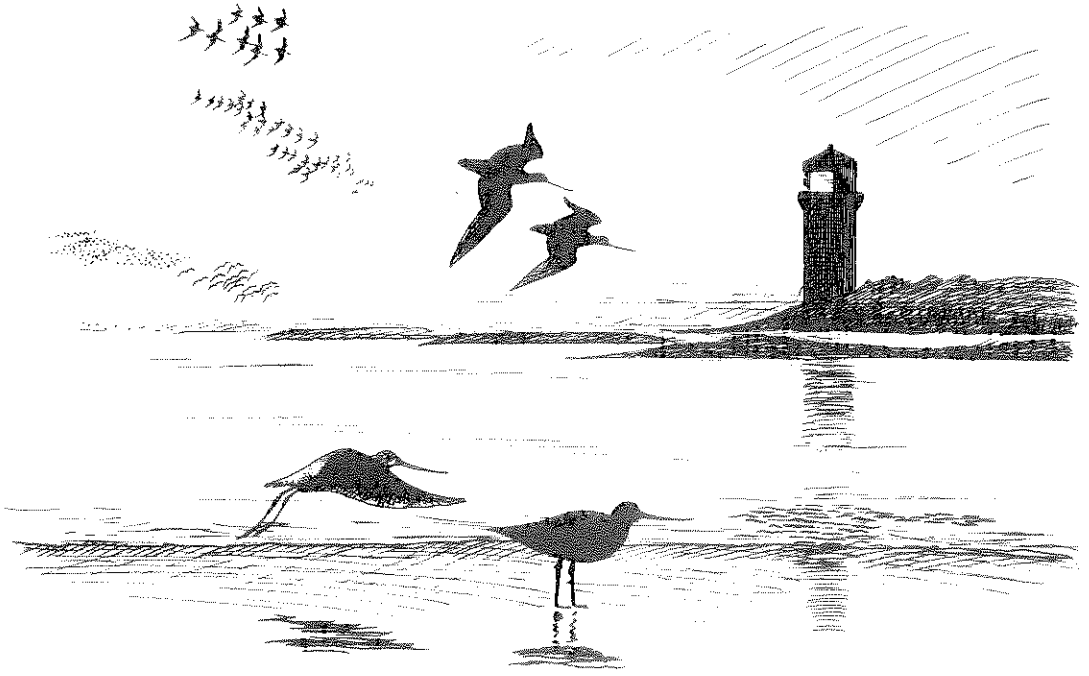
WILDFOWL AND WADER COUNTS 1983-84



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Wildfowl and Wader Counts 1983 - 1984

The Results of the National Wildfowl Counts and Birds of Estuaries Enquiry

by
D. G. Salmon and M. E. Moser

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INTRODUCTION

This is the fifth annual combined report of the National Wildfowl Counts and the Birds of Estuaries Enquiry.

The following are thanked for their help and advice in its production:

Dr. M. Owen, Mrs. J. Portlock, Mrs. A. Wenger (Wildfowl Trust);
Mrs. E. Murray, Mrs. D.M. Smallwood, Dr. R.J. O'Connor (BTO);
J. Partridge (RSPB).

Above all, we thank the many hundreds of volunteer observers who undertook the counts on which this report is based. Our knowledge of the numbers and distribution of waterfowl depends on their continued willingness to go out in all weathers (within reason) on our behalf.

Weather

The early autumn was dominated by strong westerly winds, October being wet. In November the winds were light and easterly. December was fine and cold, though with little ice, as was January in the south. In northern England and Scotland, however, there was heavy snow in mid-January. Most inland waters were frozen, and access was impossible at many. February was mild everywhere, March colder, with rain in the south. Water levels were mostly below average.

On the Continent the winter was generally much milder than usual.

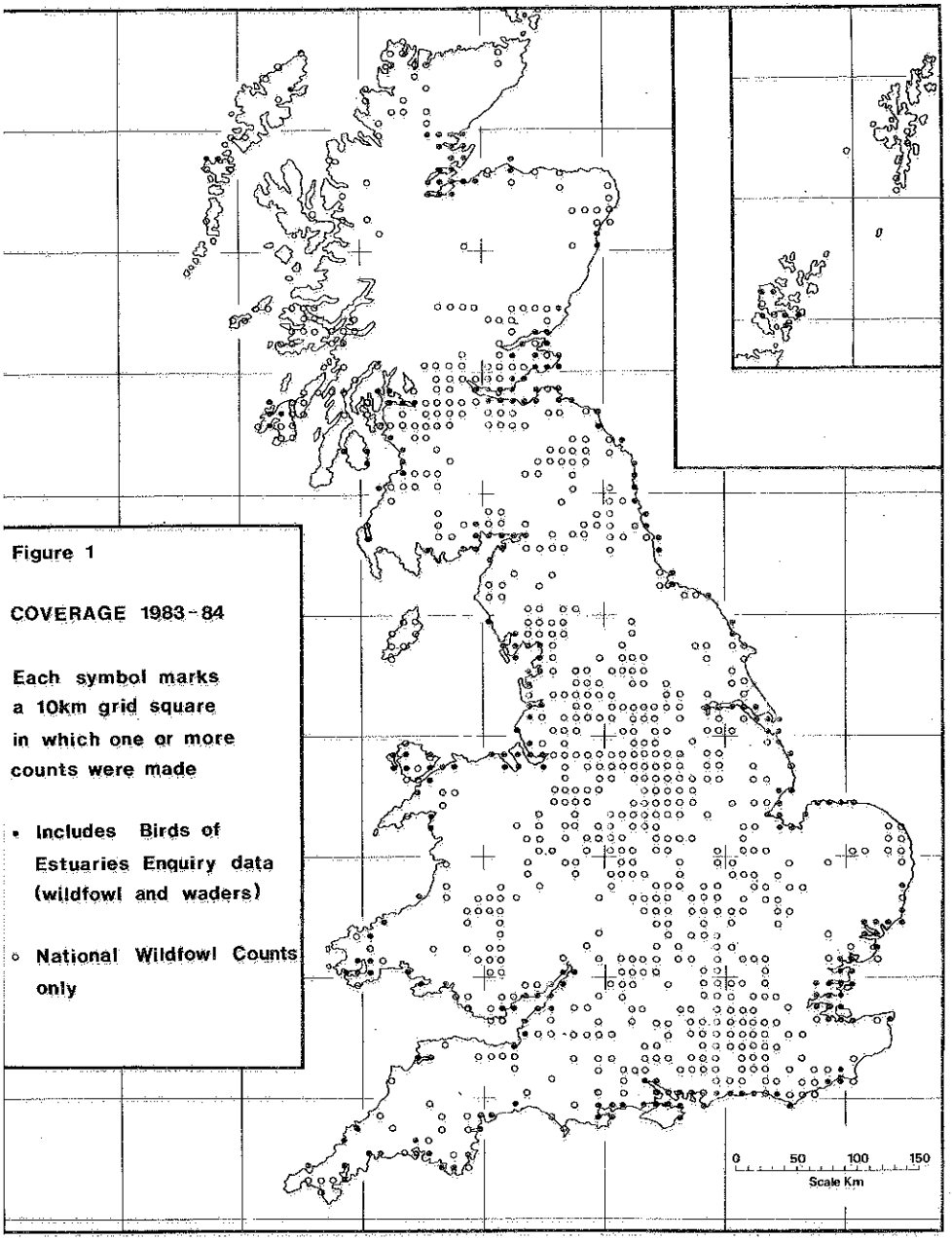


Figure 1

COVERAGE 1983-84

Each symbol marks a 10km grid square in which one or more counts were made

- Includes Birds of Estuaries Enquiry data (wildfowl and waders)
- National Wildfowl Counts only

WILDFOWL

by D.G. Salmon

The National Wildfowl Counts, instigated in 1947, are organised by the Wildfowl Trust under contract to the Nature Conservancy Council. They cover ducks, geese, swans, Great Crested Grebes and Coot on all wetland habitats, coastal and inland, from September to March. The set dates in 1983-84 were: September 18th, October 16th, November 13th, December 18th, January 15th, February 12th and March 18th. When these dates could not be used, or did not provide satisfactory conditions, counts on other days were accepted. In January snow prevented access to about a hundred inland waters in northern England and Scotland. It is likely, however, that most of these were entirely frozen and devoid of wildfowl. Adverse weather and tidal conditions meant that a full count of the Wash was possible only in February. No data were received from Herefordshire, Montgomery, Merioneth or Skye, and very few from Clwyd and Caithness.

The BTO kindly supplied wildfowl figures from the Birds of Estuaries Enquiry for some areas not covered in the wildfowl counts, and from a Winter Atlas expedition to north-west Scotland in November.

A total of 1,753 sites in England, Scotland and Wales were covered in one or more months, an improvement of exactly 100 on 1982-83 and of over 500 on 1979-80. Following a special request for previously unrecorded localities to be visited, 228 places were counted for the first time in 1983-84. The total number of birds found on these "new" sites is of great interest, since it gives us an idea of how many of each species are missed in the counts, and enables us to estimate more accurately their true populations. The value of counting "lesser" resorts is also emphasized. For instance, peak totals of 5,640 Mallard, 1,620 Teal, 870 Pochard, 1,350 Tufted Ducks, 210 Goldeneyes, 130 Whooper Swans, 470 Mute Swans, 990 Canada Geese and 1,860 Coot (each representing over 2% of the peak national count) were found on the new sites, but only 5 Scaup, 3 Ruddy Ducks and 257 Dark-bellied Brent Geese. Bearing in mind that, although most of the new sites were ornamental lakes and ponds, a good number of reservoirs, gravel pits and coastal areas were also included, these results reassure us that the degree to which our estimates of the British population of individual species (see Appendix) allow for under-counting is not too inaccurate.

In Northern Ireland counts were received for only four areas (Lough Foyle, the Bann Estuary, Strangford Lough and Dundrum Bay). These have been incorporated in the species accounts where appropriate, but are omitted from Tables 1-3.

Table 1. Total count of wildfowl in Great Britain, 1983-84

Monthly totals (no. of sites) Figures over 100 rounded to nearest 10.

	Sep (1,015)	Oct (1,086)	Nov (1,184)	Dec (1,122)	Jan (1,362)	Feb (1,170)	Mar (1,152)	Average maximum 1978-79 to 1982-83
G.Crested Grebe	5,830	4,840	5,570	4,450	4,340	4,670	5,730	5,410*
Mute Swan	6,630	7,000	7,460	6,950	6,860	5,880	5,310	7,420
Bewick's Swan	0	24	2,060	4,800	5,220	4,500	1,520	4,690
Whooper Swan	16	1,120	2,300	1,700	1,710	1,460	1,260	2,490
Eur Wf Goose	2	19	620	2,540	4,490	5,090	1,120	4,940
Canada Goose	21,740	16,960	22,570	19,520	22,810	16,510	12,600	18,070
D-b Brent Goose	73	20,200	75,600	55,200	71,410	79,190	47,420	68,830
L-b Brent Goose	4	310	260	1,000	1,200	900	0	1,270
Shelduck	11,370	21,770	41,670	47,490	42,110	59,630	38,400	64,350
Wigeon	23,340	108,190	152,640	131,960	122,540	126,990	75,290	194,070
Gadwall	2,980	3,120	4,150	4,120	2,820	3,080	2,100	2,980
Teal	36,950	66,330	76,540	101,530	77,370	60,100	31,300	88,090
Mallard	129,320	138,120	156,070	167,700	140,630	114,090	52,570	163,860
Pintail	4,520	18,550	14,150	20,950	21,750	14,240	4,980	21,040
Shoveler	6,670	6,220	7,490	6,570	5,780	5,980	4,520	7,170
Garganey	29	2	2	0	0	1	1	14
Pochard	12,130	21,200	34,460	36,890	36,360	31,660	18,440	34,480
Tufted Duck	35,400	31,360	40,530	41,000	40,170	36,100	30,520	44,150
Scaup	180	470	1,250	1,810	1,990	890	1,290	4,700
Goldeneye	170	830	7,180	7,890	8,210	8,100	8,200	9,180
Smew	0	2	3	41	44	41	16	96
R-b Merganser	1,000	2,160	1,830	2,050	1,390	1,900	1,600	2,700
Goosander	270	1,020	1,910	3,630	2,300	2,300	1,600	2,560
Ruddy Duck	730	1,130	1,730	1,800	1,770	1,720	1,200	1,260
Coot	70,420	75,010	76,710	77,810	77,540	59,020	40,790	74,760*

(*1982-83 maximum only)

Total counts

Table 1 shows the total number of each species counted monthly in England, Scotland and Wales in 1983-84, together with the average peak for the previous five seasons. Certain sea-ducks and geese are omitted because their coverage in the monthly counts is both incomplete and erratic. The count totals should not be used to represent the actual British populations. For guidance on this see the individual species accounts and the Appendix.

Monthly fluctuations

Since the coverage is not uniform in every month, being best in January, when a special effort is made for the International Census, successive monthly count totals do not necessarily provide a reliable picture of the change in numbers in Britain during the course of the season. Table 2, therefore, uses the data only from those sites counted in all seven months - 798 in all - and expresses each month's total as a percentage of those present in the peak month. Although not flawless (the sample is biassed against areas of transient flooding, which are unlikely to be visited in the early part of the season), this system enables fairly confident comparisons to be made between different months.

Total numbers at individual sites

Although the chief criterion for selection of sites of international importance on the basis of their numbers of wildfowl relates to individual species, any locality regularly holding a total of 10,000 or more wildfowl automatically qualifies (see Appendix). Table 3 lists all sites where the total number of ducks, geese and swans in at least one month of 1983-84 exceeded 10,000.

Table 2. The number of selected species of wildfowl counted in Britain in each month of 1983-84 expressed as a percentage of the total for the peak month, using only sites covered in every month from September to March.

	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Bewick's Swan	0	0	48	81	93	100	29
Eur. Whitefront	0	0	17	62	71	100	65
Shelduck	26	49	80	92	82	100	78
Wigeon	16	76	100	75	72	66	37
Gadwall	85	72	100	97	82	100	78
Teal	38	59	73	100	78	56	28
Mallard	93	85	92	100	81	66	30
Pintail	22	75	67	100	100	54	18
Shoveler	96	86	100	84	73	76	55
Pochard	37	66	94	100	91	88	49
Tufted Duck	93	81	99	100	90	86	71
Goldeneye	2	11	85	96	81	97	100
Goosander	12	15	34	69	65	100	72
Coot	95	100	97	97	86	71	47

Table 3. Sites with a maximum total count of 10,000 or more wildfowl, 1983-84

	Highest total count	Month
Ouse Washes	43,217	February
The Wash	41,558	February
Inner Solway Firth	39,905	March
Lindisfarne NNR	37,674	November
Mersey Estuary: Ince/Stanlow Banks	28,249	November
Foulness/Leigh/Canvey Island	26,680	November
Ribble Estuary	23,355	December
Dee Estuary (Cheshire/Merseyside/Clwyd)	22,285	December
Inner Severn Estuary	17,939	January
Loch Leven	17,644	October
The Humber	17,315	December
Hamford Water	17,013	January
Abberton Reservoir	16,536	September
Chichester Harbour	16,309	January
Cromarty Firth	16,151	November
The Swale	15,962	January
*Outer Firth of Tay	14,100	November
Rutland Water	13,821	December
Dornoch Sands	13,325	October
Derwent Ings	12,758	February
Martin Mere	12,067	December
Firth of Forth	10,292	December

NB: Sites important mainly as goose roosts are omitted.

* Eiders only counted

SPECIES ACCOUNTS

(NB: in the tables, in both the wildfowl and wader sections, a cross indicates "no data" and brackets around a count mean that the figure has been excluded when calculating the average, because of incomplete coverage. The averages are for the seasonal maxima 1979-80 to 1983-84. The "month" column shows the month in which the peak occurred in 1983-84. The Dee estuary is that in Cheshire/Clwyd/Merseyside.)

Great Crested Grebe *Podiceps cristatus*

As in 1982-83, the maximum count was in September (when Britain's resident population is at its most numerous and concentrated) and the lowest totals in mid-winter.

By far the highest count was at Rutland Water, Leicestershire, with 771 in January (18% of those counted in that month, and probably 8-10% of the actual population), compared with a peak of only 191 in 1982-83. Of the six sites to hold over 200 that winter five did so again in 1983-84: Chew Valley Lake, Avon (510 September); Grafham Water, Cambs (350, February); Queen Mary Reservoir, Surrey (340, September); Seafield, Firth of Forth (222, November) and Loch Leven, Tayside (200, October).

Mute Swan *Cygnus olor*

In each month there was a substantial reduction in the numbers counted - a reversal of the trend for recent years.

The moulting concentration at Abberton Reservoir, Essex, showed a further increase, however, to 427 in August 1983. In the same month 363 were found in Christchurch Harbour, Dorset.

A further census of the Thames and its backwaters between the source and Richmond by the Thames Fisheries Consultative Committee located 536 Mute Swans (including 132 cygnets) in July 1983, compared with 577 in the previous January. The lower river from Richmond to Grays was also surveyed in July 1983, revealing 291 Mute Swans, including 20 cygnets (French 1983).

Table 4. Mute Swan: maxima at main resorts

	1979-80	1980-81	1981-82	1982-83	1983-84	(Month)	Average
Chesil Fleet, Dorset	1,170	1,238	1,111	890	740	(Oct)	1,030
Ouse Washes, Cambs/ Norfolk	371	443	548	621	643	(Jan)	525
Strangford Lough, Co. Down	453	321	294	276	384	(Dec)	346
Loughs Neagh/Beg	392	276	(24)	(23)	x		334
Loch of Strathbeg, Grampian	306	278	314	309	280	(Sep)	297
R.Welland: Spalding-Borough Fen	245	249	243	269	265	(Dec)	254
Stour Estuary, Essex/Suffolk	241	292	195	314	225	(Jan)	253
Montrose Basin, Tayside	186	200	x	245	231	(Oct)	216

Bewick's Swan Cygnus columbianus bewickii

A further increase brought the British total to over 5,000 for the first time. A record 3,364 were present on the Ouse Washes in January. In Lancashire the recent upward trend continued, the Ribble Estuary/Martin Mere population reaching 337 in December.

The maxima at other major resorts were as follows: Nene Washes, Cambs 396 (February); Slimbridge, Glos 281 (December); Walland Marsh, Kent 173 (January); Horsey Mere, Norfolk 160 (February); Hampshire Avon: Ringwood-Fordingbridge 142 (February); Derwent Ings, N. Yorks/Humberside 126 (February) and Breydon Water, Norfolk 122 (January).

The results of the international Bewick's Swan Census, organised from the Netherlands, indicate that at least 15,000 were present in Europe in January 1984 (per S. Dirksen & J. Beekman). This suggests that an increase of several thousand has occurred since the late 1970s, probably due largely to successful breeding in the early 80s.

Table 5. Whooper Swan: maxima at main resorts

	1979-80	1980-81	1981-82	1982-83	1983-84	(Month)	Average
Lough Foyle, Co. Londonderry	315	849	1,110	521	674	(Nov)	694
Loch of Strathbeg	495	388	519	633	382	(Oct)	483
L. Eye/Cromarty Firth, Ross & Cromarty	1,000	405	405	103	62	(Nov)	395
Lough Neagh/Beg	190	432	(56)	(14)	x		311
Broomdykes Scrape, Allanton, Borders	x	210	x	x	x		210
Strangford Lough	125	210	255	124	243	(Nov)	191
Ouse Washes	106	130	161	223	248	(Feb)	174
L. of Wester, Caithness	x	250	44	x	x		147
L. of Spiggie, Shetland	40	174	44	336	66	(Nov)	132
Holywell Pond, Northumberland	155	170	84	81	170	(Nov)	132
Lindisfarne	179	197	93	68	87	(Nov)	125
Caerlaverock, Dumfries & Galloway	87	91	126	150	165	(Nov)	124
R. Teviot: Nisbet, Borders	161	71	145	107	135	(Jan)	124
North L., Sanday, Orkney	x	77	128	158	x		121
L. Insh, Strathspey	78	176	124	96	128	(Mar)	120
Islesteps, Dumfries & Galloway	169	119	60	142	85	(Mar)	115
L. Leven	90	150	81	140	39	(Oct)	100

Whooper Swan Cygnus cygnus

As with the Mute Swan and several of the geese, fewer are counted in mid-winter than in autumn (see Table 2), mainly because by the New Year they are generally widely dispersed and often quite far from a substantial body of water. The impression of a serious decline in the Loch Eye area given by Table 5 is misleading. There was merely a temporary concentration at the loch caused by an exceptional growth of waterplants in 1979. Most other major sites have shown the fluctuations normally to be expected. There has, however, been a steady increase at Caerlaverock and the Ouse Washes. Sightings of birds ringed at Caerlaverock have supported the belief that most Whooper Swans wintering there belong to the Icelandic breeding population (Black & Rees 1984), and the likelihood must be that this applies to the remainder of the British and Irish stock.

A survey of the Icelandic staging posts in October 1982 yielded a count of 9,057 and suggested that the whole population numbered 10-11,000, many more than previous estimates, of around 6,000, which have been based on less complete surveys (Gardarsson & Skarphedinsson 1984). A full census of Britain and Ireland is planned for 1985-86.

Bean Goose Anser fabalis

In the Yare Valley, Norfolk, a maximum of 238 was recorded in February - the second highest on record.

Otherwise the only sizeable flock reported was at Carron Valley Reservoir, Stirling, where 46 called in during October. This locality has regularly held such numbers for short periods in recent years.

Pink-footed Goose Anser brachyrhynchus

Despite only moderate breeding success in 1983 (there being 15.9% young in the autumn flocks), the November Census located many more birds than in 1982 - 101,000 compared with 89,000. The March 1983 Census total of 80,000 suggested lower than average mortality in the 1982-83 winter, and this may help to explain the high count the following November (Ogilvie 1984a).

During the November Census a higher than usual proportion was in south-east Scotland, at the expense of Lancashire. By the end of the month, however, more had moved south, and there were 23,000 Pinkfeet in Lancashire (Forshaw 1984).

The monthly wildfowl counts recorded a higher proportion of the actual population than usual in 1983-84, a total of 72,000 being counted in October. This included 19,200 roosting at Westwater Reservoir (Tweeddale), 17,400 on the Slains Lochs (Grampian) and 11,500 at Loch Leven.

The March Census found 87,000 Pinkfeet, of which a remarkable 34,300 were on the Solway Firth, including 11,950 at Caerlaverock (M.A. Ogilvie).

European White-fronted Goose *Anser albifrons albifrons*

With another mild winter on the Continent the numbers fell back to their lowest level since 1979-80.

Table 6. European White-fronted Goose: maxima at main resorts

	1979-80	1980-81	1981-82	1982-83	1983-84	(Month)	Average
Slimbridge	2,100	3,000	4,508	3,040	3,400	(Feb)	3,210
Swale, Kent	1,260	1,700	1,500	1,493	876	(Feb)	1,366
Hampshire Avon	230	59	1,500	292	385	(Jan)	493
Dryslwyn, Dyfed	x	406	720	320	305	(Jan/Feb)	438
S.Thames Marshes, Kent	460	220	635	331	464	(Mar)	422
Holkham, Norfolk	154*	145*	170*	270	295	(Jan)	207
GB Total +	5,000	5,700	6,910	5,700	5,500	(Feb)	5,760

(* = from Norfolk Bird Report; + = from Ogilvie in Wildfowl 31 *et seq.*)

Greenland White-fronted Goose *Anser albifrons flavirostris*

The two complete Censuses of Britain (Stroud 1984) found 8,190 in November and 7,490 in March/April. These compare with totals of 7,190 and 7,280 respectively in 1982-83. The scale of improvement in November was surprising in view of the poor breeding season in 1983 (9.9% young in the autumn flocks). On Islay many more were found - 4,592, compared with 3,250 in November and 3,872 in February of 1982-83. Elsewhere the numbers actually fell, and it is probable that the size of the increase on Islay was the result of more thorough counting rather than a genuine trend.

The reduction in the spring total was also surprising in its extent, and although it appears that some sites were deserted early (before the 25th March-1st April period of the Census), the main factor may well have been a greater than usual dispersion for this late in the season (a problem which has affected the spring Greylag and Pinkfoot Censuses). There were still 4,198 on Islay at the end of March.

Elsewhere, the main centres were: The Reef, Tiree (203, November); Arnabost/Cliad, Coll (230, November); Rhunahaorine, Kintyre (763, November); Macrihanish, Kintyre (483, March); Stranraer (350, November) and Loch Ken, Stewartry (290, November and April).

Greylag Goose Anser anser

The proportion of young in the autumn flocks was similar to that of Pinkfeet, 16.8%, but only a slight increase in the November Census total occurred, from 80,000 in 1982 to 82,000 in 1983, suggesting that this species may have been undercounted this winter (Ogilvie 1984a). Fog hampered the count in some areas, while the clean harvest probably forced some birds into unusual areas. In the north of Scotland, in particular, (where conditions were clear) the numbers were much lower than in most recent years, although a count of 12,000 at Loch Eye in October suggests that they had visited their normal haunts for a short time.

The March Censuses of 1983 and 1984 found, respectively, 53,000 and 48,000 Greylags, both undoubtedly substantial underestimates (M.A. Ogilvie).

Canada Goose Branta canadensis

If the degree of coverage is allowed for, as in Table 2, the highest counts were, as usual, in September. Two massive concentrations were recorded in that month: 2,450 at Stratfield Saye, Hampshire, and 1,030 at Bewl Bridge Reservoir, Kent/East Sussex. The annual post-moult gathering at Stratfield Saye now exceeds 10% of the total British count, and probably includes about 7.5% of the national population, which is estimated (by projecting the long-term trend) at 33,000.

Over 500 were also found at Welbeck Great Lake, Notts (680, November); R. Ure, Ripon, N. Yorks (643, January); Abberton Reservoir (572, September); Blithfield Reservoir, Staffs (520, November) and the Ellesmere Meres, Salop (513, October).

Barnacle Goose Branta leucopsis

Despite only moderate breeding success in 1983 the numbers on Islay, where the bulk of the Greenland breeding population winters, showed an improvement to 16,600 in March 1984, compared with 14,000 in 1983. This may be partly attributable to a reduction in shooting on the island following the introduction of new licensing arrangements. The numbers on Islay are still well below the level of the 1970s. Elsewhere in this population's range two flocks of over 100 were found in the wildfowl counts: 250 on the Keills Peninsula, Argyll in December and 132 on Vallay Island, North Uist in January.

On the Solway, the sole wintering grounds of the Spitsbergen breeding population, there were 8,400, virtually the same as in the previous two seasons. The proportion of young was fairly low, at 8%. (The 1984 breeding season has been the best on record. An expedition to Spitsbergen estimated that 3,200 pairs were nesting, and there are currently an unprecedented 10,500 in the Caerlaverock area, including 2,800 - 26% - young.)

Dark-bellied Brent Goose Branta bernicla bernicla

A very poor breeding season, with only 4% young in the wintering flocks (the third failure or near failure in four years), coupled with mild conditions on the Continent, caused a fall in the numbers visiting Britain. Allowing for the incomplete coverage of the Wash and a lack of counts on the Blackwater Estuary in January, a maximum total of 87,000 has been estimated (Ogilvie 1984b), compared with 92,600 in 1982-83. The subspecies as a whole totalled 188,000 (a reduction of 7% on last year's record figure), including 59,000 in France and 38,000 in the Netherlands. (Indications from the first wintering birds of 1984-85 are that there was a complete breeding failure this summer, so a further reduction can be expected.)

Table 7. Dark-bellied Brent Goose: maxima at main resorts

	1979-80	1980-81	1981-82	1982-83	1983-84	(Month)	Average
Foulness/Leigh Marsh, Essex	20,469	17,758	19,961	18,208	21,025	(Nov)	19,484
The Wash	11,390	16,997	(6,982)	24,497	17,039	(Feb)	17,481
Blackwater Est, Essex	12,490	9,167	9,003	11,500	(5,690)		10,540
Chichester Harbour	9,502	7,088	8,632	10,547	11,849	(Jan)	9,524
Langstone H., Hants	6,419	7,400	6,185	7,536	7,380	(Jan)	6,984
Hamford Water, Essex	8,200	4,500	4,000	8,000	10,000	(Feb)	6,940
Blakeney H., Norfolk	x	x	x	3,200	5,000	(Nov)	4,100
Crouch/Roach Est, Essex	4,288	3,120	3,550	5,059	3,960	(Feb)	3,995
Overy Marshes, Holkham	x	x	x	4,000	3,850	(Jan)	3,925
Scolt Head, Norfolk	2,000	2,000	2,000	4,000	4,250	(Mar)	2,850
Pagham Harbour, W. Sussex	2,700	1,500	1,863	3,093	2,477	(Jan)	2,327
Portsmouth H., Hants	2,454	1,476	3,316	855	2,236	(Nov)	2,067

Light-bellied Brent Goose Branta bernicla hrota

At Lindisfarne, Northumberland, the first arrived in early October. They increased steadily to 1,200 in mid January, the last birds departing in mid March. Counts from Denmark showed that this population now exceeds 3,000, while the favourable conditions on Spitsbergen this summer, coupled with a high ratio of young seen by the Wildfowl Trust expedition to the Bear Island staging grounds in September/October, suggest that there has been a further increase.

The autumn gathering of Greenland/Canada breeders at Strangford Lough was back near its normal recent level, at 11,900, after the low numbers of 1982. Lough Foyle held more than usual - 1,063 in October. In Scotland there was only one report of more than fifty: 61 at Loch Gruinart, Islay, in October.

Shelduck Tadorna tadorna

As Table 2 shows, there was an influx into Britain in February, if not as large as suggested by the count totals in Table 1, which are affected by the lack of a full January count on the Wash. Earlier, the return from the German moulting grounds was not complete until December.

The peak count was within the range of 55-65,000 for the fifth successive season. The Wash held 13,700 in February, and elsewhere the highest returns were for the Ince/Stanlow Banks, R. Mersey (6,800, November - the lowest for six years); the Humber (a record 6,495, December); Dee Estuary (5,745, November); Hamford Water (3,050, December); Ribble Estuary (2,660, December) and Chichester Harbour (2,571, February).

On the Dee Estuary, where a large concentration occurs each autumn, a most interesting observation was made by the warden of the RSPB's Gayton Sands reserve in August 1983. At least 75 flightless adult Shelducks were found in the middle of the estuary, making this only the fifth locality in Britain where flocks of moulting Shelducks have been found (the others being Bridgwater Bay, the Firth of Forth, the Wash and the Humber). The likelihood must be that there are still some undiscovered moulting sites on British estuaries, and it may be that the late summer wildfowl survey in July/August 1985 will locate some (see Notices).

Wigeon Anas penelope

The January total was the lowest since 1978, but the recent trend of high autumn numbers continued (see Table 8). This indicates that the Icelandic and our own breeding populations, which form the bulk of the early season numbers in Britain - concentrated in Scotland and northernmost England, have fared very well in recent years. By the New Year many have moved farther south, maybe out of Britain altogether. At the same time, there have been no hard weather influxes from the Continent to southern Britain in the last two years. In France, too, the January 1984 count total was the lowest since 1978 (Saint-Gerand 1984).

Striking features of Table 9 are the increases at Dornoch Sands (in the outermost Dornoch Firth) and in the Ribble Estuary.

Table 8. Wigeon: monthly totals in Britain, 1975-76 to 83-84

Season	Monthly count totals (x 1,000) September	October	November	December	January	February	March
1975-76	16	62	93	110	115	118	63
76-77	16	72	114	134	182	77	49
77-78	25	65	75	135	114	103	48
78-79	19	71	82	119	209	144	48
79-80	17	75	107	113	175	94	46
80-81	18	86	151	164	176	125	57
81-82	15	85	148	183	210	143	65
82-83	29	114	174	200	139	141	67
83-84	23	108	153	132	123	127	75

Table 9. Wigeon: maxima at main resorts

	1979-80	80-81	81-82	82-83	83-84 (Month)	Average
Lindisfarne	22,000	30,000	25,410	41,000	30,000 (Nov)	29,882
Ouse Washes	19,340	26,737	39,368	28,073	25,456 (Feb)	27,795
Lough Foyle	(4,377)	22,000	21,000	28,475	25,797 (Nov)	24,368
Cromarty Firth	7,200	10,812	15,022	9,380	10,215 (Oct)	10,526
Elmley, Swale, Kent	7,000	5,092	18,500	14,000	5,737 (Nov)	10,066
Mersey Est: Ince/ Stanlow	8,040	15,200	10,800	9,050	5,800 (Jan)	9,788
Ribble Estuary	6,640	6,380	7,242	13,823	11,655 (Nov)	9,148
Dornoch Sands, Highland	3,500	3,000	12,000	7,000	12,000 (Oct)	7,500
Slimbridge	5,000	4,000	8,000	6,000	5,500 (Feb)	5,700
Humber	7,929	6,340	5,202	2,692	4,386 (Nov)	5,310
Derwent Ings	5,584	5,200	4,511	4,755	5,836 (Feb)	5,177
Chesil Fleet	2,630	5,860	10,210	2,008	2,232 (Nov)	4,588
Abberton Reservoir	4,475	5,725	5,000	4,070	3,300 (Dec)	4,514
Middle Yare Valley, Norfolk	1,500	4,000	7,500	4,500	5,000 (Jan)	4,500
Cley/Salthouse Marsh, Norfolk	5,000	2,500	3,500	4,500	4,525 (Nov)	4,005

Gadwall Anas strepera

The increase in this species - the bulk of whose British population is of introduced stock - continues. The main resort of recent years, Gunton Park, Norfolk, where an autumn gathering of 4-600 has occurred, presumably from the surrounding Norfolk breeding sites, held no more than a brief peak of 200 in September, having been devalued by disturbance and habitat change. There were, however, some unusually large autumn counts in and around East Anglia, notably at Rutland Water, where a huge concentration of 796 in September was followed by an even greater peak in December - 947 (23% of the British total) - then a sharp decline; Stanford Training Area (358, September); Abberton Reservoir (332, September) and Hickling Broad (254, October). To the north Hornsea Mere, Humberside, held 222 in November and Loch Leven 220 in September.

Later in the season the main centres were the Ouse Washes (213, March), Slimbridge (210, February) and the Wash (160, February), together with Martin Mere, which held 200 throughout the season.

Teal Anas crecca

The December total was the highest ever. The sizeable peak in that month seems to have been normal in recent years.

Table 10 shows, as do the counts for several other species, a sudden reduction on the south shore of the Mersey Estuary. This may have been caused by the erosion of the feeding grounds resulting from a southward shift in the main channel of the river. The channel has now moved northwards again, so the decline in duck numbers may prove only temporary. (See also the Notice at the end of this section.)

Conditions on the neighbouring Dee Estuary have improved in recent years with the establishment of the RSPB reserve, and certain species, including Teal, have shown a marked increase, both in their maximum numbers and the length of their stay on the estuary.

Table 10. Teal: maxima at main resorts

	1979-80	80-81	81-82	82-83	83-84	(Month)	Average
Mersey Est: Ince/ Stanlow	17,400	25,850	35,000	26,100	11,050	(Dec)	23,080
Martin Mere	3,000	6,000	6,000	4,000	4,000	(Dec)	4,600
Hamford Water	3,780	4,500	5,400	2,575	5,700	(Dec)	4,391
Ribble Estuary	412	2,074	5,274	4,808	4,486	(Nov)	3,411
Ouse Washes	1,874	2,378	2,970	4,319	2,513	(Feb)	2,811
Derwent Ings	2,966	3,682	4,000	1,183	1,919	(Feb)	2,750
Elmley	2,000	3,000	2,000	1,797	3,787	(Oct)	2,517
Chichester Harbour	1,990	2,760	3,253	2,235	1,724	(Dec)	2,392
Humber	852	2,190	1,370	3,663	2,917	(Oct)	2,198
Dee Estuary	880	1,055	2,486	2,710	3,815	(Jan)	2,189
Abberton Reservoir	1,320	3,370	1,200	1,850	2,485	(Nov)	2,045
Woolston Eyes, Cheshire	409	1,326	1,218	4,590	2,500	(Feb)	2,009
Rainham Marsh, Gt. London	2,000	3,000	2,000	1,800	520	(Nov)	1,864
Nene Washes	2,860	2,283	735	1,198	1,629	(Feb)	1,741
Teesmouth	906	1,366	1,652	1,788	2,150	(Dec)	1,572

Mallard *Anas platyrhynchos*

The autumn and early winter counts were very high, those for the rest of the season rather low. The native breeding population continues to fare well, apparently, but, as with other species, the mild weather on the Continent meant a smaller than usual winter influx to Britain.

The highest counts were at the Ouse Washes (6,377, February); Humber (5,687, December); Dee Estuary (5,045, January); Swale (4,556, October); Abberton Reservoir (4,525, September); Inner Severn Estuary (3,634, November); Lough Foyle (3,024, November); Martin Mere (3,000, December); Stour Estuary, Essex/Suffolk (2,485, November); Rutland Water (2,240, September) and the Loch of Strathbeg (2,100, February).

Pintail Anas acuta

For the first time for many years the highest count was not on the Mersey Estuary. On the Dee a record 11,265 were counted in November, with 9,000 remaining in December and 8,000 in January. On the Mersey there were also 8,000 in January, but only 6,100-6,600 in the autumn. At Martin Mere the usual autumn influx amounted to 2,300 in October, while on the Ribble Estuary the peak was 760 in January.

Elsewhere seven sites held over 500: the Burry Inlet, W. Glamorgan (1,332, December); the Wash (1,249, February); Dornoch Sands (1,000, October); Nene Washes (948, February); Ouse Washes (769, March); Inner Severn Estuary (617, January) and Swale (532, October).

Shoveler Anas clypeata

The increase discussed in the last report seems to have levelled off, but the substantial annual fluctuations at the main localities continue. In 1983-84 the following eleven sites held over 300: Loch Leven (680, October); Rutland Water (616, September); Aqualate Mere, Staffs (475, September); Swale (410, January); Ouse Washes (397, March); King George VI Reservoir, Surrey (391, September); Woolston Eyes (375, November); Queen Mary Reservoir, Surrey (374, December); Chew Valley Lake, Avon (350, November); Dungeness, Kent (310, November) and Abberton Reservoir (303, October).

Pochard Aythya ferina

The high November count of recent years was maintained, and this season, unlike the previous two, there was then a further increase to a peak in December.

The highest count was again at the Loch of Harray, Orkney (4,300, December). Two days earlier there were 1,505 at the nearby Loch of Boardhouse. In January the gravel pits of the Cotswold Water Park held a record total of 3,400 Pochard - 1,900 in the eastern section and 1,500 in the western complex, 10 km away.

In February two areas of floodwater held very large numbers: the Derwent Ings, with 2,250, and Ouse Washes, with 1,900.

Rutland Water, which has become a moulting ground of considerable importance, held 1,032 Pochard in August 1983. The longer-established concentration at Abberton Reservoir numbered 2,525 in the same month.

A thousand or more were also found at Loch Leven (1,648, January); Woolston Eyes (1,420, March); Chew Valley Lake (1,285, November) and Kingsbury Water Park, Warwickshire (1,184, December).

Tufted Duck Aythya fuligula

The healthy state of the British breeding population is indicated by another high September count. In that month a record 4,830 were present at Loch Leven. In August Abberton Reservoir and Rutland Water both held just over 3,000. The other major sites held their peaks later, as follows: Loch of Harray 1,483, January; Wraysbury Gravel Pits, Berks 1,267, November; Loch of Strathbeg 1,150, October; Kingsbury Water Park 1,055, October and Staines Reservoir, Surrey 853, February.

At Grafham Water, Cambs, one of the main centres a few years ago, the numbers recovered slightly to 790 in November from only 190 a year previously.

Scaup Aythya marila

For the first time the number counted in Britain has fallen below 3,000. Although the total of just over 2,000 in Table 1 underestimates the true British population, as coverage of the major areas was not complete in every month, it still signifies a serious decline. The main factor since the final disappearance of the Edinburgh flock in 1980 has been a decline at Largo Bay on the north side of the Firth of Forth. They may have changed their distribution and been "absorbed" by the huge flocks wintering in the Netherlands and Denmark, which emanate mostly from the Scandinavian/Siberian population. (Those wintering in western Scotland and Ireland, which have shown no appreciable change in numbers for some years, probably come from Iceland.) In a species as highly specialised and vulnerable as the Scaup, however, any unexpected decrease which is not simply the result of a local movement must give rise to concern.

Table 11. Scaup: maxima at main resorts

	1979-80	80-81	81-82	82-83	83-84	(Month)	Average
Largo Bay, Fife	2,530	2,750	2,680	717	1,400	(Jan)	2,015
Inner Solway Firth	1,300*	(610)	(300)	1,244	1,144	(Apr)	1,229
Loch Indaal, Islay	950	650	500	1,200*	770	(Nov)	874
Carlingford L, Co. Down	600*	632*	1,000*	950*	x		796
Edderton Bay, Dornoch F.	400*	482	418	325	230	(Feb)	371
Granton-Musselburgh	1,100*	44	114	1	6	(Jan)	253
Dee Estuary	383	347	290	221	14	(Sep)	251
Loch Ryan, Dumfries & Galloway	200*	80	170	210	280	(Jan)	188
Inner Firth of Clyde	210*	150*	226	87	46	(Dec)	144
Ayr	60*	61*	168	192	52	(Feb)	107

(* = data from Scottish/Irish Bird Reports)

Eider *Somateria mollissima*

The count of 14,100 at the mouth of the Firth of Tay, carried out in excellent conditions, confirmed that this area has maintained its importance as an autumn gathering ground. Murcar, just north of Aberdeen, remains the principal moulting area.

In addition to the places in Table 12, West Loch Tarbert, Kintyre, carried 1,100 Eider in March 1984.

Please note that the figures for the Inner Firth of Clyde in Table 12 include revised maxima for the seasons 1979-80 and 81-82, based on data received since the publication of the last table in the 1981-82 Report.

Table 12. Eider: maxima at main resorts

	1979-80	80-81	81-82	82-83	83-84 (Month)	Average
Outer Firth of Tay	15,460	13,600	8,700+	(700)	14,100 (Nov)	12,965
Murcar, Grampian	5,500*	6,500*	9,700	9,500	8,000 (Aug)	7,840
Lindisfarne	3,063	3,060	3,085	5,900	3,000 (Dec)	3,622
S.Walney Island, Cumbria	2,000	3,000	4,000	5,000	4,000 (Oct)	3,600
Firth of Forth	3,619	3,380	4,472	3,959	2,325 (Dec)	3,551
Inner Firth of Clyde	3,490**	1,459	3,600*	2,600*	1,601 (Dec)	2,550
Loch Fleet	2,000*	3,300*	2,400*	2,000*	x	2,425
Rattray Head, Grampian	1,950	680	4,250	1,500	x	2,095
Fraserburgh, Grampian	1,070	1,570	2,600	1,780	x	1,755
Ythan Estuary, Grampian	1,695	1,445	1,962	1,670	2,000 (Sep)	1,754

(* = data from Scottish Bird Report; ** = from Clyde Area Bird Report; + = from Milne 1981).

Long-tailed Duck Clangula hyemalis

The highest count in the Moray Firth was 10,100, comprising birds flighting to roost (Britoil/RSPB).

Only five areas reported 50 or more in the regular counts: Water Sound, Orkney (220, February); Firth of Forth (168, December); Loch of Stenness, Orkney (159, November); Lindisfarne (96, November) and Tentsmuir, Fife (88, October).

Common Scoter Melanitta nigra and Velvet Scoter Melanitta fusca

A maximum combined total of 9,100 was found in the Moray Firth by the Britoil/RSPB survey. This was somewhat less than in the previous two winters, but the coverage was less comprehensive.

Otherwise the highest counts of Common Scoter were at Dundrum Bay, Co. Down (2,570, November); St. Andrews Bay, Fife (2,200, September); Lindisfarne (607, March); Ythan Mouth - Cruden Bay, Grampian (400, October) and Luskentyre, Harris (204, February); and of Velvet Scoter, at St. Andrews Bay (380, March) and Spey Bay (108, January).

Goldeneye Bucephala clangula

The midwinter peak was the lowest for many years. As with several other species the usual New Year influx was hardly discernible.

The highest counts were at the Firth of Forth (2,017, January); Abberton Reservoir (431, March); Inner Firth of Clyde (418, March); Invergordon, Cromarty Firth (345, November); Windermere, Cumbria (286, March); Girdle Ness, Grampian (279, January); Blackwater Estuary (269, December); Loch Leven (267, March); Loch of Strathbeg (265, November); Morecambe Bay (261, January) and Rutland Water (252, February).

Smew Mergus albellus

The total was at its usual current level for a mild Continental winter. Dungeness confirmed its new status as by far the most important site in Britain for Smew, with 20 in January. The next highest count was 4 at Wraysbury Gravel Pits.

Red-breasted Merganser Mergus serrator

On the Beauly Firth there was a count of 720 in December. A week earlier there were 583 in the Inner Cromarty Firth nearby, not normally an important site. There were large counts in two other areas on the east coast of Scotland: Tentsmuir, Fife (649 in October) and the Firth of Forth (395, October). Over 100 were reported from two places in the Hebrides - Loch na Keal, Mull (111, November) and Broad Bay, Lewis (110, October) - and from four in England - Poole Harbour (241, March), Lindisfarne (130, September), Chesil Fleet (126, February) and Langstone Harbour (113, November).

Goosander Mergus merganser

The peak count in the Beauly Firth was 2,150 in December. In the Inner Cromarty Firth there were 358 in December along with the 583 Mergansers. Only four other sites reported over 100: Rutland Water (119, December); Hoselaw Loch, Borders (106, February); R. Tweed: Junction Pool - Coldstream, Borders/Northumberland (105, January) and the Loch of Skene, Grampian (101, February).

Ruddy Duck Oxyura jamaicensis

Having quickly recovered from the rigours of the 1981-82 winter, this species has reached a new record level in Britain. As Table 13 shows, several sites in the east and north Midlands now regularly hold over 100, although four waters in Staffordshire and Avon remain of prime importance in winter.

Table 13. Ruddy Duck: maxima at main resorts

	1979-80	80-81	81-82	82-83	83-84	(Month)	Average
Blithfield Resr, Staffs	297	630	477	358	340	(Dec)	420
Chew Valley L., Avon	167	290	505*	600*	526	(Dec)	418
Blagdon Resr, Avon	312	295	330	415*	384	(Jan)	348
Belvide Resr, Staffs	198	425	340	290	242	(Feb)	299
Combermere, Cheshire	81	110	115	x	164	(Nov)	118
Ellesmere Meres, Salop	79	143	82	105	120	(Nov)	106
Swithland Resr, Leics	28	92	105	97	180	(Nov)	100

Coot Fulica atra

According to Table 2 the autumn numbers are significantly higher than those in the remainder of the season. The figures are greatly influenced by a huge autumn gathering at Abberton Reservoir, where there were 2,800 in August, 9,300 in September and 10,000 in October, then a drop to 2,000 in December and only a few hundred for the rest of the season. Even if those data are excluded, however, a sharp fall is apparent in January. It may be that Coot congregate during and after the moult to a greater extent than has been thought, and by mid-winter they have dispersed again to the smaller (less regularly counted) waters where they will breed. The late summer census in 1985 should provide some clues to the movements of this little-studied species (see Notices).

At Rutland Water there were 2,500 in August, rising to 5,400 in December. Over a thousand were reported from ten other areas: the Cotswold Water Park West (3,375, December); Cheddar Reservoir, Somerset (2,450, December); Cotswold Water Park East (2,416, December); Ouse Washes (2,134, February); Loch Leven (1,905, September); Pitsford Reservoir, Northants (1,420, October); Bewl Bridge Reservoir, E. Sussex/Kent (1,358, November); Hornsea Mere (1,350, December); Chew Valley Lake (1,105, September) and Henley Road Gravel Pit, Oxon (1,012, January).

NOTICES

Wildfowl Trust Late Summer Survey

Evidence that the number of moulting wildfowl in Britain has risen in recent years, probably as a result of increases in both the native breeding populations and the number of late summer immigrants, has prompted us to organise a survey of wildfowl in Britain between July 15th and August 31st 1985. We realise that many people will be on holiday at this time, but would like as many places as can easily be visited to be counted at least once during the period. Counts from holiday venues in Britain and Ireland would be most welcome! The forms will be designed to allow for the particular difficulties of identifying the different species and counting their individual numbers during the "eclipse" period. The forms will be distributed, via the regional count organisers, in the spring. Please help with this project if your other commitments allow!

"Wildfowl in Great Britain"

We are pleased to announce that work on this major book - a complete and expanded re-writing of the 1963 Nature Conservancy Monograph - is finished. Publication, now by Cambridge University Press under the authorship of M. Owen, G.L. Atkinson-Willes (the editor of the first edition) and D.G. Salmon, is expected late in 1985. The book will comprise a detailed review of the wildfowl counts since 1960, both region by region and species by species, as well as of the many factors controlling their distribution and conservation. We hope to offer it at a substantial discount to all wildfowl counters.

Dyed Ducks

An Ecological Study of the Stanlow and Ince Banks on the Mersey Estuary is being undertaken by the University of Liverpool, prompted by plans for further petro-chemical development in the area. One of the objects of the study is to discover the patterns of movement of birds between the Mersey and the other major centres in the area, such as the Dee and Ribble Estuaries. To facilitate this, ducks are being caught in the Hale Decoy (on the north shore of the Mersey), ringed and marked with yellow dye on the tail and wing-tips. If you see any ducks marked in this way, please notify Dr. David Parker or Dr. David Hockin, Environmental Advisory Unit, Department of Botany, University of Liverpool, P.O. Box 147, Liverpool L69 3BX (Tel. 051-709-6022, ext. 2368).

Figure 3 Monthly variation in coverage for the Birds of Estuaries Enquiry, 1983-84.

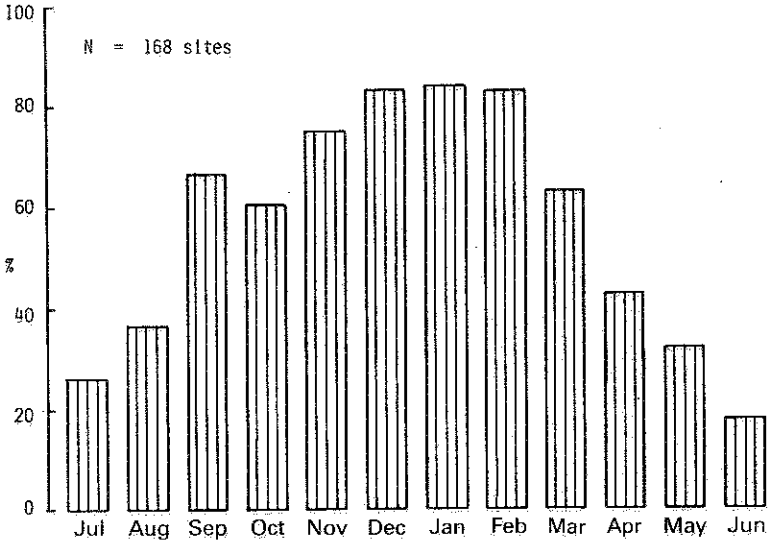
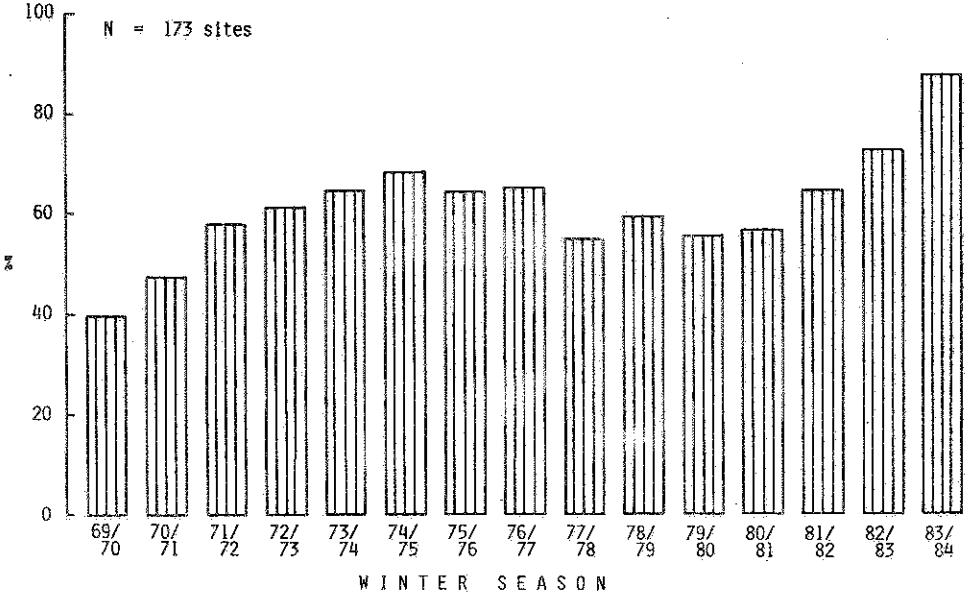


Figure 2 Annual changes in percentage of sites counted for the Birds of Estuaries Enquiry since 1969.



WADERS

by M.E. Moser

(NB Please note that the headings to columns 2 and 3 of Table 12 of the 1982-83 report were transposed).

The Birds of Estuaries Enquiry is co-sponsored by the British Trust for Ornithology, Nature Conservancy Council and Royal Society for the Protection of Birds, and has a full-time organiser based at Tring. 1983-84 was the fourteenth consecutive season of coordinated counts. This section of the report concerns counts of waders made during the mid-winter months (December, January and February), although year-round data were collected at many sites. Counts are made on selected dates in the middle of each month, and are timed to coincide with the best tidal conditions for counting estuarine birds. Records of wildfowl from both the BOEE and National Wildfowl Counts are analysed by the Wildfowl Trust, and are presented in the first section of this report.

Coverage in 1983-84

There was a dramatic increase in coverage in the 1983-84 season (Figure 2), both as a result of counts restarting at sites where they had ceased, and because of the initiation of counting programmes at several new sites. In the first category, excellent progress was made with the revitalisation of counts from Cornwall and the outer south shore of the Humber. Several entirely new sites were also covered, particularly in Orkney and the Outer Hebrides, where important wintering wader populations have recently been described (Tay and Orkney Ringing Group 1984, Buxton 1982).

The seasonal pattern of count coverage is also very pleasing, with a consistently high proportion of sites being covered for the priority mid-winter months, while more than 60% of sites were counted from September to March (Figure 3). The distribution of areas covered in 1983-84 is given in Figure 1. The only major localities for which no data were received were Poole Harbour and the Dyfi.

Developments

The return to almost complete coverage of the British estuaries has brought the recent revitalisation of the BOEE to completion. The Enquiry has been guaranteed a further 3 years of funding from June 1985 to June 1988. This important news comes at a time of increasing threats to estuaries and their birds (see below), which make the successful continuation of the Enquiry of vital importance.

A very valuable start to the West Coast Spring Passage project was made in April and May 1984. This project aims to identify the main staging posts of migrating waders on the west coast of Britain and to examine the movements of birds between sites. Frequent counts carried out at more than 60 places indicated that migrants were concentrated onto very few estuaries. Good

measures of population turnover were achieved for the target species on three of the most important sites, and preliminary results indicate that individual migrants may stay on an estuary for only very short periods.

The Winter Shorebird Count in December 1984 and January 1985 will attempt to assess the extent to which shorebirds exploit open coastal habitats. The objective is to survey the entire non-estuarine coastline of Britain during the 6-week survey period. Important sponsorship from EARTHWATCH (USA) will ensure coverage in difficult areas of west Scotland.

Threats to Estuaries

The period since the publication of the 1982-83 report has witnessed a dramatic rise in the number of actual or potential threats to British estuaries and their bird populations. During the last year, a total of 14 requests for information by the conservation bodies was answered using BOEE data. This has highlighted the immense conservation value of the BOEE counting programme.

On September 28th 1983 there was a major oil-spill in the Humber, which resulted in extensive pollution of the intertidal areas. Although more than 29,000 waders and wildfowl were present at the time of the spill (data from the September BOEE count), the direct mortality was fortunately low and mainly confined to gulls. The size of the wintering wader population as recorded by subsequent BOEE counts was apparently unaffected by the invertebrate kill observed immediately after the spill.

During the spring and summer of 1984 came the news of extensive inshore prospecting for oil on several major estuaries. The latest list of sites for which licences have been awarded or are being considered includes the Humber, the Solway, the Mersey, the Dee, the Solent, Poole Harbour and the Firth of Clyde - all prime sites for wintering waders and wildfowl.

Perhaps the most immediate and serious threat is on the Orwell, in Suffolk, where a proposed extension of the Felixstowe Docks will require the reclamation of 600 hectares of intertidal flats and marshes. Regular BOEE counts have revealed this site to be of national importance for Ringed Plover, Grey Plover, Dunlin and Turnstone, and to be of international importance for wintering Redshanks. The BOEE counts will play a leading role in opposing this reclamation and local counters are currently busy collecting additional information about the site.

British Population Totals

Table 14 shows the national totals of each wader species counted in the priority mid-winter months in 1983-84. The totals show a rise for several species, reflecting the improved coverage when compared with earlier years. Unfortunately, the counts on the Wash were ruined in December and January by bad weather and the totals for these months are underestimated accordingly. The counts are made largely on estuarine habitats and do not therefore include birds on open coasts or inland.

Table 14. Total numbers of waders recorded in Britain and N. Ireland during midwinter 1983-84. (Figures of over 100 have been rounded up to the nearest ten; over 1,000 to the nearest hundred).

	December	January	February
Oystercatcher	192,300	172,400	203,900
Avocet	160	150	120
Ringed Plover	9,100	6,900	7,500
Golden Plover	42,000	22,800	23,500
Grey Plover	15,500	15,300	20,700
Lapwing	105,500	72,900	73,000
Knot	137,600	149,200	166,800
Sanderling	4,200	4,400	4,600
Little Stint	0	1	3
Curlew Sandpiper	1	0	0
Purple Sandpiper	1,500	1,100	1,300
Dunlin	378,500	315,500	412,200
Ruff	330	150	110
Jack Snipe	25	50	480
Snipe	2,100	2,900	1,300
Black-tailed Godwit	4,500	3,700	4,100
Bar-tailed Godwit	39,400	34,000	41,800
Whimbrel	0	0	2
Curlew	41,300	44,400	52,600
Spotted Redshank	65	58	41
Redshank	60,000	43,500	55,100
Greenshank	260	210	210
Green Sandpiper	16	10	9
Common Sandpiper	26	30	33
Turnstone	12,900	10,100	11,300
Grey Phalarope	0	1	0
Woodcock	7	8	0

SPECIES ACCOUNTS

The tables presented in this section rank the principal sites in Britain and Ireland on the basis of the average mid-winter maxima for the last five seasons, for the species concerned. In addition to the species described in the text, the following were also observed on count days during the mid-winter months: two Little Stints on the Cumbrian Esk and one on Pegwell Bay, one Curlew Sandpiper on the Fal, one Grey Phalarope at Filey Brigg, two Whimbrel on the Mersey and a total of 15 Woodcock at six sites.

Oystercatcher *Haematopus ostralegus*

As a result of increased coverage and improved counting, three new sites were identified as being of national importance for wintering Oystercatchers: the outer S. Solway, Belfast Lough and the Humber. That section of the Solway also passes the level required for international recognition, bringing the total number of such sites in Britain to eight (Table 15).

Recent counts have shown that fewer than 20,000 Oystercatchers winter in W. Africa and the Mediterranean; the estimated 300,000 which winter in Britain therefore represent 42% of the Palearctic population. Although Oystercatchers occur in small numbers all around our coasts, the top four sites account for over one third of the entire British population.

Table 15. Oystercatcher: maxima at main resorts

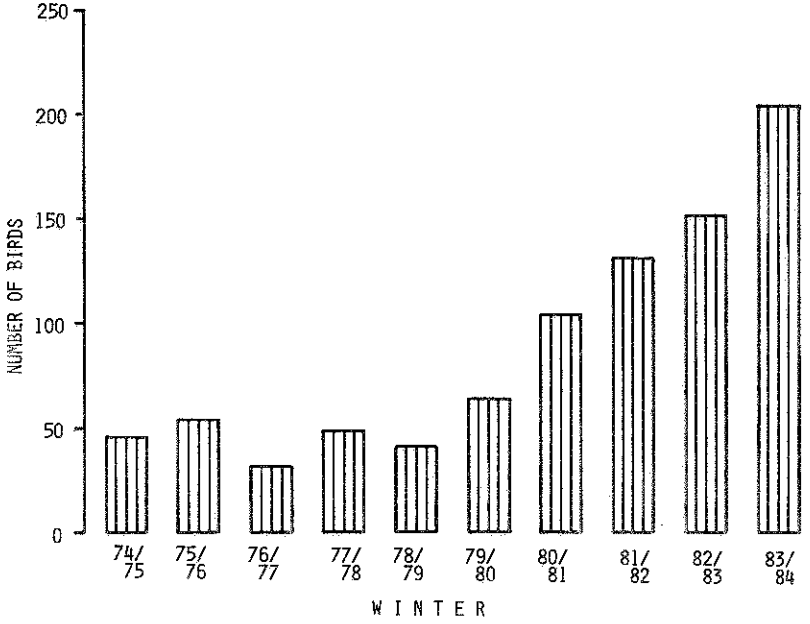
	1979-80	1980-81	1981-82	1982-83	1983-84	(Month)	Average
Morecambe Bay	46,500	46,250	x	29,754	45,220	(Dec)	41,931
Dee	16,300	41,400	42,505	28,430	30,360	(Dec)	31,799
Solway Firth	14,942	22,165	31,604	21,328	21,312	(Jan)	22,271
Wash	18,352	22,853	19,223	23,803	23,009	(Feb)	21,448
Burry Inlet	15,380	14,930	14,300	16,170	13,105	(Jan)	14,777
Duddon, Cumbria	10,200	7,728	12,680	10,655	5,725	(Feb)	9,398
Foulness	10,224	12,901	7,890	7,974	5,365	(Dec)	8,871
Outer S.Solway	x	x	x	x	7,602	(Feb)	7,602

Avocet Recurvirostra avosetta

The Avocet recolonised Britain as a breeding species in 1947, with nesting occurring at both Havergate Island and Minsmere. Although Minsmere was not used again until 1963, the breeding population at Havergate has risen steadily to a peak of 126 pairs in 1983. At the same time as the recolonisation by breeding birds, Avocets began wintering in S.W. England, principally on the Tamar/Tavy complex (Prater 1981), and more recently on the Exe. During the last 5 years however, there has been a dramatic increase in the number of Avocets wintering at Havergate Island and Butley Creek (Figure 4). Indeed, this has now become the most important wintering site in Britain and, should the present trend continue, will become the first British estuary to reach the level required for international recognition (230 birds). It seems likely that at least some of these birds may be from the local breeding population, although no birds have been ringed in recent years to confirm this. The development of a wintering population on the east coast of England may seem surprising in view of the severe conditions which sometimes occur. However, even during the arctic weather of January 1982, when the area was entirely frozen over, the population apparently suffered no losses.

In addition to this detailed information from Havergate, the 1983-84 counts produced winter peaks of 52 birds on the Tamar in December, a record of 113 on the Exe in February, 7 at Hamford Water, 5 on the Swale, 2 at Pagham Harbour, and singles from a further four sites.

Figure 4 Peak winter (November – February) counts of Avocets on Havergate Island, 1974-75 to 83-84.



Ringed Plover Charadrius hiaticula

The full complexity of Ringed Plover migration has yet to be unravelled. Their breeding grounds extend over a huge range from Central and North Europe to Iceland and Greenland. The wintering populations of West Europe (25,000) are vastly outnumbered by those wintering in West Africa (200,000). There is evidence from ringing recoveries (see e.g. Clapham 1978) that these latter birds comprise largely the Iceland and Greenland breeders, while the W. European wintering birds are probably the European breeders.

The highest counts for 1982-83 were from the Medway (547) and the Orwell (513) in S.E. England. Other sites recording a 5-year average winter peak of more than 250 birds are listed in Table 16. A count of 300 in December at Traighear, in the Outer Hebrides, provides evidence as to the importance of these islands as a wintering area (Buxton 1982). The 1983 WSG Breeding Wader Survey of the Outer Hebrides revealed a population of over 2,100 pairs of Ringed Plovers (Green 1984), and it seems likely that many breeding individuals from this population also winter in the area.

The wintering population level as judged from sites counted in both January 1983 and 1984 was down by 14%.

Table 16. Ringed Plover: maxima at main resorts

	1979-80	1980-81	1981-82	1982-83	1983-84	(Month)	Average
Medway	x	519	268	515	569	(Feb)	468
Forth	541	429	356	320	(251)	(Feb)	412
Orwell, Suffolk	200	(12)	370	482	513	(Dec)	392
Langstone Harbour	215	306	547	300	254	(Feb)	325
Chichester Harbour	339	298	215	364	388	(Dec)	321
Southampton Water	302	404	277	271	323	(Feb)	316
Swale	x	267	333	308	(167)	(Jan)	303
Traighear, O. Hebrides	x	x	x	x	300	(Dec)	300
Humber	(124)	(101)	241	(209)	305	(Feb)	273

Golden Plover *Pluvialis apricaria*

Although the most important estuarine sites for this species are in the Republic of Ireland, these have not been included in this report due to the paucity of counts from recent years. An unusually high total of 42,000 was recorded in Britain and Northern Ireland on the December count, but this had almost halved to 23,000 birds by the January count; the numbers stayed at this level for the rest of the winter.

The six estuaries of Britain and N. Ireland which support nationally important populations of Golden Plovers are listed in Table 17. The BTO/IWC Winter Atlas will provide much further information on the distribution of this species.

Table 17. Golden Plover: maxima at main resorts

	1979-80	1980-81	1981-82	1982-83	1983-84	(Month)	Average
Strangford Lough	5,556	6,410	2,200	5,352	2,184	(Dec)	4,340
Humber	1,649	(1,463)	2,940	(711)	8,014	(Dec)	4,201
Taw/Torridge, Devon	1,859	4,315	(418)	2,037	2,983	(Jan)	2,799
Ribble	1,256	1,959	698	6,968	1,400	(Jan)	2,456
Burry Inlet	2,715	1,530	2,250	1,700	3,200	(Dec)	2,279
Forth	3,829	2,105	(847)	1,691	1,367	(Jan)	2,248

Grey Plover Pluvialis squatarola

A record count of 879 Grey Plovers in Morecambe Bay in December 1983 was more than twice the previous maximum for the Bay, indicating a continued rise in numbers in N.W. England. On the adjacent Solway Firth a similar increase has been apparent, from a wintering population of a few tens in the early 1970s to more than 400 in recent winters (Moser 1984). The trends are similar to those of the Dark-bellied Brent Goose,which breeds in the same areas of the USSR, where a series of good breeding seasons in the late 1970s and early 1980s resulted in a much increased breeding output.

The sites in Britain and N. Ireland which achieve international importance for Grey Plovers are listed in Table 18.

Table 18. Grey Plover: maxima at main resorts

	1979-80	1980-81	1981-82	1982-83	1983-84	(Month)	Average
Wash	2,026	8,264	1,616	2,807	2,694	(Feb)	3,482
Dengie, Essex	x	4,000	1,380	400	1,180	(Feb)	1,740
Chichester Harbour	1,416	1,022	1,666	1,971	1,541	(Jan)	1,524
Swale	x	2,247	682	1,126	737	(Feb)	1,198
Dee	1,000	1,700	720	1,490	846	(Feb)	1,152
Ribble	1,525	743	903	1,040	1,338	(Dec)	1,110
Foulness	829	880	2,213	683	749	(Feb)	1,071
Hamford Water	687	1,042	1,000	835	1,430	(Jan)	999
Stour	899	590	1,084	1,125	798	(Feb)	900

Lapwing Vanellus vanellus

The mid-winter BOEE counts usually record a maximum of just over 100,000 Lapwing, which represents only 10% of the estimated 1 million individuals which winter in Britain and N. Ireland. The remainder occur on inland habitats not included in the counts.

Northern sites recorded their highest counts in December, with 7,300 on the Ribble, 6,500 on Morecambe Bay, 5,800 on the Humber, 5,500 on the Solway and 5,400 on Strangford Lough. In contrast, numbers on the two most important sites in the south peaked later in the winter: there were 7,500 on the Severn in February and 6,200 on the Taw/Torridge in January.

Knot *Calidris canutus*

Two distinct races of Knot visit Britain (Dick et al. 1976). The majority of the birds on our coasts in autumn, winter and spring come from the nearctic breeding population, while those that breed in Siberia pass through our estuaries in small numbers only, mainly on autumn migration toward their W. African wintering areas. The most recent estimates suggest the W. European wintering population to number some 350,000 birds, of which two-thirds are in Britain. Knots winter in very large aggregations on a few large estuaries; occurrences of this species on our smaller estuaries are rare. For this reason, special conservation measures are necessary to protect the key sites.

The estuaries which hold an average winter peak of more than 10,000 Knot are shown in Table 19. Only two of the eight sites listed showed peak counts above their 5-year average, and the January 1984 population showed a 23% decrease when sites which had been counted in both 1983 and 1984 were compared. This decrease continues the decline of wintering Knots since censuses began in the late 1960s.

Table 19. Knot: maxima at main resorts

	1979-80	1980-81	1981-82	1982-83	1983-84	(Month)	Average
Wash	48,843	82,400	54,139	108,739	53,495	(Feb)	69,524
Morecambe Bay	35,500	40,500	x	28,087	24,555	(Dec)	32,161
Dee	48,000	21,450	25,315	28,390	17,960	(Jan)	28,223
Humber	10,623	17,905	34,734	14,829	25,790	(Jan)	20,777
Ribble	26,030	11,300	16,262	11,078	12,381	(Feb)	20,617
Alt, Merseyside	2,500	34,100	6,200	18,000	28,502	(Jan)	17,861
Foulness	6,894	7,219	33,380	8,727	11,941	(Feb)	13,633

Sanderling *Calidris alba*

The Ribble again held the highest winter concentration of this species in Britain, with a count of 1,644 in January; the other major concentrations were also on estuaries (Table 20). The outer south shore of the Solway, which had not been counted for several years, gave a January count of international importance (403), as did South Ford in the Outer Hebrides (548); this site has not been counted before. It therefore appears that the Winter Shorebird Count may well reveal further important concentrations of this species.

Table 20. Sanderling: maxima at main resorts

	1979-80	1980-81	1981-82	1982-83	1983-84	(Month)	Average
Ribble	2,025	1,739	1,790	1,045	1,644	(Jan)	1,649
Humber	(288)	(288)	(102)	(78)	641	(Dec)	641
Alt	616	809	356	547	537	(Dec)	573
South Ford, O. Hebrides	x	x	x	x	548	(Feb)	548
Wash	286	1,022	212	182	166	(Feb)	374
Teesmouth	570	365	214	245	210	(Dec)	321
Blackpill, W. Glam.	416	275	365	310	191	(Feb)	312
Tay	x	152	300	475	(50)	(Dec)	309

Purple Sandpiper *Calidris maritima*

Purple Sandpipers were counted at a record number of sites (52) as a result of the initiation of counts at new sites in Orkney and the Outer Hebrides. It is hoped that from the results of the Winter Shorebird Count it will be possible to select further areas for monitoring population trends in this species. The sites recording more than 100 birds in the mid-winter months were the Northumberland coast (978), Orkney: Ayre-Deerness (152), the south shore of the Forth (142) and Saltwick Bay, N. Yorks. (102).

An important population study of this species is being carried out by the Tay Ringing Group, and many individuals have been colour-ringed both in Britain and on the breeding grounds. Birds should be checked carefully and any colour-ring sightings should be recorded on the count card or sent directly to the Wader Study Group.

Dunlin *Calidris alpina*

Although the East Atlantic Flyway population of Dunlin has been estimated at just over 2.5 million individuals, these are divided into three separate populations. The *arctica* and *schinzii* races winter largely in W. Africa, while the larger *alpina* race is the one that winters in W. Europe. These latter birds breed in N. Scandinavia and the USSR and winter mainly around the British coasts, the Wadden Sea and in W. France.

The highest count for 1983-84 was of 53,330 birds on the Severn Estuary, in February. A further seven sites held more than 20,000 birds (Table 21). The January counts showed a 14% fall from 1983 to 1984 when sites counted in both years were compared. This brings the population index to its lowest level ever.

The outstanding importance of the Outer Hebrides as a European breeding area for Dunlin was revealed by the WSG 1983 Breeding Wader Survey of the area, which revealed in excess of 2,000 pairs (Green 1984). This population is of the *schinzii* race.

Table 21. Dunlin: maxima at main resorts

	1979-80	1980-81	1981-82	1982-83	1983-84	(Month)	Average
Morecambe Bay	59,500	58,500	x	28,223	31,134	(Dec)	44,340
Severn	x	36,450	52,605	27,670	53,330	(Feb)	42,514
Wash	36,983	30,193	27,572	29,082	27,044	(Jan)	30,175
Mersey	29,200	30,500	25,400	30,100	28,000	(Jan)	28,640
Chichester Harbour	24,554	21,036	23,803	27,751	28,293	(Feb)	25,088
Langstone Harbour	14,780	25,050	28,000	29,000	27,150	(Feb)	24,796
Humber	16,575	(12,493)	32,203	(22,736)	20,843	(Dec)	23,207
Dee	31,000	23,470	16,380	21,135	21,950	(Dec)	22,787
Lindisfarne	32,000	31,000	15,000	23,000	12,130	(Dec)	22,626

Ruff *Philomachus pugnax*

Pagham Harbour maintained its place as the most important estuary in Britain for wintering Ruff, with a peak count of 203 in December. The Wildfowl Trust reserve at Martin Mere, Lancs, which has recently become an important wintering site for this species, also had a winter peak of just over 200 birds. Other sites where more than 10 birds were recorded were Pegwell Bay (79), the Swale (24), the Humber (19), the Tees (19) and the Beaulieu (18).

Jack Snipe Lymnocryptes minimus

A count of 13 Jack Snipe on the Inner Clyde in January was a record for this site, presumably being a result of severe weather inland. This was also the second highest count in Britain - closely beaten by 14 at Christchurch Harbour, also in January. Ten birds on the Severn in January was the only other record of note.

Snipe Gallinago gallinago

The mild winter conditions which occurred in S. England brought very few Snipe to coastal sites, and the peak counts for Sussex and Hampshire were lower than have been recorded for several winters. In contrast, the severe weather in N. England and Scotland brought many birds to the west coast, which atypically held the highest concentrations in the country. Comparison between the last two winters, of peak counts for a few selected sites, shows this pattern well (Table 22).

Table 22. Snipe: winter peak counts in 1982-83 and 1983-84 at selected coastal sites in England and Scotland.

	1982-83	1983-84
Clyde	17	180
Morecambe Bay	44	217
Ribble	155	169
Humber	43	149
Severn	71	216
Southampton Water	323	93
Pagham Harbour	213	56
Pett Level and Rye Harbour	150	48
Cuckmere	65	120

Black-tailed Godwit Limosa limosa

Approximately 5,000 Black-tailed Godwits winter in Britain, with a further 9,000 in the Republic of Ireland and ca. 40,000 in the rest of Europe. These birds are thought to comprise almost entirely Icelandic breeders, whilst the nominate race, which breeds in Holland, winters in Africa.

The highest counts for 1983-84 were on the Dee (1,285 in December), the Stour (957 in February), Langstone Harbour (583 in December) and Chichester Harbour (550 in December). The winter population on the main Hampshire sites peaked at 1,438 birds in December, whilst those on the Stour and Hamford Water peaked at 1,017 birds in February.

Bar-tailed Godwit *Limosa lapponica*

The estimated wintering population of 89,000 Bar-tailed Godwits in W. Europe (Prater 1981) is vastly outnumbered by the 600,000 which have been estimated for W. Africa, principally on the Banc d'Arguin in Mauritania (Altenburg et al. 1983). Almost all these birds are thought to be of Siberian origin, although a few pairs occur in N. Norway.

Despite the increase in coverage in the 1983-84 season, the winter count totals were the lowest for several years. Indeed, the January 1984 population showed a 35% decrease on the January 1983 level for sites counted in both years. Bar-tailed Godwit numbers show extremely erratic patterns on British estuaries, particularly as a result of severe weather, suggesting large-scale movements, possibly from the Wadden Sea. These have resulted in counts of more than 10,000 birds on the Wash, the Ribble and at Foulness in previous winters. There was no evidence of such movements in 1983-84, which accounts for the decrease in the January population level. The winter maxima for the main sites are shown in Table 23.

A count of 28,000 Bar-tailed Godwits on the Ribble in September 1983 was a record for British estuaries; this was presumably a large concentration of moulting birds which later moved south to W. Africa.

Table 23. Bar-tailed Godwit: maxima at main resorts

	1979-80	1980-81	1981-82	1982-83	1983-84	(Month)	Average
Ribble	8,528	7,098	15,885	10,875	6,138	(Jan)	9,705
Wash	8,691	10,936	8,359	8,131	5,976	(Feb)	8,419
Foulness	3,619	4,093	14,131	4,655	2,986	(Feb)	5,897
Morecambe Bay	7,250	6,200	x	4,268	5,752	(Dec)	5,868
Alt	3,440	4,510	6,540	6,000	8,620	(Feb)	5,822
Lindisfarne	5,000	4,730	2,600	4,520	3,600	(Dec)	4,090
Solway Firth	1,214	5,494	7,022	3,088	2,846	(Dec)	3,933
Forth	3,147	2,303	3,840	2,764	3,194	(Dec)	3,050
Lough Foyle	2,312	2,220	1,831	2,915	3,160	(Feb)	2,488
Dee	7,365	1,105	3,480	130	208	(Feb)	2,458

Curlew *Numenius arquata*

Curlew are a difficult species to monitor effectively from estuary counts alone, since many birds feed on inland fields unless these are frozen. The winter BOEE counts usually produce 40-55,000 individuals for Britain and N. Ireland, while the estimated national total in winter is 100,000. The discovery of a wintering population of over 17,000 birds in Orkney (Tay and Orkney Ringing Groups 1984), plus the knowledge that many Curlew frequent rocky shores elsewhere, suggests that this estimate may not be far from the true number. The principal sites for Curlew are listed in Table 24. Sites with an average count of more than 3,000 birds are of international importance.

Table 24. Curlew: maxima at main resorts

	1979-80	1980-81	1981-82	1982-83	1983-84	(Month)	Average
Morecambe Bay	6,850	7,850	x	4,422	6,401	(Jan)	6,381
Wash	2,378	4,562	2,871	2,723	4,817	(Feb)	3,471
Solway Firth	2,396	2,076	3,543	4,000	3,031	(Feb)	3,010
Dee	2,555	2,490	2,545	2,015	2,600	(Jan)	2,441
Lough Foyle	2,555	1,729	1,632	4,000	1,610	(Dec)	2,306
Foulness	3,220	1,297	2,858	1,919	1,768	(Dec)	2,213

Spotted Redshank *Tringa erythropus*

Only three sites reported winter peaks of 10 or more birds. These were the Medway (25), the N.W. Solent (11) and the Burry Inlet (10). The Medway is the most important British site for this species at all seasons, and the autumn passage count of 222 in September 1983 is an impressive concentration of these birds, presumably moving south from their Scandinavian breeding grounds. The numbers occurring on spring passage through Britain are much smaller.

Redshank *Tringa totanus*

The January population level for sites counted in both 1983 and 1984 declined by 12%, bringing the British wintering Redshank population to its lowest ever level. Although many sites show evidence of decline in the size of their wintering population, the most spectacular drop has occurred on the Inner Clyde. Although formerly the most important wintering site in Britain, with a regular peak of 6-7,000 birds, counts during the last two winters have only once exceeded 2,000. It is not yet possible to explain this dramatic change, although the wintering populations on the Solway Firth, the nearest major wintering site to the Clyde, have also declined considerably (Moser 1984). Thus it is unlikely that the missing birds have moved locally to another site.

The estuaries of international importance for Redshank are listed in Table 25. The increase for Morecambe Bay is probably a result of improved coverage. The Orwell, currently under threat from the extension of the Felixstowe Docks, is a site of international importance for this species.

Table 25. Redshank: maxima at main resorts

	1979-80	1980-81	1981-82	1982-83	1983-84	(Month)	Average
Morecambe Bay	6,850	8,850	x	2,454	5,254	(Dec)	5,852
Dee	3,425	4,495	2,880	3,185	2,672	(Feb)	3,332
Wash	2,895	5,610	2,446	2,893	2,603	(Feb)	3,290
Clyde (inner Firth)	4,616	3,444	2,609	2,574	1,732	(Feb)	2,995
Orwell	(286)	(140)	(508)	2,475	3,105	(Jan)	2,790
Lindisfarne	2,405	3,000	1,500	2,845	2,380	(Dec)	2,426
Stour	2,475	2,236	2,748	2,039	2,062	(Dec)	2,312
Forth	x	1,451	1,517	2,919	2,492	(Dec)	2,095

Greenshank *Tringa nebularia*

The predominantly westerly distribution of Greenshanks is revealed clearly by the 1983-84 counts. Northern Ireland held the largest concentrations, with 36 on Lough Foyle, 26 on Carlingford Lough and 22 on Strangford Lough. A count of 24 on the Inner Clyde was a record for recent years, making a startling comparison with the decline of Redshank which has been observed at this site in recent years (see above). The highest winter count for England was on the Kingsbridge Estuary (17), and for Wales on Lavan Sands and the Cleddau, both with 19 birds.

The main passage through Britain occurs in the autumn, when by far the largest concentrations in Britain for 1983 were at Foulness (149), the Medway (136) and Langstone Harbour (109).

Green Sandpiper Tringa ochropus

Wintering Green Sandpipers were recorded from a total of 20 sites, with a maximum of 2 birds on the Severn, the Tavy, the Devon Avon, the Roach/Crouch and the Burry Inlet.

Common Sandpiper Actitis hypoleucos

Wintering Common Sandpipers were recorded from a total of 21 sites, mainly in the south and west. The highest counts were from the Severn and the Taw/Torridge with 9 each, whilst the Tavy, the Devon Avon and Southampton Water all recorded a winter peak of 3 individuals.

The greatest concentrations in Britain occur on autumn passage, and the August count for the Kent and Sussex coastline alone produced 165 birds.

Turnstone Arenaria interpres

Turnstone are a species only partially represented by BOEE counts because of their utilisation of many open-coastal areas. The inclusion of several new counting sites, particularly in Orkney and the Outer Hebrides, gave a total of over 12,500 counted in December 1983 - the highest total ever recorded by a BOEE count. The addition of these new sites is an important step towards being able to monitor the long-term trends in Turnstone populations.

Despite the importance of open coastal areas, the highest counts of Turnstone occurred in estuaries, with the Wash, Morecambe Bay and the Forth being the highest; on Guernsey, where complete counts of the open coasts are made, a count of 665 individuals was made in February. This suggests that the Winter Shorebird Count may well reveal important concentrations on the Channel Isles. The January count for paired sites was down on 1983.

Table 26. Turnstone: maxima at main resorts

	1979-80	1980-81	1981-82	1982-83	1983-84	(Month)	Average
Forth	2,799	1,614	(1,034)	1,195	(888)	(Dec)	1,870
Morecambe Bay	1,720	1,740	x	770	934	(Jan)	1,291
Wash	724	1,159	824	496	973	(Feb)	836
Guernsey	950	518	484	350	665	(Feb)	594
Burry Inlet	640	275	270	215	710	(Dec)	422
Stour	354	427	366	469	430	(Dec)	410
Orwell	450	(30)	325	336	332	(Jan)	361
Southampton Water	350	308	437	345	275	(Jan)	343

Principal sites for waders

The most important sites for wintering waders in the U.K. are shown in Table 27, in the order of the winter peak counts for 1983-84. The winter peak is calculated by listing the highest counts for each species from December to February, irrespective of the month they were made, then totalling these counts. This procedure makes allowance for any poor counts that may have been made in particular winter months, and gives due importance to peaks of wintering numbers occurring early or late in the mid-winter period. If only one or two counts were made during these three months, the peak may be an underestimate. Only those sites with a winter peak of more than 10,000 waders are listed; those with more than 20,000 waders regularly are considered of international importance. Also shown are the all-year peaks for the same sites, calculated by adding the monthly maxima recorded for each species for the whole July to June period.

Table 27. Peak counts of waders, 1983-84 (Number of counts in brackets)

	Winter		All-year	
Morecambe Bay	128,179	(3)	159,893	(7)
Wash	121,437	(1)	121,437	(1)
Dee	82,724	(3)	86,764	(7)
Humber	70,637	(3)	90,607	(8)
Severn	67,141	(3)	70,274	(12)
Solway	54,580	(3)	89,328	(11)
Ribble	53,994	(3)	132,262	(12)
Chichester Harbour	42,111	(3)	43,245	(8)
Alt	40,175	(3)	43,776	(8)
Foulness	35,831	(3)	46,023	(8)
Burry Inlet	34,751	(3)	36,121	(12)
Forth	34,612	(3)	35,104	(7)
Langstone Harbour	34,585	(3)	38,910	(12)
Mersey	32,198	(3)	37,578	(10)
Strangford Lough	28,316	(3)	35,689	(7)
N. Kent Marshes	27,025	(3)	27,760	(7)
Medway	25,379	(3)	30,781	(12)
Stour (Essex)	24,912	(3)	25,336	(6)
Lindisfarne	24,285	(3)	31,676	(12)
Duddon	22,741	(3)	22,993	(7)
Orwell	19,973	(3)	20,013	(3)
Leigh/Canvey Island	19,280	(3)	20,392	(3)
Hamford Water	18,721	(3)	21,571	(7)
Tees	16,435	(3)	18,804	(12)
Lough Foyle	15,208	(3)	16,147	(9)
Taw/Torridge	14,351	(3)	15,779	(10)
Swale	13,895	(3)	18,324	(5)
S. Solway (outer)	12,676	(3)	14,693	(10)
Blackwater	12,346	(3)	18,698	(6)
Inner Clyde	11,753	(3)	12,958	(4)
Southampton Water	11,641	(3)	12,782	(12)
Eden	11,610	(3)	13,770	(12)
Exe	11,433	(3)	13,768	(11)
Montrose Basin	10,878	(3)	11,009	(6)
Lavan Sands	10,557	(2)	12,435	(5)
Portsmouth Harbour	10,347	(3)	10,723	(12)
Roach/Crouch	10,149	(3)	10,413	(8)

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APPENDIX

International and National Importance

Among other criteria, a wetland is considered Internationally Important if it REGULARLY supports 1% of the individuals in a population of one species or subspecies of waterfowl (IWRB 1980). A wetland in Britain is considered Nationally Important if it REGULARLY holds at least 1% of the estimated wintering population of one species or subspecies of waterfowl (Prater 1981; Salmon 1981). Table 28 gives the qualifying levels among wildfowl and waders for both categories of importance.

The second conference of contracting parties to the Ramsar Convention took place at Groningen, Netherlands, in May 1984. Practically all the contracting states took part and there was a large number of observers from countries in the developing world that are not yet parties. Many delegates reported their government's intention to designate further sites. The U.K. delegation announced that a list of 132 wetlands eligible for designation under the Cagliari criteria had been deposited with the conference secretariat, and that nearly all of these sites would be designated by 1986 (Ramsar Convention Bureau 1984).

Table 28. Qualifying levels for national and international importance

	National (Great Britain only)	International (Northwest/west European pop.)
Mute Swan	180	1,200
Bewick's Swan	50	120
Whooper Swan	* 50	100
Bean Goose	-	700
Pink-footed Goose: Iceland/Greenland pop.	900	900
European White-fronted Goose	60	2,000
Greenland White-fronted Goose	60	150
Greylag Goose: Iceland pop.	900	900
Barnacle Goose: Greenland pop.	200	300
Svalbard pop.	80	* 100
Dark-bellied Brent Goose	600	1,300
Light-bellied Brent Goose		
Canada/Greenland pop.	-	150
Svalbard pop.	* 50	* 100
Shelduck	750	1,250
Wigeon	2,000	5,000
Gadwall	* 50	550
Teal	1,000	2,000
Mallard	4,000	+10,000
Pintail	250	750
Shoveler	90	1,000
Pochard	500	2,500
Tufted Duck	600	5,000
Scaup	* 50	1,500
Eider	500	+10,000
Long-tailed Duck	200	5,000
Common Scoter	350	+10,000
Velvet Scoter	* 50	2,000
Goldeneye	150	2,000
Smew	-	200
Red-breasted Merganser	100	400
Goosander	50	750
Oystercatcher	3,000	7,500
Avocet	-	260
Ringed Plover	120 (Passage: 300)	1,000
Golden Plover	2,000	10,000
Grey Plover	100	800
Lapwing	5,000	+20,000
Knot	2,500	3,500
Sanderling: Passage	300	500
Winter	100	150
Purple Sandpiper	180	?
Dunlin	5,500 (Passage: 2,000)	+20,000
Ruff	-	10,000
Snipe	?	10,000
Black-tailed Godwit	50	400
Bar-tailed Godwit	450	5,500
Whimbrel	100	500
Curlew	1,000	3,000
Spotted Redshank	50	500
Redshank	1,000 (Passage: 1,200)	2,000
Greenshank	50	500
Turnstone	250	500

(* minimum permissible; represents over 1%
+ maximum permissible; represents under 1%
- British population too small for meaningful figure to be obtained)