1	4	31	
Capercaillie	GB	B	1,073 (549-2,041)	A	1998-99		Best est.	1	4	76	
<i>Tetrao urogallus</i>	UK	B	1,073 (549-2,041)	A	1998-99		Best est.	1	4	76	
Red-legged Partridge	GB	B	72,000-200,000	T	2000		Best est.	3	4,5	1,13	
<i>Alectoris rufa</i>	UK	B	72,000-200,000	T	2000		Best est.	3	4,5	1,13	
Grey Partridge	GB	B	70,000-75,000	P	2000		Best est.	2	4,2,5	1,13	
<i>Perdix perdix</i>	UK	B	70,000-75,000	P	2000		Best est.	2	4,2,5	1,13	
Common Quail	GB	B	4-315	M	1998-2002		5-y mean	3	3	52	
<i>Coturnix coturnix</i>	UK	B	4-315	M	1998-2002		5-y mean	3	3	52	
Common Pheasant	GB	B	1,688,000-1,788,000	F	2000		Best est.	2	4,5	61,13	16
<i>Phasianus colchicus</i>	UK	B	1,800,000-1,900,000	F	2000		Best est.	2	4,5	61,13	
Golden Pheasant	GB	B	85-118	P	2000	-	Best est.	3	3	50	
<i>Chrysolophus pictus</i>	UK	B	85-118	P	2000	-	Best est.	3	3	50	
Lady Amherst's Pheasant	UK	B	94	P/T	1998		Best est.	1	3,4	8,48	
<i>Chrysolophus amherstiae</i>	UK	B	94	P/T	1998		Best est.	1	3,4	8,48	
Red-throated Diver	GB	B	935-1,500	P	1994		Best est.	2	2,4	24	6
<i>Gavia stellata</i>	GB	W	4,850	I	1980-86	++	Best est.	3	2	14	7
	UK	B	935-1,500	P	1994		Best est.	2	2,4	24	6
Black-throated Diver	GB	B	155-189	P	1994		Best est.	2	1,2	-	18
<i>Gavia arctica</i>	GB	W	700	I	1980-86		Best est.	3	2	14	
	UK	B	155-189	P	1994		Best est.	2	1,2	-	18
Great Northern Diver	GB	W	2,500-3,000	I	1974-84		Best est.	3	3	36	
<i>Gavia immer</i>											
Little Grebe	GB	B	5,000-10,000	P	1988-91		Best est.	3	4	23	
<i>Tachybaptus ruficollis</i>	GB	W	7,770	I	1994-99		Best est.	3	4	33	
	UK	B	5,900-12,000	P	1988-91		Best est.	3	4	23	
	UK	W	10,040	I	1994-99		Best est.	3	4	33	
Great Crested Grebe	GB	B	8,000	A	1988-91		Best est.	2	4	23	
<i>Podiceps cristatus</i>	GB	W	15,900	I	1994-99		Best est.	2	4	33	
	UK	B	9,400	A	1988-91		Best est.	2	4	23	
	UK	W	19,140	I	1994-99		Best est.	2	4	33	
Red-necked Grebe	GB	B	1	P	1998-2002		5-y mean	2	3	52	
<i>Podiceps grisegena</i>	GB	W	200	I	1981-99		Best est.	2	2	33	
	UK	B	1	P	1998-2002		5-y mean	2	3	52	
	UK	W	200	I	1981-99		Best est.	2	2	33	



Population estimates of birds in Great Britain

Species/population	Region	Season	Number	Unit	Date	+/-	Type	Rel	Der	Ref	Note
Slavonian Grebe	GB	B	39-43	P	1998-2002		5-y mean	1	3	52	3
<i>Podiceps auritus</i>	GB	W	725	I	1986-93		7-y mean	2	2	18	
	UK	B	39-43	P	1998-2002		5-y mean	1	3	52	3
	UK	W	775	I	1986-99		7-y mean	2	2,3	18	
Black-necked Grebe	GB	B	42-60	P	1998-2002		5-y mean	2	3	52	3
<i>Podiceps nigricollis</i>	GB	W	120	I	1981-84		Best est.	2	2	36	
	UK	B	42-60	P	1998-2002		5-y mean	2	3	52	3
	UK	W	120	I	1981-84		Best est.	2	2	36	
Fulmar	GB	B	498,764	P	1998-2002		Best est.	1	1	41	
<i>Fulmarus glacialis</i>	UK	B	504,756	P	1998-2002		Best est.	1	1	41	
Manx Shearwater	GB	B	295,079 (277,793-313,253)	P	1998-2002		95%	2	1	41	
<i>Puffinus puffinus</i>	UK	B	299,712 (281,382-319,499)	P	1998-2002		95%	2	1	41	
European Storm-petrel	GB	B	25,650 (20,994-33,434)	P	1998-2002		95%	2	1	41	
<i>Hydrobates pelagicus</i>	UK	B	25,650 (20,994-33,434)	P	1998-2002		95%	2	1	41	
Leach's Storm-petrel	GB	B	48,047 (36,432-64,883)	P	1998-2002		95%	2	1	41	
<i>Oceanodroma leucorhoa</i>	UK	B	48,047 (36,432-64,883)	P	1998-2002		95%	2	1	41	
Northern Gannet	GB	B	218,546	N	2003-04		Best est.	1	1	74	
<i>Morus bassanus</i>	UK	B	218,546	N	2003-04		Best est.	1	1	74	
Great Cormorant	GB	B	8,355	P	1998-2002		Best est.	1	1	41	
<i>Phalacrocorax carbo</i>	GB	W	23,000	I	1994-99		5-y mean	2	4	33	
	UK	B	9,018	P	1998-2002		Best est.	1	1	41	
	UK	W	24,200	I	1994-99		5-y mean	2	4	33	
Shag	GB	B	27,176	P	1998-2002		Best est.	1	1	41	
<i>Phalacrocorax aristotelis</i>	UK	B	27,477	P	1998-2002		Best est.	1	1	41	
Eurasian Bittern	GB	B	28	M	1998-2002		5-y mean	1	1	52	
<i>Botaurus stellaris</i>	GB	W	50-150	I	1981-84		Best est.	2	3	36	
	UK	B	28	M	1998-2002		5-y mean	1	1	52	
	UK	W	50-150	I	1981-84		Best est.	2	3	36	
Little Egret	GB	B	146-162	P	2002		RBBP	1	3	52	3,8
<i>Egretta garzetta</i>	GB	W	800-900	I	2000		Best est.	1	1	44	
	GB	A	1,650	I	1999		Best est.	1	1	44	
	UK	B	146-162	P	2002		RBBP	1	3	52	3,8
	UK	W	800-900	I	2000		Best est.	1	1	44	
	UK	A	1,650	I	1999		Best est.	1	1	44	
Grey Heron	GB	B	13,430	N	2003		Best est.	1	4	4	
<i>Ardea cinerea</i>	UK	B	14,200	N	2003		Best est.	1	4	4	
Eurasian Spoonbill	GB	B	0-4	P	1998-2002		Best est.	1	3	52	
<i>Platalea leucorodia</i>	UK	B	0-4	P	1998-2002		Best est.	1	3	52	
Honey-buzzard	GB	B	33-69	P	2000		Best est.	2	1,2	2,47	3
<i>Pernis apivorus</i>	UK	B	33-69	P	2000		Best est.	2	1,2	2,47	3
Red Kite	GB	B	430 (372-490)	P	2000		Best est.	1	1	81	
<i>Milvus milvus</i>	UK	B	430 (372-490)	P	2000		Best est.	1	1	81	
White-tailed Eagle	GB	B	21	P	1998-2002		5-y mean	1	1	52	
<i>Haliaeetus albicilla</i>	UK	B	21	P	1998-2002		5-y mean	1	1	52	
Marsh Harrier	GB	B	201	F	1998-2002		5-y mean	1	1,3	52,73	
<i>Circus aeruginosus</i>	UK	B	201	F	1998-2002		5-y mean	1	1,3	52,73	
Hen Harrier	GB*	B	483 (412-553)	TP	1998		Best est.	1	1	66	
<i>Circus cyaneus</i>	GB	W	750	I	1981-83		Best est.	3	2	36	
	IoM	B	49	TP	1998		Best est.	1	1	66	
	UK	B	570 (499-640)	TP	1998		Best est.	1	1	66	
Montagu's Harrier	GB	B	7	TF	1998-2002		5-y mean	1	3	52	
<i>Circus pygargus</i>	UK	B	7	TF	1998-2002		5-y mean	1	3	52	
Northern Goshawk	GB	B	400	P	1995		Best est.	2	3	54	
<i>Accipiter gentilis</i>	UK	B	410	P	1994-2000		Best est.	2	3	54,64	
Eurasian Sparrowhawk	GB	B	38,600	P	2000	+	Best est.	2	4,5	1,13	16
<i>Accipiter nisus</i>	UK	B	41,000	P	2000	+	Best est.	2	4,5	1,13	
Common Buzzard	GB	B	31,100-44,000	T	2000	+	Best est.	2	4,5	1,13	16
<i>Buteo buteo</i>	UK	B	31,100-44,000	T	2000	+	Best est.	2	4,5	1,13	

Population estimates of birds in Great Britain

Species/population	Region	Season	Number	Unit	Date	+/-	Type	Rel	Der	Ref	Note
Golden Eagle	GB	B	422	P	1992		Best est.	1	1	26	
<i>Aquila chrysaetos</i>	UK	B	422	P	1992		Best est.	1	1	26	
Osprey	GB	B	148	P	1998-2002		5-y mean	1	3	52	
<i>Pandion haliaetus</i>	UK	B	148	P	1998-2002		5-y mean	1	3	52	
Common Kestrel	GB	B	35,400	P	2000	-	Best est.	2	4,5	1,13	16
<i>Falco tinnunculus</i>	UK	B	36,800	P	2000	-	Best est.	2	4,5	1,13	
Merlin	GB	B	1,300 (1,100-1,500)	P	1993-94		Best est.	1	2	57	
<i>Falco columbarius</i>	UK	B	1,330	P	1990-94		Best est.	1	2	57,62	
Hobby	GB	B	2,200	P	2000	+	Best est.	2	4	10	
<i>Falco subbuteo</i>	UK	B	2,200	P	2000	+	Best est.	2	4	10	
Peregrine Falcon	GB*	B	1,167	P	1991	+	Best est.	1	2	12	
<i>Falco peregrinus</i>	IoM	B	20	P	1991	+	Best est.	1	2	12	
	UK	B	1,283	P	1991	+	Best est.	1	2	12	
Water Rail	GB	B	450-900	P	1988-91		Best est.	3	2,4	23	
<i>Rallus aquaticus</i>	UK	B	700-1,400	P	1988-91		Best est.	3	2,4	23	
Spotted Crake	GB	B	73	M	1999		Best est.	2	3	25	
<i>Porzana porzana</i>	UK	B	73	M	1999		Best est.	2	3	25	
Corn Crake	GB	B	589	M	1998		Best est.	1	1	27	
<i>Crex crex</i>	UK	B	589	M	1998		Best est.	1	1	27	
Moorhen	GB	B	240,000	T	1988-91		Best est.	2	4	23	
<i>Gallinula chloropus</i>	GB	W	750,000	I	1981-84		Best est.	3	3	33	
	UK	B	270,000	P	2000		Best est.	2	4,5	1,13	
	UK	W	750,000	I	1981-84		Best est.	3	3	33	
Common Coot	GB	B	21,700-27,600	P	2000		Best est.	2	4,5	1,13	16
<i>Fulica atra</i>	GB	W	173,000	I	1994-99		5-y mean	2	4	33	
	UK	B	22,600-28,800	P	2000		Best est.	2	4,5	1,13	
	UK	W	188,000	I	1994-99		5-y mean	2	4	33	
Common Crane	GB	B	4	P	1998-2002		5-y mean	1	1	52	
<i>Grus grus</i>	UK	B	4	P	1998-2002		5-y mean	1	1	52	
Oystercatcher	GB	B	113,000 (98,500-127,000)	P	1985-98		Best est.	2	2	46	
<i>Haematopus ostralegus</i>	GB	W	315,200	I	1994-99		Best est.	1	1	60	
	UK	B	113,000 (98,500-127,000)	P	1985-99		Best est.	2	2	46	
	UK	W	338,700	I	1994-99		Best est.	1	1	60	
Black-winged Stilt	GB	B	0-1	P	1998-2002		5-y mean	1	3	52	
<i>Himantopus himantopus</i>	UK	B	0-1	P	1998-2002		5-y mean	1	3	52	
Avocet	GB	B	877	P	1997-2002		5-y mean	1	3	52	9
<i>Recurvirostra avosetta</i>	GB	W	3,395	I	1994-99		Best est.	1	1	60	
	UK	B	877	P	1997-2002		5-y mean	1	3	52	9
	UK	W	3,395	I	1994-99		Best est.	1	1	60	
Stone-curlew	GB	B	214-227	P	1996-2000		5-y mean	1	3	51	3
<i>Burhinus oediconemus</i>	UK	B	214-227	P	1996-2000		5-y mean	1	3	51	3
Little Ringed Plover	GB	B	825-1,070	P	1988-91		Best est.	2	4	23	
<i>Charadrius dubius</i>	UK	B	825-1,070	P	1988-91		Best est.	2	4	23	
Ringed Plover	GB	B	8,400	P	1984		Best est.	2	1,4	55	
<i>Charadrius hiaticula</i>	GB	W	32,450	I	1994-99		Best est.	3	2	9,36	
	UK	B	8,540	P	1984		Best est.	2	1,4	55	
	UK	W	34,510	I	1994-99		Best est.	1	1	60	
Dotterel	GB	B	510-750	M	1999		Best est.	2	1	75	
<i>Charadrius morinellus</i>	UK	B	510-750	M	1999		Best est.	2	1	75	
European Golden Plover	GB	B	22,600	P	1981-84		Best est.	3	3,4	58,67	
<i>Pluvialis apricaria</i>	GB	W	250,000	I	1981-92		Best est.	3	2	9,36	
	UK	B	22,600	P	1981-84		Best est.	3	3,4	58,67	
	UK	W	310,000	I	1981-92		Best est.	3	2	9,36	
Grey Plover	GB	W	52,750	I	1994-99		Best est.	1	1	60	
<i>Pluvialis squatarola</i>	UK	W	53,300	I	1994-99		Best est.	1	1	60	
Northern Lapwing	GB	B	154,000	P	1985-98		Best est.	2	3,4	46	
<i>Vanellus vanellus</i>	GB	W	1,500,000-2,000,000	I	1981-92		Best est.	3	2	9,36	
	UK	B	156,000 (137,000-174,000)	P	1985-99		Best est.	2	3,4	46	
	UK	W	1,600,000-2,100,000	I	1981-92		Best est.	3	2	9,36	

Population estimates of birds in Great Britain

Species/population	Region	Season	Number	Unit	Date	+/-	Type	Rel	Der	Ref	Note
Red Knot	GB	W	283,600	I	1994-99		Best est.	1	1	60	
<i>Calidris canutus</i>	UK	W	295,000	I	1994-99		Best est.	1	1	60	
Sanderling	GB	W	20,540	I	1994-99		Best est.	1	1	60	
<i>Calidris alba</i>	UK	W	20,700	I	1994-99		Best est.	1	1	60	
Little Stint	GB	A	450	I	1996-2000		Min.	2	1	5	
<i>Calidris minuta</i>	UK	A	460	I	1996-2000		Min.	2	1	5	
Temminck's Stint	GB	B	1-4	P	1998-2002		5-y mean	1	3	52	
<i>Calidris temminckii</i>	UK	B	1-4	P	1998-2002		5-y mean	1	3	52	
Curlew Sandpiper	GB	A	650	I	1996-2000		Min.	2	1	5	
<i>Calidris ferruginea</i>	UK	A	670	I	1996-2000		Min.	2	1	5	
Purple Sandpiper	GB	B	1-3	P	1998-2002		5-y mean	2	3	52	
<i>Calidris maritima</i>	GB	W	17,530	I	1994-99		Best est.	1	1	60	
	UK	B	1-3	P	1998-2002		5-y mean	2	3	52	
	UK	W	17,760	I	1994-99		Best est.	1	1	60	
Dunlin	GB	B	9,150-9,900	P	1981-84		Best est.	3	3,4	58,67	
<i>Calidris alpina</i>	GB	W	555,800	I	1994-99		Best est.	1	1	60	
	UK	B	9,150-9,900	P	1981-84		Best est.	3	3,4	58,67	
	UK	W	577,100	I	1994-99		Best est.	1	1	60	
Ruff	GB	B	37	M	1998-2002		5-y mean	2	3	52	
<i>Philomachus pugnax</i>	GB	W	700	I	1987-92		Best est.	1	1	9	
	GB	A	1,760	I	1996-2000		Min.	3	4	5	
	UK	B	37	M	1998-2002		5-y mean	2	3	52	
	UK	W	700	I	1989-94		Best est.	1	1	9,5	
	UK	A	1,790	I	1996-2000		Min.	3	4	5	
Jack Snipe	GB	W	10,000-100,000	I	1987-92	-	Best est.	3	2	9	
<i>Lymnocyptes minimus</i>	UK	W	10,000-100,000	I	1989-94		Best est.	3	2	9	
Common Snipe	GB	B	52,500	P	1985-99		Best est.	2	3	46	
<i>Gallinago gallinago</i>	GB	W	>100,000	I	1987-92		Min.	3	2	9	10
	UK	B	59,300 (52,600-69,000)	P	1985-99		Best est.	2	3	46	
	UK	W	>100,000	I	1987-92		Min.	3	2	9	10
Woodcock	GB	B	5,000-12,500	P	2000	-	Best est.	3	4,5	1,13	16
<i>Scolopax rusticola</i>	UK	B	5,400-13,700	P	2000	-	Best est.	3	4,5	1,13	
Black-tailed Godwit	GB	B	44-52	P	1998-2002		5-y mean	1	3	52	3
<i>Limosa limosa</i>	GB	W	15,390	I	1994-99		Best est.	1	1	60	
	UK	B	44-52	P	1998-2002		5-y mean	1	3	52	3
	UK	W	15,860	I	1994-99		Best est.	1	1	60	
Bar-tailed Godwit	GB	W	61,590	I	1994-99		Best est.	1	1	60	
<i>Limosa lapponica</i>	UK	W	65,430	I	1994-99		Best est.	1	1	60	
Whimbrel	GB	B	530	P	1989-92		Best est.	2	2	17	
<i>Numenius phaeopus</i>	GB	S	3,530	I	1997-2001		Min.	3	4	5	
	UK	B	530	P	1989-92		Best est.	2	2	17	
	UK	S	3,840	I	1997-2001		Min.	3	4	5	
Eurasian Curlew	GB	B	105,000	P	1985-99		Best est.	3	3,4	46	
<i>Numenius arquata</i>	GB	W	147,100	I	1994-99		Best est.	1	1	60	
	UK	B	107,000 (99,500-125,000)	P	1985-98		Best est.	3	3,4	46	
	UK	W	164,700	I	1994-99		Best est.	1	1	60	
Spotted Redshank	GB	W	136	I	1994-99		Best est.	1	1	60	
<i>Tringa erythropus</i>	GB	A	530	I	1996-2000		Min.	3	4	5	
	UK	W	138	I	1994-99		Best est.	1	1	60	
	UK	A	540	I	1996-2000		Min.	3	4	5	
Common Redshank	GB	B	38,600	P	1985-98		Best est.	3	3,4	46	
<i>Tringa totanus</i>	GB	W	116,100	I	1994-99		Best est.	1	1	60	
	UK	B	38,800 (31,400-44,400)	P	1985-99		Best est.	3	3,4	46	
	UK	W	125,800	I	1994-99		Best est.	1	1	60	
Common Greenshank	GB	B	1,080 (720-1,480)	P	1995		Best est.	1	1	30	
<i>Tringa nebularia</i>	GB	W	597	I	1994-99		Best est.	1	1	60	
	GB	A	4,290	I	1996-2000		Min.	3	4	5	
	UK	B	1,080 (720-1,480)	P	1995		Best est.	1	1	30	
	UK	W	701	I	1994-99		Best est.	1	1	60	
	UK	A	4,790	I	1996-2000		Min.	3	4	5	

Population estimates of birds in Great Britain

Species/population	Region	Season	Number	Unit	Date	+/-	Type	Rel	Der	Ref	Note
Green Sandpiper	GB	B	1-2	P	1998-2002		5-y mean	1	3	52	3
<i>Tringa ochropus</i>	GB	A	1,000	I	1996-2000		Min.	3	4	5	
	UK	B	1-2	P	1998-2002		5-y mean	1	3	52	3
	UK	A	1,010	I	1996-2000		Min.	3	4	5	
Wood Sandpiper	GB	B	4-8	P	1998-2002		5-y mean	2	3	52	3
<i>Tringa glareola</i>	UK	B	4-8	P	1998-2002		5-y mean	2	3	52	3
Common Sandpiper	GB	B	12,000	P	2000		Best est.	2	4,7	1,13	
<i>Actitis hypoleucos</i>	GB	A	2,600	I	1996-2000		Min.	3	4	5	
	UK	B	12,000	P	2000		Best est.	2	4,7	1,13	
	UK	A	2,610	I	1996-2000		Min.	3	4	5	
Turnstone	GB	W	49,550	I	1994-99		Best est.	1	1	60	
<i>Arenaria interpres</i>	UK	W	52,390	I	1994-99		Best est.	1	1	60	
Red-necked Phalarope	GB	B	16	M	1998-2002		5-y mean	1	3	52	
<i>Phalaropus lobatus</i>	UK	B	16	M	1998-2002		5-y mean	1	3	52	
Arctic Skua	GB	B	2,136	P	1998-2002		Best est.	1	1	41	
<i>Stercorarius parasiticus</i>	UK	B	2,136	P	1998-2002		Best est.	1	1	41	
Great Skua	GB	B	9,634	P	1998-2002		Best est.	1	1	41	
<i>Stercorarius skua</i>	UK	B	9,634	P	1998-2002		Best est.	1	1	41	
Mediterranean Gull	GB	B	108	P	1999-2002		Best est.	1	1	41	
<i>Larus melanocephalus</i>	UK	B	110	P	1999-2002		Best est.	1	1	41	
Black-headed Gull	GB	B	127,907	P	1998-2002		Best est.	1	1	41	
<i>Larus ridibundus</i>	GB	W	1,682,385	I	1993		Min.	2	1	6	
	UK	B	138,014	P	1998-2002		Best est.	1	1	41	
	UK	W	1,697,797	I	1993		Min.	2	1	6	
Common Gull	GB	B	48,163	P	1998-2002		Best est.	1	1	41	
<i>Larus canus</i>	GB	W	429,331	I	1993		Min.	2	1	6	
	UK	B	48,720	P	1998-2002		Best est.	1	1	41	
	UK	W	430,927	I	1993		Min.	2	1	6	
Lesser Black-backed Gull	GB	B	110,101	P	1998-2002		Best est.	1	1	41	
<i>Larus fuscus</i>	GB	W	60,830	I	1993		Min.	2	1	6	
	UK	B	112,074	P	1998-2002		Best est.	1	1	41	
	UK	W	60,830	I	1993		Min.	2	1	6	
Herring Gull	GB*	B	131,469	P	1998-2002		Best est.	1	1	41	
<i>Larus argentatus</i>	GB	W	376,775	I	1993		Min.	2	1	6	
	IoM	B	7,126	P	1998-2002		Best est.	1	1	41	
	UK	B	139,309	P	1998-2002		Best est.	1	1	41	
	UK	W	378,748	I	1993		Min.	2	1	6	
Great Black-backed Gull	GB	B	17,084	P	1998-2002		Best est.	1	1	41	
<i>Larus marinus</i>	GB	W	43,108	I	1993		Min.	2	1	6	
	UK	B	17,160	P	1998-2002		Best est.	1	1	41	
	UK	W	43,156	I	1993		Min.	2	1	6	
Kittiwake	GB	B	366,832	P	1998-2002		Best est.	1	1	41	
<i>Rissa tridactyla</i>	UK	B	379,892	P	1998-2002		Best est.	1	1	41	
Little Tern	GB	B	1,947	P	2000		Best est.	1	1	41	
<i>Sterna albifrons</i>	UK	B	1,947	P	2000		Best est.	1	1	41	
Sandwich Tern	GB	B	10,536	P	2000		Best est.	1	1	41	
<i>Sterna sandvicensis</i>	UK	B	12,490	P	2000		Best est.	1	1	41	
Common Tern	GB	B	10,134	P	2000		Best est.	1	1	41	
<i>Sterna hirundo</i>	UK	B	11,838	P	2000		Best est.	1	1	41	
Roseate Tern	GB	B	52	P	2000		Best est.	1	1	41	
<i>Sterna dougallii</i>	UK	B	56	P	2000		Best est.	1	1	41	
Arctic Tern	GB	B	52,621	P	2000		Best est.	1	1	41	
<i>Sterna paradisaea</i>	UK	B	53,388	P	2000		Best est.	1	1	41	
Common Guillemot	GB	B	1,322,354	I	1998-2002		Best est.	1	1	41	
<i>Uria aalge</i>	UK	B	1,420,900	I	1998-2002		Best est.	1	1	41	
Razorbill	GB	B	164,492	I	1998-2002		Best est.	1	1	41	
<i>Alca torda</i>	UK	B	188,576	I	1998-2002		Best est.	1	1	41	
Black Guillemot	GB	B	38,142	I	1998-2003		Best est.	1	1	41	
<i>Cephus grylle</i>	UK	B	39,316	I	1998-2003		Best est.	1	1	41	

Population estimates of birds in Great Britain

Species/population	Region	Season	Number	Unit	Date	+/-	Type	Rel	Der	Ref	Note
Puffin	GB	B	579,189	P	1998-2002		Best est.	1	1	41	
<i>Fratercula arctica</i>	UK	B	580,799	P	1998-2002		Best est.	1	1	41	
Rock Dove/Feral Pigeon	GB	B	>100,000	P	1968-72		Min.	3	2	65	
<i>Columba livia</i>	UK	B	>100,000	P	1968-72		Min.	3	2	65	
Stock Dove	GB	B	309,000	T	2000		Best est.	2	4,5	1,13	16
<i>Columba oenas</i>	UK	B	309,000	T	2000		Best est.	2	4,5	1,13	
Wood Pigeon	GB	B	2,450,000-3,040,000	T	2000	+	Best est.	2	4,5	1,13	16
<i>Columba palumbus</i>	UK	B	2,570,000-3,160,000	T	2000	+	Best est.	2	4,5	1,13	
Collared Dove	GB	B	284,000	T	2000		Best est.	3	4,5	1,13	16
<i>Streptopelia decaocto</i>	UK	B	298,000	T	2000		Best est.	3	4,5	1,13	
Turtle Dove	GB	B	44,000	T	2000	-	Best est.	2	4,5	1,13	
<i>Streptopelia turtur</i>	UK	B	44,000	T	2000	-	Best est.	2	4,5	1,13	
Rose-ringed Parakeet	GB	W	4,300	A	2000/01		Best est.	2	2	7	
<i>Psittacula krameri</i>	UK	W	4,300	A	2000/01		Best est.	2	2	7	
Alexandrine Parakeet	GB	B	1	P	1997-2000		4-y mean	1	3	50	
<i>Psittacula eupatria</i>	UK	B	1	P	1997-2000		4-y mean	1	3	50	
Monk Parakeet	GB	B	5	P	2000		Min.	2	3	50	
<i>Myiopsitta monachus</i>	UK	B	5	P	2000		Min.	2	3	50	
Common Cuckoo	GB	B	9,600-19,300	P	2000		Best est.	3	4,5	1,13	16
<i>Cuculus canorus</i>	UK	B	9,600-20,000	P	2000		Best est.	3	4,5	1,13	
Barn Owl	GB	B	4,000 (3,000-5,000)	P	1995-97		Best est.	1	4	71	
<i>Tyto alba</i>	UK	B	4,000 (3,000-5,000)	P	1995-97		Best est.	1	4	71	
Eagle Owl	GB	B	1	P	1996-2000	+	5-y mean	3	3	50	11
<i>Bubo bubo</i>	UK	B	1	P	1996-2000	+	5-y mean	3	3	50	11
Little Owl	GB	B	5,800-11,600	P	2000		Best est.	3	4,5	1,13	
<i>Athene noctua</i>	UK	B	5,800-11,600	P	2000		Best est.	3	4,5	1,13	
Tawny Owl	GB	B	19,400	P	2000		Best est.	3	4,5	1,13	
<i>Strix aluco</i>	UK	B	19,400	P	2000		Best est.	3	4,5	1,13	
Long-eared Owl	GB	B	1,100-3,600	P	1988-91		Best est.	3	4	23	
<i>Asio otus</i>	UK	B	1,460-4,770	P	1988-91		Best est.	3	4	23	
Short-eared Owl	GB	B	1,000-3,500	P	1988-91		Best est.	3	4	23	
<i>Asio flammeus</i>	UK	B	1,000-3,500	P	1988-91		Best est.	3	4	23	
European Nightjar	GB	B	3,400	M	1992		Best est.	1	1,4	43	
<i>Caprimulgus europaeus</i>	UK	B	3,400	M	1992		Best est.	1	1,4	43	
Common Swift	GB	B	80,000	P	68-72, 88-91		Best est.	3	2	23	
<i>Apus apus</i>	UK	B	85,000	P	68-72, 88-91		Best est.	3	4	23	
Common Kingfisher	GB	B	4,300-7,100	P	2000		Best est.	2	4,7	1,13	
<i>Alcedo atthis</i>	UK	B	4,800-8,000	P	2000		Best est.	2	4,7	1,13	
Wryneck	GB	B	0-1	P	1998-2002		5-y mean	2	3	52	3
<i>Jynx torquilla</i>	UK	B	0-1	P	1998-2002		5-y mean	2	3	52	3
Green Woodpecker	GB	B	24,200	P	2000		Best est.	3	4,5	1,13	
<i>Picus viridus</i>	UK	B	24,200	P	2000		Best est.	3	4,5	1,13	
Great Spotted Woodpecker	GB	B	37,000-44,400	P	2000		Best est.	3	4,5	1,13	
<i>Dendrocopos major</i>	UK	B	37,000-44,400	P	2000		Best est.	3	4,5	1,13	
Lesser Spotted Woodpecker	GB	B	1,400-2,900	P	2000	-	Best est.	2	2,5	1,13	
<i>Dendrocopos minor</i>	UK	B	1,400-2,900	P	2000	-	Best est.	2	2,5	1,13	
Wood Lark	GB	B	1,426-1,552	P	1997		Best est.	1	1	78	
<i>Lullula arborea</i>	UK	B	1,426-1,552	P	1997		Best est.	1	1	78	
Sky Lark	GB	B	1,700,000	T	2000	-	Best est.	2	4,5	1,13	16
<i>Alauda arvensis</i>	UK	B	1,785,000	T	2000	-	Best est.	2	4,5	1,13	
Shore Lark	GB	W	<300	I	1981-84		Best est.	3	2	36	
<i>Eremophila alpestris</i>	UK	W	<300	I	1981-84		Best est.	3	2	36	
Sand Martin	GB	B	77,500-250,000	N	1988-91		Best est.	3	4	23	
<i>Riparia riparia</i>	UK	B	85,000-270,000	N	1988-91		Best est.	3	4	23	
Barn Swallow	GB	B	678,000	T	2000	-	Best est.	2	4,5	1,13	16
<i>Hirundo rustica</i>	UK	B	726,000	T	2000	-	Best est.	2	4,5	1,13	

Population estimates of birds in Great Britain

Species/population	Region	Season	Number	Unit	Date	+/-	Type	Rel	Der	Ref	Note
House Martin	GB	B	253,000-505,000	P	2000		Best est.	3	4,5	1,13	16
<i>Delichon urbicum</i>	UK	B	273,000-535,000	P	2000		Best est.	3	4,5	1,13	
Tree Pipit	GB	B	74,400	T	2000		Best est.	3	4,5	1,13	
<i>Anthus trivialis</i>	UK	B	74,400	T	2000		Best est.	3	4,5	1,13	
Meadow Pipit	GB	B	1,600,000	T	2000		Best est.	3	4,5	1,13	16
<i>Anthus pratensis</i>	UK	B	1,680,000	T	2000		Best est.	3	4,5	1,13	
Water Pipit <i>Anthus spinoletta</i>	GB	W	<100	I	1981-84		Best est.	3	2	36	
Rock Pipit	GB	B	34,000	P	1988-91		Best est.	3	4	23	
<i>Anthus petrosus</i>	UK	B	35,650	P	1988-91		Best est.	3	4	23	
Yellow Wagtail	GB	B	11,500-26,500	T	2000		Best est.	3	4,5	1,13	
<i>Motacilla flava</i>	UK	B	11,500-26,500	T	2000		Best est.	3	4,5	1,13	
Grey Wagtail	GB	B	34,400-41,300	P	2000		Best est.	3	4,7	1,13	16
<i>Motacilla cinerea</i>	UK	B	38,400-46,200	P	2000		Best est.	3	4,7	1,13	
White/Pied Wagtail	GB	B	255,000-330,000	T	2000		Best est.	2	4,5	1,13	16
<i>Motacilla alba</i>	UK	B	272,000-352,000	T	2000		Best est.	2	4,5	1,13	
Waxwing	GB	W	<100	I	1981-84		Best est.	3	2	36	
<i>Bombycilla garrulus</i>	UK	W	<100	I	1981-84		Best est.	3	2	36	
Dipper	GB	B	6,350-19,100	P	2000		Best est.	3	4,7	1,13	16
<i>Cinclus cinclus</i>	UK	B	6,800-20,000	P	2000		Best est.	3	4,7	1,13	
Wren	GB	B	8,000,000	T	2000		Best est.	2	4,5	1,13	16
<i>Troglodytes troglodytes</i>	UK	B	8,512,000	T	2000		Best est.	2	4,5	1,13	
'Fair Isle' Wren <i>T. t. fridariensis</i>	GB	B	28	M	1999-2003		Best est.	1	1	19	
Dunnock	GB	B	2,060,000	T	2000	-	Best est.	2	4,5	1,13	16
<i>Prunella modularis</i>	UK	B	2,163,000	T	2000	-	Best est.	2	4,5	1,13	
Robin	GB	B	5,500,000	T	2000		Best est.	2	4,5	1,13	16
<i>Erithacus rubecula</i>	UK	B	5,895,000	T	2000		Best est.	2	4,5	1,13	
Common Nightingale	GB	B	6,700 (5,600-9,350)	M	1999		Best est.	1	1	77	
<i>Luscinia megarhynchos</i>	UK	B	6,700 (5,600-9,350)	M	1999		Best est.	1	1	77	
Bluethroat	GB	B	0-1	P	1998-2002		5-y mean	2	3	52	3
<i>Luscinia svecica</i>	UK	B	0-1	P	1998-2002		5-y mean	2	3	52	3
Black Redstart	GB	B	25-73	P	1998-2002		5-y mean	2	3	52	3
<i>Phoenicurus ochruros</i>	UK	B	25-73	P	1998-2002		5-y mean	2	3	52	3
Common Redstart	GB	B	101,000	P	2000		Min.	3	4,5	1,13	
<i>Phoenicurus phoenicurus</i>	UK	B	101,000	P	2000		Min.	3	4,5	1,13	
Whinchat	GB	B	14,000-28,000	P	1988-91		Best est.	3	4	23	
<i>Saxicola rubetra</i>	UK	B	14,000-28,000	P	1988-91		Best est.	3	4	23	
Common Stonechat	GB	B	8,500-22,000	P	1988-91		Best est.	3	4	23	
<i>Saxicola torquatus</i>	UK	B	9,000-23,000	P	1988-91		Best est.	3	4	23	
Northern Wheatear	GB	B	55,000	P	1988-91		Best est.	3	4	23	
<i>Oenanthe oenanthe</i>	UK	B	56,000	P	1988-91		Best est.	3	4	23	
Ring Ouzel	GB	B	6,157-7,549	P	1999		Best est.	1	1	79	
<i>Turdus torquatus</i>	UK	B	6,157-7,549	P	1999		Best est.	1	1	79	
Blackbird	GB	B	4,620,000	T	2000	-	Best est.	2	4,5	1,13	16
<i>Turdus merula</i>	UK	B	4,935,000	T	2000	-	Best est.	2	4,5	1,13	
Fieldfare	GB	B	1-4	P	1998-2002		5-y mean	2	3	52	3
<i>Turdus pilaris</i>	GB	W	680,000	I	1981-84		Best est.	3	2	36	12
	UK	B	1-4	P	1998-2002		5-y mean	2	3	52	3
	UK	W	720,000	I	1981-84		Best est.	3	2	36	12
Song Thrush	GB	B	1,030,000	T	2000	-	Best est.	2	4,5	1,13	16
<i>Turdus philomelos</i>	UK	B	1,144,000	T	2000	-	Best est.	2	4,5	1,13	
Redwing	GB	B	2-17	P	1998-2002		5-y mean	2	3	52	3
<i>Turdus iliacus</i>	GB	W	650,000	I	1981-84		Best est.	3	2	36	13
	UK	B	2-17	P	1998-2002		5-y mean	2	3	52	3
	UK	W	685,000	I	1981-84		Best est.	3	2	36	13
Mistle Thrush	GB	B	205,000	T	2000		Best est.	2	4,5	1,13	16
<i>Turdus viscivorus</i>	UK	B	222,500	T	2000		Best est.	2	4,5	1,13	

Population estimates of birds in Great Britain

Species/population	Region	Season	Number	Unit	Date	+/-	Type	Rel	Der	Ref	Note
Cetti's Warbler	GB	B	645	M	1998-2002		5-y mean	2	3	52	
<i>Cettia cetti</i>	UK	B	645	M	1998-2002		5-y mean	2	3	52	
Grasshopper Warbler	GB	B	10,500	P	1988-91	-	Best est.	3	4	23	
<i>Locustella naevia</i>	UK	B	11,750	P	1988-91	-	Best est.	3	4	23	
Savi's Warbler	GB	B	0-6	P	1998-2002		5-y mean	2	3	52	3
<i>Locustella luscinioides</i>	UK	B	0-6	P	1998-2002		5-y mean	2	3	52	3
Aquatic Warbler	GB	A	33	I	1996-2000		5-y mean	3	3		17
<i>Acrocephalus paludicola</i>	UK	A	33	I	1996-2000		5-y mean	3	3		17
Sedge Warbler	GB	B	297,000	T	2000		Best est.	2	4,5	1,13	16
<i>Acrocephalus schoenobaenus</i>	UK	B	321,000	T	2000		Best est.	2	4,5	1,13	
Marsh Warbler	UK	B	3-24	P	1998-2002		5-y mean	1	3	52	3
<i>Acrocephalus palustris</i>	UK	B	3-24	P	1998-2002		5-y mean	1	3	52	3
Reed Warbler	GB	B	60,800-122,000	P	2000		Best est.	3	4,5	1,13	
<i>Acrocephalus scirpaceus</i>	UK	B	60,800-122,000	P	2000		Best est.	3	4,5	1,13	
Great Reed Warbler	GB	B	0-1	P	1998-2002		5-y mean	2	3	52	3
<i>Acrocephalus arundinaceus</i>	UK	B	0-1	P	1998-2002		5-y mean	2	3	52	3
Icterine Warbler	GB	B	0-1	P	1998-2002		5-y mean	2	3	52	3
<i>Hippolais icterina</i>	UK	B	0-1	P	1998-2002		5-y mean	2	3	52	3
Blackcap	GB	B	916,000	T	2000	+	Best est.	2	4,5	1,13	16
<i>Sylvia atricapilla</i>	UK	B	932,000	T	2000	+	Best est.	2	4,5	1,13	
Garden Warbler	GB	B	190,000	T	2000		Best est.	2	4,5	1,13	16
<i>Sylvia borin</i>	UK	B	190,000	T	2000		Best est.	2	4,5	1,13	
Lesser Whitethroat	GB	B	64,000	T	2000		Best est.	2	4,5	1,13	16
<i>Sylvia curruca</i>	UK	B	64,000	T	2000		Best est.	2	4,5	1,13	
Common Whitethroat	GB	B	931,000	T	2000	+	Best est.	2	4,5	1,13	16
<i>Sylvia communis</i>	UK	B	945,000	T	2000	+	Best est.	2	4,5	1,13	
Dartford Warbler	GB	B	1,600-1,890	P	1994		Best est.	1	1,2	22	
<i>Sylvia undata</i>	UK	B	1,600-1,890	P	1994		Best est.	1	1,2	22	
Wood Warbler	GB	B	17,200 (15,830-18,570)	M	1984-85		95%	2	4	3	
<i>Phylloscopus sibilatrix</i>	UK	B	17,200 (15,830-18,570)	M	1984-85		95%	2	4	3	
Common Chiffchaff	GB	B	749,000	T	2000		Best est.	2	4,5	1,13	16
<i>Phylloscopus collybita</i>	UK	B	807,000	T	2000		Best est.	2	4,5	1,13	
Iberian Chiffchaff	GB	B	0-1	P	1998-2002		5-y mean	3	3	52	3
<i>Phylloscopus ibericus</i>	UK	B	0-1	P	1998-2002		5-y mean	3	3	52	3
Willow Warbler	GB	B	1,955,000	T	2000		Best est.	2	4,5	1,13	16
<i>Phylloscopus trochilus</i>	UK	B	2,125,000	T	2000		Best est.	2	4,5	1,13	
Goldcrest	GB	B	773,000	T	2000		Best est.	3	4,5	1,13	16
<i>Regulus regulus</i>	UK	B	842,000	T	2000		Best est.	3	4,5	1,13	
Firecrest	GB	B	80-250	M	1988-91		Best est.	2	2	23	
<i>Regulus ignicapilla</i>	UK	B	80-250	M	1988-91		Best est.	2	4	23	
Spotted Flycatcher	GB	B	58,800	T	2000	-	Best est.	2	4,5	1,13	16
<i>Muscicapa striata</i>	UK	B	63,700	T	2000	-	Best est.	2	4,5	1,13	
Pied Flycatcher	GB	B	35,000-40,000	P	1988-91		Best est.	3	4	23	
<i>Ficedula hypoleuca</i>	UK	B	35,000-40,000	P	1988-91		Best est.	3	4	23	
Bearded Tit	GB	B	504-559	P	2002		Best est.	1	1,2	52	3
<i>Panurus biarmicus</i>	UK	B	504-559	P	2002		Best est.	1	1,2	52	3
Long-tailed Tit	GB	B	261,000	T	2000		Best est.	2	4,5	1,13	16
<i>Aegithalos caudatus</i>	UK	B	273,000	T	2000		Best est.	2	4,5	1,13	
Blue Tit	GB	B	3,333,000	T	2000		Best est.	2	4,5	1,13	16
<i>Cyanistes caeruleus</i>	UK	B	3,535,000	T	2000		Best est.	2	4,5	1,13	
Great Tit	GB	B	1,952,000	T	2000		Best est.	2	4,5	1,13	16
<i>Parus major</i>	UK	B	2,074,000	T	2000		Best est.	2	4,5	1,13	
Crested Tit	GB	B	2,400	P	1995		Best est.	1	2	68	
<i>Lophophanes cristatus</i>	GB	W	5,200-9,500	I	1995		Best est.	1	1	68	
	UK	B	2,400	P	1995		Best est.	1	2	68	
	UK	W	5,200-9,500	I	1995		Best est.	1	1	68	

Population estimates of birds in Great Britain

Species/population	Region	Season	Number	Unit	Date	+/-	Type	Rel	Der	Ref	Note
Coal Tit	GB	B	604,000	T	2000		Best est.	2	4,5	1,13	16
<i>Periparus ater</i>	UK	B	653,000	T	2000		Best est.	2	4,5	1,13	
Willow Tit	GB	B	8,500	T	2000	-	Best est.	3	4,5	1,13	
<i>Poecile montanus</i>	UK	B	8,500	T	2000	-	Best est.	3	4,5	1,13	
Marsh Tit	GB	B	52,800	T	2000	-	Best est.	3	4,5	1,13	
<i>Poecile palustris</i>	UK	B	52,800	T	2000	-	Best est.	3	4,5	1,13	
Eurasian Nuthatch	GB	B	144,000	T	2000		Best est.	2	4,5	1,13	
<i>Sitta europaea</i>	UK	B	144,000	T	2000		Best est.	2	4,5	1,13	
Eurasian Treecreeper	GB	B	204,000	T	2000		Best est.	3	4,5	1,13	16
<i>Certhia familiaris</i>	UK	B	214,000	T	2000		Best est.	3	4,5	1,13	
Golden Oriole	GB	B	5-17	P	1998-2002		5-y mean	1	3	52	3
<i>Oriolus oriolus</i>	UK	B	5-17	P	1998-2002		5-y mean	1	3	52	3
Red-backed Shrike	GB	B	0-5	P	1998-2002		5-y mean	1	3	52	3
<i>Lanius collurio</i>	UK	B	0-5	P	1998-2002		5-y mean	1	3	52	3
Eurasian Jay	GB	B	160,000	T	2000		Best est.	2	4,5	1,13	16
<i>Garrulus glandarius</i>	UK	B	160,000	T	2000		Best est.	2	4,5	1,13	
Magpie	GB	B	590,000	T	2000		Best est.	2	4,5	1,13	16
<i>Pica pica</i>	UK	B	650,000	T	2000		Best est.	2	4,5	1,13	
Red-billed Chough	GB*	B	300-346	P	2002		Best est.	1	1	20,70	14
<i>Pyrrhocorax pyrrhocorax</i>	GB*	B	932-939	I	2002		Best est.	1	1	20,70	15
	GB*	W	932-939	I	2002		Best est.	1	1	20,70	15
	IoM	B	128-150	P	2002		Best est.	1	1	42	14
	IoM	B	426	I	2002		Best est.	1	1	42	15
	IoM	W	426	I	2002		Best est.	1	1	42	15
	UK	B	429-497	P	2002		Best est.	1	1	20,70,42	14
	UK	B	1,360-1,367	I	2002		Best est.	1	1	20,70,42	15
	UK	W	1,360-1,367	I	2002		Best est.	1	1	20,70,42	15
Western Jackdaw	GB	B	503,000	T	2000		Best est.	2	4,5	1,13	16
<i>Corvus monedula</i>	UK	B	555,000	T	2000		Best est.	2	4,5	1,13	
Rook	GB	B	1,022,000-1,304,000	P	2000		Best est.	3	2,5	38,13	16
<i>Corvus frugilegus</i>	UK	B	1,130,000-1,440,000	P	2000		Best est.	3	2,5	38,13	
Carrion Crow	GB	B	790,000	T	1988-91	+	Best est.	2	4	23	
<i>Corvus corone</i>	UK	B	790,000	T	1988-91	+	Best est.	2	4	23	
Hooded Crow	GB	B	160,000	T	1988-91	+	Best est.	2	4	23	
<i>Corvus cornix</i>	UK	B	213,900	T	1988-91	+	Best est.	2	4	23	
Common Raven	GB	B	12,000	P	2000		Best est.	3	4,5	1,13	16
<i>Corvus corax</i>	UK	B	12,900	P	2000		Best est.	3	4,5	1,13	
Common Starling	GB	B	737,000	T	2000		Best est.	3	4,5	1,13	16
<i>Sturnus vulgaris</i>	UK	B	804,000	T	2000		Best est.	3	4,5	1,13	
House Sparrow	GB	B	1,950,000-3,450,000	P	2000	-	Best est.	3	4,5	1,13	16
<i>Passer domesticus</i>	UK	B	2,100,000-3,675,000	P	2000	-	Best est.	3	4,5	1,13	
Tree Sparrow	GB	B	68,000	T	2000	-	Best est.	2	4,5	1,13	16
<i>Passer montanus</i>	UK	B	68,000	T	2000	-	Best est.	2	4,5	1,13	
Common Chaffinch	GB	B	5,562,000	T	2000		Best est.	2	4,5	1,13	16
<i>Fringilla coelebs</i>	UK	B	5,974,000	T	2000		Best est.	2	4,5	1,13	
Brambling	GB	B	0-2	P	1998-2002		5-y mean	2	3	52	3
<i>Fringilla montifringilla</i>	GB	W	45,000-1,800,000	I	1981-84		Best est.	3	2	36	
	UK	B	0-2	P	1998-2002		5-y mean	2	3	52	3
Greenfinch	GB	B	695,000	T	2000		Best est.	2	4,5	1,13	16
<i>Carduelis chloris</i>	UK	B	734,000	T	2000		Best est.	2	4,5	1,13	
Goldfinch	GB	B	299,000	T	2000	-	Best est.	2	4,5	1,13	16
<i>Carduelis carduelis</i>	UK	B	313,000	T	2000	-	Best est.	2	4,5	1,13	
Siskin	GB	B	357,000	P	2000		Best est.	3	4,5	1,13	16
<i>Carduelis spinus</i>	UK	B	369,000	P	2000		Best est.	3	4,5	1,13	
Linnet	GB	B	535,000	T	2000		Best est.	2	4,5	1,13	16
<i>Carduelis cannabina</i>	UK	B	556,000	T	2000		Best est.	2	4,5	1,13	
Twite	GB	B	10,000 (6,000-15,000)	P	1999		Best est.	1	4	37	
<i>Carduelis flavirostris</i>	UK	B	10,000 (6,000-15,000)	P	1999		Best est.	1	4	37	



Population estimates of birds in Great Britain

Species/population	Region	Season	Number	Unit	Date	+/-	Type	Rel	Der	Ref	Note
Lesser Redpoll	GB	B	25,300	P	2000		Best est.	3	4,5	1,13	16
<i>Carduelis cabaret</i>	UK	B	26,900	P	2000		Best est.	3	4,5	1,13	
Common Crossbill	GB	B	1,000-20,000	P	1968-90		Best est.	3	2	23,65	
<i>Loxia curvirostra</i>	UK	B	1,000-20,000	P	1968-90		Best est.	3	2	23,65	
Scottish Crossbill	GB	B	300-1,250	P	1988		Best est.	3	2	1	
<i>Loxia scotica</i>	UK	B	300-1,250	P	1988		Best est.	3	2	1	
Parrot Crossbill	GB	B	30	P	2002	+	Best est.	3	2	52	
<i>Loxia pytyopsittacus</i>	UK	B	30	P	2002	+	Best est.	3	2	52	
Common Rosefinch	UK	B	0-4	P	1998-2002		5-y mean	2	3	52	3
<i>Carpodacus erythrinus</i>	UK	B	0-4	P	1998-2002		5-y mean	2	3	52	3
Bullfinch	GB	B	157,700	T	2000	-	Best est.	2	4,5	1,13	16
<i>Pyrrhula pyrrhula</i>	UK	B	166,000	T	2000	-	Best est.	2	4,5	1,13	
Hawfinch	GB	B	3,000-6,500	P	1988-91	-	Best est.	3	4	23	
<i>Coccothraustes coccothraustes</i>	UK	B	3,000-6,500	P	1988-91	-	Best est.	3	4	23	
Lapland Bunting	GB	W	200-500	I	1981-84		Best est.	3	2	36	
<i>Calcarius lapponicus</i>	UK	W	200-500	I	1981-84		Best est.	3	2	36	
Snow Bunting	GB	B	70-100	P	1988-91		Best est.	2	2	23	
<i>Plectrophenax nivalis</i>	GB	W	9,000-13,500	I	1981-84		Best est.	3	2	36	
	UK	B	70-100	P	1988-91		Best est.	2	4	23	
	UK	W	10,000-15,000	I	1981-84		Best est.	3	2	36	
Yellowhammer	GB	B	792,000	T	2000	-	Best est.	2	4,5	1,13	16
<i>Emberiza citrinella</i>	UK	B	792,000	T	2000	-	Best est.	2	4,5	1,13	
Cirl Bunting	GB	B	697 (645-770)	P	2003		Best est.	1	1	80	
<i>Emberiza cirlus</i>	UK	B	697 (645-770)	P	2003		Best est.	1	1	80	
Reed Bunting	GB	B	176,000-193,000	T	2000		Best est.	2	4,5	1,13	16
<i>Emberiza schoeniclus</i>	UK	B	192,000-211,000	T	2000		Best est.	2	4,5	1,13	
Corn Bunting	GB	B	8,500-12,200	T	2000	-	Best est.	2	4,5	1,13	
<i>Emberiza calandra</i>	UK	B	8,500-12,200	T	2000	-	Best est.	2	4,5	1,13	

**Footnote**

1. When a site has had no assessment of the breeding numbers, an assessment has been made using size of late-summer flocks divided by 3 (see Meiningner *et al.* 1995) where these flocks are known to be self-sustaining and contain breeding birds.
2. The figures for breeding Mallard in APEP97 were poorly adapted from Sharrock (1976). A new estimate has been derived by applying densities of 20 and 48 pairs/10 km square (adapted from CBC data) to *New Breeding Atlas* (Gibbons *et al.* 1993) data to give a range based on the number of 10 km squares with breeding evidence in GB (2,384) and UK (2,521).
3. Range is average of confirmed to average of confirmed + probable + possible breeding attempts.
4. Garganey numbers exclude 2002 figures as RBBP has changed the way that it treats this species.
5. Breeding Common Pochard numbers are total pairs in each year (proved + probable + possible breeding attempts).
6. The minimum figure for Red-throated Diver is proven breeding pairs and the maximum is half of the total number of adults recorded in Scotland in 1994.
7. Owing to limited survey coverage, the winter estimate for Red-throated Diver is likely to be a significant underestimate.
8. For Little Egret, the RBBP figure from 2002 is used because this colonising species, which started breeding in 1996, is still increasing rapidly.
9. Breeding Avocet numbers are confirmed pairs from a 5-year mean for 1997-2002 excluding 2001, when coverage was poor.
10. Estimate based on *Winter Atlas* (Lack 1986), but no real estimate available for Common Snipe.
11. Eagle Owl population is almost certainly larger, but under-reported.
12. APEP97 figures for Fieldfare have been reviewed and corrected.
13. APEP97 figures for Redwing have been reviewed and corrected.
14. Range of breeding Red-billed Chough numbers is (confirmed + probable) to (confirmed + probable + possible) pairs.
15. Estimates for number of individual Red-billed Choughs, in any season, are based on two pairs on territory plus total number of birds in non-breeding flocks.
16. GB estimate derived from UK estimate on basis of ratio in APEP97.
17. Estimate derived from various sources including County Bird Reports.
18. RSPB unpublished data.

**Conclusions**

There have been several major new surveys and reviews of bird numbers since the collation of the APEP97 list, and the figures presented here reflect considerable progress in improving our understanding of British and UK bird numbers.

Nonetheless, despite the extensive range of existing bird surveys in the UK and continued efforts to develop these to provide more precise population estimates, we still need to improve our understanding of the population status of some species.

One of the key outcomes of this type of review exercise is to identify gaps in our knowledge. Such gaps may relate to the quality of existing information (including estimate 'age') as well as where estimates are completely lacking. There are a few species for which we have no population estimate at all. For example, Little Gull *Larus minutus* was excluded from the list because previous estimates (e.g. Lack 1986) were based on a small part of the population and are unsuitable for extrapolation; in our opinion, this species lacks a British or UK population estimate. There are a number of species for which the existing estimates are of very poor quality, either due to the nature of the original surveys or because they are now out of date; new surveys are required for these species. Of particular urgency is the need to complete national surveys for non-breeding seaducks, divers and grebes in inshore marine waters to establish baseline estimates. Notwithstanding the poor quality of some of the figures, table 1 includes the best population estimates currently available, and these estimates remain relevant for conservation uses.

Some of the older estimates presented here will be updated when the list is next revised. Several national surveys (including the 2002 Peregrine and 2003 Golden Eagle *Aquila chrysaetos* surveys) have been completed recently, but the results had not been accepted for publication when this list was put together so they have not been used. The GCT/BTO breeding Woodcock *Scolopax rusticola* survey was carried out in 2003 and estimates may also be available for the next list. There are a number of ongoing or new surveys that will also contribute estimates for future revisions. A new BTO-led national survey of non-breeding gulls (WinGS) began in the winter of 2003/04 and will report in 2007, and within WeBS a new survey has been launched, the Dispersed Waterbird Survey, which aims to provide better estimates for widely dispersed non-breeding waterbirds. Ongoing surveys in coastal waters may provide us with better estimates for some of the species that we know occur in large numbers around our coasts but which are not readily surveyed from shore, such as Common Scoter *Melanitta nigra*. The SCARABBS programme identifies possible timings of future national surveys for our rarer breeding birds, based on an annual, six- or 12-year cycle of repeat, e.g. European Nightjar *Caprimulgus europaeus* in 2004, and new esti-

mates may become available for the next list revision. Finally, the BTO has announced that it intends to carry out a new breeding and wintering 'Atlas' survey of Britain & Ireland in 2007–11. This may provide a good opportunity to update many of the population estimates for common birds and may allow much better-quality estimates to be produced for some species that have never been well surveyed.

### Future compilations

APEP intends to publish future revisions to the list of GB and UK population estimates every three years. In addition, in collaboration with colleagues in Ireland, it plans to produce a list of estimates for All-Ireland in the near future. There is increasing interest in country-level estimates and APEP is also considering expanding the list to include these.

### Acknowledgments

APEP acknowledges the data, advice and other assistance provided by the following people and schemes: David Baines (GCT), Andy Brown (EN), Richard Evans (RSPB), Peter Fraser (BBRC), Phil Grice (EN), Ian Johnstone (RSPB), John Marchant (BTO), Ian Mitchell (JNCC), David Newborn (GCT), Mark O'Brien (RSPB), Malcolm Ogilvie (RBBP), Deryk Shaw (Fair Isle Bird Observatory), Alyn Walsh, Sian Whitehead (CCW), The Seabird Group, the Common Birds Census, the Breeding Bird Survey, the Seabird Monitoring Programme, the Wetland Bird Survey, national swan and goose monitoring programmes, the Rare Breeding Birds Panel, County Bird Recorders, the National Gamebag Census, the Raptor Study Groups and other specialist study groups. In particular, we thank all the volunteer and professional bird surveyors who have invested so much effort in collecting the data that underpin the estimates presented in this list.

### References

- (Numbers in square brackets refer to those listed in table 1 under 'Ref')
- [APEP97] Stone, B. H., Sears, J., Cranswick, P. A., Gregory, R. D., Gibbons, D. W., Rehfisch, M. M., Aebischer, N. J., & Reid, J. B. 1997. Population estimates of birds in Britain and in the United Kingdom. *Brit. Birds* 90: 1–22. [1]
- Batten, L. A. 2001. European Honey-buzzard Survey 2000 and 2001: preliminary results and request for further surveys. *Brit. Birds* 94: 143–144. [2]
- Bibby, C. J. 1989. A survey of breeding Wood Warblers *Phylloscopus sibilatrix*, in Britain 1984–85. *Bird Study* 36: 56–72. [3]
- BTO. Unpubl. (from Marchant, J. 2005. Charting success of UK herons. *BTO News* 257: 12–13.) [4]
- BTO, WWT, RSPB, JNCC. *Wetland Bird Survey Annual Reports: Wildfowl and wader counts*. [5]
- Burton, N. H. K., Musgrove, A. J., Rehfisch, M. M., Sutcliffe, A., & Waters, R. 2003. Numbers of wintering gulls in the United Kingdom, Channel Islands and Isle of Man: a review of the 1993 and previous Winter Gull Roost Surveys. *Brit. Birds* 96: 376–401. [6]
- Butler, C. 2002. Breeding parrots in Britain. *Brit. Birds* 95: 345–348. [7]
- Cannings, P. 1999. The Lady Amherst's Pheasant. *Bedfordshire*

- Naturalist* 53: 68–72. [8]
- Cayford, J. T., & Waters, R. J. 1996. Population estimates for waders Charadrii wintering in Great Britain. 1987/88–1991/92. *Biol. Conserv.* 77: 7–17. [9]
- Clements, R. 2001. The Hobby in Britain: a new population estimate. *Brit. Birds* 94: 402–408. [10]
- Cranswick, P. A., Mitchell, C. R., Merne, O. J., Ogilvie, M. A., Kershaw, M., Delany, S. N., MacKay, M., & Lilley, R. 2000. 'Status and distribution of the Greenland population of Barnacle Goose *Branta leucopsis* in Britain and Ireland, 1993 to 1999.' WWT unpubl. report, Slimbridge, UK. [11]
- Crick, H. Q. P., & Ratcliffe, D. A. 1995. The Peregrine *Falco peregrinus* breeding population of the United Kingdom in 1991. *Bird Study* 42: 1–19. [12]
- , Marchant, J. H., Noble, D. G., Baillie, S. R., Balmer, D. E., Beaven, L. P., Coombes, R. H., Downie, I. S., Freeman, S. N., Joys, A. C., Leech, D. I., Raven, M. J., Robinson, R. A., & Thewlis, R. M. 2004. *Breeding Birds in the Wider Countryside: their conservation status 2003*. BTO Research Report No. 353. BTO, Thetford. [13]
- Danielsen, F., Skov, H., & Durinck, J. 1993. Estimates of the wintering population of Red-throated Diver *Gavia stellata* and Black-throated Diver *Gavia arctica* in northwest Europe. *Proc. Nord. Congr. Ornithol.* 7th (1990): 18–24. [14]
- Davies, A. K. 1988. The distribution and status of Mandarin Duck *Aix galericulata* in Britain. *Bird Study* 35: 203–208. [15]
- Delany, S., Greenwood, J. J. D., & Kirby, J. S. 1992. *National Mute Swan Survey 1990*. Report to JNCC, WWT, Slimbridge. [16]
- Dore, C., & Ellis, P. M. 1994. 'An estimate of the population of Whimbrel *Numenius phaeopus* breeding in Shetland during 1989–1992 and a comparison with previous estimates.' RSPB, unpublished report. [17]
- Evans, R. J. 2000. Winter Slavonian Grebes in coastal waters of Britain and Ireland. *Brit. Birds* 93: 218–226. [18]
- Fair Isle Bird Observatory Trust. Annual Reports. [19]
- Finney, S. K., & Jardine, D. C. 2003. The distribution and status of the Red-billed Chough in Scotland in 2002. *Scot. Birds* 24: 11–17. [20]
- Fox, A. D. 1988. Breeding status of the Gadwall in Britain and Ireland. *Brit. Birds* 81: 51–66. [21]
- Gibbons, D. W., & Wotton, S. 1996. The Dartford Warbler in the United Kingdom in 1994. *Brit. Birds* 89: 203–212. [22]
- , Reid, J. B., & Chapman, R. A. 1993. *The New Atlas of Breeding Birds in Britain and Ireland: 1988–1991*. Poyser, London. [23]
- , Bainbridge, I. P., Mudge, G. P., Tharme, A. P., & Ellis, P. M. 1997. The status and distribution of the Red-throated Diver *Gavia stellata* in Britain in 1994. *Bird Study* 44: 194–205. [24]
- Gilbert, G. 2002. The status and habitat of Spotted Crakes *Porzana porzana* in Britain in 1999. *Bird Study* 49: 79–86. [25]
- Green, R. E. 1996. Status of the Golden Eagle in Britain in 1992. *Bird Study* 43: 20–27. [26]
- & Gibbons, D. W. 2000. The status of the Corncrake *Crex crex* in Britain in 1998. *Bird Study* 47: 129–137. [27]
- Greenwood, J. J. D., Delany, S., & Kirby, J. S. 1994. A method of estimating Mute Swan breeding populations in Great Britain in three years. In: *Proceedings of the 12th International Conference of IBCC & EOAC, Noordwijkerhout, The Netherlands*: 533–542. Voorburg/Heerlen & SOVON, Beek-Ubbergen. [28]
- Gregory, R. D., Carter, S. P., & Baillie, S. R. 1997. Abundance, distribution and habitat use of breeding Goosanders *Mergus merganser* and Red-breasted Mergansers *Mergus serrator* on British rivers. *Bird Study* 44: 1–12. [29]
- , Wilkinson, N. I., Noble, D. G., Robinson, J. A., Brown, A. F., Hughes, J., Procter, D. A., Gibbons, D. W., & Galbraith, C. A. 2002. The population status of birds in the United Kingdom, Channel Islands and Isle of Man: an analysis of conservation concern 2002–2007. *Brit. Birds* 95: 410–448.
- Hancock, M. H., Gibbons, D. W., & Thompson, P. S. 1997. The status of the breeding Greenshank *Tringa nebularia* in the United Kingdom in 1995. *Bird Study* 44: 290–302. [30]
- , Baines, D., Gibbons, D., Etheridge, B., & Shepherd, M. 1999. Status of male Black Grouse *Tetrao tetrix* in Britain in 1995–96. *Bird Study* 46: 1–15. [31]
- Heath, M. F., & Evans, M. I. (eds.) 2000. *Important Bird Areas in Europe: priority sites for conservation*. 2 vols. BirdLife International (BirdLife Conservation Series No. 8), Cambridge.
- Hudson, P. J. 1992. Grouse in space and time: the population biology of a managed gamebird. Game Conservancy Trust, Fordingbridge.
- Hughes, B. 1996. *The feasibility of control measures for North American Ruddy Ducks Oxyura jamaicensis in the United Kingdom*. WWT report to Defra. [32]
- JNCC. 1999. *The Birds Directive: selection guidelines for Special Protection Areas*. JNCC, Peterborough.
- Kershaw, M., & Cranswick, P. A. 2003. Numbers of wintering waterbirds in Great Britain, 1994/95–1998/99. I. Wildfowl and selected waterbirds. *Biol. Conserv.* 111: 91–104. [33]
- Kirby, J. S., & Mitchell, C. 1993. Distribution and status of wintering Shovelers *Anas clypeata* in Great Britain. *Bird Study* 40: 170–180. [34]
- , Evans, R. J., & Fox, A. D. 1993. *Wintering seaducks in Britain and Ireland: populations, threats, conservation and research priorities*. Aquatic Conservation: Marine and Freshwater Ecosystems. [35]
- Lack, P. 1986. *The Atlas of Wintering Birds in Britain and Ireland*. Poyser, Calton. [36]
- Langston, R. H. W., Smith, T., Brown, A. F., & Gregory, R. D. In press. The status of breeding Twite *Carduelis flavirostris* in the UK. *Bird Study*. [37]
- Lloyd, C., Tasker, M. L., & Partridge, K. 1991. *The Status of Seabirds in Britain and Ireland*. Poyser, London.
- Marchant, J. H., & Gregory, R. D. 1999. Numbers of nesting Rooks *Corvus frugilegus* in the United Kingdom in 1996. *Bird Study* 46: 258–273. [38]
- Meininger, P. L., Schekkerman, H., & van Roomen, M. W. J. 1995. Populatieschattingen en 1%-normen van in Nederland voor-komende watervogelsoorten: voorstellen voor standaardisatie. *Limosa* 68: 41–48.
- Merne, O. J., Boertmann, D., Boyd, H., Mitchell, C., Ó Briain, M., Reed, A., & Sigfusson, A. 1999. Light-bellied Brent Goose *Branta bernicla hrota*: Canada. In: Madsen, J., Cracknell, G., & Fox, A. D. (eds.), *Goose populations of the Western Palearctic: a review of status and distribution*: 298–311. Wetlands International Publication No. 48, NERI, Denmark. [39]
- Mitchell, C., Patterson, D., Boyer, P., Cunningham, P., McDonald, R., Meek, E., Okill, J. D., & Symonds, F. 2000. The summer status and distribution of Greylag Geese in north and west Scotland. *Scot. Birds* 21: 69–77. [40]
- Mitchell, P. I., Newton, S. F., Ratcliffe, N., & Dunn, T. E. 2004. *Seabird populations of Britain and Ireland*. Poyser, London. [41]
- Moore, A. 2004. Choughs in the Isle of Man in 2002, the year of the international census. *Peregrine* 8: 338–343. [42]
- Morris, A., Burges, D., Fuller, R. J., Evans, A. D., & Smith, K. W. 1994. The status and distribution of Nightjars *Caprimulgus europaeus* in Britain in 1992. *Bird Study* 41: 181–191. [43]
- Musgrove, A. J. 2002. The non-breeding status of the Little Egret in Britain. *Brit. Birds* 95: 62–80. [44]
- NCC. 1989. *Guidelines for selection of biological SSSIs*. NCC, Peterborough
- Newton, I. 1986. *The Sparrowhawk*. Poyser, Calton. [45]
- O'Brien, M. 2005. Estimating the number of farmland waders breeding in the United Kingdom. In: Thorup, O. (ed.), *Breeding waders in Europe 2000*. International Wader Studies 14, IWVSG, UK. [46]
- Ogilvie, M. A. 2003. European Honey-buzzards in the UK – correction to breeding totals. *Brit. Birds* 96: 145. [47]
- & the Rare Breeding Birds Panel. 2000a. Non-native birds breeding in the United Kingdom in 1998. *Brit. Birds* 93: 428–433. [48]
- & —. 2000b. Rare breeding birds in the United Kingdom in 1998. *Brit. Birds* 93: 358–393. [49]

- & — 2002a. Non-native birds breeding in the United Kingdom in 2000. *Brit. Birds* 95: 631–635. [50]
- & — 2002b. Rare breeding birds in the United Kingdom in 2000. *Brit. Birds* 95: 542–582. [51]
- & — 2004. Rare breeding birds in the United Kingdom in 2002. *Brit. Birds* 97: 492–536. [52]
- Owen, M., Atkinson-Willes, G. L., & Salmon, D. G. 1986. *Wildfowl in Great Britain*. Cambridge. [53]
- Petty, S. J. 1996. History of the Northern Goshawk *Accipiter gentilis* in Britain. In: Holmes, J. S., & Simons J. R. (eds), *The introduction and naturalisation of birds*. HMSO, London. [54]
- Pollitt, M. S., Cranswick, P.A., Musgrove, A. J., Hall, C., Hearn, R. D., Robinson, J. A., & Holloway, S. J. 2000. *The Wetland Bird Survey 1998–99: wildfowl and wader counts*. BTO, WWWT, RSPB, JNCC, Slimbridge.
- , Hall, C., Holloway, S. J., Hearn, R. D., Marshall, P. E., Musgrove, A. J., Robinson, J. A., & Cranswick, P.A. 2003. *The Wetland Bird Survey 2000–01: wildfowl and wader counts*. BTO, WWWT, RSPB, JNCC, Slimbridge.
- Prater, A. J. 1989. Ringed Plover *Charadrius hiaticula* breeding population in the United Kingdom in 1984. *Bird Study* 36: 154–159. [55]
- Ramsar Convention Secretariat. 1999. *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance of the Convention on Wetlands (Ramsar, Iran, 1971)*. Gland, Switzerland. [www.ramsar.org](http://www.ramsar.org)
- Ratcliffe, D.A. 1990. *Bird Life of Mountain and Upland*. CUP, Cambridge. [56]
- Ratcliffe, N., Vaughan, D., Whyte, C., & Shepherd, M. 1998. Development of playback census methods for Storm-petrels *Hydrobatas pelagicus*. *Bird Study* 45: 302–312.
- Raven, M. J., Noble, D. G., & Baillie, S. R. 2004. *The Breeding Bird Survey 2003*. BTO Research Report 363, Thetford.
- Rebecca, G., & Bainbridge, I. P. 1998. The breeding status of Merlin *Falco columbarius* in Britain in 1993–94. *Bird Study* 45: 172–187. [57]
- Reed, T. 1985. Estimates of British breeding wader populations. *Wader Study Group Bull.* 45: 11–12. [58]
- Rehfishch, M. M., Austin, G. E., Holloway, S. J., Allan, J. R., & O'Connell, M. 2002. An approach to the assessment of change in the numbers of Canada Geese *Branta canadensis* and Greylag Geese *Anser anser* in southern Britain. *Bird Study* 49: 50–59. [59]
- , Holloway, S. J., & Austin, G. E. 2003a. Population estimates of waders on the non-estuarine coasts of the United Kingdom and the Isle of Man during the winter of 1997–98. *Bird Study* 50: 22–32.
- , Austin, G. E., Armitage, M. J. S., Atkinson, P.W., Holloway, S. J., Musgrove, A. J., & Pollitt, M. S. 2003b. Numbers of wintering waterbirds in Great Britain and the Isle of Man (1994/95–1998/99): II. Coastal waders (Charadrii). *Biol. Conserv.* 112: 329–341. [60]
- Robertson, P.A., Woodburn, M. I. A., Tapper, S. C., & Stoate, C. 1989. *Estimating Game Densities in Britain from Land-use Maps*. Report to ITE, Abbots Ripton. [61]
- RSPB/Irish Raptor Study Group data (from UK Raptor Working Group 2000). [62]
- Sage, B. L., & Whittington, P.A. 1985. The 1980 sample survey of rookeries. *Bird Study* 32: 77–81. [63]
- Scott, D. 2001. Goshawk breeding in Northern Ireland. *Northern Ireland Bird Report 1999*: 114–119. [64]
- Sharrock, J.T.R. 1976. *The Atlas of Breeding Birds in Britain and Ireland*. Poyser, Calton. [65]
- Sim, I. M.V., Gibbons, D.V.W., Bainbridge, I. P., & Mattingley, W.A. 2001. Status of the Hen Harrier *Circus cyaneus* in the UK and the Isle of Man in 1998. *Bird Study* 48: 341–353. [66]
- Stroud, D.A., Reed, T.M., Pienkowski, M.V., & Lindsay, R.A. 1987. *Birds, Bogs and Forestry*. Nature Conservancy Council, Peterborough. [67]
- , Chambers, D., Cook, S., Buxton, N., Fraser, B., Clement, P., Lewis, P., McLean, I., Baker, H., & Whitehead, S. (eds.) 2001. *The UK SPA network: its scope and content*. JNCC, Peterborough.
- Summers, R.W., Mavor, R.A., Buckland, S.T., & MacLennan, A. M. 1999. Winter population size and habitat selection of Crested Tits *Parus cristatus* in Scotland. *Bird Study* 46: 230–242. [68]
- Taylor, K., Hudson, R., & Horne, G. 1988. Buzzard breeding distribution and abundance in Britain and Northern Ireland in 1983. *Bird Study* 35: 109–115. [69]
- Thorpe, R.T., & Johnstone, I. G. 2003. The status of the Chough *Pyrrhocorax pyrrhocorax* in Wales in 2002. *Welsh Birds* 3: 354–362. [70]
- Toms, M. P., Crick, H. Q. P., & Sawyer, C. R. 2001. The status of breeding Barn Owls *Tyto alba* in the United Kingdom 1995–97. *Bird Study* 48: 23–37. [71]
- UK Government (DETR). 1999. *A Better Quality of Life – strategy for sustainable development for the United Kingdom*. The Stationery Office, London.
- Underhill, M. C., Gittings, T., Callaghan, D.A., Hughes, B., Kirby, J. S., & Delany, S. 1998. Status and distribution of breeding Common Scoters *Melanitta nigra nigra* in Britain and Ireland in 1995. *Bird Study* 45: 146–156. [72]
- Underhill-Day, J. 1998. Breeding Marsh Harriers in the United Kingdom, 1983–95. *Brit. Birds* 91: 210–218. [73]
- Wanless, S., Murray, S., & Harris, M. P. 2005. The status of Northern Gannet in Britain & Ireland in 2003/04. *Brit. Birds* 98: 280–294. [74]
- Wetlands International. 2002. *Waterbird Population Estimates – third edition*. Wetlands International Global Series No. 12, Wageningen, The Netherlands.
- Whitfield, P. 2002. Status of breeding Dotterel *Charadrius morinellus* in Britain in 1999. *Bird Study* 49: 237–249. [75]
- Wilkinson, N. I., Langston, R. H.W., Gregory, R. D., Gibbons, D.W., & Marquiss, M. 2002. Capercaillie *Tetrao urogallus* abundance and habitat use in Scotland, in winter 1998–99. *Bird Study* 49: 177–185. [76]
- Wilson, A. M., Henderson, A. C. B., & Fuller, R. J. 2002. Status of the Nightingale *Luscinia megarhynchos* in Britain at the end of the 20th Century with particular reference to climate change. *Bird Study* 49: 193–204. [77]
- Wotton, S. R., & Gillings, S. 2000. The status of breeding Woodlarks *Lullula arborea* in Britain in 1997. *Bird Study* 47: 212–224. [78]
- , Langston, R. H.W., & Gregory, R. D. 2002. The breeding status of the Ring Ouzel *Turdus torquatus* in the UK in 1999. *Bird Study* 49: 26–34. [79]
- , Rylands, K., Grice, P., Smallshire, D., & Gregory, R. 2004. The status of the Gull Bunting in the UK and the Channel Islands in 2003. *Brit. Birds* 97: 376–384. [80]
- , Carter, I., Cross, A.V., Etheridge, B., Snell, N., Duffy, K., Thorpe, R., & Gregory, R. D. 2002. Breeding status of the Red Kite *Milvus milvus* in Britain in 2000. *Bird Study* 49: 278–286. [81]

Helen Baker<sup>1</sup> and David A. Stroud, JNCC, Monkstone House, City Road, Peterborough PE1 1JY; <sup>1</sup> e-mail: [helen.baker@jncc.gov.uk](mailto:helen.baker@jncc.gov.uk)

Nicholas J. Aebischer, Game Conservancy Trust, Fordingbridge, Hampshire SP6 1EF

Peter A. Cranswick, Wildfowl & Wetlands Trust, Slimbridge, Gloucester GL2 7BT

Richard D. Gregory, RSPB, The Lodge, Sandy, Bedfordshire SG19 2DL

Claire A. McSorley, JNCC, Dunnet House, 7 Thistle Place, Aberdeen AB10 1UZ

David G. Noble & Mark M. Rehfishch, BTO, The Nunnery, Thetford, Norfolk IP24 2PU

