Name	*Migratory status*	*Breeding season*					*Non-breeding season*				
		Number of breeding sites in species' UK SPA suite	**Total numbers in species' UK SPA suite (pairs)**	**% British (GB) breeding population**	**% all-Ireland breeding population in Northern Ireland**	**% international population**	**Number of non-breeding sites in species' UK SPA suite**	**Total numbers in species' UK SPA suite (individuals)**	**% British (GB) non-breeding population**	**% all-Ireland non-breeding population in Northern Ireland**	**% international population**
Razorbill	Partial migrant	19	81,335	76.0%	26.2%	14.1%					
Black Guillemot	Partial migrant										
Little Auk											
Puffin	Partial migrant	21	470,284	c. 100%	11.7%	52.2%					
Stock Dove	Partial migrant										
Woodpigeon	Partial migrant										
Turtle Dove											
Cuckoo											
Snowy Owl	Not migratory										
Long-eared Owl	Partial migrant										
Short-eared Owl	Partial migrant	6	131	13.1%		1.0%					
Nightjar		10	1,785	52.5%		0.8%					
Swift											
Kingfisher	Not migratory										
Bee-eater											
Hoopoe											
Wryneck											
Short-toed Lark											
Woodlark	Partial migrant	7	1,102	73.4%		0.1%					
Skylark	Partial migrant										
Shore Lark											
Sand Martin											
Swallow											
Red-rumped Swallow											
House Martin											
Richard's Pipit											
Tawny Pipit											
Tree Pipit											
Meadow Pipit	Partial migrant										
Rock Pipit	Partial migrant										
Water Pipit											

Name	*Migratory status*	*Breeding season*					*Non-breeding season*				
		Number of breeding sites in species' UK SPA suite	**Total numbers in species' UK SPA suite (pairs)**	**% British (GB) breeding population**	**% all-Ireland breeding population in Northern Ireland**	**% international population**	**Number of non-breeding sites in species' UK SPA suite**	**Total numbers in species' UK SPA suite (individuals)**	**% British (GB) non-breeding population**	**% all-Ireland non-breeding population in Northern Ireland**	**% international population**
Yellow Wagtail											
Grey Wagtail	Partial migrant										
Pied (White) Wagtail	Partial migrant										
Waxwing											
Fair Isle Wren	Not migratory	1	37	100%		100%	Largely resident on breeding areas (Appendix 5.5.1)				
Robin	Partial migrant										
Nightingale											
Bluethroat											
Black Redstart	Partial migrant										
Redstart											
Whinchat											
Stonechat	Partial migrant										
Wheatear											
Ring Ouzel											
Blackbird	Partial migrant										
Fieldfare											
Song Thrush	Partial migrant										
Redwing											
Grasshopper Warbler											
Savi's Warbler											
Aquatic Warbler							3	47 (during passage)	70%		0.4%
Sedge Warbler											
Marsh Warbler											
Reed Warbler											
Icterine Warbler											
Melodious Warbler											
Dartford Warbler	Not migratory	6	1,681	c. 100%		<0.1%	Largely resident on breeding areas (Appendix 5.5.1)				
Barred Warbler											
Lesser Whitethroat											
Whitethroat											
Garden Warbler											

Name	*Migratory status*	*Breeding season*					*Non-breeding season*				
		Number of breeding sites in species' UK SPA suite	**Total numbers in species' UK SPA suite (pairs)**	**% British (GB) breeding population**	**% all-Ireland breeding population in Northern Ireland**	**% international population**	**Number of non-breeding sites in species' UK SPA suite**	**Total numbers in species' UK SPA suite (individuals)**	**% British (GB) non-breeding population**	**% all-Ireland non-breeding population in Northern Ireland**	**% international population**
Blackcap											
Pallas's Warbler											
Yellow-browed Warbler											
Wood Warbler											
Chiffchaff											
Willow Warbler											
Goldcrest	Partial migrant										
Firecrest	Partial migrant										
Spotted Flycatcher											
Red-breasted Flycatcher											
Pied Flycatcher											
Bearded Tit	Partial migrant										
Golden Oriole											
Red-backed Shrike											
Great Grey Shrike											
Woodchat Shrike											
Chough	Not migratory	9	112	32.9%		0.9%	8	241	35.0%		0.7%
Rook	Partial migrant										
Starling	Partial migrant										
Chaffinch	Partial migrant										
Brambling											
Serin											
Greenfinch	Partial migrant										
Goldfinch	Partial migrant										
Siskin	Partial migrant										
Linnet	Partial migrant										
Redpoll	Partial migrant										
Crossbill	Partial migrant										
Scottish Crossbill	Not migratory	5	295	98%		98%	Largely resident on breeding areas (Appendix 5.5.1)				
Common Rosefinch											
Lapland Bunting											

Name	*Migratory status*	*Breeding season*					*Non-breeding season*				
		Number of breeding sites in species' UK SPA suite	**Total numbers in species' UK SPA suite (pairs)**	**% British (GB) breeding population**	**% all-Ireland breeding population in Northern Ireland**	**% international population**	**Number of non-breeding sites in species' UK SPA suite**	**Total numbers in species' UK SPA suite (individuals)**	**% British (GB) non-breeding population**	**% all-Ireland non-breeding population in Northern Ireland**	**% international population**
Snow Bunting	Partial migrant										
Ortolan Bunting											
Little Bunting											
Reed Bunting	Partial migrant										

Appendix 4

Reference populations used in review

This Appendix summarises the standardised national (*i.e.* GB or all-Ireland) or biogeographic population figures used in this review. These data have been used to calculate proportions of Annex I or migratory species within SPAs. The proportion of such species' national or biogeographic population supported by the UK SPA network as a whole can therefore also be calculated. Usually only those species qualifying on at least one UK SPA are included.

Points regarding derivations:

(1) Where figures have been taken directly from source, these are shown as originally cited.

(2) Where population ranges have required the selection of a single population figure, the minimum has normally been taken.

(3) Where such ranges are small, typically those in Stone *et al.* 1997, the minimum figure is shown exactly.

(4) Where the range is large, typically in Rose & Scott 1997, the figure selected has additionally been rounded to produce a figure that can be more easily employed.

(5) The rounding of large population figures follows the methodology given in Stone *et al.* 1997, *e.g.* 1,000–10,000 to the nearest 100, 10,000–100,000 to the nearest 1,000, 100,000–1,000,000 to the nearest 10,000, *etc.*

(6) For a number non-Annex I migratory species, particularly ducks, breeding populations were derived by dividing the wintering figure by three, following Meininger *et al.* (1995) and Rose & Scott (1994,1997).

(7) Breeding populations of Guillemot, Razorbill and Puffin have been converted from individual birds to breeding pairs, using the methodology used by Lloyd *et al.* (1991).

(8) Biogeographical populations derived from data in Hagemeijer & Blair (1997) and defined here as 'European' exclude Turkey and European Russia.

F = individual females; M = calling males; P = pairs; I = individuals; A = individual adults

Species/ population	Season	GB population	GB population unit	GB population source	GB population derivation	All-Ireland population	All-Ireland population unit	All-Ireland population source	All-Ireland population derivation	Bio-geographic population and name	Bio-geographic population unit	Bio-geographic population source	Bio-geographic population derivation
Red-throated Diver	B	935	P	Gibbons *et al.* 1997	935–1,500 prs = minimum	<10	P	Gibbons *et al.* 1997		7,158 Europe	P	Hagemeijer & Blair 1997	7,158–10,502 = minimum
Red-throated Diver	W	4,850	I	Danielsen *et al.* 1993		1,000	I	Lack 1986		75,000 Europe/ Greenland	I	Rose & Scott 1997	
Black-throated Diver	B	155	P	Stone et al. 1997	155–189 prs = minimum					19,196 Europe	P	Hagemeijer & Blair 1997	19,196–26,548 = minimum
Black-throated Diver	W	700	I	Danielsen *et al.* 1993						120,000 Europe/ W Siberia	I	Rose & Scott 1997	
Great Northern Diver	W	3,000	I	Lack 1986		1,000	I	Lack 1986	1,000–1,500 = minimum	5,000 Europe (wintering)	I	Rose & Scott 1997	
Little Grebe	W	3,290	I	Kirby 1995		5,000	I	Sheppard 1993		550,000 W Palearctic	I	Rose & Scott 1997	100,000–1,000,000 Inds = midpoint
Great Crested Grebe	B	4,000	P	Gibbons *et al.* 1993	8,000 adults divided by two	2,074	P	Gibbons *et al.* 1993	4,150 adults divided by two	50,000 NW Europe	P	Rose & Scott 1997	Winter figure divided by three
Great Crested Grebe	P					3,060	I	Cranswick *et al.* 1997; Delany 1996b 1997/8	Average of September all-Ireland counts 1995–1997	150,000 NW Europe	I	Rose & Scott 1997	As for winter population
Great Crested Grebe	W	9,800	I	Kirby 1995		3,500	I	Delany 1996b		150,000 NW Europe	I	Rose & Scott 1997	
Slavonian Grebe	B	70	P	Ogilvie *et al.* 1996	70–78 prs = minimum					6,058 Europe	P	Hagemeijer & Blair 1997	6,058–9,268 = minimum
Slavonian Grebe	P	400	I	Stone *et al.* 1997	same as winter					5,000 NW Europe	I	Rose & Scott 1997	Same as winter
Slavonian Grebe	W	400	I	Lack 1986		30	I	Lack 1986	30–40 = minimum	5,000 NW Europe	I	Rose & Scott 1997	
Black-necked Grebe	B	23	P	Ogilvie *et al.* 1996	23–48 prs = minimum					33,000 W Palearctic	P	Rose & Scott 1997	Winter figure divided by three & rounded to nearest 10,000
Black-necked Grebe	W	120	I	Lack 1986						100,000 W Palearctic	I	Rose & Scott 1997	
Fulmar	B	539,000	P	Lloyd *et al.* 1991		31,300	P	Lloyd *et al.* 1991		7,540,000 N Atlantic	P	Lloyd *et al.* 1991	

Species/ population	Season	GB population	GB population unit	GB population source	GB population derivation	All-Ireland population	All-Ireland population unit	All-Ireland population source	All-Ireland population derivation	Bio-geographic population and name	Bio-geographic population unit	Bio-geographic population source	Bio-geographic population derivation
Manx Shearwater	B	220,000	P	Lloyd *et al.* 1991	220,000–250,000 prs = minimum	30,000	P	Gibbons *et al.* 1993	30,000–50,000 = minimum	265,100 World	P	Lloyd *et al.* 1991	Excludes birds now regarded as *P. mauretanicus* and *P. yelkouan*
Storm Petrel	B	85,000	P	Lloyd *et al.* 1991	20,000–150,000 inds = midpoint on JNCC Seabirds Team advice					257,000 World	P	Lloyd *et al.* 1991	135,000–380,000 = midpoint
Leach's Petrel	B	55,000	P	Lloyd *et al.* 1991	10,000–100,000 inds = midpoint on JNCC Seabirds Team advice					955,000 North Atlantic	P	Lloyd *et al.* 1991	780,200–1,130,600 = midpoint
Gannet	B	201,000	N	Stone *et al.* 1997						263,000 World	P	Lloyd *et al.* 1991	
Cormorant	B	7,000	P	Lloyd *et al.* 1991		4,700	P	Gibbons *et al.* 1993		41,200 *total P. c. carbo*	P	Lloyd *et al.* 1991	Total population of *P. c. carbo*
Cormorant	W	13,200	I	Kirby 1995		5,000	I	Way *et al.* 1993		120,000 NW Europe	I	Rose & Scott 1997	
Shag	B	37,500	P	Lloyd *et al.* 1991		8,800	P	Gibbons *et al.* 1993		125,000 N Europe	P	Lloyd *et al.* 1991	
Bittern	B	20	M	Stone *et al.* 1997						10,044 Europe	M	Hagemeijer & Blair 1997	10,044–11,669 = minimum
Bittern	W	100	I	Lack 1986	50–150 inds = midpoint on EN advice					25,000 Europe	I	Rose & Scott 1997	25,000–100,000 inds = minimum
Little Egret	P	800	I	BTO *in litt.* 1999						125,000 W Mediterranean	I	Rose & Scott 1997	100,000–150,000 = midpoint
Little Egret	W	500	I	BTO *in litt.* 1999						125,000 W Mediterranean	I	Rose & Scott 1997	100,000–150,000 = midpoint
Bewick's Swan	W	7,200	I	Kirby 1995		2,500	I	Way *et al.* 1993		17,000 W Siberia/NW Europe	I	Rose & Scott 1997	
Whooper Swan	P	5,600	I	Kirby 1995		10,320	I	Way *et al.* 1993		16,000 Iceland/ UK/Ireland	I	Rose & Scott 1997	
Whooper Swan	W	5,600	I	Kirby 1995		10,320	I	Way *et al.* 1993		16,000 Iceland/ UK/Ireland	I	Rose & Scott 1997	

Species/ population	Season	GB population	GB population unit	GB population source	GB population derivation	All-Ireland population	All-Ireland population unit	All-Ireland population source	All-Ireland population derivation	Bio-geographic population and name	Bio-geographic population unit	Bio-geographic population source	Bio-geographic population derivation
Bean Goose	W	450	I	Batten *et al.* 1990						80,000 NE & NW Europe	I	Rose & Scott 1997	
Pink-footed Goose	W	192,000	I	Kirby 1995						225,000 UK/ Iceland/ Greenland	I	Rose & Scott 1997	
European White-fronted Goose	W	6,100	I	Kirby 1995						600,000 NW Siberia/NE & NW Europe	I	Rose & Scott 1997	
Greenland White-fronted Goose	W	13,700	I	Stroud 1992		14,000	I	Cranswick *et al.* 1999		30,000 total *A. a. flavirostris*	I	Rose & Scott 1997	Total population of *A. a. flavirostris*
Greylag Goose	W	100,000	I	Kirby 1995		3,800	I	Way *et al.* 1993		100,000 Iceland/ UK/Ireland	I	Rose & Scott 1997	
Barnacle Goose (Greenland)	W	31,009	I	Fox *et al.* 1990		7,500	I	Cranswick *et al.* 1997		32,000 Greenland/ Ireland/UK	I	Rose & Scott 1997	
Barnacle Goose (Svalbard)	W	17,450	I	Cranswick *et al.* 1997						12,000 Svalbard/ UK	I	Rose & Scott 1997	
Dark-bellied Brent Goose	W	103,300	I	Kirby 1995						300,000 total *B. b. bernicla*	I	Rose & Scott 1997	Total population of *B. b. bernicla*
Light-bellied Brent Goose (Canada)	W					20,000	I	Way *et al.* 1993		20,000 Canada/ Ireland	I	Rose & Scott 1997	
Light-bellied Brent Goose (Svalbard)	W	2,430	I	Cranswick *et al.* 1992						5,000 Svalbard/ UK/ Denmark	I	Rose & Scott 1997	
Shelduck	B	10,600	P	Gibbons *et al.* 1993		1,100	P	Gibbons *et al.* 1993		100,000 NW Europe	P	Rose & Scott 1997	Winter figure divided by three
Shelduck	W	73,500	I	Kirby 1995		7,000	I	Way *et al.* 1993		300,000 NW Europe	I	Rose & Scott 1997	
Wigeon	B	300	P	Gibbons *et al.* 1993	300–500 prs = minimum					420,000 W Siberia/NW & NE Europe	P	Rose & Scott 1997	Winter figure divided by three & rounded to nearest 10,000
Wigeon	W	277,800	I	Kirby 1995		125,000	I	Way *et al.* 1993		1,250,000 W Siberia/NW & NE Europe	I	Rose & Scott 1997	
Gadwall	B	770	P	Gibbons *et al.* 1993		30	P	Gibbons *et al.* 1993		10,000 NW Europe	P	Rose & Scott 1997	Winter figure divided by three
Gadwall	W	8,200	I	Kirby 1995		600	I	Way *et al.* 1993		30,000 NW Europe	I	Rose & Scott 1997	

Species/ population	Season	GB population	GB population unit	GB population source	GB population derivation	All-Ireland population	All-Ireland population unit	All-Ireland population source	All-Ireland population derivation	Bio-geographic population and name	Bio-geographic population unit	Bio-geographic population source	Bio-geographic population derivation
Teal	B	1,500	P	Gibbons *et al.* 1993	1,500–2,600 prs = minimum	400	P	Gibbons *et al.* 1993	400–675 = minimum	130,000 NW Europe	P	Rose & Scott 1997	Winter figure divided by three & rounded to nearest 10,000
Teal	W	135,800	I	Kirby 1995		65,000	I	Cranswick *et al.* 1999		400,000 NW Europe	I	Rose & Scott 1997	
Mallard	B	100,000	P	Owen *et al.* 1986	100,000–130,000 prs = minimum	23,000	P	Gibbons *et al.* 1993	By extrap-olation from GB total	1,700,000 NW Europe	P	Rose & Scott 1997	Winter figure divided by three & rounded to nearest 100,000
Mallard	W	500,000	I	Owen *et al.* 1986		20,000	I	Way *et al.* 1993		5,000,000 NW Europe	I	Rose & Scott 1997	
Pintail	B	8	P	Ogilvie *et al.* 1996	8–42 prs = minimum	1	P	Gibbons *et al.* 1993		20,000 NW Europe	P	Rose & Scott 1997	Winter figure divided by three
Pintail	W	27,800	I	Kirby 1995		6,000	I	Cranswick *et al.* 1999		60,000 NW Europe	I	Rose & Scott 1997	
Garganey	B	15	P	Ogilvie *et al.* 1996	15–125 prs = minimum	1	P	Gibbons *et al.* 1993		670,000 W Siberia/Europe/ W Africa	P	Rose & Scott 1997	Winter figure (2,000,000) divided by three & rounded to nearest 10,000
Shoveler	B	1,000	P	Gibbons *et al.* 1993	1,000–1,500 prs = minimum	100	P	Gibbons *et al.* 1993		13,300 NW & C Europe	P	Rose & Scott 1997	Winter figure divided by three & rounded to nearest 100
Shoveler	W	10,000	I	Kirby 1995		6,500	I	Way *et al.* 1993		40,000 NW & C Europe	I	Rose & Scott 1997	
Pochard	B	251	P	Ogilvie *et al.* 1996	251–406 prs = minimum	30	P	Gibbons *et al.* 1993		120,000 NW & NE Europe	P	Rose & Scott 1997	Winter figure divided by three & rounded to nearest 10,000
Pochard	W	43,700	I	Kirby 1995		40,000	I	Way *et al.* 1993		350,000 NW & NE Europe	I	Rose & Scott 1997	
Tufted Duck	W	60,600	I	Kirby 1995		40,000	I	Way *et al.* 1993		1,000,000 NW Europe	I	Rose & Scott 1997	
Scaup	W	11,000	I	Kirby *et al.* 1993		3,000	I	Delany 1996b		310,000 N & W Europe	I	Rose & Scott 1997	
Eider	B	31,000	P	Gibbons *et al.* 1993	31,000–32,000 females = minimum pairs	600	P	Gibbons *et al.* 1993		500,000 Europe	P	Rose & Scott 1997	Winter figure divided by three

Species/ population	Season	GB population	GB population unit	GB population source	GB population derivation	All-Ireland population	All-Ireland population unit	All-Ireland population source	All-Ireland population derivation	Bio-geographic population and name	Bio-geographic population unit	Bio-geographic population source	Bio-geographic population derivation
Eider	W	77,500	I	Kirby *et al.* 1993		2,000	I	Cranswick *et al.* 1999		1,500,000 W European S. m. mollissima	I	Derived from Rose & Scott 1997	Combined totals of the Britain and Ireland, and Baltic, Denmark & Netherlands wintering groups 1,415,000–1,775,000
Long-tailed Duck	W	23,500	I	Kirby *et al.* 1993		Unknown	I	Delany 1996	Threshold of 50 adopted	150,000 Iceland/ Greenland	I	Rose & Scott 1997	
Common Scoter	B	75	F	Underhill *et al.* 1998		95	F	Underhill *et al.* 1998		530,000 W Siberia/N & W Europe/NW Africa	P	Rose & Scott 1997	Winter figure divided by three & rounded to nearest 10,000
Common Scoter	W	27,350	I	Kirby *et al.* 1993	Corrected from published paper to exclude Irish totals	4,000	I	Cranswick *et al.* 1999		1,600,000 W Siberia/N & W Europe/NW Africa	I	Rose & Scott 1997	
Velvet Scoter	W	3,000	I	Kirby *et al.* 1993						1,000,000 W Siberia/N Europe	I	Rose & Scott 1997	
Goldeneye	B	83	P	Ogilvie *et al.* 1996	83–109 prs = minimum					100,000 NW & C Europe	P	Rose & Scott 1997	Winter figure divided by three
Goldeneye	W	17,000	I	Kirby 1995		11,000	I	Way *et al.* 1993		300,000 NW & C Europe	I	Rose & Scott 1997	
Smew	W	250	I	Lack 1986		<10	I	Delany 1996a, 1996b		25,000 NW & C Europe	I	Rose & Scott 1997	25,000–30,000 inds = minimum
Red-breasted Merganser	W	10,000	I	Kirby *et al.* 1993		2,000	I	Cranswick *et al.* 1999		125,000 NW & C Europe	I	Rose & Scott 1997	
Goosander	W	8,900	I	Kirby 1995						200,000 NW & C Europe	I	Rose & Scott 1997	
Honey Buzzard	B	16	P	DETR/ JNCC Raptor Working Group 1998						41,200 Europe	P	Hagemeijer & Blair 1997	41,200–48,677 = minimum
Red Kite	B	161	P	DETR/ JNCC Raptor Working Group 1998						17,394 Europe	P	Hagemeijer & Blair 1997	17,394–28,185 = minimum

Species/ population	Season	GB population	GB population unit	GB population source	GB population derivation	All-Ireland population	All-Ireland population unit	All-Ireland population source	All-Ireland population derivation	Bio-geographic population and name	Bio-geographic population unit	Bio-geographic population source	Bio-geographic population derivation
Red Kite	W	1,320	I	CCW unpub-lished	1998					52,182 Europe	I	Hagemeijer & Blair 1997	Breeding population × 3
Marsh Harrier	B	157	F	Stone *et al.* 1997	157–160 prs = minimum					25,955 Europe	P	Hagemeijer & Blair 1997	25,955–34,675 = minimum
Hen Harrier	B	483	P	RSPB unpub-lished 1998		180	P	Gibbons *et al.* 1993		8,332 Europe	P	Hagemeijer & Blair 1997	8,332–10,840 = minimum
Hen Harrier	W	750	I	Lack 1986		540	I	Gibbons *et al.* 1993	Breeding population × 3	24,996 Europe	I	Hagemeijer & Blair 1997	Breeding population × 3
Montagu's Harrier	B	11	P	DETR/ JNCC Raptor Working Group 1998	11–21 = minimum					6,976 Europe	P	Hagemeijer & Blair 1997	6,976–9,610 = minimum
Golden Eagle	B	400	P	DETR/ JNCC Raptor Working Group 1998	400–450 = minimum					5,239 Europe	P	Hagemeijer & Blair 1997	5,239–5,616 = minimum
Osprey	B	99	P	Stone *et al.* 1997						4,732 Europe	P	Hagemeijer & Blair 1997	4,732–5,249 = minimum
Merlin	B	1,300	P	Rebecca & Bainbridge 1998		110	P	Gibbons *et al.* 1993	110–130 = minimum	10,200 Europe	P	Hagemeijer & Blair 1997	10,166–16,612 = minimum
Merlin	W	1,300	I	Stroud *et al.* 1990	1,500–2,500 = minimum	416	I	Derived from data in Lack 1986 (2–3 birds/ occupied square)	416–624 = minimum	30,600 Europe	I	From Hagemeijer & Blair 1997	Breeding estimate × 3
Hobby	B	500	P	Gibbons *et al.* 1993	500–900 prs = minimum					20,000 Europe	P	Hagemeijer & Blair 1997	19,720–22,799 = rounded minimum

Species/ population	Season	GB population	GB population unit	GB population source	GB population derivation	All-Ireland population	All-Ireland population unit	All-Ireland population source	All-Ireland population derivation	Bio-geographic population and name	Bio-geographic population unit	Bio-geographic population source	Bio-geographic population derivation
Peregrine	B	1,167	P	DETR/ JNCC Raptor Working Group 2000		365	P	Gibbons et al. 1993		5,633 Europe	P	Hagemeijer & Blair 1997	5,633–6,075 = minimum
Capercaillie	B	2,200	IA	Catt *et al.* 1994						209,500 Europe	P	Hagemeijer & Blair 1997	209,405–296,085 = rounded minimum
Quail	B	515	M	Ogilvie *et al.* 1998	Total of probable & possible pairs	<20	M	Gibbons *et al.* 1993	In years without invasions	640,000 Europe	P	Hagemeijer & Blair 1997	641,525–876,497 = rounded minimum
Water Rail	B	450	P	Gibbons *et al.* 1993	450–900 = minimum	850	P	Gibbons *et al.* 1993	850–1,700 = minimum	129,994 Europe	P	Hagemeijer & Blair 1997	129,994–239,718 = minimum
Water Rail	W	Unknown	I			Unknown	I			550,000 Europe	I	Rose & Scott 1997	100,000–1,000,000 = midpoint
Spotted Crake	B	50	M	JNCC unpub-lished						48,800 Europe	P	Hagemeijer & Blair 1997	48,786–67,083 = rounded minimum
Corncrake	B	480	M	Green 1995		174	M	Green *et al.* 1997a	1993 data	87,500 Europe	M	Hagemeijer & Blair 1997	87,470–96,920 = rounded minimum
Coot	W	114,100	I	Kirby 1995		25,000	I	Cranswick *et al.* 1999		1,500,000 NW Europe	I	Rose & Scott 1997	
Oystercatcher	B	33,000	P	Piersma 1986	33,000 prs = minimum	3,000	P	Piersma 1986	3,000–4,000 = minimum	290,000 Europe/ W Africa	P	Rose & Scott 1997	Winter figure divided by three & rounded to nearest 10,000
Oystercatcher	W	359,000	I	Cayford & Waters 1996		50,000	I	Cranswick *et al.* 1999		874,000 Europe/ W Africa (East Atlantic Flyway)	I	Rose & Scott 1997	
Black-winged Stilt	B	1	P	Batten *et al.* 1990						15,400 Europe	P	Hagemeijer & Blair 1997	15,382–16,750 = rounded minimum
Avocet	B	592	P	Ogilvie *et al.* 1996	592–654 = minimum					26,800 Europe	P	Hagemeijer & Blair 1997	26,762–29,436 = minimum
Avocet	P	1,700	I	Stone *et al.* 1997						67,000 Europe/ NW Africa	I	Rose & Scott 1997	
Avocet	W	1,270	I	Cayford & Waters 1996						67,000 Europe/ NW Africa	I	Rose & Scott 1997	

Species/ population	Season	GB population	GB population unit	GB population source	GB population derivation	All-Ireland population	All-Ireland population unit	All-Ireland population source	All-Ireland population derivation	Bio-geographic population and name	Bio-geographic population unit	Bio-geographic population source	Bio-geographic population derivation
Stone Curlew	B	188	P	English Nature unpub-lished	1998 count					32,690 Europe	P	Hagemeijer & Blair 1997	32,690–45,704 = minimum
Ringed Plover	B	8,500	P	Prater 1989		1,250	P	Gibbons *et al.* 1993		16,000 Europe/ NW Africa	I	Rose & Scott 1997	Winter figure divided by three & rounded to nearest 1,000
Ringed Plover	P	30,000	I	Stone *et al.* 1997		Unknown				47,500 Europe/ NW Africa	I	Rose & Scott 1997	As from winter figure
Ringed Plover	W	28,600	I	Cayford & Waters 1996		12,500	I	Way *et al.* 1993		47,500 Europe/ NW Africa	I	Rose & Scott 1997	
Dotterel	B	840	P	Galbraith *et al.* 1993	840–950 = minimum					17,922 Europe	P	Hagemeijer & Blair 1997	17,922–39,136 = minimum
Golden Plover	B	22,600	P	Gibbons *et al.* 1993		400	P	Gibbons *et al.* 1993		474,900 Europe	P	Hagemeijer & Blair 1997	474,920–621,757 = minimum
Golden Plover	W	250,000	I	Cayford & Waters 1996		200,000	I	Way *et al.* 1993	>200,000 inds = minimum	1,800,000 NW Europe	I	Rose & Scott 1997	
Grey Plover	W	43,200	I	Cayford & Waters 1996		4,000	I	Cranswick *et al.* 1999		168,000 East Atlantic	I	Rose & Scott 1997	
Lapwing	B	190,000	P	Shrubb & Lack 1991; Thom 1986	190,000–240,000 = minimum	21,500	P	Gibbons *et al.* 1993		2,300,000 Europe/ West Africa	P	Rose & Scott 1997	Winter figure divided by three & rounded to nearest 100,000
Lapwing	W	1,500,000	I	Cayford & Waters 1996	1,500,000–2,000,000 = minimum	250,000	I	Cranswick *et al.* 1999		7,000,000 Europe/West Africa	I	Rose & Scott 1997	
Knot	W	291,000	I	Cayford & Waters 1996	= *C. c. islandica*	37,500	I	Way *et al.* 1993	= C. c. islandica	345,000 W Europe/Canada	I	Rose & Scott 1997	Total population of *C. c. islandica*
Sanderling	P	30,000	P	Cranswick *et al.* 1997		Unknown				123,000 East Atlantic	I	Rose & Scott 1997	
Sanderling	W	23,200	I	Cayford & Waters 1996		3,500	I	Cranswick *et al.* 1999		123,000 East Atlantic	I	Rose & Scott 1997	
Purple Sandpiper	B	2	P	Ogilvie *et al.* 1996		[redacted]				17,000 East Atlantic	P	Rose & Scott 1997	Winter figure divided by three & rounded to nearest 1,000

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Purple Sandpiper	W	21,300	I	Cayford & Waters 1996		1,000	I	Cranswick *et al.* 1999		50,500 East Atlantic	I	Rose & Scott 1997	
Dunlin	B	9,150	P	Reed 1985; Stroud *et al.* 1987	9,150–9,900 prs = minimum = *C. a. schinzii*	175	P	Hutch-inson 1989	= *C. a. schinzii*	11,000 temperate European *C.a. schinzii*	P	Stroud et al. 1990	Temperate European figure (11,158 prs) extrapolated from British breeding popn figures & rounded to nearest 1,000
Dunlin	W	532,000	I	Cayford & Waters 1996		125,000	I	Cranswick *et al.* 1999		1,373,000 Northern Siberia/ Europe/ Western Africa	I	Rose & Scott 1997	
Ruff	B	11	N	Ogilvie *et al.* 1996	2–24 = midpoint on JNCC advice					105,700 Europe	P	Hagemeijer & Blair 1997	105,655–139,209 = rounded minimum
Ruff	P	1,100	I	Stone *et al.* 1997						1,000,000 West Africa	I	Rose & Scott 1997	>1,000,000 = minimum
Ruff	W	700	I	Cayford & Waters 1996		<20	I	Delany 1996		1,000,000 West Africa	I	Rose & Scott 1997	>1,000,000 = minimum
Snipe (*G. g. gallinago*)	B	55,000	P	Gibbons *et al.* 1993		10,000	P	Piersma 1986	minimum estimate	862,000 Europe	P	Hagemeijer & Blair 1997	861,593–990,503 = rounded minimum
Snipe (*G. g. faeroeensis*)	B	6,900	P	BTO *in litt.* 2001						250,000 total *G. g. faeroeensis*	P	Rose & Scott 1997	750,000 divided by three Total population of *G. g. faeroeensis*
Snipe	W	100,000	I	Cayford & Waters 1996	>100,000 = minimum	Unknown				2,000,000 Europe/ West Africa	I	Rose & Scott 1997	>2,000,000 = minimum
Black-tailed Godwit (*L. l. limosa*)	B	34	P	Ogilvie et al. 1996	34–41 pairs = minimum					120,000 W Africa/W Europe	P	Rose & Scott 1997	350,000 divided by three & rounded to nearest 10,000
Black-tailed Godwit (*L. l. islandica*)	B	?	P			2	P	Gibbons *et al.* 1993		5,000 Iceland	P	Hagemeijer & Blair 1997	5,000–15,000 = minimum
Black-tailed Godwit (*L. l. islandica*)	W	7,410	I	Cayford & Waters 1996		9,000	I	Cranswick *et al.* 1999		65,000 Iceland/ UK/Ireland	I	Rose & Scott 1997	
Bar-tailed Godwit	W	52,500	I	Cayford & Waters 1996		16,000	I	Way *et al.* 1993	16,000–20,000 = minimum	115,000 W Palearctic	I	Rose & Scott 1997	

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Whimbrel	B	530	P	Dore & Ellis 1994						220,000 Europe/ W Africa	P	Rose & Scott 1997	Winter figure divided by three & rounded to nearest 10,000
Whimbrel	P	5,000	I	Cranswick *et al.* 1997		Unknown				650,000 Europe/ W Africa	I	Rose & Scott 1997	600,000–700,000 = midpoint
Whimbrel	W	<15	I	Lack 1986		<15	I	Lack 1986		650,000 Europe/ W Africa	I	Rose & Scott 1997	600,000–700,000 = midpoint
Curlew	B	33,000	P	Piersma 1986	33,000–38,000 prs = minimum	12,000	P	Reed 1985		120,000 Europe	P	Rose & Scott 1997	Winter figure divided by three & rounded
Curlew	W	115,000	I	Cayford & Waters 1996		87,500	I	Cranswick *et al.* 1999		348,000 Europe	I	Rose & Scott 1997	
Spotted Redshank	W	120	I	Cayford & Waters 1996						75,000 Europe/W Africa	I	Rose & Scott 1997	75,000–150,000 inds = minimum
Redshank	B	30,600	P	Piersma 1986	30,600–33,600 prs = minimum	4,400	P	Gibbons *et al.* 1993	4,400–5,000 = minimum	59,000 Total *T. t. totanus*	P	Rose & Scott 1997	Winter figure divided by three Total population of *T. t. totanus*
Redshank	P	120,000	I	Cranswick *et al.* 1997		Unknown				177,000 total *T. t. totanus*	I	Rose & Scott 1997	Wintering figure used Total population of *T. t. totanus*
Redshank	W	114,000	I	Cayford & Waters 1996		24,500	I	Way *et al.* 1993		177,000 total *T. t. totanus*	I	Rose & Scott 1997	Total population of *T. t. totanus*
Greenshank	B	1,440	P	Hancock *et al.* 1997						57,600 Europe	P	Hagemeijer & Blair 1997	57,612–83,189 = rounded minimum
Greenshank	W	380	I	Cayford & Waters 1996		900	I	Cranswick *et al.* 1999		550,000 Europe/ W Africa	I	Rose & Scott 1997	100,000–1,000,000 = midpoint
Wood Sandpiper	B	10	P	SNH unpub-lished						298,800 Europe	P	Hagemeijer & Blair 1997	298,842–412,474 = rounded minimum
Turnstone	W	64,400	I	Cayford & Waters 1996		22,500	I	Cranswick *et al.* 1999		67,000 Europe (wintering)	I	Rose & Scott 1997	
Red-necked Phalarope	B	36	M	Stone *et al.* 1997						65,500 Europe	P	Hagemeijer & Blair 1997	65,536–94,391 = rounded minimum

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Arctic Skua	B	3,200	P	Walsh *et al.* 1995	Territories equated to pairs					30,000 NE Atlantic	P	Lloyd *et al.* 1991	20,000–40,000 = midpoint
Great Skua	B	8,500	P	Walsh *et al.* 1995	Territories equated to pairs					13,600 World	P	Lloyd *et al.* 1991	
Mediterranean Gull	B	31	P	Ogilvie *et al.* 1996	31–45 pairs = minimum					184,000 Europe	P	Hagemeijer & Blair 1997	183,925–339,963 = rounded minimum
Black-headed Gull	B	167,000	P	Lloyd *et al.* 1991		53,800	P	Gibbons *et al.* 1993		1,650,000 World	P	Lloyd *et al.* 1991	
Black-headed Gull	W	1,900,000	I	Stone *et al.* 1997		1,100,000	I	Lack 1986	Difference between estimates for Britain/ Ireland and GB	5,000,000 NW Europe	I	Rose & Scott 1997	Minimum
Common Gull	B	68,000	P	Lloyd *et al.* 1991		3,600	P	Gibbons *et al.* 1993		124,000 NW & C Europe/Atlantic/ Mediterranean	P	Lloyd *et al.* 1991	
Common Gull	W	900,000	I	Stone *et al.* 1997		67,500	I	Lack 1986		1,600,000 NW & C Europe/ Atlantic/Med.	I	Rose & Scott 1997	
Lesser Black-backed Gull	B	83,000	P	Lloyd *et al.* 1991		5,200	P	Gibbons *et al.* 1993		124,000 total *L. f. graellsii*	P	Lloyd *et al.* 1991	Total population of *L. f. graellsii*
Lesser Black-backed Gull	W	500,000	I	Stone *et al.* 1997		70,000	I	Lack 1986		400,000	I	Rose & Scott 1997	400,000–500,000 = minimum; total population of *L. f. graellsii*
Herring Gull	B	160,000	P	Lloyd *et al.* 1991		44,700	P	Gibbons *et al.* 1993		940,000 NW European & Iceland/W Europe	P	Lloyd *et al.* 1991	Includes both *L. a. argentatus* and *L. a. argenteus*
Great Black-backed Gull	B	19,000	P	Lloyd *et al.* 1991		4,500	P	Gibbons *et al.* 1993		95,546 Europe	P	Hagemeijer & Blair 1997	95,546–121,233 = minimum
Kittiwake	B	490,000	P	Lloyd *et al.* 1991		50,200	P	Gibbons *et al.* 1993		3,170,000 North Atlantic = total *R. t. tridactyla*	P	Lloyd *et al.* 1991	Calculated using mid-points of ranges presented Total population of *R. t. tridactyla*

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Sandwich Tern	B	14,000	P	Lloyd *et al.* 1991		4,400	P	Gibbons *et al.* 1993		132,000 Europe	P	Hagemeijer & Blair 1997	
Sandwich Tern	P	42,000	I	JNCC unpub-lished	extrapolated from breeding population	13,200	I	Gibbons *et al.* 1993		396,000 Europe	I	Derived from Hage-meijer & Blair 1997	Breeding population × 3
Roseate Tern	B	64	P	Stone *et al.* 1997		400	P	Gibbons *et al.* 1993	>400 = minimum estimate	1,770 Europe	P	Lloyd *et al.* 1991	
Common Tern	B	12,300	P	Gibbons *et al.* 1993		3,100	P	Gibbons *et al.* 1993		195,105 Europe	P	Hagemeijer & Blair 1997	195,105–227,250 = minimum
Arctic Tern	B	44,000	P	Gibbons *et al.* 1993		2,500	P	Gibbons *et al.* 1993		900,000 Europe/ North Atlantic	P	Lloyd *et al.* 1991	
Little Tern	B	2,400	P	Lloyd *et al.* 1991		390	P	Gibbons *et al.* 1993		20,643 Europe	P	Hagemeijer & Blair 1997	20,643–22,799 = minimum
Guillemot	B	703,500	P	Lloyd *et al.* 1991	67% of popn as individuals	102,510	P	Gibbons *et al.* 1993		2,250,000 North Atlantic	P	Lloyd *et al.* 1991	Conversion of 0.67 used between Appar-ently Occupied Sites and individual birds
Razorbill	B	99,160	P	Lloyd *et al.* 1991	67% of popn as individuals	22,780	P	Gibbons *et al.* 1993		575,000 total *Alca torda islandica*	P	Lloyd *et al.* 1991	Total population of *Alca torda islandica* Conversion of 0.67 used between Appar-ently Occupied Sites and individual birds Midpoints of national ranges used
Puffin	B	449,000	P	Lloyd *et al.* 1991	50% of popn as individuals	20,500	P	Gibbons *et al.* 1993		901,000 total *Fratercula arctica grabae*	P	Lloyd *et al.* 1991	Total population of *Fratercula arctica grabae* Conversion of 0.5 used between Apparently Occupied Sites and individual birds
Short-eared Owl	B	1,000	P	Gibbons *et al.* 1993	1,000–3,500 = minimum	[redacted]				13,400 Europe	P	Hagemeijer & Blair 1997	13,376–26,265 = rounded minimum
Nightjar	B	3,400	M	Morris *et al.* 1994						224,000 Europe	M	Hagemeijer & Blair 1997	223,921–264,419 = rounded minimum

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Kingfisher	B	3,300	P	Gibbons *et al.* 1993	3,300–5,500 = minimum	1,300	P	Gibbons *et al.* 1993	1,300–2,100 = minimum	47,302 Europe	P	Hagemeijer & Blair 1997	47,302–66,752 = minimum
Woodlark	B	1,500	P	Wotton & Gillings 2000						1,050,000 Europe	P	Hagemeijer & Blair 1997	1,050,376–2,239,048 = rounded minimum
Aquatic Warbler	P	67	I	EN unpub-lished	Count 1997					11,220 World population	I	Tucker & Heath 1994	Breeding range minimum (3,740) × 3 = 11,220 inds
Dartford Warbler	B	1,600	P	Gibbons & Wotton 1996	1,600–1,890 = minimum					2,026,000 Europe	P	Hagemeijer & Blair 1997	2,025,456–3,635,791 = rounded minimum
Chough	B	340	P	Bignal *et al.* 1997		906	P	Berrow *et al.* 1993		12,265 Europe	P	Hagemeijer & Blair 1997	12,265–17,370 = minimum
Chough	W	689	I	Bignal *et al.* 1997		2,633	I	Berrow *et al.* 1993		36,800 Europe	I	Derived from Hage-meijer & Blair 1997	Breeding range minimum (12,265) × 3 = 36,795 inds then rounded
Snow Bunting	B	70	P	Stone *et al.* 1997	70–100 = minimum					220,000 Europe	P	Hagemeijer & Blair 1997	223,986–634,300 prs = rounded minimum
Fair Isle Wren	B	37	M	SNH unpub-lished	Count 1997					37 World	M	SNH unpub-lished	Count 1997
Scottish Crossbill	B	300	P	Stone *et al.* 1997	300–1,250 = minimum					300 World	P	Stone *et al.* 1997	300–1250 prs = minimum