

## Annex 1. Sources, years and quality of national wader population data used to compile 1990s midwinter population totals.

For explanation of estimate types, see Table 1.

Country	Year range	Estimate type	Source of information	Comments	Other key literature sources related to national- (or near national-) scale estimates and trends in populations of non-breeding waders from the mid 1980s to mid 1990s.
<b>EUROPE</b>					
ICELAND	Early 1980s	5	Smit & Piersma 1989	No more recent information	
FAEROES	Early 1980s	5	Smit & Piersma 1989	No more recent information	
ESTONIA	1993-98	4	Lehoe Luigufoe- national wader count co-ordinator		
LATVIA	1993-97	4	Antra Stipniece-national wader count co-ordinator		
NORWAY				Turnstone & Purple Sandpiper totals taken from Nygård (1994)	
SWEDEN	1990's	3	Leif Nilsson - national wader count co-ordinator	Numbers vary depending on severity of winter: estimates are for milder winters - v. few birds stay in cold winters. <i>C. maritima</i> estimate is a minimum.	
POLAND	1993-96	4	IWC Wader Database		
GERMANY: Baltic (Schleswig-Holstein & Meckleburg-Vorpommern)	1991-95	1	H.W. Nehls (Mecklenberg-Vorpommern) & Bernd		
DENMARK (Waddensea only)	1993-97	1 & 3	Lars Maltha Rasmussen - national wader count co-ordinator	Wadden Sea only. 1996 & 97 were ice-winters-estimates are for 'normal' winters. Additional sources: Meltofte 1993; Pedersen 1991.	
GERMANY: Schleswig-Holstein, Waddensea	1991-95	1	Hans-Ulrich Rösner - national wader count co-ordinator		
GERMANY: Niedersachsen, Waddensea	1993-97	??	Peter Südbeck - national wader count co-ordinator	1997 counts were incomplete-excluded from averages	
NETHERLANDS	1993-97	1 & 5	Marc van Rooijen - national wader count co-ordinator	National estimates are derived for coastal species from type 1 counts; inland and non-estuarine species estimated from a variety of sources. Since in NL coastal counts are affected by ice winters (occurred in 1996 and 1997), coastal estimates are made for 'normal' winters-so exclude ice-affected years.	
INTERNATIONAL WADDEN SEA (Netherlands/Germany/Denmark)		??			Meltofte <i>et al.</i> 1994
BELGIUM	1993-97	1	Koen Devos - national count co-ordinator		

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UNITED KINGDOM	1991-95 (1993-97)	1 (3)	John Cayford, Mark Rehfisch & Ray Waters - WeBS	1993-97 data supplied was consolidated for UK but were actual counts only, so underestimate total numbers. Estimates (in italics) used are 1991-95 (combining separate GB and N Ireland figures) and include some regularly counted open coast. For species wintering predominately on non-estuarine (<60% on estuaries) estimates from Cayford & Waters (1996) are used (bold italics). Normal font figures are total UK birds counted for 1993-97.	Cayford & Waters 1996 Cranswick <i>et al.</i> 1995 — <i>and other annual reports of the UK Wetland Bird Survey</i> Prys-Jones <i>et al.</i> 1994; Rehfisch <i>et al.</i> 2003
IRELAND	1995-97	1	Kendrew Colhoun - national wader count co-ordinator		Delany 1996, 1997 – and other subsequent annual reports of the Irish Wetland Bird Survey
FRANCE	1993-97	2	Roger Mahéo & Bernard Deceuninck - national wader count co-ordinators	French data in IWC database from mid-January 1977 to 1992 come from the annual reports Mahéo 1978-1993. Estimates (Annex 3a) for species inadequately covered by mid-winter counts come from Gillier <i>et al.</i> 2000.	Mahéo 1978-2001. Deceuninck & Mahéo 2000. Gillier <i>et al.</i> 2000. (Also see Deceuninck & Mahéo 1998 & Deceuninck 2001 for national assessments of breeding waders)
CZECH REPUBLIC	1993-98	2	Jitka Pellantova - national wader counts co-ordinator		
SLOVAKIA	1992-96	4	IWC Wader Database		
HUNGARY	1992-96	4	IWC Wader Database		
AUSTRIA	1994-96	4	IWC Wader Database		
ITALY	1990-96	1 & 5	Nicola Baccetti - national wader count co-ordinator	Estimates developed from 1990-96 median counts are coastal sites, and 1991-95 means of all sites (including inland) that were counted.	Baccetti <i>et al.</i> 1996, 2002
SPAIN	1993-94	3 & 4	Ramon Marti & Oscar Frias - national wader count co-ordinators	Late 1990s estimates for <i>Burhinus oedicnemus distinctus</i> and <i>Burhinus oedicnemus insularum</i> on the Canary Islands, supplied by Keith Emmerson & Juan Antonio Lorenzo (unpublished data, 2002).	
PORTUGAL	1993-97	1	Rui Rufino – national wader count co-ordinator		
SLOVENIA	1992-96	4	IWC Wader Database		
CROATIA	1992-96	4	IWC Wader Database		
YUGOSLAVIA	1992-96	4	IWC Wader Database		
BOSNIA-HERZEGOVINA	1992-94	4	IWC Wader Database		
ROMANIA	1994-98	4	Dan Munteau	Coastal lagoons and lakes only.	
GREECE	1993-97	3	George Handrinou		
ALBANIA	1993	4	WIWO Report 49 W Hagemeijer pp.110-111	Mid-range figures taken from range estimates	
UKRAINE	1991+94-96	4	IWC Wader Database		
CYPRUS	1993-96	4	IWC Wader Database		
BULGARIA	1993-96	4	IWC Wader Database		Kostadinova & Dereliev 2001
TURKEY	1992/93/95&96	4	IWC Wader Database		

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<b>AFRICA</b>					
MOROCCO (north of 28°N)	1991-95	3	IWC Wader Database & Mohamed Dakki - national wader count co-ordinator	Figures are those supplied minus the estimates for Morocco (Western Sahara) for most species. For small waders, two major sites (Sidi Moussa & Merja Zerga) 1991-93 counts included large numbers of unidentified small waders, so species counts are too low. For three species ( <i>Ch. hiaticula</i> , <i>C. alpina</i> , <i>C. minuta</i> ) only data from 1994 & 95 for these sites have been included in the estimates. For <i>Ch. alexandrinus</i> estimate is from Groen & Zomerdijk (1994) since IWC Wader Database figures are believed to include misidentified birds (P. Meininger in Wader Atlas in prep.).	Dakki <i>et al.</i> 2001
MOROCCO (south of 28°N)	1991-95	3	IWC Wader Database	Totals for this region of Morocco are calculated separately since there is evidence of a population divide between northern and southern Morocco in several species: species' totals are needed separately so as to calculate international population totals. Three sites included: Dahkla Bay, Cintra Bay & Layoune Lagoon. Since counts at Dahkla Bay in 1993 included large numbers of unidentified waders, and Cintra Bay counts in 1993 were very low (partial count?), totals are calculated as Dahkla Bay & Cintra Bay 1995, plus average of 1994 and 1995 counts for Layoune Lagoon.	Dakki <i>et al.</i> 2001
LIBYA	-		No data available from 1990s		Meininger <i>et al.</i> 1994
ALGERIA	1991-96	4	IWC Wader Database		
TUNISIA		3	WIWO Report		
EGYPT	1989-90	3	Meininger & Gatta 1993		
CANARY ISLANDS (Spain)			<i>Ch alexandrinus</i> : Velasco & Alberto (1993)		
CAPE VERDE ISLANDS	1986	4	Hazevoet 1992		
MAURITANIA	1997	3	Zwarts <i>et al.</i> 1998a,b		
MALI	1994-97	4	IWC Wader Database		
NIGER	1992-97	4	IWC Wader Database/Brouwer & Mullie unpublished mss.	Estimates for <i>Calidris alpina</i> and <i>C. temminckii</i> from IWC, all other species from the analysis of Brouwer & Mullie which gives average figures for 1992-1997.	
CHAD	1992-96	4	IWC file 'LACTCHAD'		
SUDAN	1993 & 97	4	IWC Wader Database		
ERITREA	1998	5	Estimated data for mudflats only – Nicola Baccetti		
SENEGAL	1993-97	3	IWC Wader Database		
BURKINO FASO	1997	4	IWC Wader Database		

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GAMBIA	1992-96	5	Best Guess estimates - Rodney West		
REUNION		4	IWC Wader Database		
GUINEA	1989-90	4	Altenburg & van der Kamp 1991		
GUINEA-BISSAU	1992-93	4	Salvig <i>et al.</i> 1997	Waders in Bijagos Archipelago	Zwarts 1988
SIERRA LEONE	1994-97	5	Best Guess estimates – Emmanuel Williams		
LIBERIA	1987	5	Smit & Piersma 1987		
IVORY COAST	1991-92&93	4	IWC Wader Database		
GHANA	1987-89	2	Ntiamoa-Baidu 1991		
TOGO	1993-96&97	4	IWC Wader Database		
BENIN	1996-97	4	IWC Wader Database		
NIGERIA	1996-97	4	IWC Wader Database		
CAMEROON	1993-99	3	IWC Wader Database plus WI 'Report Coastal Waders'		
CENTRAL AFRICAN REPUBLIC	1994-97	5	Best Guess estimates - Bob Dowsett		
DEMOCRATIC REPUBLIC OF CONGO				No data available for this review	
RWANDA	-	4	IWC Wader Database		
ETHIOPIA	1993-96	4	IWC data + Wintering Waterbirds' <i>Walia</i> 16: 5-16 1995		
DIJIBOUTI	-		No data available		
SOMALIA	-		No data available		
EQUATORAL GUINEA			No data available		
GABON	1992	3	Schepers & Marteijn 1993		
BURUNDI	1993	4	IWC Wader Database		
UGANDA		4	IWC Wader Database		
KENYA		4	IWC Wader Database		
ANGOLA	1993-97	5	Best Guess estimate - Prof Les Underhill		
ZAMBIA	1993-97	5	Best Guess estimate - Prof Les Underhill		
TANZANIA	1996	3	Tanzania Waterbird Count – Baker 1997		Geene 2001
MOZAMBIQUE	1993-97	5	Best Guess estimate - Prof Les Underhill		
NAMIBIA	1993-97	2	Best Guess estimate - Prof Les Underhill		
BOTSWANA	1993-97	2	Best Guess estimate - Prof Les Underhill		

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MALAWI		4	IWC Wader Database		
SWAZILAND	1993-97	2	Best Guess estimate - Prof Les Underhill		
ZIMBABWE	1993-97	2	Best Guess estimate - Prof Les Underhill		
MADAGASCAR	1993-97	5	Best Guess estimate - Frank Hawkins		
SOUTH AFRICA	1993-97	2	Best Guess estimate - Prof Les Underhill		Taylor <i>et al.</i> 1999
LESOTHO	1993-97	2	Best Guess estimate - Prof Les Underhill		
MAURITIUS		4	IWC Wader Database		
<b>MIDDLE EAST</b>					
AZERBAIJAN	1991-96	4	IWC Wader Database		
BAHREIN	1990-96	4	IWC Wader Database		
IRAN	1969-76	2	Summers <i>et al.</i> 1987	No more recent comprehensive counts (although see van der Have <i>et al.</i> 2001)	
IRAQ	1968-79	4	Scott & Carp 1982	No more recent comprehensive counts	
ISRAEL	1993-96	4	IWC Wader Database		Blitzblau 1996
JORDAN	1990 & 1992	4	IWC Wader Database		
KUWAIT	1990 & 1993/94	4	IWC Wader Database		
OMAN	1993-96	4	IWC Wader Database		
QATAR	1993-96	4	IWC Wader Database		
SAUDI ARABIA	1986	4	Zwarts <i>et al.</i> 1991		
UNITED ARAB EMIRATES	1993-96	4	IWC Wader Database		
YEMEN	1991-93	4	IWC Wader Database		

