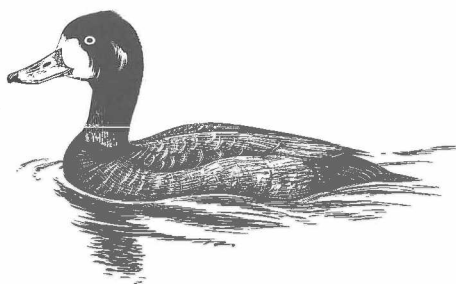


Wildfowl Counts in the UK, 1992-93

PETER CRANSWICK and MARK POLLITT



October 1993 saw one of the most important developments in the monitoring of waterfowl in the UK for many years with the launch of the Wetland Bird Survey (WeBS). This represents the amalgamation of the two previous schemes for surveying non-breeding wildfowl and waders: the National Waterfowl Counts (NWC), begun in 1947, and the Birds of Estuaries Enquiry (BoEE), begun in 1969. WeBS aims to provide a scientific basis for the conservation of waterfowl populations and retains the objectives of the old schemes:

- a) to obtain population estimates for wildfowl and waders in the UK during the non-breeding season
- b) to monitor trends in abundance of these populations
- c) to identify adverse trends at particular sites

The new scheme provides a greatly enhanced capacity for forward planning, improved co-ordination of research, analyses, and handling of data, and its use for conservation purposes. A new recording form introduced at the launch of WeBS is similar to those of the old schemes, but will ensure standardisation of data collected across all sites, including information relating to accuracy and disturbance.

The WeBS scheme is funded by the British Trust for Ornithology (BTO), The Wildfowl & Wetlands Trust (WWT), Royal Society for the Protection of Birds (RSPB) and the Joint Nature Conservation Committee (JNCC) (the last on behalf of English Nature (EN), Scottish Natural Heritage (SNH) and the Countryside Council for Wales (CCW) and the Department of the Environment for Northern Ireland (DoENI)). All four WeBS partners take an active role in the planning of the scheme and the rolling programme of analyses that use WeBS data, whilst the day-to-day running of the scheme is the responsibility of the two National Organisers based at the BTO Headquarters, Thetford, and WWT Headquarters, Slimbridge.

The success and growth of the count schemes reflects accurately the enthusiasm and dedication of several thousands of volunteer ornithologists throughout the UK. Counts are made at a variety of wetlands including lakes, lochs/loughs, ponds, reservoirs, gravel pits, rivers, freshwater marshes, canals, estuaries, sections of open coast and other coastal habitats. Counts are conducted once per month, normally on pre-selected dates. September to March are identified as priority months for counting non-breeding waterfowl, although pre-selected dates are provided for all months should observers wish to continue their counts throughout the year.

The information presented below summarises the results of WeBS in 1992-93. More detailed information can be found in the scheme's annual report *The Wetland Bird Survey 1992-93: Wildfowl and Wader Counts* (Waters & Cranswick, 1993). Information from additional WWT surveys of other species, principally geese and swans, that are difficult to monitor accurately by the once-monthly counts alone are used to complement WeBS data where relevant. Notably, these included national surveys of Pink-footed and Icelandic Greylag Geese in October and November, Greenland White-fronted Geese, including birds in Ireland, in autumn 1992 and spring 1993, Greenland Barnacle Geese on Islay during December and March, regular counts of the Svalbard population on the Solway Firth, a national census of Dark-bellied Brent Geese in January and February and fortnightly counts of Light-bellied Brent Geese at Lindisfarne throughout 1992-93. Data are also included from the Greenland White-fronted Goose Study (GWGS) (Fox 1993). In addition, counts of the large flocks of sea-duck that prove difficult to monitor accurately using the standard WeBS methodology were continued under the direction of the RSPB in the Moray Firth (Evans 1993) and the northern half of Cardigan Bay (Green & Elliott 1993).

The winter of 1992-93 was generally mild

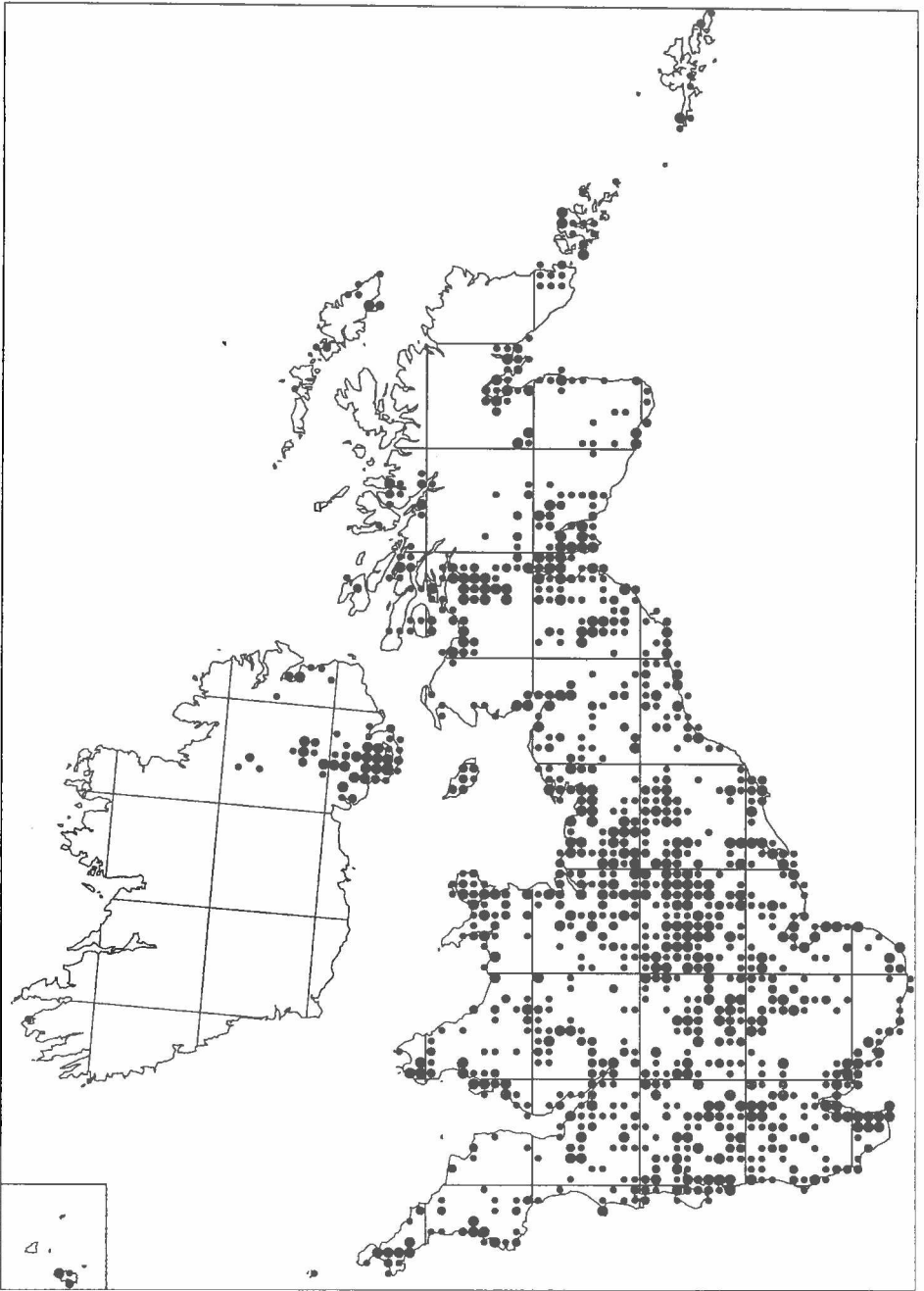


Figure 1. Coverage by 10 km grid squares for WeBS in 1992-93. Small dots represent one WeBS count unit per 10 km square, medium dots represent two units and large dots represent three or more units.

with no prolonged periods of sub-zero temperatures. Autumn began cool and unsettled, followed by a series of mild spells with heavy rainfall and occasional cold snaps

prior to Christmas. The New Year saw the onset of a stormy period, which in turn gave way to exceptionally dry and mild weather for the remainder of the winter months.

Table 1. Maximum total numbers of divers, grebes, Cormorant, wildfowl and rails recorded by WeBS in Great Britain (GB) and Northern Ireland (NI) during winter 1992-93 and 1% qualifying levels for Great Britain (GB), all-Ireland (AI) and International (Int) waterfowl populations.

	GB Peak	GB 1%	NI Peak	AI 1%	Int. 1%
Red-throated Diver <i>Gavia stellata</i>	642	50	40	10	750
Black-throated Diver <i>Gavia arctica</i>	29	7	0	1	1200
Great Northern Diver <i>Gavia immer</i>	39	30	40	?	50
Little Grebe <i>Tachybaptus ruficollis</i>	2600	30	789	?	?
Great Crested Grebe <i>Podiceps cristatus</i>	9580	100	2308	30	?
Red-necked Grebe <i>Podiceps grisegena</i>	34	1	0	?	300
Salvonian Grebe <i>Podiceps auritus</i>	163	4	0	?	50
Black-necked Grebe <i>Podiceps nigricollis</i>	39	1	0	?	1000
Cormorant <i>Phalacrocorax carbo</i>	13931	1	1849	?	1200
Mute Swan <i>Cygnus olor</i>	13844	260	2385	55	1800
Bewick's Swan <i>Cygnus columbianus</i>	7016	70	222	25	170
Whooper Swan <i>Cygnus cygnus</i>	3225	55	2389	100	170
Bean Goose <i>Anser fabalis</i>	352	4	0	+	800
Pink-footed Goose <i>Anser brachyrhynchus</i>	197861	1900	6	+	1900
European White-fronted Goose <i>Anser a. albifrons</i>	3088	60	0	+	4500
Greenland White-fronted Goose <i>Anser a. flavirostris</i>	15221	140	145	140	260
Lesser White-fronted Goose <i>Anser erythropus</i>	2	n/a	0	n/a	n/a
Greylag Goose <i>Anser anser Islandic</i>	98144	1000	772	40	1000
Greylag Goose <i>Anser anser feral</i>	15142	50	-	n/a	50
Snow Goose <i>Anser caerulescens</i>	76	n/a	0	n/a	n/a
Canada Goose <i>Anser canadensis</i>	39104	n/a	468	n/a	n/a
Barnacle Goose <i>Branta leucopsis</i>	39425	**	78	**	**
Dark-bellied Brent Goose <i>Branta b. bernicla</i>	97033	1000	2	+	2500
Light-bellied Brent Goose <i>Branta b. hrota</i>	1823	***	10132	***	***
Red-breasted Goose <i>Branta ruficollis</i>	1	n/a	0	n/a	n/a
Egyptian Goose <i>Alopochen aegyptiacus</i>	153	n/a	0	n/a	n/a
Shelduck <i>Tadorna tadorna</i>	71914	750	2780	70	2500
Mandarin Aix <i>galericulata</i>	170	n/a	0	n/a	n/a
Wigeon <i>Anas penelope</i>	299666	2800	10962	1250	7500
American Wigeon <i>Anas americana</i>	3	n/a	0	n/a	n/a
Gadwall <i>Anas strepera</i>	7903	80	314	+	250
Teal <i>Anas crecca</i>	110048	1400	4437	650	4000
Mallard <i>Anas platyrhynchos</i>	170954	5000	9232	500	20000
Pintail <i>Anas acuta</i>	20993	280	232	60	700
Garganey <i>Anas querquedula</i>	25	+	0	+	20000
Shoveler <i>Anas clypeata</i>	7873	100	153	65	400
Red-crested Pochard <i>Netta rufina</i>	134	+	0	+	200
Pochard <i>Aythya ferina</i>	36490	440	23928	400	3500
Ferruginous Duck <i>Aythya nyroca</i>	2	n/a	0	n/a	n/a
Ring-necked Duck <i>Aythya collaris</i>	5	n/a	1	n/a	n/a
Tufted Duck <i>Aythya fuligula</i>	52639	600	19006	400	7500
Scaup <i>Aythya marila</i>	3734	110	3955	30	3100
Eider <i>Somateria mollissima</i>	27567	750	663	20	20000
King Eider <i>Somateria spectabilis</i>	1	n/a	0	n/a	n/a
Long-tailed Duck <i>Clangula hyemalis</i>	1198	230	35	+	20000
Common Scoter <i>Melanitta nigra</i>	2293	230	499	40	8000
Surf Scoter <i>Melanitta perspicillata</i>	6	n/a	0	n/a	n/a
Velvet Scoter <i>Melanitta fusca</i>	294	30	0	+	2500
Goldeneye <i>Bucephala clangula</i>	16388	170	14729	110	3000
Smew <i>Mergus albellus</i>	108	2	1	+	150
Red-breasted Merganser <i>Mergus serrator</i>	4033	100	825	20	1000
Goosander <i>Mergus merganser</i>	2911	90	1	+	1500
Ruddy Duck <i>Oxyura jamaicensis</i>	2253	n/a	39	n/a	n/a
Water Rail <i>Rallus aquaticus</i>	150	?	7	?	?
Moorhen <i>Gallinula chloropus</i>	7738	?	438	?	?
Coot <i>Fulica atra</i>	95319	90	10403	+	15000

* The feral component of this species in Britain is approximated by totalling counts from English (excluding Northumberland) and Welsh sites only and adding 2340 (after Delany 1992) for the feral birds in Scotland. All other birds in Great Britain (apart from the native population in northwest Scotland) are considered to be from the Icelandic population. It is not possible to separate the feral from the wild component of this population in Northern Ireland.

** Different 1% criteria are used for the two populations occurring in Britain. Greenland: GB 270, AI 75, Int. 320; Svalbard: GB 120, AI +, Int. 120.

*** Different 1% criteria are used for the two populations occurring in Britain. Canada/Greenland: GB +, AI 200, Int. 200; Svalbard: GB 25, AI +, Int. 40.

+ population too small for meaningful figure to be obtained

? population size inadequately known for 1% criterion to be determined

n/a 1% criteria are not applicable to introduced species or rarities

It should be noted that data presented in this report represent the briefest of summaries and caution is urged regarding the limitation and interpretation of the counts and their application; readers are advised to refer to the annual report or the WeBS partners for further advice if necessary.

Data from a total of 2375 WeBS count units (either a site or its subdivisions, termed sectors, used by individual observers when a team is required to count a large site) in the UK were stored individually on computer files for 1992-93, considerably more than last season, largely due to storage of data from large or complex sites (e.g. estuaries and gravel pits) at the level of their constituent count units. A total of 1530 count units was covered in England, 485 in Scotland, 194 in Wales, 127 in Northern Ireland, 11 in The Isle of Man and ten in the Channel Islands. These totals included all bar three of the 129 UK estuaries identified by WeBS, with those not counted being three of the smaller sites. Coverage in 1992-93 is shown in **Figure 1**. The map highlights some gaps in coverage which reflecting the absence of waterbodies or, in sparsely populated areas, the lack of counters. Notable, however, is the lack of data for inland sites in Dumfries & Galloway, which unfortunately were lost in transit.

Table 1 shows the total numbers of wildfowl and related species recorded by the WeBS scheme in winter 1992-93 in Britain (including the Isle of Man but excluding the Channel Isles) and Northern Ireland. Figures in these Tables are derived from the WeBS monthly counts and goose censuses only. Higher totals for certain species (e.g. some sea-ducks) can be calculated by including counts from special surveys made by other organisations, and these are highlighted in the following text. Also given in **Table 1** are the qualifying levels for national and international importance such that any site supporting 1% of a population on a regular basis (normally taken as the five year peak mean) potentially qualifies for designation under national or international legislation. These figures can be used in conjunction with site counts given in the following text to determine the relative importance of the sites. It should be noted that sites in Northern Ireland are assessed according to all-Ireland criteria which are distinct from Great Britain criteria. It should also be noted that where 1% of the British or all-Ireland wintering population

is less than 50 birds, 50 is normally used as the minimum qualifying level for national or all-Ireland importance.

The following text highlights points relating to significant UK wildfowl populations. For each species, an indication of the population trend is given alongside for Great Britain (GB) and Northern Ireland (NI). Indices for Northern Ireland should be viewed with caution since fewer years' data are available. It should also be noted that, for many species, insufficient data (id) are available for indices to be calculated with confidence. The top few sites, in terms of the numbers of birds counted, are listed for each species, with the peak 1992-93 count followed by the five-year-peak mean in brackets. 1992-93 is only the second season in which several of the wildfowl and associated species have been included in the counts. It is thus too early for a table of sites regularly supporting large numbers of these species to be drawn up.

Red-throated Diver GB: id NI: id

The December peak of over 600 birds in Great Britain was similar in size and timing to the peak in 1991-92 although, again, counts in all other months were considerably smaller than this. Totals in Northern Ireland were much smaller than 1991-92. These figures represent only a fraction of the 4300 to 5400 birds estimated to winter in Great Britain (Danielsen *et al.* 1993). Principal concentrations were at Minsmere (318) and the Dengie (175), with 390 birds found during aerial, land- and boat-based counts of Cardigan Bay and 350 during RSPB/BP surveys of the Moray Firth.

Black-throated Diver GB: id NI: id

That only a small proportion of the British population, recently estimated to number 700 (Danielsen *et al.* 1993), was recorded, reflects the use of remote areas by this species. The counts between Turnberry and Dipple (15) and in Machrie Bay (12), and 13 recorded by RSPB/BP counts of the Moray Firth, were the only ones in double figures.

Great Northern Diver GB: id NI: id

Counts in Great Britain in 1992-93 were lower than during 1991-92, although they were higher in Northern Ireland, with concentrations in Dundrum Bay (40), Lough Foyle (29) and Loch Indaal (21) particularly noteworthy. Forty birds were recorded by

RSPB/BP counts of the Moray Firth.

Little Grebe **GB: stable** **NI: stable**

The peak British count was well below average, perhaps as a result of a wet spring and summer which would have resulted in many favoured nesting areas, especially small rivers and canals, being flooded. Numbers in Northern Ireland were largely unchanged. Most sites held fewer than their respective five-year average, the Thames being a notable exception.

Loughs Neagh/Beg	442	(396)
Thames Estuary	182	(126)
Strangford Lough	134	(116)

Great Crested Grebe

GB: increase **NI: fluctuating**

Peak counts in 1992-93 exceeded previous maxima, continuing the trend of increasing numbers since the species was first included in the count scheme. Although Loughs Neagh and Beg remain the principal site for this species, peak numbers usually occur in late autumn, generally followed by rapid dispersal to leave only 200-300 birds in mid winter. The exceptionally large count in 1992-93 coincides with a decrease in diving ducks, notably Tufted Duck and Pochard, at the site.

Loughs Neagh/Beg	2022	(1236)
Belfast Lough	1771	(1147)
Rutland Water	720	(757)
Forth Estuary	923	(657)
Chew Valley Lake	520	(512)

Red-necked Grebe **GB: id** **NI: id**

Total numbers in 1992-93 were lower than in 1991-92, and the peak count represents less than one quarter of the British population. The Forth Estuary again held the largest number of birds (22).

Slavonian Grebe **GB: id** **NI: id**

Numbers in Great Britain increased during the winter to a peak representing an increase of more than 50% on that of the previous season. Poor weather conditions hampered counts at coastal sites in Northern Ireland. There were large counts at Pagham Harbour (57) and at Lough Foyle (51) whilst RSPB/BP counts on the Moray Firth recorded 60 birds.

Black-necked Grebe **GB: id** **NI: id**

Numbers in Great Britain in 1992-93 were consistently higher than in 1991-92. Birds were recorded at 33 different sites, nearly all in the south or east, with Langstone Harbour again being the most important (28).

Cormorant **GB: stable** **NI: fluctuating**

Following sustained increases in British and continental breeding populations, maximum counts in 1992-93 represented the highest yet made. Many estuaries rank highly in the list of principal sites but the appearance of inland waterbodies is indicative of the species' new reliance on freshwater wetlands which may be stocked with fish. The growing conflict between fishery managers and conservationists over Cormorants, particularly with respect to the depredation of inland recreational fisheries, was discussed at the 3rd International meeting of the Cormorant Research Group in Poland, and resulted in the production of a Position Statement concerning Cormorant Research, Conservation and Management. Kirby *et al.* (in press) also noted the absence of adequate knowledge of diet in inland situations and concluded that significant economic damage had not been demonstrated scientifically in Britain and highlighted the inadequacies in government policy with respect to Cormorant control.

Morecambe Bay	802	(1027)
Loughs Neagh/Beg	1018	(782)
Forth Estuary	737	(779)
Medway Estuary	108	(615)
Solway Estuary	757	(588)
Inner Clyde	565	(579)

Mute Swan **GB: stable** **NI: stable**

Annual indices show that the population in Great Britain has levelled off since 1990 after a rapid increase in the second half of the 1980s. Provisional results of the 1990 breeding season survey showed a population of 25750, a 37% increase since the 1983 survey (Delany & Greenwood 1993). The banning of the sale of lead fishing weights was undoubtedly a contributory factor to this increase in England, and probably in Wales but, in Britain as a whole, a succession of mild winters in the late 1980s is also likely to have been important. In Northern Ireland, the maximum count was a slight increase on the 1991-92 maximum.

Loughs Neagh/Beg	1746	(1427)
The Fleet/Wey	1126	(1055)
Loch of Harray	261	(674)
Abberton Reservoir	487	(545)

Bewick's Swan**GB: fluctuating NI: fluctuating**

Numbers in the UK as a whole were well down on recent years following a poor breeding season that resulted in less than 5% young. Despite the national figures, large counts were made at some of the key sites, particularly the Nene Washes.

Ouse Washes	5169	(5126)
Nene Washes	2543	(1158)
Martin Mere/ Ribble Estuary	764	(791)
Breydon Water	268	(411)
Severn Estuary	267	(303)

Whooper Swan GB: decline NI: decline

The peak British total remained remarkably low for the second successive season, although the Northern Ireland total had risen considerably. Breeding success was reasonable, with 9-14% juveniles at WWT reserves, so the fall in numbers seems likely to be due to the use of other countries within their wintering range. A count of 856 at Welney during a cold snap in February was the largest ever recorded in England. Numbers on Loch Eye and the Cromarty Firth have returned to more normal levels after the particularly high counts a few seasons ago. The site forms an important staging post, with peak numbers often recorded in autumn before the birds disperse south within the British Isles. It is thought that the dry summers in 1989 and 1990 resulted in the growth of pondweed which may have provided favourable feeding conditions (J. Bowler, pers. comm.). Consequently, many birds remained longer than usual at Loch Eye in autumn.

Loughs Neagh/Beg	883	(1091)
Lough Foyle	1166	(1046)
Lough Eye/Cromarty Firth	389	(763)
Upper Lough Erne	612	(741)
Ouse Washes	840	(683)

Bean Goose GB: id NI: id

A more normal number of birds was recorded after the low of 1991-92. However, since geese often frequent non-wetland areas, they may not be present on WeBS

sites at the time of the count. The key site remains the Yare Valley (350). Bean Geese featured in a spring influx of grey geese to eastern England, and 39 birds were recorded away from the normal sites.

Pink-footed Goose GB: increase NI: id

The poor breeding season in 1992, with averages of 9.7% young and 1.67 young per pair present in autumn flocks, resulted in the population falling to around 200000 (Mitchell & Cranswick 1993). The top four sites continue to support at least 30000 birds, some 10000 more than the next largest counts. Clearly some sites become more important as the winter progresses with the Wash and SW Lancashire supporting more birds in January, and large numbers using Loch of Strathbeg, Solway Estuary, Carsebreck, Castle Loch (Lochmaben) and Wigtown Bay in early spring. A new WWT/SNH project started in October 1993 and will explore the distribution of Pinkfeet and Greylags at sites in northern Britain outwith the national census period.

Dupplin Lochs	25500	(39200)
SW Lancashire*	32800	(34188)
West Water Reservoir	25000	(31717)
Loch of Strathbeg	30650	(30690)
Montrose Basin	35000	(21800)

*from Lancashire Goose Report (Forshaw 1993)

European White-fronted Goose**GB: id NI: id**

The normal mid- to late-winter peak was very low in 1992-93, with most sites holding only a fraction of the normal number. However, March saw one of the most interesting wildfowl events of the winter, with a large influx of several goose species, often in mixed flocks, into the east coast from Norfolk to Humberside. European White-fronts featured strongly in the influx, with the result that the March total was the highest of the winter. The east coast bias is noticeable, with the number at Heigham Holmes, a previously uncounted site, being particularly noteworthy. The species complement of the March flocks, which also featured relatively large numbers of Bean and Barnacle Geese, suggests that these birds had originated from The Netherlands.

Severn Estuary	1401	(3214)
Swale Estuary	900	(1678)

Heigham Holmes	350	(350)
North Norfolk Marshes	567	(317)
Middle Yare Marshes	238	(209)

Greenland White-fronted Goose**GB: id** **NI: id**

The autumn and spring censuses, undertaken by the Greenland White-fronted Goose Study (GWGS), which includes many non-wetland sites not covered by WeBS, revealed slightly fewer birds than in 1991-92 (Fox 1993). In view of the poor breeding success in 1992, with only 6.2% young recorded from sample flocks, it is perhaps surprising that the reduction in total numbers was not larger. Because of Islay's outstanding importance as a wintering area for Greenland White-fronted and Barnacle Geese, a Goose Management Scheme was introduced in 1992-93 by Scottish Natural Heritage (SNH) to encourage sympathetic management of land where these geese occur. Under a voluntary scheme, a system of financial incentives was offered to farmers to support goose use of different areas. Payments were made on the basis of the average numbers of geese, and in return, the recipients agreed to sympathetic management for the birds.

Islay	11004	(9390)
Machrihanish	1110	(1057)
Rhunahaorine	726	(1010)

Greylag Goose **GB: fluctuating** **NI: id**

The Icelandic population that winters in Scotland was estimated to number 100000 in 1992-93, around 12000 more than in 1991. Breeding success was poor in 1992, with only 11.1% young observed in sample flocks (Mitchell & Cranswick 1993). The apparent population increase therefore results at least partly from the early arrival in 1991, with many birds already having dispersed by November to smaller sites not covered by the census. Whilst concern has been raised at the apparent status of the Icelandic Greylag Goose population, the current estimate indicates that the population seems to be stable, rather than declining. The population of indigenous Greylags breeding on the Uists is monitored currently through separate counts and it is hoped to extend these to surrounding areas. February 1993 produced a post-hunting population of 2130 birds, maintaining a very gradual increase.

Dinnet Loch/River Dee	21650	(17970)
Loch Eye/Cromarty Firth	16842	(14109)
Loch of Skene	14100	(12111)
Inner Moray Firth	1269	(7675)
Loch Spynie	7280	(7066)
Haddo House Lochs	4200	(5160)

Canada Goose **GB: fluctuating** **NI: id**

The peak GB count in 1992-93 was slightly smaller than the previous season and, unusually, occurred in December rather than in September. The trend remains upward. Although numbers in Northern Ireland were small, the comparatively large peak suggests that Canada Geese may be gaining a strong foothold. Outstanding data from the 1991 summer survey of introduced geese resulted in a final total of 63581 birds, more than three times the number found during a 1976 survey, indicating an average rate of increase during the intervening 15 years of 8.3% per annum (Delany in press).

Stratfield Saye	1090	(1378)
Abberton Reservoir	1251	(933)
Rutland Water	889	(866)
Bowl Water	943	(850)
Kedleston Park Lake	520	(846)

Barnacle Goose **GB: id** **NI: id**

The 1992 breeding season was the worst on record for the Greenlandic population, with just 2.6% juveniles in autumn flocks, immediately following the previous worst-ever season, when there were 4.6% young. A spring census of Britain and Ireland was abandoned in Scotland due to bad weather, but 8200 were counted in Ireland, continuing the recent increase. With 26500 counted on Islay in March, even if numbers elsewhere in Scotland had not increased, the population was likely for the first time to number more than 40000 in 1993. Another solution to the conflict between farmers and geese on Islay was tried in 1992-93. The Scottish Office developed a model to assess the impact, in terms of yield losses, of geese on farmland. Payments were then made to farmers in relation to the number of geese observed on their land, thus rewarding farmers for conservation-related benefits rather than for maximising yields. The Svalbard population, wintering on the Solway Firth, continues to grow, albeit more slowly than it did in the 1970s and 1980s, with much re-

duced breeding success in recent years. There were only 5% young in 1992.

Islay	26776	(25804)
Solway Estuary	12200	(12260)

Dark-bellied Brent Goose

GB: fluctuating NI: id

The peak count in 1992-93 was much lower than the previous season, following an almost complete breeding failure in 1992 (Cranswick 1993), although surprisingly few sites held maxima in 1992-93 that were markedly less than their five year averages.

Wash	19146	(23016)
Thames Estuary	15691	(19166)
North Norfolk Marshes	9318	(10351)
Chichester Harbour	11099	(10409)

Light-bellied Brent Goose

GB: id NI: stable

The low peak count of Greenlandic birds in Northern Ireland compared with previous years was probably a result of poor breeding conditions in the arctic, although no figures on breeding success are available for these birds. Numbers at several of the key sites were much reduced. Numbers of Svalbard Light-bellied Brents, which overwinter on Lindisfarne, have fallen in recent years, although they increased slightly in 1992-93. Age counts of sample flocks showed these birds to have had a poor breeding season, with only 5.9% young.

Strangford Lough	8367	(10573)
Lough Foyle	1765	(4194)
Lindisfarne	1865	(2385)

Shelduck GB: stable NI: fluctuating

Although numbers of Shelduck in Britain have increased recently, the 1992-93 peak was smaller than the record total of the previous season. The 1992 national breeding survey was extended by means of a 'mop-up' survey in the summer of 1993 which resulted in almost complete coverage of Britain, provisionally revealing totals of 44,700 adult Shelduck in Britain between late April and mid May, with almost half of the population at this time having been recorded in pairs (S. Delany, pers. comm.). Early analyses suggest geographical variation in brood sizes, with larger broods in the south of Britain.

Wash	18465	(18001)
Dee Estuary	6893	(6364)
Medway Estuary	5585	(5539)
Morecambe Bay	5178	(5369)

Wigeon GB: increase NI: decrease

The peak count in Britain was again high in 1992-93, following the record total of 1991-92. Numbers in Northern Ireland were smaller than expected. Numbers at Lindisfarne continue to fall dramatically, whilst the count on the Somerset Levels (10253) was particularly impressive, especially since nearly 7000 of these were found at West Sedgemoor alone.

Ribble Estuary	48441	(56318)
Ouse Washes	28879	(35048)
Lough Foyle	5869	(13574)
Dornoch Firth	15091	(13428)
Lindisfarne	5845	(11993)
Martin Mere	11220	(11210)
Cromarty Firth	7299	(10200)
North Norfolk Marshes	9881	(10193)

Gadwall GB: stable NI: fluctuating

The peak count recorded in Britain reached an all-time high in 1992-93, although the rapid increase in the size of the population during the 1980s has slowed, and perhaps even decreased, in recent years. The Northern Ireland population remains small, with numbers rising slightly in 1992-93, though monthly fluctuations are erratic. Most sites exhibited a slight increase in numbers.

Rutland Water	501	(1321)
Avon Valley (Mid)	1051	(592)
Abberton Reservoir	358	(522)
Gunton Park Lake	38	(354)

Teal GB: declining NI: declining

Numbers in Britain have shown a general increase during the last 25 seasons, mirroring the trend observed in the northwest European population. However, following the rapid increase in the late 1980s to record levels, there have been declines in the last few seasons which have placed the trend back on a more moderate rate of increase. Not surprisingly, most sites held fewer birds than expected, although exceptional numbers on the Somerset Levels and large counts on the Lower Derwent Ings and at Pulborough Levels highlight the benefits to be gained from positive habitat management.

Mersey Estuary	12020	(11563)
Dee Estuary	6194	(7246)
Ribble Estuary	6813	(6703)
Somerset Levels	11330	(5174)

Mallard **GB: decline** **NI: stable**

Although the peak in Britain was remarkably similar to that in 1991-92, indices show the population has declined steadily over the last few seasons to the lowest value of the 27 seasons used in the index. The Northern Ireland peak was the lowest in the last five winters. No site approaches the international level of significance, and no site in Great Britain reaches the GB 1% criterion, indicating the relatively dispersed nature of the population.

Loughs Neagh/Beg	5408	(5645)
Humber Estuary	5015	(4297)
Ouse Washes	4342	(4167)

Pintail **GB: stable** **NI: fluctuating**

The peak count in Britain in 1992-93 was low for the second time in three seasons, whilst the Northern Ireland peak was also considerably lower than 1991-92. Consequently, many UK sites held far fewer Pintail in 1992-93 than expected. Since 1988-89, there appears to have been a regular peak of Pintail in October, albeit somewhat smaller than the regular December maximum. It is still uncertain as to why the numbers of birds present in November fall so sharply before the December peak. One possible explanation is an influx of Icelandic birds during October (P. Rose, pers. comm.), which then disperse within the UK or beyond, followed by a December or January peak in harsher weather conditions which includes birds from northern Europe.

Dee Estuary	7605	(9338)
Mersey Estuary	3504	(5016)
Wash	317	(3007)
Morecambe Bay	2115	(2582)
Ribble Estuary	1850	(2273)

Shoveler **GB: fluctuating** **NI: fluctuating**

The peak British total was the lowest count since the early 1980s, whilst the index value is the lowest for 17 years. The Northern Ireland total was also particularly low, being the smallest total since regular counts began in 1985-86. A massive 46 sites qualify as nationally important, the largest number for any species of wildfowl in the

UK, although only five meet international criteria.

Abberton Reservoir	520	(692)
Ouse Washes	724	(627)
Rutland Water	362	(527)
Chew Valley Lake	435	(499)
Loch Leven	448	(478)

Red-crested Pochard **GB: id** **NI: id**

Only small numbers of continental birds are likely to visit Britain during winter; the majority of British birds are resident, with small populations having arisen from escaped birds. The large increase over 1991-92 is probably a result of more observers having been prepared to record Red-crested Pochards, rather than a genuine increase in numbers. The Cotswold Water Park held around half the total, with 52 in the West and 13 in the East with Pensthorpe Lakes holding 48.

Pochard **GB: declining** **NI: stable**

Peak numbers in Northern Ireland declined sharply in 1992-93, following a series of consistently high counts, largely as a result of numbers at Loughs Neagh and Beg, which supports around 95% of the total, being the lowest since 1986-87. Peak numbers of Pochard in Britain were about average in 1992-93 compared with recent winters although index values point to a steady decline of over 15% during the last five years.

Loughs Neagh/Beg	23367	(35897)
Abberton Reservoir	1420	(2510)
Ouse Washes	3279	(2021)

Tufted Duck **GB: stable** **NI: stable**

Numbers in Britain have remained relatively stable since the early 1970s, whilst the peak total for Northern Ireland was some 27% down on the previous season. Like Pochard, numbers in Northern Ireland are subject to large fluctuations, being particularly influenced by numbers at Loughs Neagh and Beg, and though this appears to be a sharp reduction, it still remains well within the bounds of previous fluctuations. Numbers were below average at many key sites, with steady declines recorded at Abberton Reservoir and Rutland Water in recent winters.

Loughs Neagh/Beg	18078	(22335)
Abberton Reservoir	1724	(3215)

Loch Leven	2500	(3113)
Rutland Water	1723	(3102)

Scaup **GB: id** **Ni: id**

The British peak in 1992-93 remained much the same as the previous season, though this probably represents an under-count since numbers recorded at key sites, such as the Solway, are heavily influenced by local counting conditions. The peak count in Northern Ireland rose for the fourth consecutive year, exceeding the total for the rest of the UK.

Solway Estuary	1686	(3109)
Loughs Neagh/Beg	3384	(2361)
Loch Indaal	1120	(976)

Eider **GB: id** **Ni: id**

The peak count in Britain in 1992-93 was considerably less than in the previous four seasons. It is, however, strongly influenced by the numbers on the Tay Estuary which, as with many counts of sea-duck, are subject to the prevailing conditions, and was an obvious under-count in 1992-93. Around half the British population is found on WeBS sites; a comparatively large proportion compared with many other sea-duck, reflecting the more inshore distribution of Eiders and their use of more accessible sites, notably east coast Scottish estuaries. The Shetlands, Orkneys and Western Isles support the bulk of the uncounted birds.

Tay Estuary	250	(25150)
Forth Estuary	9375	(7641)
Morecambe Bay	7509	(7432)

Long-tailed Duck **GB: id** **Ni: id**

WeBS counts detect only a small proportion of the total British population since, like many other species of sea-duck, it is difficult to count unless viewing conditions are at least good. Specific surveys, such as the RSPB/BP monitoring of the Moray Firth, record much larger numbers and this area remains the major stronghold for this species in the UK, with around 39% of the estimated winter population. As usual, only small numbers were recorded in Northern Ireland.

Moray Firth	11246	(9071)
Forth Estuary	491	(617)
Lindisfarne	83	(399)

Common Scoter **GB: id** **Ni: id**

Unusually low numbers of Common Scoter were recorded in 1992-93, both in Britain and Northern Ireland, although, given the difficulty involved in counting these birds, it is not possible to say whether this is significant or not. The Common Scoter that winter in the Irish Sea tend to be highly mobile, with large scale changes in wintering areas (A. Webb, *in litt.*), and it is possible that birds moved to a previously unrecognized site in 1992-93. However, the low counts at many sites, notably the three most important in the UK, two of which are counted using specific methodology aimed at recording sea-ducks, lend weight to the possibility of a genuine decline.

North Cardigan Bay	5650	(5872)
Moray Firth	2197	(4649)
Dundrum Bay	498	(1934)
Forth Estuary	1773	(1569)

Velvet Scoter **GB: id** **Ni: id**

Given the difficulties involved in monitoring sea-ducks and the fact that, being the least common of the two scoter, Velvets are undoubtedly overlooked in large, mixed flocks, true numbers are undoubtedly higher than recorded. The peak count was lower than 1991-92, as to be expected given the large drop in Common Scoter. No birds were specifically identified in Northern Ireland. Few UK sites hold Velvet Scoter with any regularity and, even here, numbers often fluctuate widely.

Eden/St Andrew's Bay	4	(826)
Moray Firth	1039	(618)
Forth Estuary	290	(144)

Goldeneye

GB: increasing **Ni: increasing**

Numbers in both Great Britain and Northern Ireland, although slightly lower than the 1991-92 maximum, remained considerably higher than in previous seasons. Numbers at many of the key sites are characterised by a peculiarly large count in one or two seasons; several sites with average maxima of 200-300 birds having held in excess of 500 or 600 birds at least once in the last five winters. Peak numbers at Loughs Neagh and Beg have remained remarkably constant in recent years and represent the only internationally important concentration of Goldeneye in the UK.

Loughs Neagh/Beg	13748	(12910)
Forth Estuary	2167	(1810)
Inner Moray Firth	820	(779)
Abberton Reservoir	547	(658)

Smew **GB: id** **NI: id**

Numbers of Smew in 1992-93 were about average for a mild winter, with few birds until mid winter and a late winter peak. As usual, birds were concentrated in southeast England, and Wraybury Gravel Pits was again the principal site with 39 birds.

Red-breasted Merganser

GB: fluctuating **NI: stable**

Large numbers were recorded in Britain in 1992-93, with the peak British count exceeding 4000 for the first time since the mid 1980s. The Northern Ireland total was also considerably higher than in the two previous seasons, having declined somewhat from peak figures in the 1980s. Consequently, many individual sites also registered large numbers of Red-breasted Merganser. However, the continued demise of birds at Lindisfarne, which will soon cease to be of national importance, is worrying.

Inner Moray Firth	1315	(1515)
Forth Estuary	726	(514)

Goosander **GB: declining** **NI: id**

The peak British count was 10% lower than in the last two seasons, whilst annual indices also show a decline since the late 1980s. However, since the mid 1960s, the population in Britain has shown a general increase, although annual indices indicate that there cyclic fluctuations, with regular large troughs every four or five years (Kirby *et al.* in press). Since conditions in wintering areas are thought unlikely to give rise to such phenomena, this pattern may be related to ecological factors in the breeding areas, such as food availability. The species remains a rarity in Northern Ireland, with only one bird recorded.

Inner Moray Firth	301	(573)
Hirsel Lake	360	(229)
Tay Estuary	112	(146)
Hay-a-Park Gravel Park	137	(143)

Ruddy Duck **GB: id** **NI: id**
Concentrated on relatively few wintering

sites, the WeBS counts provide an accurate estimate of the number and distribution of birds. However, no data are available for Chew Valley Lake, the most important UK site, precluding meaningful comparison with previous years. However it appears that, unless there was a record count at Chew in 1992-93, the number of birds in Great Britain has decreased for the first time in eight years, perhaps due to unfavourable weather conditions causing reduced breeding success. Numbers in Northern Ireland remained relatively stable.

Chew Valley Lake	-	(612)
Blithfield Reservoir	394	(569)
Rutland Water	550	(584)
Eyebrook Reservoir	101	(255)

Moorhen **GB: id** **NI: id**

Despite being one of the commonest waterfowl in Britain and Ireland, with a winter population estimated to be in excess of 1,000,000 birds, only a small fraction of the Moorhen population is counted by the WeBS scheme. The species' use of small waterbodies and rivers, combined with their bankside habits, make accurate counting difficult. Numbers at Martin Mere (235), Wantsum Marshes (195) and Somerset Levels (166) were notable.

Coot **GB: stable** **NI: stable**

Peak numbers in 1992-93 were the highest recorded in Britain since 1989-90, and numbers in Northern Ireland exceeded 10,000 for the first time. Peak counts were unusually late in Northern Ireland, perhaps because of the mild weather conditions. Abberton Reservoir continues to hold by far the largest numbers of Coot in the UK, while the Fleet/Wey maintained the increase numbers of recent seasons. Coot numbers at Rutland Water and Hanningfield, however, declined for a third consecutive year. In Northern Ireland, the bulk of the birds were present at Loughs Neagh and Beg, which showed a considerable increase on previous seasons.

Abberton Reservoir	11472	(11568)
Loughs Neagh/Beg	8848	(7029)
Rutland Water	2785	(3966)
Cotswold WP West	3068	(3140)

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Peter Cranswick and Mark Pollitt, The Wildfowl & Wetlands Trust, Slimbridge, Gloucester, GL2 7BT, U.K.