

LITTLE GULL
Larus minutus

International Importance: 750
 Great Britain Importance: ?
 All Ireland Importance: ?

GB maximum: 266 Apr
 NI maximum: 0

Trend not available

A very distinct peak in numbers was noted in April 1996 when 266 were reported in the UK. However, 245 of these birds were at the Alt Estuary. All sites reporting double figures in 1996-97 were in N Britain: Monikie Reservoir (50, Jul), Durham Coast (29, Jul), Tees Estuary (11, Jul) and

Tophill Low Reservoir (10, Sep). For a species whose nearest breeding colony is in the Netherlands, this may initially seem surprising. However the Dutch colonies are small in comparison to those in the Baltic, which are known to follow a well-established route across N Britain.

BONAPARTE'S GULL
Larus philadelphia

Scarce

One record of this species involved a single bird in September. Not unexpectedly for a visitor from the

Americas, this bird was reported from Northern Ireland on Lough Foyle.

BLACK-HEADED GULL
Larus ridibundus

International Importance: 20,000**
 Provisional Great Britain Importance: 19,000†
 All Ireland Importance: ?†

GB maximum: 208,203 Jan
 NI maximum: 13,150 Sep

Trend not available

Four sites now provisionally attain international status on the basis of an average peak count of 20,000 or more Black-headed Gull. The peak at a further nine sites currently average more than 8,000 birds, although none of these listed are of national importance. The majority of these sites are inland and nearly all are south of or in the region of the Midlands. The peak counts recorded by these sites fall in most months of the year outside summer. In 1996-97 only two of these 14 sites reported peak counts

above the average for that site. This pattern may have been repeated nationwide and may be responsible for the rather low country totals reported during the year. The peak UK total of 218,275 birds represents around 13% of the number found by the Winter Gull Roost Census in January 1993 (Waters 1994). Many birds will be missed as they frequent non-wetland habitat, particularly during the daytime, and some will not be reported as gull counting is optional on WeBS counts.

Table 72. BLACK-HEADED GULL: MAXIMUM COUNTS AT MAIN RESORTS

	93-94	94-95	95-96	96-97	Month	Average
International						
Lower Derwent lngs	-	-	32,500	17,500	Mar	25,000
Tophill Low Rsr	-	34,000	21,710	15,000	Oct	23,570
Tring Rsr	50,000	20,000	(21,000)	363	Jan	23,454
Hurleston Rsr	-	20,000	-	-		20,000
Sites with average peak counts of more than 8,000 birds†						
Poole Hbr	11,283	(10,233)	24,887	(10,732)	Jan	18,085
Morecambe Bay	11,595	15,965	19,049	18,653	Sep	16,316
Chasewater	15,000	10,000	12,000	-		12,333
Wash	8,949	12,355	12,380	13,975	Oct	11,915
Bolton-on-Swale GP	11,500	-	-	-		11,500
Tamar complex	(7,735)	13,794	(8,904)	5,352	Sep	9,573
Quse Washes	16,060	8,159	4,196	(886)	Jan	9,472
Pitsford Rsr	12,000	10,000	5,000	8,000	Oct	8,750
Doddington Pool	14,000	10,000	8,000	120	Sep	8,030

† as few sites meet the provisional qualifying level for national importance for Black-headed Gull in Great Britain, a threshold of 8,000 has been used as the basis for selecting sites for presentation in this report.

RING-BILLED GULL***Larus delawarensis***

Scarce

Single birds were recorded at six sites in 1996-97: Hayle Estuary Mar, Taw/Torridge Estuary (Aug, Dec, Jan & Mar),

Thames Estuary (Jan & Feb), North Warren & Thorpeness Mere Dec, Alt Estuary (Apr) and Port Talbot Docks (Dec).

COMMON GULL***Larus canus***

International Importance: 16,000

Provisional Great Britain Importance: 9,000

All Ireland Importance: ?

GB maximum: 70,265 Jan
NI maximum: 2,956 Sep

Trend

not available

Only Tophill Low Reservoir currently qualifies provisionally as internationally important for Common Gull. At this Yorkshire site, the 1996-97 peak was recorded in October coinciding with the maximum counts for Black-headed Gull and Great Black-backed Gull. In addition, nine further sites have recorded peak counts averaging more than 4,000 birds. The majority of these sites are inland with the

southernmost (Pitsford Reservoir) located in Northamptonshire. For all sites listed in Table 73 the 1996-97 peaks were below the average value and were all recorded in winter or autumn. The recorded UK totals peaked in January 1997 at around 70,000 birds which is typical of recent years.

Table 73. COMMON GULL: MAXIMUM COUNTS AT MAIN RESORTS

	93-94	94-95	95-96	96-97	Month	Average
International						
Tophill Low Rsr	-	20,000	18,000	14,000	Oct	17,333
Great Britain						
Inner Moray Fth	6,100	(40,001)	-	1,850	Dec	15,984
Lower Derwent Ings	-	-	13,400	6,400	Mar	9,900

LESSER BLACK-BACKED GULL***Larus fuscus***

International Importance: 4,500

Provisional Great Britain Importance: 500

All Ireland Importance: ?

GB maximum: 40,090 Apr
NI maximum: 1,145 Sep

Trend

not available

Morecambe Bay alone qualifies provisionally as internationally important for Lesser Black-backed Gull. Numbers peak at this estuary in spring due to the proximity of a huge breeding colony. Twenty-two sites provisionally qualify as nationally important for this species, with the

great majority located in Wales or W England. Most of these main resorts reported above average peaks in 1996-97, suggesting that the rather high UK totals recorded may have been the result of a real increase in numbers rather than improved coverage.

Table 74. LESSER BLACK-BACKED GULL: MAXIMUM COUNTS AT MAIN RESORTS

	93-94	94-95	95-96	96-97	Month	Average
International						
Morecambe Bay	10,499	20,479	29,936	30,890	Apr	22,951
Great Britain						
Lllysyfran Rsr	-	-	300	8,500	Nov	4,400
Chasewater	2,000	2,100	3,000	-		2,367
Great Pool (Westwood Park)	2,000	-	-	1,750	Nov	1,875
Severn Est.	287	70	57	7,017	Apr	1,858
Alt Est.	1,800	710	886	2,480	Aug	1,469
North-East Glamorgan Moorland Pools	-	-	-	1,352	Aug	1,352
Portworthy Mica Dam	-	300	1,000	2,250	Sep	1,183
Hayle Est.	1,401	260	1,800	735	Feb	1,049
Camel Est.	-	741	(1,252)	1,042	Feb	1,012
Cleddau Est.	152	(301)	336	2,073	Feb	854
Bicton Rsr	-	-	-	850	Sep	850

	93-94	94-95	95-96	96-97	Month	Average
Hurleston Rsr	476	1,119	-	-		798
Colliford Rsr	2,500	121	206	296	Nov	781
Solway Est.	464	(981)	837	517	Sep	700
Caistron Quarry	-	637	730	-		684
Llangorse Lake	500	400	850	820	Sep	643
Wash	145	(234)	331	(1,338)	Oct	605
Frainslake To Freshwater West	-	-	360	750	Sep	555
Rutland Water	40	500	1,000	(150)	May	513
Fiddlers Ferry Power Station Lagoons	-	400	1,000	128	Sep	509
R. Arrow/R. Lugg Floodplain	-	-	(500)	-		(500)
Foremark Rsr	-	-	1,000	0	Sep	500

HERRING GULL

Larus argentatus

International Importance: 13,000
Provisional Great Britain Importance: 4,500
All Ireland Importance: ?

GB maximum: 66,070 Dec Trend not available
NI maximum: 5,020 Nov

As with Lesser Black-backed Gull, only Morecambe Bay provisionally qualifies as internationally important as a result of averaging over 14,000 birds. Herring Gulls also peak there in spring due to the huge mixed colony of Herring and Lesser Black-backed Gulls breeding on Walney Island. Recorded UK totals are close to those reported in recent years. Gulls have been recorded for

WeBS in the past four winters and all sites now provisionally of national importance for Herring Gull are listed in the Table 75. At all these sites the 1996-97 peaks were recorded in winter or autumn. None of these sites are inland but are located throughout coastal Britain with no clear geographical pattern.

Table 75. HERRING GULL: MAXIMUM COUNTS AT MAIN RESORTS

	93-94	94-95	95-96	96-97	Month	Average
International						
Morecambe Bay	20,840	20,824	19,189	17,281	May	19,534
Great Britain						
Ribble Est.	(15)	1,351	27,500	430	Nov	9,760
Powburn to Barassie Shore	10,000	1,000	5,000	-		5,333
Solway Est.	2,986	(2,335)	(9,397)	3,169	Sep	5,184
Wash	2,816	6,538	(5,142)	5,147	Oct	4,911

ICELAND GULL

Larus glaucoideus

Scarce

GB maximum: 7 Jan/Feb Trend not available
NI maximum: 1 Nov/Dec/Jan

The peak recorded UK total during 1996-97 was eight Iceland Gulls in January 1997. This species was recorded at 24 sites with only one record, Lower Derwent Ings (2, Mar), involving more than one individual. Surprisingly for a species generally associated with mid-winter, six records

were reported from non-winter months. There was a wide geographical spread of records including Northern Ireland and Wales with both inland and estuarine sites well represented.

GLAUCOUS GULL

Larus hyperboreus

Scarce

GB maximum: 19 Feb Trend not available
NI maximum: 2 Feb

The total number of Glaucous Gulls recorded across the UK in 1996-97 was rather higher than the average value of

recent years with a peak of 21 birds in February. Ten sites reported single counts of two birds each: Belfast Lough

(Feb), Pugney Water Jan, Criddling Stubbs (Feb), Fairburn Ings (Jan), St Mary's Island to North Shields Fish Quay (Feb), Coquet Estuary (Jan), Lindisfarne (Feb), Irvine to Saltcoats (Dec), Loch of Strathbeg (Feb) and North Warren

& Thorpeness Mere (Feb). All sites except Belfast Lough and North Warren & Thorpeness Mere (which is in Suffolk) are in N England or Scotland.

GREAT BLACK-BACKED GULL

Larus marinus

International Importance: 4,800
Provisional Great Britain Importance: 400
All Ireland Importance: ?

GB maximum: 12,282 Oct
NI maximum: 701 Sep

Trend not available

As in previous years, recorded UK totals peaked in autumn suggesting this is a real peak in numbers rather than a result of increased coverage. Little can be deduced from the size of this peak (12,539), which is typical of the value recorded in recent years. Sixteen sites now qualify provisionally as nationally important for Great Black-backed Gull. These sites, listed in Table 76, are largely

estuarine or open coast with Lower Derwent Ings, Tophill Low Reservoirs, Rutland Water and Fairburn Ings the only inland sites. Apart from an absence of N Irish and Welsh sites there is a good geographical spread shown in the table. The peak counts at most of these sites were recorded in winter, with a few in autumn.

Table 76. GREAT BLACK-BACKED GULL: MAXIMUM COUNTS AT MAIN RESORTS

	93-94	94-95	95-96	96-97	Month	Average
Great Britain						
Wash	971	2,629	1,150	(1,087)	Oct	1,583
Tees Est.	1,008	1,887	1,325	1,068	Oct	1,322
Dungeness Gravel Pits	0	(6)	2,070	1,600	Jan	1,223
Lower Derwent Ings	-	-	617	1,750	Dec	1,184
Tophill Low Rsr	-	981	1,000	835	Oct	939
Lo. Of Strathbeg	-	545	1,000	(1,200)	Sep	915
Pegwell Bay	138	2,000	600	750	Nov	872
Lossie Est.	-	629	700	1,053	Oct	794
Fairburn Ings	-	1,000	2	950	Jan	651
Morecambe Bay	633	624	554	626	Dec	609
Cresswell To Chevington Burn	200	1,000	500	685	Oct	596
Dee Est. (Eng/Wales)	152	377	1,591	111	Mar	558
Thames Est.	(175)	271	474	789	Jan	511
Rutland Water	250	600	300	700	Jan	463
Portsmouth Hbr	166	772	437	(216)	Jan	458
Durham Coast	(365)	(229)	(624)	350	Oct	446

KITTIWAKE

Rissa tridactyla

International Importance: 20,000**
Great Britain Importance: ?
All Ireland Importance: ?

GB maximum: 8,902 Jun
NI maximum: 84 Sep

Trend not available

In contrast to the other species of regularly occurring gulls, recorded national totals of Kittiwake peaked in spring/autumn with the lowest totals reported for the mid-winter months. Reported numbers, however, are heavily dependent on the weather experienced on the count date. In addition, national totals can be dominated by a count from a single site. The highest peak counts recorded in

1996-97 were at North Ronaldsay (8,500, Jun out of a UK total of 8,902), the Dee Estuary (420, Aug), the Severn Estuary (400, May with a UK total of 545), Howick to Beadnell (340, Mar) and Beadnell to Seahouses (282, Aug). Not surprisingly all 16 sites recording more than 50 birds in 1996-97 were open coast or estuarine.

GULL-BILLED TERN
Sterna nilotica

Scarce

One bird was recorded at the Burry Inlet in S Wales in July.

SANDWICH TERN
Sterna sandvicensis

International Importance: 1,500
Great Britain Importance: ?[†]
All Ireland Importance: ?[†]

GB maximum: 7,976 Aug
NI maximum: 417 Sep

Trend

not available

The counting of gulls and terns for WeBS began in October 1993 hence 1996 is only the third summer for which counts of terns exist. The peak British total of almost 8,000 Sandwich Terns in August 1996 is similar in size and timing to the two previous years. Presumably adult birds are joined by large numbers of recent fledglings in early autumn. Those sites of international importance that are

regularly monitored by WeBS plus those where the average peak exceeds 200 birds are listed in Table 77. The majority of these sites are in N Britain and largely mirror the distribution of breeding colonies. Some terneries are remarkably ephemeral with large colonies suddenly starting up or dying out. As a consequence the numbers recorded at a WeBS site may fluctuate widely.

Table 77. SANDWICH TERN: MAXIMUM COUNTS AT MAIN RESORTS

	93-94	94-95	95-96	96-97	Month	Average
International						
Tees Est.	(1,665)	2,450	3,774	489	Aug	2,238
Forth Est.	(877)	(1,708)	1,774	1,352	Aug	1,611
Sites with average peak counts of more than 200 birds[†]						
Cemlyn Bay	-	-	-	1,450	May	1,450
Dee Est. (Eng/Wales)	-	601	446	2,090	Aug	1,046
North Norfolk Marshes	(3,000)	395	266	472	Aug	1,033
Lo. Strathbeg	-	1,846	220	(750)	Jun	1,033
Duddon Est.	-	487	470	650	Aug	536
Lindisfarne	(150)	(690)	224	316	May	410
Morecambe Bay	-	865	312	34	May	404
Foryd Bay	-	-	-	390	Apr	390
Tay Est.	(60)	60	361	401	Aug	274
Ythan Est.	56	262	300	380	Jul	250
Exe Est.	-	265	255	134	Apr	218
Wash	-	284	178	186	Sep	216
Eden Est.	138	(29)	99	(380)	Aug	206

[†] as no 1% threshold has been set for national importance for Sandwich Tern in Great Britain, a qualifying level of 200 has been used as the basis for selecting sites for presentation in this report

ROSEATE TERN
Sterna dougallii

Scarce

During 1996-97, UK totals of Roseate Tern were typically recorded in single figures. Alert WeBS counters recorded this species at Colwyn Bay (4, Apr), Forth Estuary (2, May),

Durham Coast (2, Jul), Exe Estuary (1, Jul) and Coquet Estuary (1, Jul).

COMMON TERN
Sterna hirundo

International Importance: 6,000
Great Britain Importance: ?[†]
All Ireland Importance: ?[†]

GB maximum: 4,812 Aug
NI maximum: 62 May

Trend

not available

As with Sandwich Tern, peak UK totals of Common Tern were recorded in August, due to recently fledged

youngsters. In August 1996 the UK total of 4,829 birds was on the low side compared to the previous two autumns.

No sites even approach the qualifying level for international importance of 6,000 birds which is not surprising as the British breeding population was only estimated at 12,900 pairs between 1984 and 1987 (Lloyd *et al.* 1991). Those

sites with average peaks exceeding 200 birds are listed in Table 78. The absence of sizeable colonies in mainland Wales or SW England is responsible for those regions not being represented in the Table.

Table 78. COMMON TERN: MAXIMUM COUNTS AT MAIN RESORTS

	93-94	94-95	95-96	96-97	Month	Average
Sites with average peak counts of more than 200 birds[†]						
Tees Est.	(338)	1,283	1,575	453	Jul	1,104
Alt Est.	(1,200)	829	1,500	596	Aug	1,031
Dee Est. (Eng/Wales)	-	429	315	641	Aug	462
Wash	-	691	262	310	Aug	421
Forth Est.	(144)	276	276	390	Aug	314
North Norfolk Marshes	(200)	326	226	344	Aug	299
Lo. Strathbeg	-	214	325	277	Jul	272
Tay Est.	(105)	27	450	320	Aug	266
Langstone Hbr	-	-	278	138	Aug	208
Thames Est.	-	(324)	109	187	Aug	207

[†] as no 1% threshold has been set for national importance for Common Tern in Great Britain, a qualifying level of 200 has been used as the basis for selecting sites for presentation in this report

ARCTIC TERN

Sterna paradisaea

International Importance: ?
Great Britain Importance: ?[†]
All Ireland Importance: ?[†]

GB maximum: 484 Jun
NI maximum: 0

Trend not available

Reported UK totals of Arctic Tern were typical of recent years. No qualifying levels have been set for international nor national importance for Arctic Tern. Table 79 lists all

sites where the peak averages more than 20 birds. The majority of these sites are in Scotland with most recorded counts below the average in 1996-97.

Table 79. ARCTIC TERN: MAXIMUM COUNTS AT MAIN RESORTS

	93-94	94-95	95-96	96-97	Month	Average
Sites with average peak counts of more than 20 birds[†]						
North Ronaldsay	-	-	563	(210)	Jun	563
Lo. Strathbeg	-	10	1,600	3	Apr	538
Tay Est.	(950)	65	130	40	Aug	296
Lo. Indaal	44	(82)	(202)	51	Jun	95
Eden Est.	64	(9)	129	90	Jul	94
Morecambe Bay	-	102	44	105	Jul	84
Ythan Est.	18	59	80	100	Jul	64
Foryd Bay	-	-	-	50	Apr	50
Tees Est.	(106)	39	7	29	Aug	45
Forth Est.	(9)	28	76	15	May	40
Arbroath Coast	-	70	0	40	Aug	37
Dee Est. (Scot)	-	40	55	4	Jul	33
Lo. Gruinart	44	35	4	0	Apr	21

[†] as no 1% threshold has been set for national importance for Arctic Tern in Great Britain, a qualifying level of 20 has been used as the basis for selecting sites for presentation in this report

LITTLE TERN

Sterna albifrons

International Importance: 340
Great Britain Importance: ?
All Ireland Importance: ?

GB maximum: 955 Aug
NI maximum: 0

Trend not available

Recorded UK totals of Little Tern peaked in August 1996 when 955 birds were reported. This value is around the

average of the previous two years when terns were reported for WeBS. Four sites reported counts exceeding

100 birds during 1996-97: Thames Estuary (467, Aug), the Wash (330, Jul), Langstone Harbour (200, Jul) and the Dee Estuary (England/Wales) (145, Aug). Four further sites recorded counts greater than 50 birds. Amongst the total of eight sites with counts exceeding 50 birds only the Dee Estuary (England/Wales) is in W Britain. The qualifying

level for international importance for Little Tern is 340 birds. Although the Thames Estuary exceeded this figure in 1996-97 there are no sites where the average peak reaches this level. A qualifying level for national importance is not currently set.

BLACK TERN *Chlidonias niger*

International Importance: 2,000
Great Britain Importance: ?
All Ireland Importance: ?

GB maximum: 74 Aug
NI maximum: 0

Trend not available

The peak UK total of 74 birds in August 1996 is rather lower than the peaks recorded in the previous two years. Sixteen sites reported counts involving three or more birds and all but four are inland sites, the great majority located in S England. Those sites recording more than five birds were

Rutland Water (35, Aug), Sutton/Lound Gravel Pit (13, Apr), Swale Estuary (12, Aug), Staines Reservoir (10, Apr), Thames Estuary (9, Aug), the Wash (8, Aug) and the Great Pool (Westwood Park) (7, May).

KINGFISHER *Alcedo atthis*

International Importance: ?
Great Britain Importance: ?†
All Ireland Importance: ?†

GB maximum: 335 Sep
NI maximum: 2 Sep/Jan

Trend not available

The 1996-97 peak UK count of 337 birds in September is very close to the previous year's value of 333, also recorded in September and similar to the peak of 274 birds reported in October 1994. Typically Northern Ireland totals never reached double figures during 1996-97. Qualifying levels have not been set for international nor national importance. Instead Table 80 lists all sites where the average peak count exceeds five birds. Most of these sites

are situated in S England and contain a similar number of estuarine and inland sites. Juvenile birds are known to disperse more widely than adults during the autumn and many movements involving this species are an attempt to avoid freezing conditions. Particularly high counts of Kingfisher were made in 1996-97 at the Thames Estuary, where the peak count of 11 birds is 120% greater than the average for this site.

Table 80. KINGFISHER: MAXIMUM COUNTS AT MAIN RESORTS

	93-94	94-95	95-96	96-97	Month	Average
Sites with average peak counts of 5 or more birds†						
Tamar complex	(6)	8	10	9	Sep	9
Lee Valley GP	-	-	-	9	Sep	9
Somerset Levels	7	5	(11)	(10)	Mar	8
Attenborough GP	8	4	5	6	Nov	6
R. Usk: Pencelli	6	7	5	5	Mar	6
Taw/Torridge Est.	(0)	3	8	3	Dec	5
Eversley and Yateley GP	0	9	4	6	Nov	5
Southampton Water	(0)	3	7	(4)	Sep	5
Chichester Hbr	(0)	8	3	5	Sep	5
Stodmarsh	(6)	2	6	4	Oct	5
Thames Est.	1	2	(3)	11	Sep	5
Cheshunt GP	6	(6)	4	-		5
Deben Est.	4	6	7	3	Oct	5
Holme Pierrepont GP	4	3	4	8	Sep	5
Kingsbury WP/Coton Pools	3	5	8	4	Sep	5
Cleddau Est.	3	3	7	5	Oct	5

† as no 1% threshold has been set for national importance for Kingfisher in Great Britain, a qualifying level of 5 has been used as the basis for selecting sites for presentation in this report

PRINCIPAL SITES

Table 81 lists the principal sites in terms of overall waterfowl numbers in the UK as recorded by WeBS, including all internationally important sites. All sites regularly holding a total of at least 10,000 waterfowl (including divers, grebes, Cormorant, herons, wildfowl, waders and rails) and all sites supporting internationally important numbers of one or more species (see Appendix 1), according to average winter maxima calculated over the five-year period 1992-93 to 1996-97, are included. Sites are ranked according to their average winter maxima over the five-year period 1991-92 to 1995-96. Gull and tern numbers are not included in these totals due to the different coverage these species received (see *Data Presentation*).

It is important to note that the ranking of sites given in Table 81 relates to waterfowl numbers, rather than conservation importance (see *Interpretation of Waterfowl Counts*). Also, some sites which may be of critical importance to certain waterfowl species or populations will not be included in this list, for example, sites that are important only in times of severe weather or during migratory periods, or sites that are not covered by WeBS. The locations of the sites in Table 81 are given in Appendix 2 and Figure 3.

The peak counts at each site are calculated by summing the highest count for each individual species during the winter season, irrespective of the month in which it occurred. The table shows the average peak counts at each site over the period 1992-93 to 1996-97, and the peak counts of all waterfowl, wildfowl and waders¹ in 1996-97 in successive columns. For most inland sites, the numbers of waders present have only been recorded for the past four years. A number of wildfowl species, e.g. rare grebes, have also only been recorded for the past four years. Only WeBS Core Counts and the censuses of Pink-footed and Greylag Geese, Greenland White-fronted Geese and Barnacle Geese are included in calculating totals. Additional counts, such as those of sea-ducks on the Moray Firth, made using different methodologies, are not currently incorporated into the WeBS databases. Thus, it should be borne in mind that other sites that are important for certain waterfowl species are not included in the table, whilst the sites listed may be of greater importance for the species listed if additional data were included. The number of Internationally Important Populations (IIP) at each site, and corresponding species codes, are given in the final two columns.

Though the table requires careful interpretation, it does serve to identify many of the UK's important wetlands, and some of the species for which these sites have special value. Readers should refer to the sections on

Interpretation of Waterfowl Counts and Data Presentation for further guidance.

Around 80 WeBS sites continue to hold, on average, more than 10,000 waterfowl and at 40 of these the peak waterfowl totals in 1996-97 were above the average of the past five winters. Careful interpretation is needed to distinguish real trends as opposed to short term fluctuations. Some of these fluctuations might be of considerable magnitude. Of those sites now averaging 20,000 waterfowl 12 registered counts that were at least 30% above or below these averages in 1996-97: Arun Valley (-49%), the Burry Inlet (+48%), Cameron Reservoir (-67%), Colne Estuary (-32%), Hule Moss (+47%), Langstone Harbour (-30%), Martin Mere (-30%), Montrose Basin (-35%), Nene Washes (-43%), North Norfolk Marshes (+39%) and the Somerset Levels (-56%). Increases in the numbers of Knot, a species prone to large annual fluctuations, were responsible in part for the unusually high counts at the Burry Inlet, the North Norfolk Marshes and Strangford Lough, with the North Norfolk Marshes also recording unusually large numbers of Bar-tailed Godwit. Strangford Lough also held unusually large numbers of Dunlin, in contrast to Langstone Harbour and the Colne Estuary, where declining numbers of this species contributed to below average numbers of waterfowl. The numbers of species such as Golden Plover and Lapwing vary at many sites in response to weather conditions. In the Arun Valley and on the Somerset Levels, one or both of these species was responsible for unusually low counts in 1996-97. Fluctuations in the numbers of Pink-footed Geese were responsible for the uncharacteristically high or low numbers of waterfowl at Hule Moss, Cameron Reservoir and in the Montrose Basin. Very large numbers often occur at some sites shortly after their arrival in Scotland and increased site counts are to be expected given the continuing growth in population. However, these transitional birds rarely remain at the site for long, and are easily missed unless the site is constantly monitored during the autumn, accounting for some sites having much lower than average numbers. Below average numbers of waterfowl at both Martin Mere and the Nene Washes were caused by declines in several species. Both sites witnessed unusually low numbers of Pintail and Teal; in addition, counts of Wigeon at Martin Mere were much lower than average, whilst numbers of Pochard on the Nene Washes were considerably down on previous years.

Of those sites averaging between 10,000 and 20,000 waterfowl, two recorded 1996-97 counts more than 30% above their average value. Numbers of waterfowl on the Outer Ards Shoreline were affected by greater numbers of Dunlin and Golden Plover, whilst Pitsford Reservoir held nationally important numbers of Tufted Duck and Shoveler.

¹ "Wildfowl" in Table 81 refers to wildfowl and allies (i.e. including divers, grebes, Cormorant and rails), and "waterfowl" refers to summed counts of wildfowl and waders only (i.e. excluding herons, terns and gulls).

Table 81. PRINCIPAL WATERFOWL SITES IN THE UK, 1992-93 TO 1996-97
based on WeBS Core Counts and surveys of Pink-footed and Greylag Geese only

Site name	5 Yr Mean Waterfowl	1996-97 Waterfowl	1996-97 Wildfowl	1996-97 Waders	IIP [†]	Species codes
The Wash	425,111	278,215	96,160	(182,055)	12	PG, DB, SU, OC, GV, L, KN, DN, BW, BA, CU, RK
Ribble Estuary	276,986	292,793	107,405	185,388	16	BS, WS, PG, SU, WN, T., PT, OC, GV, L, KN, SS, DN, BW, BA
Morecambe Bay	217,963	244,144	38,113	206,031	11	PG, SU, T., OC, GV, KN, DN, BA, CU, RK, TT
Humber Estuary	166,854	(74,919)	(15,697)	(59,222)	7	SU, GP, L, KN, DN, BA, RK
Thames Estuary	163,849	166,939	32,059	134,880	9	DB, OC, RP, GV, KN, DN, BA, RK, TT
Solway Estuary	147,135	148,199	48,638	99,561	10	WS, PG, BY, PT, OC, KN, DN, BA, CU, RK
Dee Estuary	122,782	141,743	28,239	113,504	12	SU, T., PT, OC, GV, KN, DN, BW, BA, CU, RK, TT
North Norfolk Marshes	114,646	159,659	121,233	38,426	6	PG, DB, WN, PT, KN, BA
Mersey Estuary	99,392	114,586	35,299	79,287	5	SU, T., PT, DN, RK
Loughs Neagh/Beg	95,592	101,487	89,005	12,482	7	GG, BS, WS, PO, TU, SP, GN
Forth Estuary	94,997	81,899	40,414	41,485	7	SZ, PG, SU, KN, BA, RK, TT
Blackwater Complete	88,480	81,587	23,558	58,029	6	DB, SU, GV, DN, BW, RK
Somerset Levels	87,221	38,457	19,752	18,705	5	BS, WN, T., SV, L
Loch of Strathbeg	86,840	71,910	69,844	2,066	3	WS, PG, BY
Severn Estuary	83,911	79,857	30,655	49,202	6	BS, SU, PT, DN, CU, RK
Swale Estuary	78,187	100,015	56,086	43,929	6	WN, PT, SV, GV, KN, BW
Montrose Basin	74,793	48,911	37,093	11,818	3	PG, KN, RK
Strangford Lough	66,787	90,403	23,241	67,162	4	PB, KN, BA, RK
Medway Estuary	66,156	64,530	16,870	47,660	8	DB, SU, PT, RP, GV, DN, BW, RK
Ouse Washes	62,737	55,853	47,869	(7,984)	7	BS, WS, WN, GA, PT, SV, BW
Chichester Harbour	54,969	47,635	15,528	32,107	13	DB, RP, GV, DN, BW, BA, RK
Hamford Water	51,985	66,880	32,046	34,834	6	DB, T., RP, GV, BW, RK
Inner Moray Firth	51,396	53,286	24,180	29,106	5	GJ, RM, KN, BA, RK
Stour Estuary	50,140	45,096	9,649	35,447	6	RP, GV, KN, DN, BW, RK
Breydon Water & Berney Marshes	48,791	57,910	10,687	47,223	2	BS, L
Loch Leven	48,513	38,922	38,146	776	2	PG, SV
Lower Derwent Ings	45,399	43,307	25,388	17,919	1	T.
Langstone Harbour	44,416	31,079	9,428	(21,651)	3	DB, GV, DN
West Water Reservoir	44,075	50,879	50,788	91	1	PG
Lindisfarne NNR	43,801	41,925	15,358	26,567	2	GJ, PB
Burry Inlet	42,450	63,001	14,289	48,712	4	PT, SV, OC, KN
Dupplin Lochs	40,040	40,665	40,665	-	1	PG
Duddon Estuary	39,597	35,029	6,704	28,325	3	PT, KN, RK
Colne Estuary	39,397	26,984	8,227	18,757	2	DB, RK
Alt Estuary	39,312	50,355	2,409	47,946	4	KN, BA, RK, TT
Abberton Reservoir	39,292	34,335	29,932	4,403	2	GA, SV
Lough Foyle	36,416	37,305	16,804	(20,501)	4	SZ, WS, PB, BA
Cromarty Firth	35,596	33,795	17,622	(16,173)	5	WS, PG, GJ, KN, BA
Poole Harbour	33,176	32,697	14,534	18,163	2	SU, BW
Sw Lancashire Mosses	32,318	41,680	41,680	-	1	PG
Dinnet Lochs	31,633	27,095	27,095	-	1	GJ
Dengie Flats	31,453	35,913	3,367	32,546	3	GV, KN, BA
Dornoch Firth	29,512	29,665	16,673	(12,992)	3	GJ, WN, BA
Carmarthen Bay	27,341	22,144	3,351	18,793		
Hule Moss	27,131	39,817	39,812	5	1	PG
Alde Complex	26,996	27,222	14,523	12,699	1	RK
Nene Washes (Complete)	26,770	15,182	12,329	2,853	2	BS, PT
Orwell Estuary	26,341	23,519	8,280	15,239	1	RK
Rutland Water	26,197	25,297	22,520	2,777	2	GA, SV
Crouch-Roach Estuary	25,872	18,369	10,359	8,010	1	DB
Ythan Estuary	25,259	11,108	4,098	7,010	1	PG
Martin Mere	24,756	17,285	15,711	1,574	4	BS, WS, PG, PT
Cameron Reservoir	23,286	7,599	7,122	477	1	PG
Tees Estuary	22,970	21,544	6,519	15,025	1	KN
Carsebreck and Rhynd Lochs	22,864	16,057	15,341	716	1	PG
Exe Estuary	22,693	18,684	7,839	10,845		
Inner Firth Of Clyde	22,105	22,971	10,104	12,867	1	RK
Belfast Lough/Harbour	20,715	17,511	4,383	13,128	2	RK, TT
Southampton Water	20,389	17,101	8,341	8,760	1	BW
Arun Valley	20,373	10,386	9,581	805		

Site name	5 Yr Mean Waterfowl	1996-97 Waterfowl	1996-97 Wildfowl	1996-97 Waders	IIP†	Species codes
Outer Firth Of Tay	20,244	23,619	15,283	(8,336)	2	PG, BA
Wigtown Bay	19,071	23,124	17,266	(5,858)	1	PG
Slains Lochs	18,408	17,400	17,400	-	1	PG
Walland Marsh	18,267	18,267	11,532	6,735	1	BS
Fleet/Wey	18,147	15,807	14,521	1,286	1	DB
Cleddau Estuary	17,822	21,614	7,855	13,759		
Pagham Harbour	17,357	19,384	10,008	9,376	1	PT
Deben Estuary	17,091	19,923	8,856	11,067	1	RK
Loch of Skene	16,180	13,976	13,976	-	2	WS, GJ
Outer Ards Shoreline	15,842	21,838	1,719	20,119	2	PB, TT
Eden Estuary	15,388	11,398	4,659	6,739	1	GJ
North-West Solent	14,988	13,469	7,066	6,403		
Beaulieu Estuary	13,858	16,361	6,927	9,434		
Lavan Sands	13,533	15,367	2,902	12,465		
Taw/Torridge Estuary	13,378	14,629	4,206	10,423		
Tamar Complex	12,750	9,309	2,863	6,446		
Blyth Estuary (Suffolk)	12,420	13,568	3,343	10,225		
Dyfi Estuary	12,303	12,498	7,230	5,268		
Portsmouth Harbour	12,116	11,163	4,224	(6,939)		
Cotswold Water Park (West)	11,145	9,278	6,960	2,318		
Dungeness Gravel Pits	11,099	11,583	9,238	2,345		
Loch of Harray	11,053	8,139	7,436	703		
Hanningfield Reservoir	10,803	13,586	11,806	1,780		
Thanet	10,364	5,927	2,181	3,746	1	TT
Pitsford Reservoir	10,252	13,737	9,850	3,887	1	GA
Chew Valley Lake	9,923	9,711	9,326	385	1	SV
Haddo House Lakes	9,351	9,256	9,256	0	1	GJ
Drummond Pond	8,756	8,698	8,688	10	2	PG, GJ
Loch Fleet Complex	8,636	7,241	3,793	3,448	1	GJ
Upper Lough Erne	8,431	9,659	6,922	2,737	1	WS
Gladhouse Reservoir	8,242	14,153	14,110	43	1	PG
Loch Spynie	8,026	6,488	6,488	-	1	GJ
Kinnordy Loch	7,768	4,889	4,784	105	1	PG
Mid Avon Valley	7,617	7,188	6,698	490	1	GA
St Benets Levels	7,602	4,543	1,380	3,163	1	BS
Carlingford Lough	7,294	7,446	2,391	(5,055)	1	PB
Lee Valley Gravel Pits	6,283	6,199	5,584	615	1	GA
Wraysbury Gravel Pits	5,574	6,100	6,100	0	1	GA
Crombie Reservoir	5,559	0	-	-	1	PG
Loch of Lintrathen	5,508	4,657	4,625	32	1	GJ
Upper Cowgill Reservoir	5,308	6,060	6,060	-	1	PG
Alloa Inch	5,268	-	-	-	1	PG
Fala Flow (Confidential)	4,682	5,000	5,000	-	1	PG
Larne Lough	3,933	4,061	2,352	1,709	1	PB
Lower Bogrotten	3,853	850	850	-	1	GJ
Forth and Teith Valleys	3,703	-	-	-	1	PG
Glenfarg Reservoir	3,560	0	-	-	1	PG
Loch Tullybelton	3,551	4,658	4,658	-	1	PG
Holburn Moss	3,336	2,310	2,310	-	1	GJ
King George VI Reservoir	3,308	1,735	1,734	1	1	SV
Monikie Reservoirs	3,190	1,548	1,457	91	1	GJ
Strathearn	2,698	2,730	2,730	-	1	GJ
Castle Loch Lochmaben	2,316	1,108	1,052	56	1	PG
R. Spey: T'gorum to Boat of Balliefirth	2,215	-	-	-	1	GJ
R. Eamont: Watersmeet - Pooley Bridge	2,154	-	-	-	1	GJ
Loch Garten and Mallachie	2,073	-	-	-	1	GJ
Fincastle Loch	1,997	-	-	-	1	GJ
Loch Clunie	1,914	1,675	1,598	77	1	GJ
Loch Ken	1,807	1,825	1,520	(305)	1	NW
R. Tay: Dunkeld	1,400	-	-	-	1	GJ
Corby Loch	1,346	-	-	-	1	GJ
Loch of Lowes	1,334	234	234	0	1	GJ
R. Tay: Scone	1,082	1,050	1,050	-	1	GJ
Tyrella	495	-	-	-	1	PB
Killough Harbour	487	-	-	-	1	PB
Machrihanish	426	41	41	-	1	NW
R. Foyle: Grange	326	387	387	-	1	WS

Site name	5 Yr Mean Waterfowl	1996-97 Waterfowl	1996-97 Wildfowl	1996-97 Waders	IIP [†]	Species codes
Rhunahaorine					1	NW
Colonsay					1	BY
Tiree					3	NW, GJ, BY
Tay-isla Valley					2	PG, GJ
South Walls (Hoy)					1	BY
Keills Peninsular & Isle of Danna					1	NW, BY
Bute (Geese)					1	GJ
Moray Firth					1	SZ
Stranraer Lochs					1	NW, GJ
Caithness (Geese)					1	G

Note that no count data are presented for the last 11 sites in Table 81. These are areas important for geese or swans, but for which WeBS data is not regularly received. Data for any important WeBS sites within these areas, e.g. Lochs Gruinart and Indaal on the island of Islay, are presented separately in Table 70.

- indicates that no count is available

() indicates that no complete count was obtained during 1994-95 and that the count presented here is incomplete

† Internationally Important Populations

NB Not every species covered by WeBS has a corresponding qualifying threshold for international importance (see Appendix 1). Hence these species do not feature in this table

Species codes

AV	Avocet	LN	Long-tailed Duck
BA	Bar-tailed Godwit	LP	Little Ringed Plover
BS	Bewick's Swan	MA	Mallard
BW	Black-tailed Godwit	MS	Mute Swan
BY	Barnacle Goose	NW	Greenland White-fronted Goose
CA	Cormorant	OC	Oystercatcher
CG	Canada Goose	PB	Light-bellied Brent Goose
CO	Coot	PG	Pink-footed Goose
CU	Curlew	PO	Pochard
DB	Dark-bellied Brent Goose	PT	Pintail
DN	Dunlin	RK	Redshank
E	Eider	RM	Red-breasted Merganser
EW	European White-fronted Goose	RP	Ringed Plover
GA	Gadwall	SP	Scaup
GD	Goosander	SS	Sanderling
GG	Great Crested Grebe	SU	Shelduck
GJ	Greylag Goose	SV	Shoveler
GN	Goldeneye	T	Teal
GP	Golden Plover	TT	Turnstone
GV	Grey Plover	TU	Tufted Duck
KN	Knot	WM	Whimbrel
L	Lapwing	WN	Wigeon
LG	Little Grebe	WS	Whooper Swan

WeBS Low Tide Counts

INTRODUCTION

WeBS Low Tide Counts aim to monitor, assess and regularly update information on the relative importance of intertidal feeding areas of UK estuaries for wintering waterfowl. They provide information on the numbers of waterfowl feeding on individual sections of intertidal habitat within estuaries. Individual estuaries aim to be covered at least once every seven years. Coordinated counts of feeding and roosting waterfowl are made by volunteers each month between November and February on pre-established subdivisions of the intertidal habitat in the period two hours either side of low tide. The counts are thus complementary to the long-established WeBS Core Counts, which provide accurate counts of whole estuary populations and should generally be used in any assessment of the national and international importance of a site. WeBS Low Tide Counts provide the crucial information needed to assess the potential effects on waterfowl populations of a variety of human activities which affect the extent or value of intertidal habitats. Proposals for recreational and tidal power barrages, marinas and housing schemes comprise more than half of the present land claim proposals in Britain. Land claim has been widespread, cumulative and piecemeal and has affected most British estuaries (Davidson & Evans 1986, Davidson *et al.* 1991, pg 358). The data provided by the scheme will greatly contribute to the conservation of waterfowl by providing supporting information for the network of Ramsar sites and Special Protection Areas (SPAs), other site designations and whole estuary conservation plans. In addition, WeBS Low Tide Counts enhance our knowledge of the low water distribution of waterfowl and provide the data that highlight regional variations in phenology and habitat use.

DATA INTERPRETATION AND PRESENTATION

In 1996-97, the Alt Estuary, the Beaulieu Estuary, Belfast Lough, the Burry Inlet, Chichester Harbour, the Conwy Estuary, the Dee Estuary (England/Wales), Dundrum Bay, Findhorn Bay, the Medway Estuary, the Mersey Estuary, the Orwell Estuary, Pagham Harbour, Southampton Water, the Stour Estuary, Strangford Lough and the Tees Estuary were covered. Unfortunately, data from Strangford Lough were received too late for incorporation in this report, but this site has been well described in previous reports. In addition, a one-off co-ordinated low tide count of the whole of the Greater Solent area was carried out on 18-19 January 1997, although the results from this count are not presented below due to differing methodology. Data for each of the remaining estuaries covers the period November to February inclusive. The use of densities, rather than numbers, enables the distribution of birds across individual mudflats to be assessed. WeBS Low Tide Counts, which provide a "snapshot" of waterfowl feeding distribution at low tide during the winter, are designed to

give an indication of the relative importance of each mudflat to each species present within individual estuaries in the winter period. The use of densities rather than numbers enables the distribution of birds across individual mudflats to be described more meaningfully. As with the WeBS Core Counts, the results are presented in summary form, the primary aim being to provide feedback to WeBS counters and to inform others of the data that are available.

Tables 82 & 83 tabulates three statistics for the 18 most numerous waterfowl species present on the estuaries covered during the 1996-97 winter. Two measures of mean density are presented for each species. The first, the mean density for the whole site, is the sum of the mean counts for every mudflat, divided by the total surveyed intertidal area. The second, the mean density for the occupied mudflats, is the sum of the mean counts divided by the combined area of only those mudflats on which that species was recorded. The maximum density on any mudflat for any month is also given for each species.

ESTUARY ACCOUNTS

The following accounts describe the results of the WeBS Low Tide Counts carried out on 17 estuaries during the 1996-97 winter. Individual species accounts are not given because, unlike WeBS Core Counts, results are available from relatively few estuaries. In each case, a list of nationally and internationally important species present, based on Core Counts, and a description of the estuary are given. This is followed by an outline of the key results. Distribution maps are given for the two most significant species present on each estuary. In deciding which maps to present, internationally important species were ranked above nationally important species, which were in turn ranked above species present in numbers less than those required for national importance. In the case of equal levels of importance, the species with the greatest percentages of their national populations were usually chosen. However, maps are not presented for grebes or sea-ducks which are not adequately counted by WeBS Low Tide Counts.

The maps depict a representation of the count units used, with bolder lines illustrating the mean high tide mark. In most cases, this is coincident with the boundary of a count unit. However, in the few cases where a single count unit takes in both intertidal and non-tidal substrates, a dotted line has been used to depict the continuation of the high water mark. For clarity, many of the locations mentioned in the site descriptions are depicted in abbreviated form on the maps; these abbreviations are included in the text in parentheses following the first mention of the relevant location name.

ACKNOWLEDGEMENTS

The following counters took part in the WeBS Low Tide Counts during the winter of 1996-97; apologies for anyone who may inadvertently have been missed.

Wendy & Keith Alexander, Barry Allan, David Andrews, Graham Appleton, MFM Bamford, Duncan Bell, R & M Biddle, Roger Bigg, Lois Bingley, Martin Blick, Keith Blomerley, Sally Brakes, Jonathan Britton, Dave Burges, Jeremy Burgess, Keith Burn, Eric Burrows, Cyril Burton, Peter Carr, Alex Carroll, Hans Carse, Eve Catlett, Paul Charlton, Alan Claxton, Carl Clee, Lesley Coates, Heather Coats, Barry Collins, Clive Collins, Barry Crawford, Mike Creighton, Steve Cross, Curly Curtis, Richard d'Orfe, Anne de Potier, John Dedman, Stephen Dixon, Frances Donnan, Pete Durnell, Michael Ellison, Ian Enlander, Rhian Evans, Wilton Farrelly, Brian Fellows, Andy Foster, Jack Garstang, Chris and Maureen Gibson, Jenny Gill, John Glazebrook, Bob Gomes, Andrew Gouldstone, Neil Griffiths, David Hale, Phil Halliwell, Ian Hawkins, Tony Heath, NR Hider, Ian Higginson, Stuart Hinley, Paul Hirst, Ralph Hollins, Paul Holmes, Bob Howells, Martin Humphreys, Martyn Jamieson, Philip Johnston, Steve Jones, Graeme Joynt,

Geoff Kelso, Simon King, BR Knight, Bill Last, Mike Leakey, Russell Leavett, Jim Lee, S Lewis, Paddy Livingstone, Bob Lord, Kerry Mackie, Paddy Mackie, Trevor Manship, CF & SM Mason, Pete Maton, Russell McAndrew, Niall McCutcheon, Ken McGregor, Andrew McInnes, Jim McNair, Dougal McNeill, Ivor McPherson, Graham Megson, John Mellor, David Morris, Roger Morris, Peter & Sue Morrison, Gary Mortimer, Nigel Odin, Tom Oliver, James Orr, Geoff Orton, Jess Pain, Mark Painter, Mark Palmer, Andy Parfitt, Alan Parker, Tony Parker, Terry Paton, Colin Peake, Bryan Pinchen, Pete Potts, Roy & Ivy Poulter, Eric Rainey, WE Richardson, Graham Roberts, James Robinson, Adam Rowlands, Graham Rutt, Brian Savage, Jan Schubert, DJG Scott, Vicky Seager, Chris Sharp, David Sharrod, Pearson Silburn, Mark Smith, Celia Spouncer, Len Stewart, David Thompson, Kevin Thornton, A Thorpe, Hugh Thurgate, Jack Toney, John Turner, Chris Tyas, Robin Ward, Colin Wells, Jo Whatmough, Nigel Williams, Richard Williamson, Dave Wilson, Jim Wilson, David Wimpess, HS Wingfield-Hayes, Bill & Ingrid Woodburn, Ken & Joan Wright, and Mick Wright.

Species	Alt Estuary			Beaulieu Estuary			Belfast Lough			Burry Inlet		
	Density (whole)	Density (occ.)	Max. density	Density (whole)	Density (occ.)	Max. density	Density (whole)	Density (occ.)	Max. density	Density (whole)	Density (occ.)	Max. density
Brent Goose	-	-	-	1.0	2.2	35.0	+	0.1	0.3	0.2	0.6	3.9
Shelduck	0.1	0.2	0.9	0.1	0.2	0.4	0.8	2.0	26.7	0.2	0.3	19.4
Wigeon	-	-	-	3.4	4.0	108.8	0.1	8.2	9.0	0.4	0.6	19.9
Teal	-	-	-	1.7	2.3	47.1	0.3	1.1	19.7	+	0.2	2.3
Mallard	0.1	0.5	3.0	0.6	0.6	14.3	0.5	1.9	24.2	+	0.1	2.3
Pintail	-	-	-	+	0.1	1.0	-	-	-	0.2	0.6	12.0
Oystercatcher	0.4	0.5	15.7	0.1	0.2	3.7	9.5	10.3	66.0	2.5	3.2	22.3
Ringed Plover	+	0.1	0.8	+	+	0.2	0.1	0.3	2.3	+	0.1	0.9
Golden Plover	0.1	0.6	1.7	0.1	0.6	1.3	+	0.2	0.5	0.1	0.5	2.4
Grey Plover	0.3	0.6	2.6	0.1	0.2	1.5	+	+	+	+	0.1	0.6
Lapwing	0.2	0.8	2.1	0.6	0.7	6.4	2.3	8.2	250.0	0.4	0.8	10.8
Knot	2.7	5.6	32.3	-	-	-	0.3	1.0	5.0	0.3	0.6	8.5
Dunlin	1.6	2.3	12.8	1.4	4.3	7.7	2.9	6.1	55.8	1.5	2.1	17.5
Black-tailed Godwit	-	-	-	+	+	+	0.5	2.5	12.0	+	0.1	3.2
Bar-tailed Godwit	0.3	0.5	6.1	+	0.1	0.1	0.1	0.2	2.0	+	+	1.4
Curlew	0.2	0.3	1.3	0.4	0.4	0.9	1.0	1.4	8.7	0.1	0.1	8.2
Redshank	0.4	0.4	4.0	0.1	0.1	0.5	3.2	3.4	24.9	0.1	0.1	9.8
Turnstone	+	0.1	0.7	+	1.0	1.8	0.4	0.6	4.6	+	+	0.1

Species	Chichester Harbour			Conwy Estuary			Dee Estuary			Dundrum Bay		
	Density (whole)	Density (occ.)	Max. density	Density (whole)	Density (occ.)	Max. density	Density (whole)	Density (occ.)	Max. density	Density (whole)	Density (occ.)	Max. density
Brent Goose	2.0	2.1	50.0	-	-	-	+	+	+	0.3	0.3	1.6
Shelduck	0.4	0.4	4.8	0.1	0.3	1.0	0.3	0.4	6.6	0.2	0.2	1.3
Wigeon	0.3	0.9	42.8	0.2	0.4	4.4	0.1	0.3	10.5	1.2	1.3	8.6
Teal	0.2	0.3	7.8	0.1	0.5	5.3	0.4	3.2	28.3	-	-	-
Mallard	0.1	0.2	2.8	0.1	0.3	2.3	0.1	0.2	1.4	0.1	0.2	0.7
Pintail	+	0.1	10.0	-	-	-	0.2	0.7	2.3	+	+	0.1
Oystercatcher	0.4	0.4	4.3	1.5	1.5	5.1	2.4	2.8	41.4	2.6	2.6	5.3
Ringed Plover	+	+	1.0	+	+	+	+	+	0.6	0.1	0.1	0.3
Golden Plover	0.2	1.0	34.0	-	-	-	+	+	0.2	-	-	-
Grey Plover	0.2	0.2	13.1	-	-	-	0.3	0.6	18.9	+	+	0.2
Lapwing	0.3	0.7	22.7	0.3	0.8	9.2	0.3	1.4	12.2	2.1	2.4	12.2
Knot	0.3	1.2	6.7	-	-	-	3.1	6.3	75.8	-	-	-
Dunlin	3.8	4.3	72.7	+	+	0.2	2.7	3.4	106.1	2.2	2.5	13.0
Black-tailed Godwit	0.2	0.3	10.0	+	+	+	0.1	0.6	12.0	+	0.1	0.3
Bar-tailed Godwit	0.1	0.5	4.9	-	-	-	0.6	4.0	42.5	+	+	0.2
Curlew	0.2	0.2	16.7	0.2	0.2	2.9	0.2	0.2	4.7	0.6	0.6	4.2
Redshank	0.3	0.3	8.8	0.3	0.8	3.6	0.3	0.3	5.3	0.5	0.5	1.7
Turnstone	+	+	0.9	-	-	-	+	0.2	1.4	+	+	0.5

Table 82. Mean density for whole sites, mean density for occupied mudflats and maximum densities (birds ha⁻¹) for each of the 18 most numerous waterfowl species present on the estuaries covered by the WeBS Low Tide Count scheme during the 1996-97 winter. "+" indicates densities of less than 0.1 birds ha⁻¹. "-" indicates that no birds were noted.

Species	Findhorn Bay			Medway Estuary			Mersey Estuary			Orwell Estuary		
	Density (whole)	Density (occ.)	Max. density	Density (whole)	Density (occ.)	Max. density	Density (whole)	Density (occ.)	Max. density	Density (whole)	Density (occ.)	Max. density
Brent Goose	-	-	-	0.3	0.4	4.0	-	-	4.0	0.7	1.5	6.8
Shelduck	+	+	0.2	1.0	1.0	11.4	0.6	0.6	11.4	0.9	0.9	58.0
Wigeon	1.1	1.7	4.8	0.8	1.1	10.9	2.7	4.8	10.9	2.1	2.1	44.0
Teal	+	+	+	0.3	0.5	7.5	1.9	2.5	7.5	0.5	1.1	37.0
Mallard	0.2	0.2	2.9	0.1	0.2	2.1	0.3	0.4	2.1	0.6	0.6	150.0
Pintail	+	0.1	0.1	0.2	1.0	5.2	+	0.2	5.2	0.2	0.2	1.4
Oystercatcher	0.9	0.9	7.7	0.5	0.5	3.5	0.4	1.5	3.5	0.9	1.0	7.3
Ringed Plover	+	+	0.1	0.1	0.2	2.1	+	0.5	2.1	0.2	0.2	3.0
Golden Plover	+	0.1	0.3	+	0.4	1.1	0.8	3.6	1.1	+	+	0.2
Grey Plover	-	-	-	0.4	0.4	5.0	0.1	0.3	5.0	0.2	0.2	1.5
Lapwing	-	-	-	0.5	0.9	20.9	2.6	6.4	20.9	1.3	1.7	130.0
Knot	0.2	0.3	2.7	0.5	1.3	12.4	+	+	12.4	0.8	2.3	7.9
Dunlin	2.7	3.5	17.6	5.9	6.0	30.1	11.9	21.6	30.1	7.8	7.8	34.2
Black-tailed Godwit	-	-	-	0.1	0.2	2.0	0.2	0.7	2.0	0.2	0.3	2.1
Bar-tailed Godwit	0.4	0.6	5.4	+	+	0.3	-	-	0.3	-	-	-
Curlew	0.2	0.2	1.7	0.2	0.2	3.6	0.4	0.4	3.6	0.7	0.7	2.7
Redshank	0.3	0.3	2.8	0.6	0.6	5.7	1.0	1.2	5.7	2.4	2.6	32.9
Turnstone	+	0.1	1.1	+	+	0.3	0.4	11.3	0.3	0.1	0.1	0.7

Species	Pagham Harbour			Southampton Water			Stour Estuary			Tees Estuary		
	Density (whole)	Density (occ.)	Max. density	Density (whole)	Density (occ.)	Max. density	Density (whole)	Density (occ.)	Max. density	Density (whole)	Density (occ.)	Max. density
Brent Goose	2.0	3.4	31.7	0.6	0.7	15.6	0.6	0.7	22.0	-	-	-
Shelduck	0.4	0.7	7.4	0.1	0.2	1.9	1.0	1.1	12.8	0.9	1.6	9.3
Wigeon	3.8	7.2	72.0	0.9	1.3	12.4	1.9	2.0	97.0	1.0	2.5	18.8
Teal	2.2	3.5	83.0	0.8	1.6	21.7	0.1	0.3	3.4	0.3	0.9	8.0
Mallard	0.8	1.2	42.0	0.1	0.2	41.0	0.2	0.2	9.0	0.1	0.1	2.5
Pintail	1.6	5.1	33.7	+	0.4	0.6	0.3	0.5	6.2	+	+	0.1
Oystercatcher	0.3	0.8	3.6	0.7	0.8	11.1	0.7	0.7	7.1	1.0	1.2	19.2
Ringed Plover	0.1	0.2	5.3	0.1	0.1	1.4	0.1	0.1	3.8	0.1	0.2	2.3
Golden Plover	0.4	3.4	17.8	0.3	1.7	7.1	0.4	1.2	27.3	+	1.1	4.5
Grey Plover	2.0	3.1	21.6	0.2	0.2	1.8	0.9	0.9	13.9	0.3	0.5	3.1
Lapwing	1.1	3.0	60.8	0.6	1.2	7.3	1.8	2.1	51.7	0.7	4.2	31.3
Knot	0.2	0.7	7.0	+	+	+	1.8	2.6	34.8	1.2	1.8	19.8
Dunlin	9.3	14.9	221.0	2.8	2.9	25.9	7.4	7.6	82.1	1.9	2.5	45.4
Black-tailed Godwit	0.1	0.3	4.0	0.1	0.2	1.0	1.1	1.3	19.7	+	0.2	0.4
Bar-tailed Godwit	0.2	0.5	3.5	+	+	0.1	+	0.1	5.0	0.3	0.5	6.4
Curlew	0.6	0.6	9.0	0.3	0.3	2.2	0.4	0.5	3.9	0.3	0.5	3.1
Redshank	0.7	1.0	17.0	0.3	0.3	5.8	1.3	1.3	20.0	1.1	1.2	7.2
Turnstone	0.4	1.1	10.9	0.1	0.1	2.6	0.1	0.2	1.5	0.1	0.1	4.4

Table 83. Mean density for whole sites, mean density for occupied mudflats and maximum densities (birds ha⁻¹) for each of the 18 most numerous waterfowl species present on the estuaries covered by the WeBS Low Tide Count scheme during the 1996-97 winter. "+" indicates densities of less than 0.1 birds ha⁻¹. "-" indicates that no birds were noted.

ALT ESTUARY

Merseyside

Internationally important species:

Knot, Bar-tailed Godwit, Redshank, Turnstone

Nationally important species:

Cormorant, Grey Plover, Sanderling

Site description

The River Alt is a small river which emerges as a creek on this section of the shoreline of Liverpool Bay, between the Ribble and the Mersey. The majority of the site is rather sandy in character, although it is somewhat muddier around the river outlet where there are also rocky training walls. A large area of saltmarsh used to be present at the mouth of the Alt but was lost to land claim, largely in the early 19th century. The whole site is backed by an important dune system, although the southern part of this has largely been lost to housing and dock development at Crosby (Pritchard *et al.* 1992).

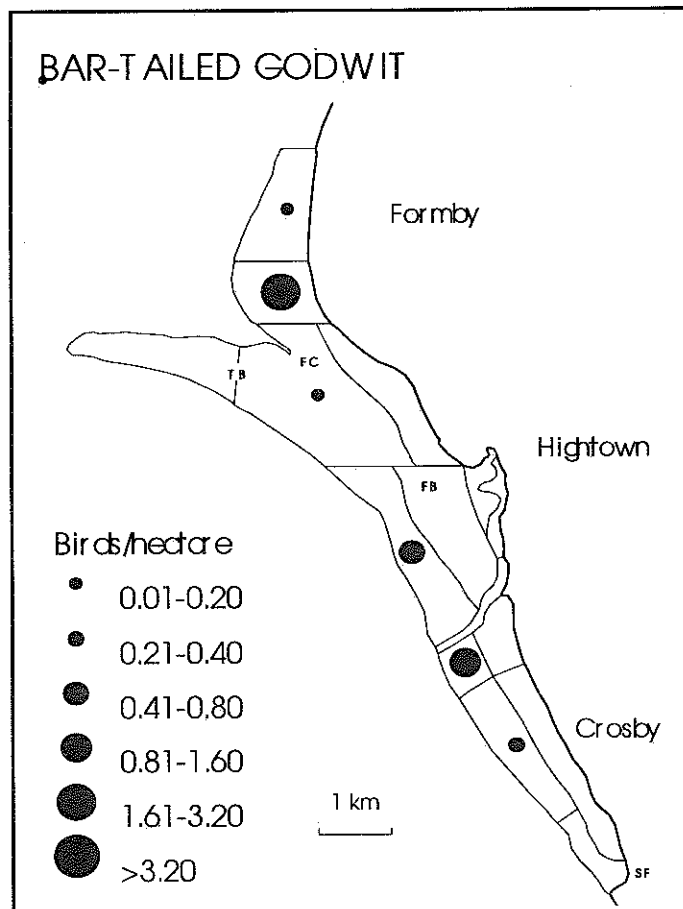
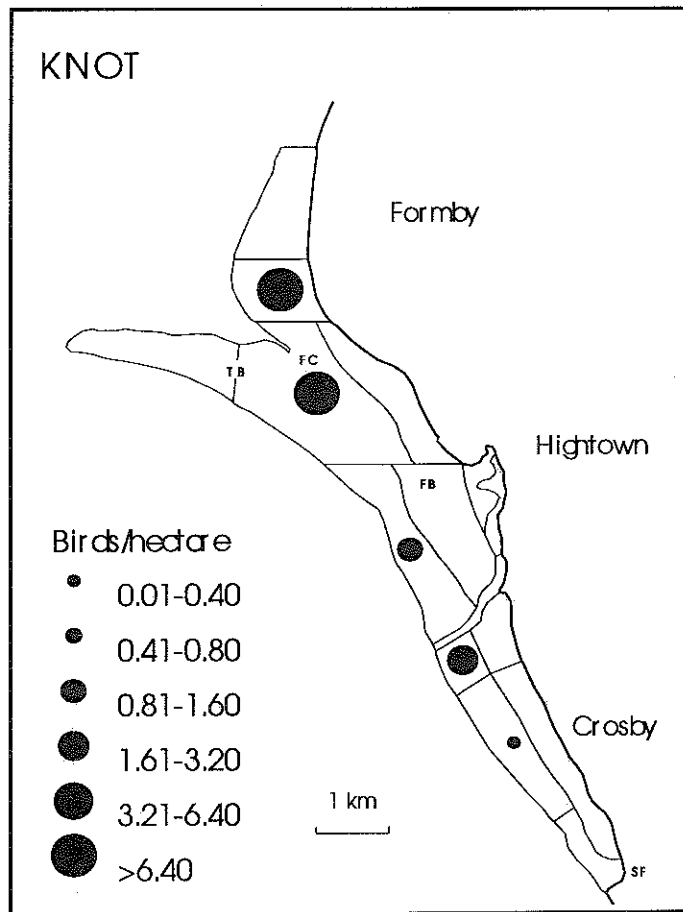
Bird distribution

Although the River Alt itself is relatively small, the numbers of waterfowl wintering on this estuary are disproportionately large. Numbers can vary greatly, however, between counts since there is much movement between the Alt and the nearby North Wirral shore (which is counted as part of the Dee Estuary for WeBS). For example, during the WeBS Low Tide Counts at the Alt, 788 Knot were counted in December 1996, followed by none at all in January 1997, before a much higher count of 11,200 in February 1997. The distribution of Knot on the Alt is shown in the accompanying figure, with the highest densities on the northern sandflats and mainly away from the land. Grey Plover displayed a very similar pattern of occurrence. The distribution of Bar-tailed Godwits, illustrated in the accompanying figure, was also similar except that there was less of a concentration in the Formby channel area (FC). The number of Bar-tailed Godwits recorded at low tide (a mean of 437 birds) was much

smaller than the internationally important numbers roosting here (over 9,000 were recorded here in January 1997 during WeBS Core Counts), and this species was probably travelling across to the North Wirral shore to feed in large numbers.

The highest densities of Sanderlings were found in the northern parts of the site, although concentrations were also found in the south nearer to Seaforth (SF). Dunlins and Curlews were much more uniform in distribution. Oystercatchers favoured the areas close to the river, as well as to the west of Formby. Redshanks also occurred in high densities around the river, as well as to the south. The only wader species which was found almost exclusively in the south of the site was Ringed Plover. Both Lapwing and Golden Plover roosted north of the river, on Formby Bank (FB), at low tide. Turnstones showed a preference for two areas: the northern flats and the rocky areas alongside the River Alt.

The Alt Estuary is not a particularly important site for wildfowl (although there are nationally important flocks of Common Scoter offshore and Pink-footed Geese feed on the fields inland from the estuary) and the most numerous species was the Shelduck. These were concentrated on Formby Bank although numbers were relatively small. Otherwise, Mallards were concentrated along the River Alt. The number of Cormorants using the estuary reaches national importance levels, with this species being recorded on the outer parts of Taylor's Bank (TB), Formby Bank and near Seaforth.



BEAULIEU ESTUARY**Hampshire****Internationally important species:**

None

Nationally important species:

Dark-bellied Brent Goose, Grey Plover, Black-tailed Godwit

Site description

The Beaulieu River rises in the New Forest and enters the western Solent at Needs Oar Point (NO), a very important site for breeding terns and Black-headed Gulls. From the village of Beaulieu down as far as Bucklers Hard (BH) the river has narrow muddy banks. Further down, saltmarsh begins to develop and becomes extensive at the mouth of the estuary. For the purposes of the low tide counts, the shore of the Solent for about 3 km west from Needs Oar Point was also counted, as were the associated inland fields backing this area. There is relatively little disturbance to the Beaulieu Estuary, with the only potential problems being with boating and wildfowling (Buck 1997a, Pritchard *et al.* 1992).

Bird distribution

The Solent as a whole is very important for wintering Dark-bellied Brent Geese, and the population using the Beaulieu Estuary is nationally important. At low tide, Brent Geese fed mostly on inland fields to the west of the Beaulieu River and along the adjacent shore, along with a large flock of feral Greylag Geese. Smaller numbers of Canada Geese occurred more widely. Large numbers of Wigeon were also found widely, with the two largest flocks found close to Beaulieu village itself and in the fields to the west of Needs Oar Point. Teal showed a similar widespread distribution but were found in larger numbers at Keeping Marsh (KM) and Lower Exbury (LE). Mallard were widespread along the river. Small numbers of Gadwall and Pintail were also present, and Goldeneyes and Red-breasted Mergansers were to be found at the mouth of the

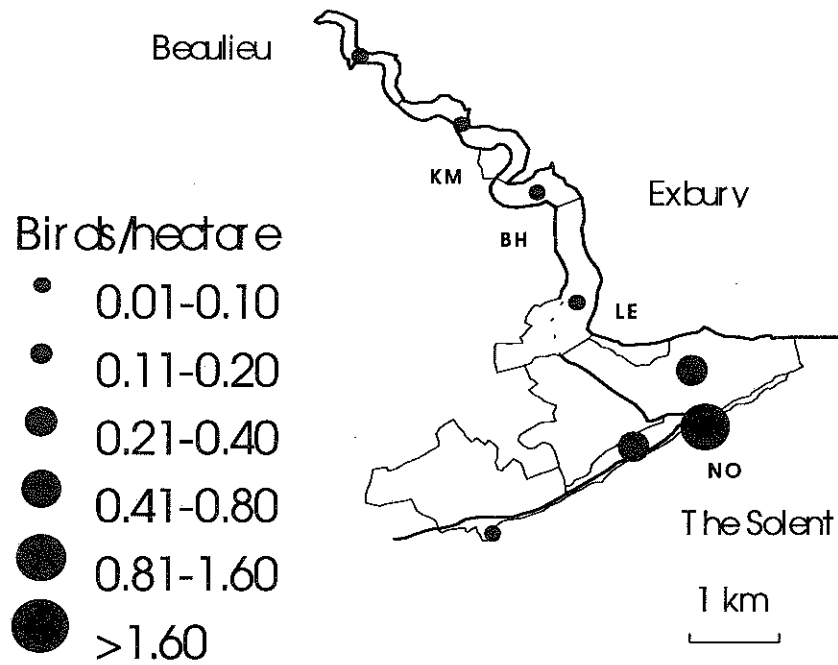
estuary along with a few Great Crested Grebes. Little Grebes, however, were found further upstream, as were Mute Swans.

Of the waders, two species occur in nationally important numbers. Grey Plovers were widespread and found in small numbers all the way up to Beaulieu, but were most numerous at the mouth of the river. Black-tailed Godwits, however, were found in much smaller numbers at low tide than at high tide, with just a few feeding in the inland fields. It would appear that the birds are moving out of the estuary at low tide, either to other parts of the Solent or perhaps to other, uncounted, fields.

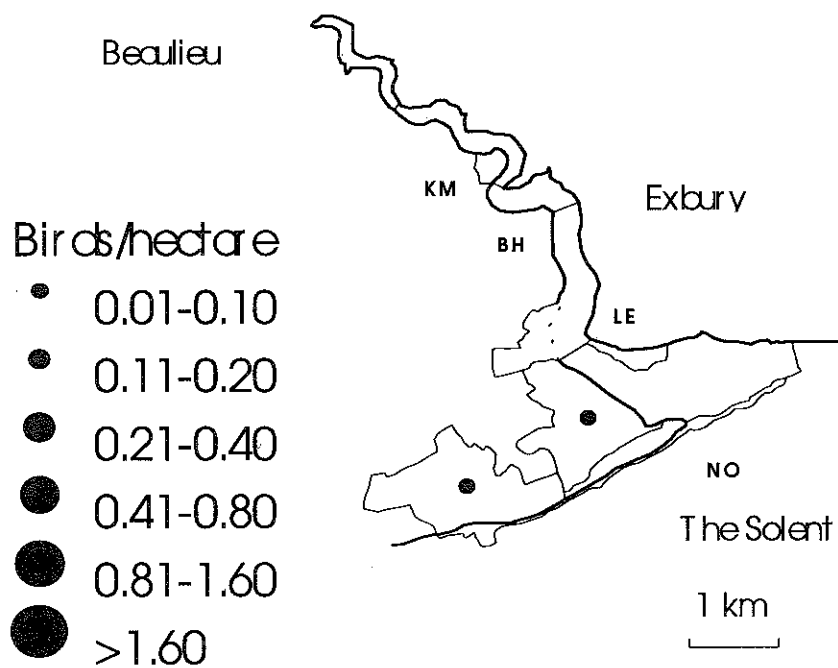
Of the other waders, Redshanks were fairly evenly distributed (in quite small numbers) but Oystercatchers and Dunlins favoured the mouth of the estuary, and Turnstones were found exclusively at Needs Oar. Curlew favoured the fields for feeding, as well as the mouth of the river. Lapwings also preferred the fields, but Golden Plovers were only noted on the saltmarsh at Exbury. Also in the saltmarsh, relatively good numbers of Snipe were noted, with no doubt many more present but not visible. Small numbers of Ringed Plover, Bar-tailed Godwit and Greenshank were also noted.

Little Egrets and Grey Herons were about equally common, with the egrets favouring the shore of the Solent but the herons a little more widespread. Amongst other species, records of two Slavonian Grebes and a Snipe were noteworthy.

GREY PLOVER



BLACK-TAILED GODWIT



BELFAST LOUGH

Co. Antrim / Co. Down

Internationally important species:

Redshank, Turnstone

Nationally important species:

Great Crested Grebe, Shelduck, Mallard, Scaup, Eider, Goldeneye, Red-breasted Merganser, Oystercatcher, Ringed Plover, Knot, Dunlin, Black-tailed Godwit, Bar-tailed Godwit

Site description

Belfast Lough is a large sea lough in the north-east of Ireland, with the city of Belfast at its head. The area surveyed for the 1996-97 low tide counts comprised the coast from Carrickfergus on the north shore around to the eastern end of Bangor on the south shore. The outer parts of the lough's shore are generally rocky with some sandy bays, whereas more extensive areas of intertidal mud are found towards Belfast. Industrial land claim has, however, reduced the area of the mudflats over the last 150 years. More recently, some of the area, including the important Belfast Harbour Pools (BP), has been given a degree of protection. There are also problems of refuse disposal, pollution and general disturbance (Pritchard *et al.* 1992, Buck & Donaghy 1996).

Bird distribution

Maps of the distribution of the two internationally important species at Belfast Lough, Redshank and Turnstone, are very similar to those produced following the 1995-96 fieldwork at this site. Again, Redshanks favoured the south-west corner of the lough with Turnstones most numerous along the southern shore. Both species were widespread within the site however.

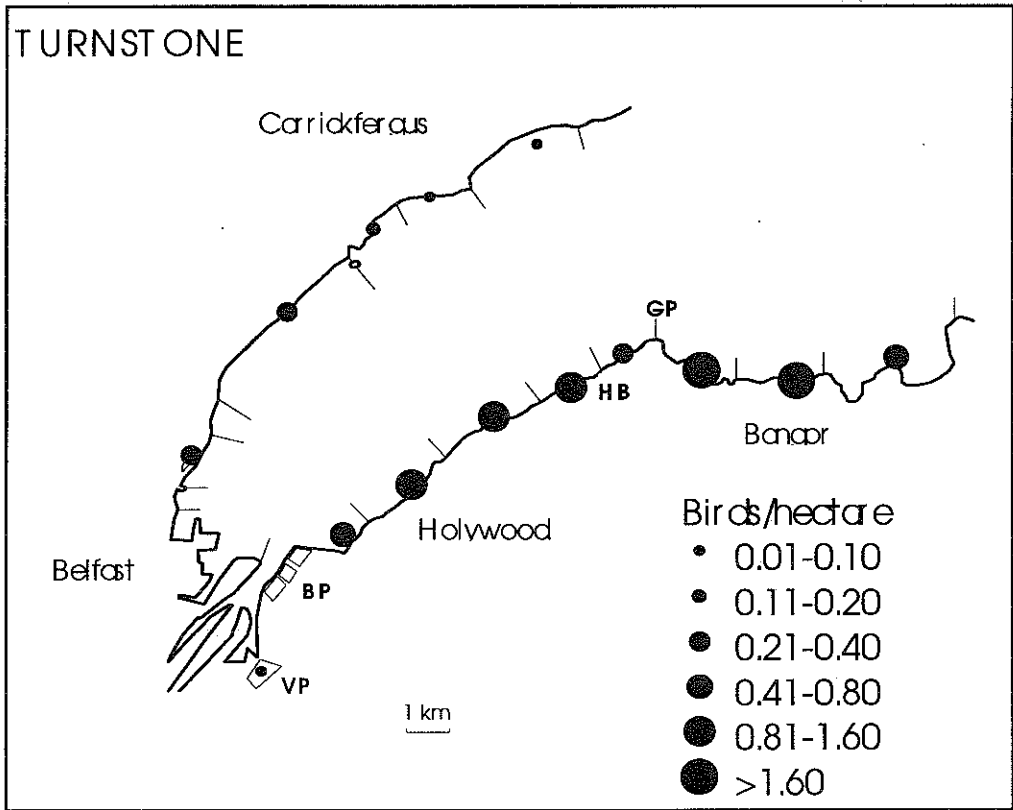
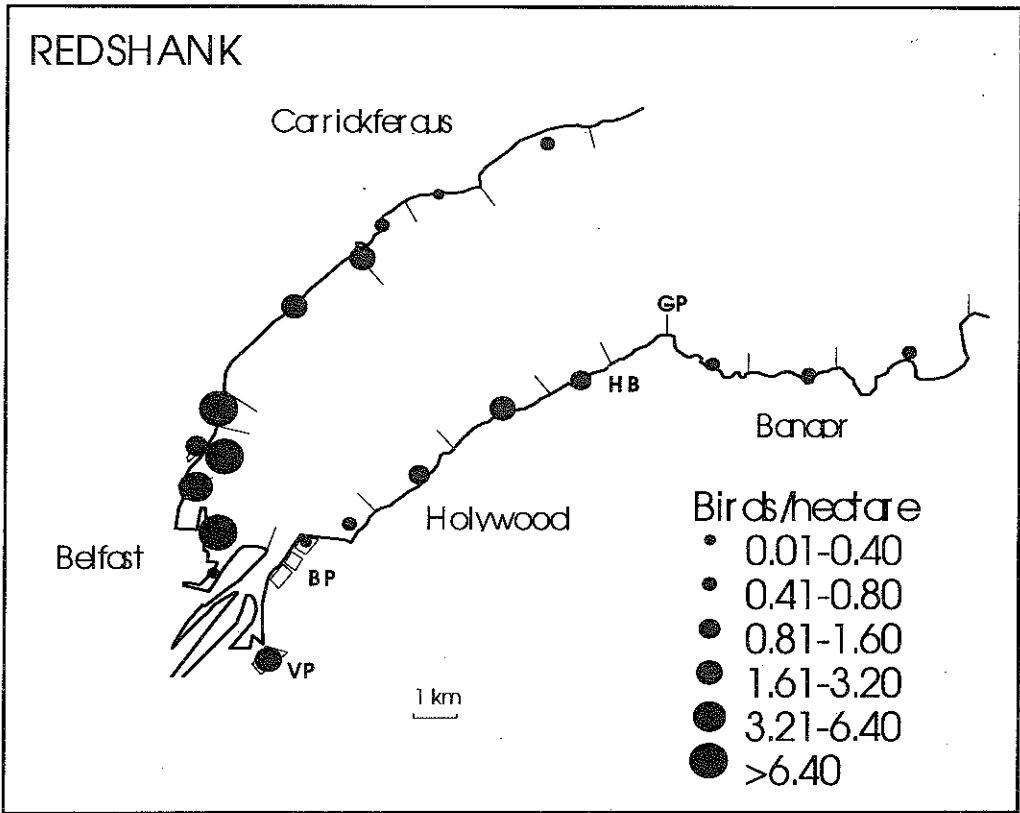
The more extensive mudflats on the inner parts of the lough were again favoured by many species. All of the Knots and Black-tailed Godwits were found in this area, as were many of the Bar-tailed Godwits although the distribution of this species extended further along the northern shore. Dunlins also favoured the inner lough but were also to be found near Bangor. Both Curlews and

Oystercatchers were very widespread, but densities of both species were slightly higher on average on the inner parts of the lough. The largest concentrations of Lapwings were also found on the inner lough. Ringed Plovers were more widely scattered about the lough, and small numbers of Purple Sandpipers were restricted to the Bangor / Helen's Bay (HB) areas. Small numbers of Golden Plover, Grey Plover and Snipe were also recorded.

The majority of the wildfowl were to be found at the southern end of the lough also, with the Belfast Harbour Pools being favoured by most species. Shelducks and Teal were also found on the mudflats around the docks. Mallards, Mute Swans, and naturalised flocks of Canada Geese and Greylag Geese were found at Victoria Park (VP).

As was mentioned in *Wildfowl and Wader Counts 1995-96*, Belfast Lough is of major importance for Great Crested Grebes and sea-duck. An average count of 671 Great Crested Grebes was made during the low tide counts, mostly at the southern end of the lough. Other average totals for more marine species were 84 Shags (mostly east of Grey Point (GP)), 157 Scaup (inner lough), 223 Eider (widely distributed around outer parts of the lough), 188 Goldeneye (mostly inner lough), 66 Red-breasted Mergansers (widespread but more to the inner lough) and small numbers of Long-tailed Ducks, Guillemot, Razorbill and Black Guillemot.

Gulls were widespread, with Black-headed and Herring both very common. Additionally, Glaucous, Iceland and Ring-billed Gulls were recorded at the Belfast Harbour pools. Ring-billed Gull was also noted at Carrickfergus.



BURRY INLET***Carmarthenshire / Glamorgan*****Internationally important species:****Nationally important species:**

Pintail, Shoveler, Oystercatcher, Knot

Shelduck, Dunlin, Black-tailed Godwit

Site description

The Burry Inlet is a wide area of intertidal mudflats between the Gower peninsula to the south and the towns of Llanelli and Burry Port to the north. The inlet is the estuary of the Loughor, a small river draining the hills to the north of Swansea. The upper reaches of the estuary are fairly narrow, but it widens below the Loughor bridge (LB) to form an extensive area of intertidal flats. There is a large area of saltmarsh along almost the whole of the southern shore of the estuary. The mouth of the estuary is narrowed by flanking dunes, particularly those at Whiteford Point (WP) which neatly demarcates the boundary of the estuary from Carmarthen Bay (CB). The north side of the Burry Inlet has historically been a very heavily industrialised area but this has been much reduced in recent years. There are extensive redevelopment plans for this area, including extensions to the WWT's reserve at Penclacwydd (WT), which will almost certainly increase public access to the area (Pritchard *et al.* 1992, Prater 1981).

Bird distribution

The Burry Inlet is the most important wholly Welsh estuary for wintering waterfowl, and is particularly important for Oystercatchers, currently ranked as the seventh most important site in the UK for this species. During the WeBS Low Tide Counts, a mean of 12,000 Oystercatchers were recorded, and the accompanying figure shows that they were widely distributed with fairly even densities over much of the site but the highest densities were on the north shore just west of the Loughor bridge.

Of the other wader species, the internationally important population of Knots was somewhat more restricted in distribution, being confined to the wider mudflats on the south side of the main channel between Whiteford and Pen-clawdd (PC), mostly on the inner sections. Both Grey Plovers and Dunlins reached their highest densities in the same area although were much more widespread than Knots, being found over most of the estuary (but not on the upper Loughor). Black-tailed Godwits favoured the north shore around the WWT reserve at Penclacwydd, as well as the south shore here, and at Llanelli docks. High densities

of Redshanks were also found at Llanelli docks, although this species was ubiquitous throughout the Burry Inlet. Curlews also occurred throughout with the highest concentration to the north of the main channel just south of Penclacwydd. Bar-tailed Godwits occurred in relatively low numbers, with the highest density again being at Llanelli docks. Ringed Plovers favoured the north side of the estuary, with Burry Port being relatively good for this species. Golden Plovers and Lapwings favoured Llanrhidian Marsh (LM) on the south shore, with the latter species occurring more widely, particularly at Penclacwydd and on the Upper Loughor. Turnstones favoured the Whiteford area, along with small numbers of Sanderlings and Purple Sandpipers. Greenshank, Spotted Redshank and Snipe were noted on the saltmarsh areas.

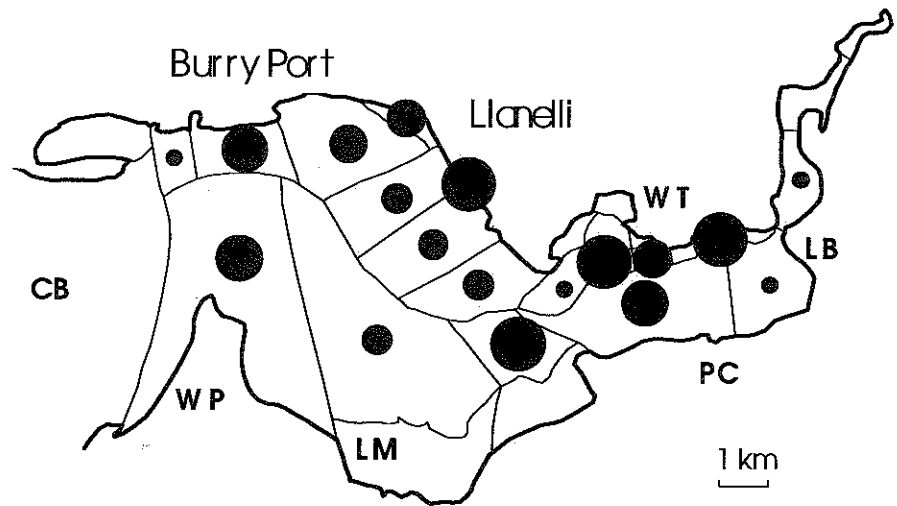
The Burry Inlet is also an important site for wildfowl; the accompanying figure illustrates the distribution of the internationally important population of Pintail present at the site, and it can be seen that there are two main concentrations. Birds at Whiteford peaked at over 1,000 birds with somewhat fewer (although still important) numbers around Penclacwydd. Brent Geese were similarly restricted, to Whiteford and to the area between the Loughor bridge and Pen-clawdd. Shelduck were more widespread but were most concentrated in the area south of Penclacwydd, where the majority of the Shovelers were to be found. Although Wigeon were also distributed widely, all of the other dabbling ducks were found in their highest densities around the WWT reserve, as were the only Mute Swans, Greylag Geese and a good record of two Whooper Swans. Small numbers of Great Crested Grebes and diving ducks occurred widely, with a preference for the outer parts of the estuary; Eider frequented the Whiteford area in particular.

Cormorants and Grey Herons occurred throughout the estuary but Little Egrets preferred the inner parts of the site. Gulls were widespread and common, although there was an interesting differentiation between Lesser Black-backed Gulls, which showed a preference for the inner estuary, and Herring Gulls, which were found in higher densities towards the outer parts of the estuary.

OYSTERCATCHER

Birds/hectare

- 0.01-0.40
- 0.41-0.80
- 0.81-1.60
- 1.61-3.20
- 3.21-6.40
- >6.40

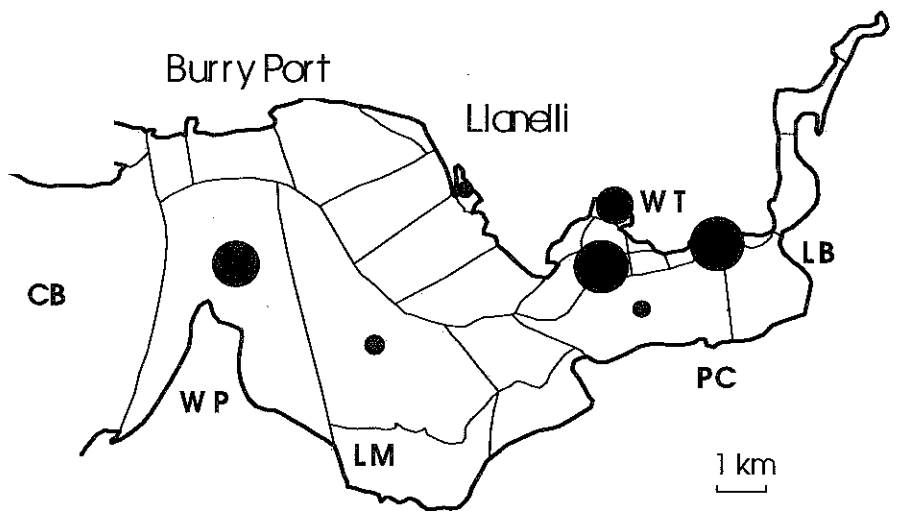


Gower Peninsula

PINTAIL

Birds/hectare

- 0.01-0.10
- 0.11-0.20
- 0.21-0.40
- 0.41-0.80
- 0.81-1.60
- >1.60



Gower Peninsula

CHICHESTER HARBOUR*West Sussex / Hampshire***Internationally important species:**

Dark-bellied Brent Goose, Ringed Plover, Grey Plover, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Redshank

Nationally important species:

Little Grebe, Shelduck, Teal, Red-breasted Merganser, Curlew

Site description

Chichester Harbour is a large and complex site situated between Chichester and Havant. There are four major arms, Chichester channel (CC), Bosham channel (BC), Thorney channel (TC) and Emsworth channel (EC), originally formed by land sinking along four small river valleys. These run into a wider area near the mouth of the estuary and there is a fairly wide opening to the eastern Solent. The river channels are muddy whereas the intertidal areas south of Thorney Island (TI) are much sandier, and also support extensive areas of eelgrass and algae. The estuary is extremely popular with watersports enthusiasts so, although the majority of the shoreline is undeveloped with restricted access, those areas with public access are heavily used. There is always the potential for pressure for further marinas and slipways. Wildfowling also occurs, as does commercial dredging for oysters and hand-gathering of cockles and mussels (Prater 1981, Buck 1997a, Pritchard *et al.* 1992).

Bird distribution

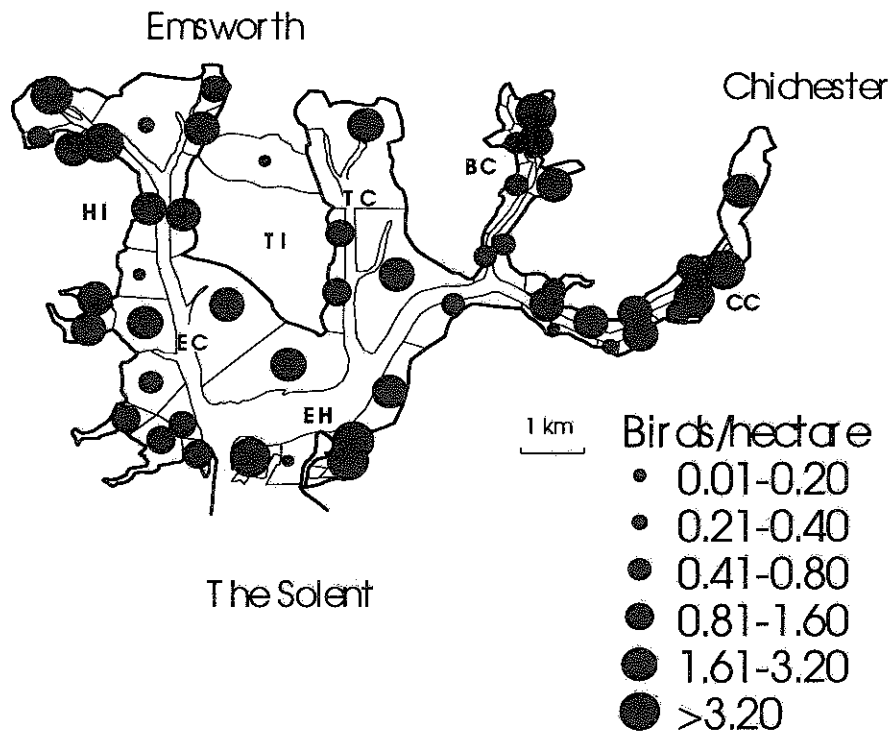
The accompanying figure shows the distribution of Dark-bellied Brent Goose in Chichester Harbour, the fourth most important site in the UK for this subspecies. The geese occurred throughout the harbour, with the highest densities near East Head (EH), at the north end of Hayling Island (HI) and at the north end of Bosham channel. About 5,000 were recorded on average, which is only about half the recent total recorded on WeBS Core Counts. Chichester Harbour is also important for Shelduck, which occurred widely throughout the site, as did Teal. Wigeon were more localised, with concentrations at the top of Bosham and Chichester channels. Pintails also preferred Chichester channel. Mallards occurred more widely, but still showed a preference for the channels. Goldeneyes and Red-breasted Mergansers were both widespread. Chichester channel was also favoured by both Great Crested Grebes and the nationally important numbers of Little Grebes; the

latter also favoured Bosham channel. Little Egrets were seen widely, with a mean of 15 birds noted during the WeBS Low Tide Counts, but showed more of a preference for the west of the harbour.

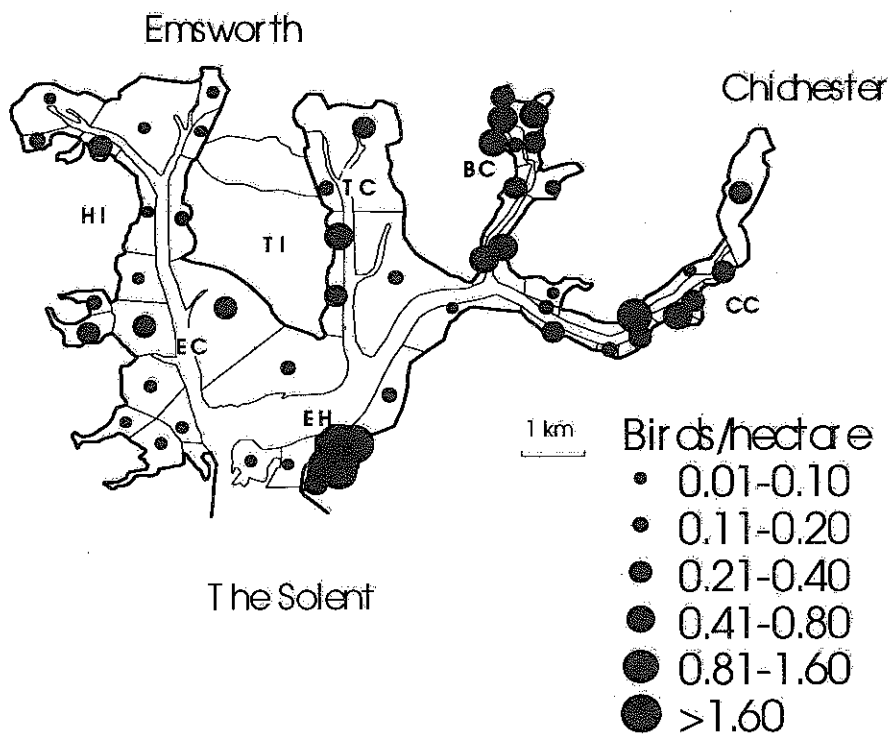
Chichester Harbour is also of great importance for wintering waders, with no less than six species occurring in internationally important numbers. The accompanying figure shows the low tide distribution of Grey Plovers in the harbour. Although there were concentrations at East Head and in the Bosham and Chichester channels, the bird occurred throughout the entire site. A very similar pattern of distribution was noted for both Redshank and Curlew. Ringed Plovers were less widespread, but also favoured East Head and Bosham channel, whereas Dunlins occurred commonly over the whole of the site.

Both godwit species occur at the harbour in internationally important numbers, but the two species show different patterns of occurrence. Black-tailed Godwits were widespread but favoured the Bosham and Chichester channels and, to a lesser extent, the east shore of Hayling Island. Bar-tailed Godwits, on the other hand, were all found between Thorney Island and the estuary mouth. This pattern of occurrence is the same as that noted during the WeBS Low Tide Counts here during 1993-94, due to a preference for sandier substrates by Bar-tailed Godwits and for muddier substrates by Black-tailed Godwits. The wider intertidal areas to the south of Thorney Island were also favoured by Knot and Sanderling and supported the highest densities of Oystercatchers in the harbour. There were two main roosts of Golden Plover: at the mouth of the estuary at East Head and at the northern end of Hayling Island. Lapwings were much more widespread. Turnstones were found mostly at East Head. Small numbers of Avocets, Greenshanks and even Whimbrels were noted also and other records of note during the WeBS Low Tide Counts were Red-throated Diver, Red-necked and Slavonian Grebes and a Mandarin.

DARK-BELLIED BRENT GOOSE



GREY PLOVER



CONWY ESTUARY

Caernarvonshire

Internationally important species:	None
Nationally important species:	None

Site description

The River Conwy drains the eastern slopes of Snowdonia National Park, and flows into the western end of Conwy Bay. The site counted for the WeBS Low Tide Counts comprises two distinct areas: a relatively narrow inner estuary, counted from the bridge at Tal-y-cafn (TC) northwards, and the wide expanse of Conwy Sands which lie between the Great Orme and Conwy Mountain (CM). The RSPB has recently acquired a reserve at Glan Conwy (GC), to the south of Llandudno Junction. The whole area is heavily used by tourists, although more so during the summer. A tunnel has recently been built under the estuary to relieve traffic congestion in Conwy and although causing short-term disturbance, may in the long run reduce the amount of disturbance to wintering waterfowl.

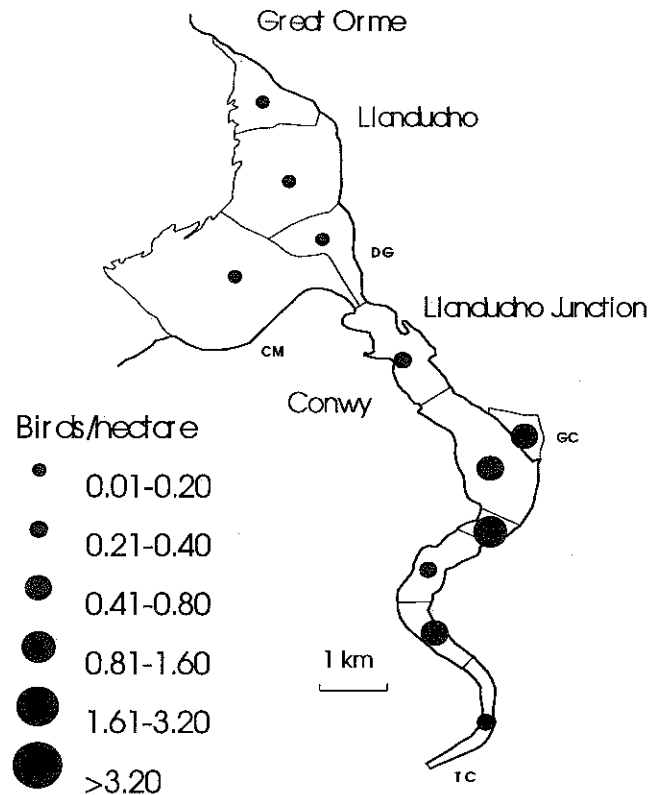
Bird distribution

The Conwy Estuary supports approximately 4,000 waterfowl in the winter, far fewer than are found at Traeth Lafan at the western end of Conwy Bay with which this site forms a natural pair. No species currently reaches the level of national importance at the Conwy Estuary: Oystercatchers were the most numerous species recorded on the WeBS Low Tide Counts with a mean of 1,490 noted. This figure agreed very well with the most recent five-year mean from WeBS Core Counts of 1,470. Oystercatchers were recorded on all sections but were much more numerous on the outer estuary. Numbers of Curlews and

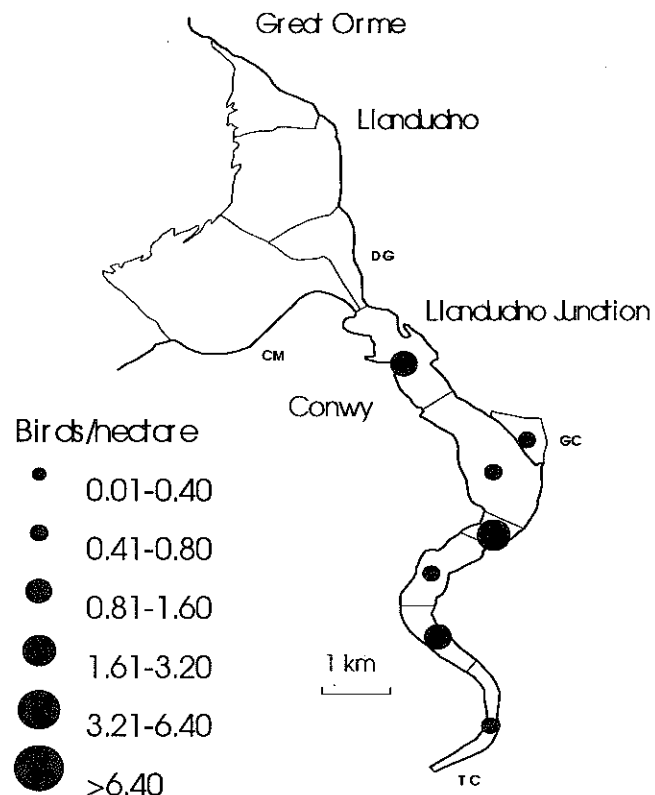
Redshanks (mean counts of 226 and 256 respectively) were much lower and, interestingly, only represented about half of their respective five-year means from the WeBS Core Counts. Either these species move out of the estuary at low tide, or the birds become increasingly difficult to count accurately as the tide recedes. The accompanying figure shows that Curlews are found over the whole site, although in higher densities on the inner parts of the estuary, whereas Redshanks were not found on the outer estuary at all. Lapwings were present on the inner estuary at low tide, with the highest density at Glan Conwy, but other wader species were very scarce, with a few Dunlins on the inner estuary and a handful of Ringed Plovers and Black-tailed Godwits. Some species, such as Knot, Bar-tailed Godwit and Turnstone were notable by their absence.

Apart from a few Wigeon noted to the west of Deganwy (DG), all of the wildfowl were recorded on the inner estuary, with not even any Shelduck on the outer sands. Most wildfowl favoured the RSPB reserve and the adjacent river, with a male American Wigeon spending its third winter here amongst the flock of Wigeon, and records of Snew and Ruddy Shelduck also being noteworthy. Otherwise, Cormorants were widespread and Grey Herons were present on the inner estuary only. All five common gull species were also recorded, although Lesser Black-backed Gulls were scarce.

CURLEW



REDSHANK



DEE ESTUARY***Merseyside / Cheshire / Flintshire*****Internationally important species:**

Shelduck, Teal, Pintail, Oystercatcher, Grey Plover, Knot, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Curlew, Redshank, Turnstone

Nationally important species:

Great Crested Grebe, Cormorant, Wigeon, Sanderling

Site description

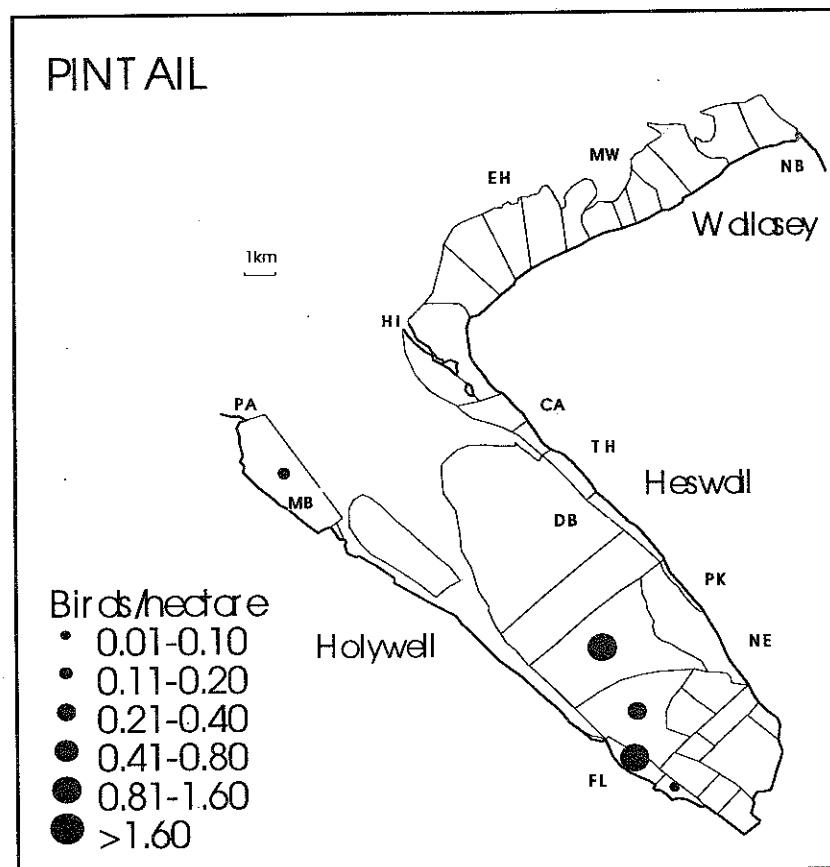
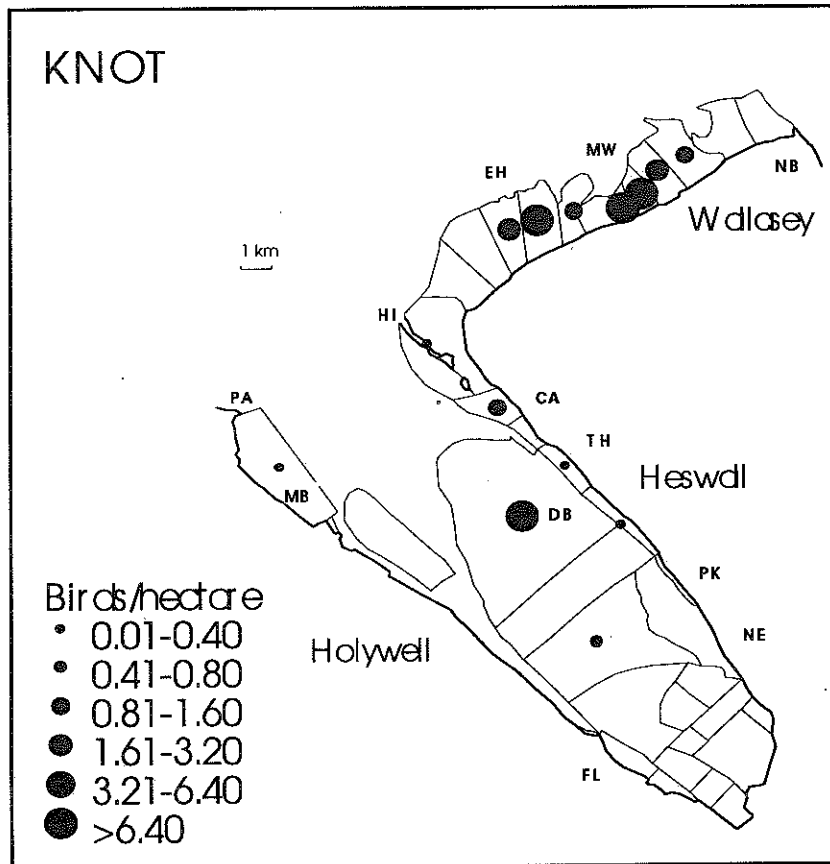
The Dee Estuary constitutes the largest and most important estuary yet covered by the WeBS Low Tide Count scheme. This meant that many of the more distant parts of the estuary were difficult to view and, in addition, some areas were difficult or impossible to access. The site includes the wide intertidal mudflats of the Dee itself as well as the adjacent North Wirral shore, as far as the mouth of the River Mersey and just opposite the south end of the Alt Estuary. The main channel of the Dee runs close to the Welsh shore for most of its length and so the mudflats are less wide on this side. At the south end of the Dee are extensive areas of saltmarsh, which extend half way north along the eastern shore. At the northern end of the Dee are a series of rocky islands at Hilbre (HI) nearer the eastern shore and there is an area of sand dunes at Point of Ayr (PA) on the western shore. The Dee is a heavily industrialised area which suffers from pollution, windsurfing and other general disturbance, commercial cockling and tipping of coal waste, amongst other problems. This has led to incremental land claim over centuries. The recent government decision to allow the expansion of Mostyn Docks will lead to yet further loss of mudflats within this designated Ramsar site and Special Protection Area (Pritchard *et al.* 1992, Prater 1981).

Bird distribution

Along with the Ribble Estuary, which forms a natural northern continuation of the Alt, Mersey and Dee Estuaries, these four sites, collectively known as Liverpool Bay, support approximately half a million wintering waterfowl. The Dee Estuary itself has internationally important populations of no less than 12 species. The accompanying figure shows the distribution of Pintail on the Dee, their most important British wintering site. The species is highly concentrated in the southern part of the estuary, mostly along the line of the river, with a secondary site at Mostyn Bank (MB). However, the numbers recorded on the WeBS Low Tide Counts were only about a quarter of those noted on the WeBS Core Counts. This is presumably largely due to birds being "lost" in the saltmarsh as the tide goes out. Teals were similarly confined to the inner estuary, although

some were found close to the shore as far north as Heswall on the east shore. The numbers of Teal recorded at low tide were also lower than those recorded by the WeBS Core Counts, but not to the same degree as for Pintail. Wigeon were also confined to the inner estuary, with a preference for the west shore to the east of Flint (FL). Mallards were widespread, as were Shelduck. The distribution of this last species extended slightly onto the North Wirral shore. Small numbers of other wildfowl species, as well as all of the Grey Herons, were mostly confined to the inner Dee, although a handful of Brent Geese frequented the Hilbre area. Cormorants were found on the inner Dee and at Mockbeggar Wharf (MW).

In contrast to the wildfowl, most of the important wader species fed largely on the outer parts of the estuary at low tide, particularly on the North Wirral shore. The accompanying figure shows the main concentrations of Knots at Mockbeggar Wharf, East Hoyle Bank (EH) and Dawnpool Bank (DB). A mean count of 33,000 Knots was made at low tide. The North Wirral shore was also the major feeding area for many other species, with Ringed Plovers, Grey Plovers, Sanderlings and Bar-tailed Godwits found almost exclusively along here, particularly at Mockbeggar Wharf. Oystercatchers and Dunlins were widely distributed around the Dee Estuary and along the North Wirral shore, with the highest densities of Oystercatchers occurring along the Caldy (CA) shores. Turnstones occurred only along the North Wirral shore, where they were concentrated at the eastern and western ends (New Brighton (NB) and Hilbre). Small numbers of Purple Sandpipers were also present at these two localities. Curlews and Redshanks were fairly evenly distributed over the whole of the site. A few wader species were more dependent upon the inner estuary. Although some Lapwings were to be found along Mockbeggar Wharf, the majority were found on the inner estuary, along with the few Golden Plover that were present. Black-tailed Godwits also favoured the inner estuary, with the main concentrations found along the inner shore at Heswall and Thurstaston (TH), and offshore from Flint. Large numbers of Snipe were located in the saltmarsh off Parkgate (PK) and Neston (NE).



DUNDRUM BAY**Co. Down****Internationally important species:**

None

Nationally important species:

Mute Swan, Shelduck, Common Scoter, Oystercatcher, Knot, Redshank

Site description

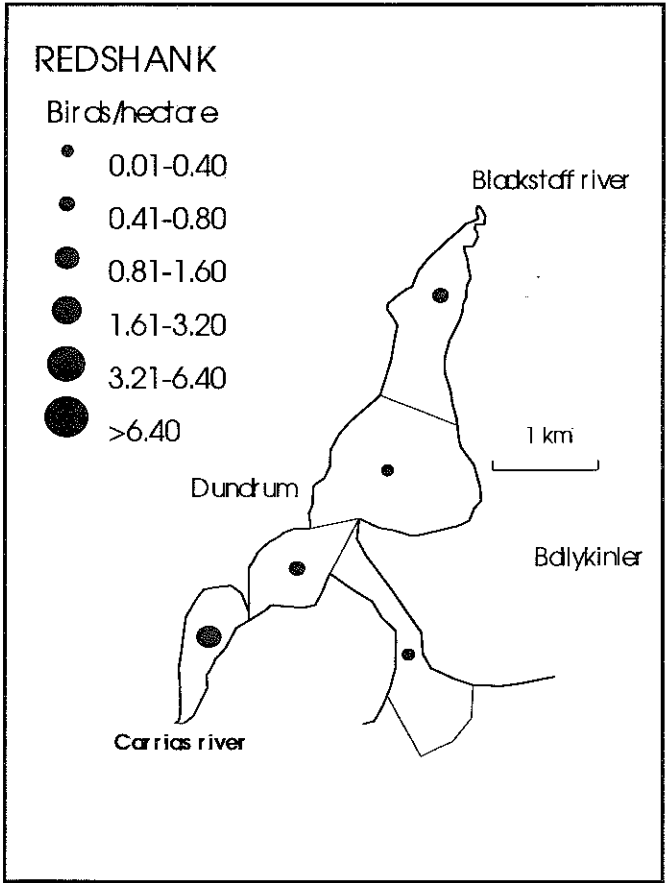
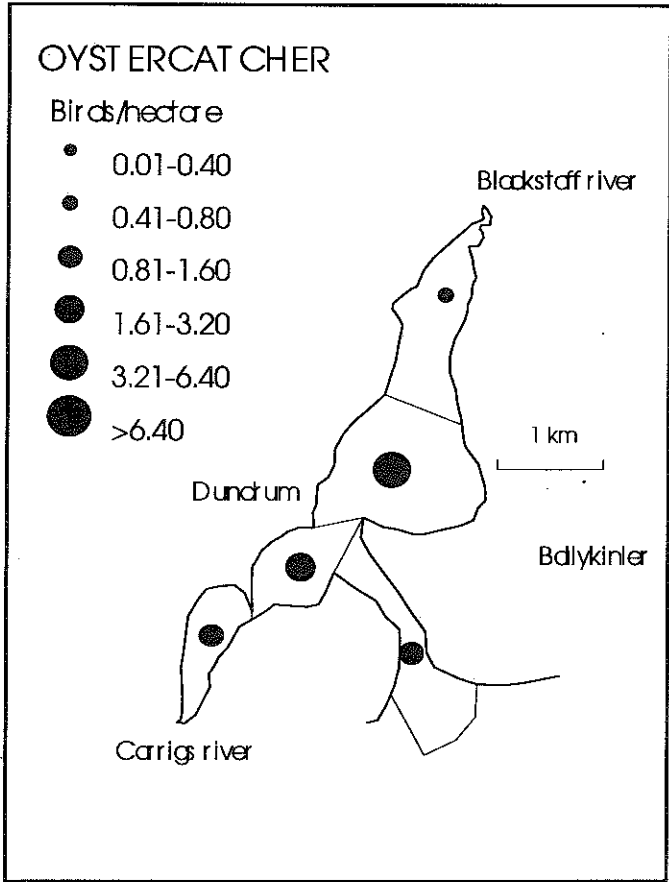
This small muddy estuary is at the confluence of the Blackstaff and Carrigs Rivers, which empty into the sea through a narrow channel between extensive sand dune systems. The sandy outer bay was largely uncouned for this survey, but WeBS Core Counts do survey the sea-ducks out on the bay itself. The estuary is surrounded largely by farmland but there are some small areas of saltmarsh at the northern and southern ends of the site. There is virtually no industrial development around Dundrum Bay, but there are problems with waste disposal around the site. Disturbance occurs as a result of recreational activities such as watersports and shooting (Buck & Donaghy 1996, Pritchard *et al.* 1992).

Bird distribution

Although there are no internationally important waterfowl populations here, the total of six populations important in an all-Ireland context is impressive for such a small site. The accompanying figure shows the distribution of Oystercatchers in Dundrum Bay. Although present on all count sections, Oystercatchers were most common on the widest mudflats, to the east of Dundrum itself. In contrast, Redshanks reached their highest densities in the southernmost part of the bay, along the channel of the Carrigs River. Curlew, which were also present throughout the whole site, showed a very similar pattern of occurrence to Redshank. Other wader species, such as Ringed Plover,

Lapwing, Dunlin and Greenshank occurred throughout the whole site except for the outlet to the sea. Lapwings reached their highest densities at both the north and south ends but Golden Plover was unrecorded. The mean count of eight wintering Greenshanks was notable for such a small site. Grey Plovers, Snipe, both godwits, Spotted Redshank and Turnstones occurred in small numbers more locally. Surprisingly, although about 500 Knot have been recorded on the site during recent years by WeBS Core Counts, none were noted at low tide; these birds must presumably move out to the outer bay to feed at low tide.

Two nationally important species of wildfowl occur on the inner bay. Mute Swans were mostly found in the southern arm of the bay, mostly just south of Dundrum; small numbers were also found at the northern end of the bay. Shelducks were found throughout the inner estuary but with by far the highest densities at the northern end. Dundrum Bay no longer qualifies as internationally important for Pale-bellied Brent Geese, but an average of 123 birds was recorded at low tide, distributed in all parts of the site except for the southern end. Reasonable numbers of Wigeon were present, concentrated at the southern end and, to a lesser extent, the northern end. Smaller numbers of Mallards were also present at the two ends of the inner bay, along with a handful of Pintails at the northern end. Small numbers of Goldeneye and Red-breasted Merganser were also present.



FINDHORN BAY

Moray

Internationally important species:	None
Nationally important species:	Velvet Scoter

Site description

Findhorn Bay comprises a relatively small area of intertidal mudflats which is connected to the sea at Burghead Bay by a narrow channel, and forms part of the Inner Moray Firth. Between the bay and the sea is an area of sand dunes and to the west is the Culbin Forest, with agricultural land to the south. The estuary is generally quite muddy at the southern end but with an extensive area of rocks at the northern end. Findhorn Bay is used regularly by wildfowling, and there is also disturbance from the adjacent RAF Kinloss air base. More general disturbance from dog-walking takes place along the eastern shore (Holloway 1997, Pritchard *et al.* 1992, P. Hirst pers. comm.).

Bird distribution

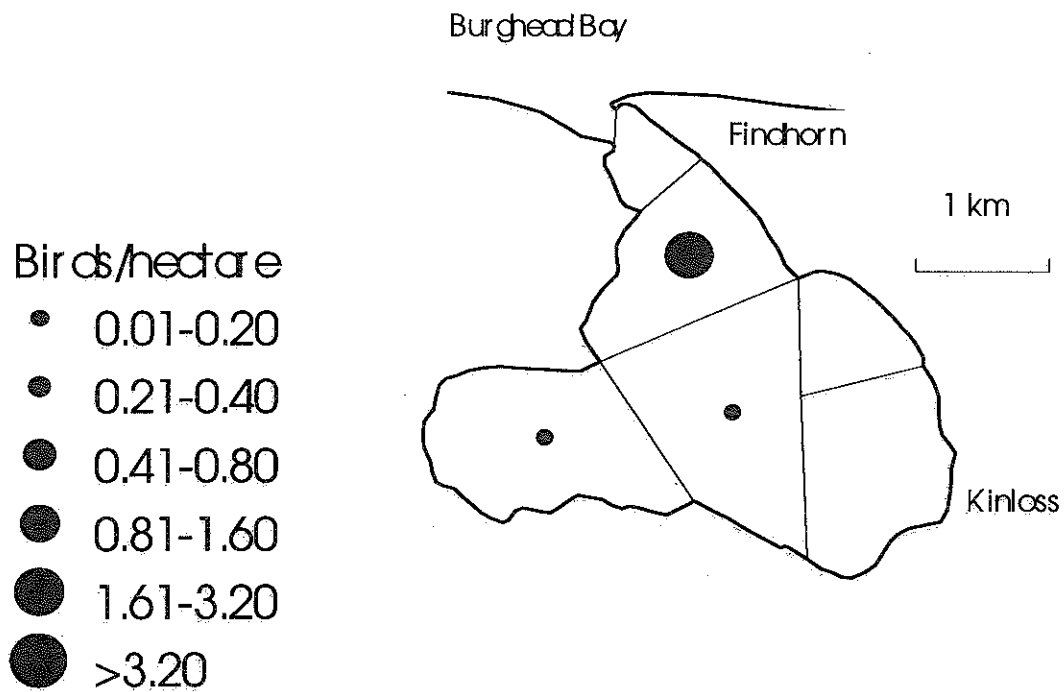
During the winter of 1996-97, the majority of Bar-tailed Godwits fed on the rockier northern sections of Findhorn Bay. Turnstones fed in the same area, as well as at the estuary mouth. The spatial distribution of Knots in the bay was similar to that of Bar-tailed Godwit. Oystercatchers also reached their highest densities in the northern parts of the bay, but were much more numerous elsewhere than the aforementioned three species. Curlews and Redshanks were fairly evenly distributed, although no Curlews were recorded in the south-east corner of the bay. Good numbers of Dunlins were recorded but none were noted in the northern-most or the south-east sectors. Both Ringed Plovers and Golden Plovers were only found in the south

and south-west of the bay. Two Greenshanks recorded on the east shore were a long way north for this species in the winter.

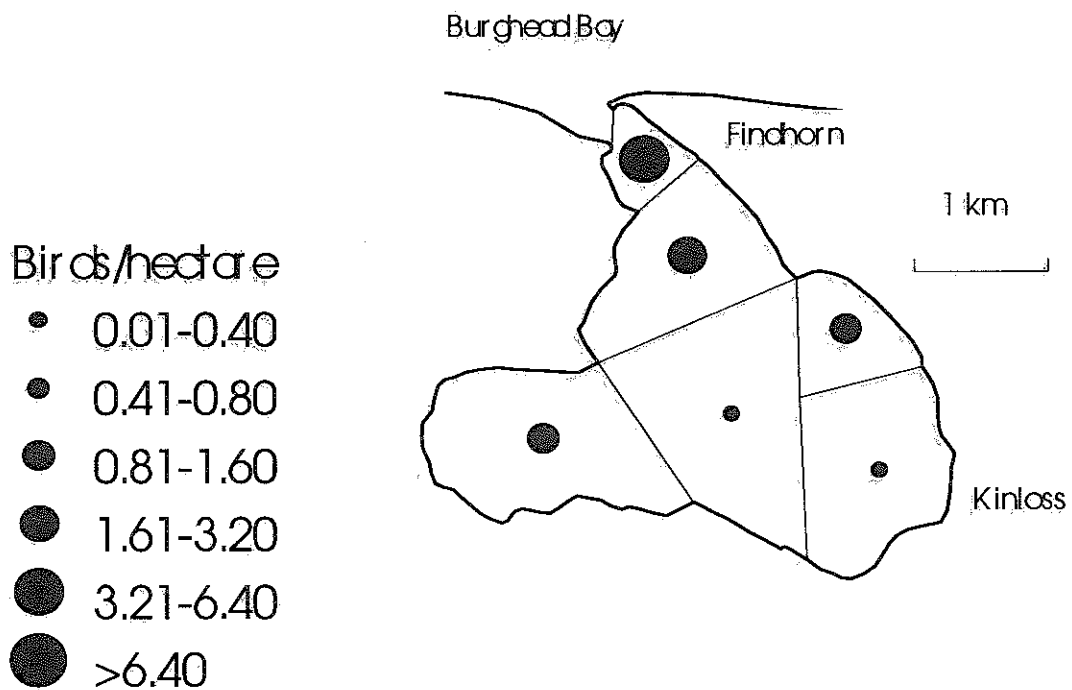
Flocks of Wigeons were found in the north, the south-east and the south-west corners of the bay, but not in the centre. Mallards, as well as small numbers of Teal and Pintail, were concentrated in the north of the bay. A few Shelducks were present in the central and eastern parts of the bay. Mute Swans were restricted to the north. Moderate numbers of Goldeneyes were present in the bay and Red-breasted Mergansers and Eiders were found at the estuary mouth. However, much higher numbers of sea-duck are to be found north of the bay, on Burghead Bay, with large flocks of both Common and Velvet Scoters, Long-tailed Ducks and Eiders, in addition to the three divers, Slavonian Grebes and, during the 1996/97 winter, both King Eider and Surf Scoter.

Findhorn Bay is an important night-time roost site for Greylag and Pink-footed Geese, with small numbers present during the day, particularly when wildfowling pressure is less (Holloway 1997). During the WeBS Low Tide Counts, the Greylag Geese preferred the east shore, whereas the Pink-feet were more often found in the south-central parts of the bay. There were, however, only very small numbers noted during the WeBS Low Tide Counts. A few Canada Geese were noted in the south-west corner.

BAR-TAILED GODWIT



OYSTERCATCHER



MEDWAY ESTUARY**Kent****Internationally important species:**

Dark-bellied Brent Goose, Shelduck, Pintail, Ringed Plover, Grey Plover, Dunlin, Black-tailed Godwit, Redshank

Nationally important species:

Little Grebe, Great Crested Grebe, Cormorant, Wigeon, Teal, Oystercatcher, Avocet, Lapwing, Curlew

Site description

The Medway is a large estuarine site which merges with the Thames Estuary at its outlet between the Isle of Grain and Sheerness (SH) on the Isle of Sheppey. At its eastern end it is also connected to the Swale. The shoreline is deeply indented and there are many islands and areas of saltmarsh, along with large areas of brackish grazing marshes. There are also major dockyards around the estuary, as well as two power stations and two defunct oil refineries. Watersports take place over much of the estuary, and other forms of disturbance include wildfowling and bait-digging. Most controversially, an area of intertidal mudflats at Lappel Bank (LB) has recently been claimed for port operations (Pritchard *et al.* 1992, Buck 1997b).

Bird distribution

The Medway estuary currently supports internationally important populations of eight species. The accompanying figure depicts the low tide distribution of Shelducks on the estuary. The species occurs throughout the entire estuary but tends to be found in higher densities along the southern shore. A mean of about 3,600 Shelducks was noted during the WeBS Low Tide Counts, which was somewhat lower than the recent WeBS Core Counts at this site. Brent Geese also occurred widely across the site, but were mainly concentrated at Halstow (HC), Otterham (OC) and Colemouth creeks (CC). Wigeon and Teal were most concentrated in the east of the Medway, from Halstow eastwards to the south of the main channel, with lesser numbers along the Gillingham shore and in the northern saltmarshes. The internationally important population of Pintails was concentrated at Funton (FU) although smaller numbers were found along the south shore as far west as Copperhouse Marshes (CM). Shovelers showed a similar distribution to Pintails and Mallards were typically scattered in small numbers around most of the estuary. Of the diving ducks, Goldeneyes preferred the south-central areas whereas more of the Red-breasted Mergansers were at the eastern end of the estuary.

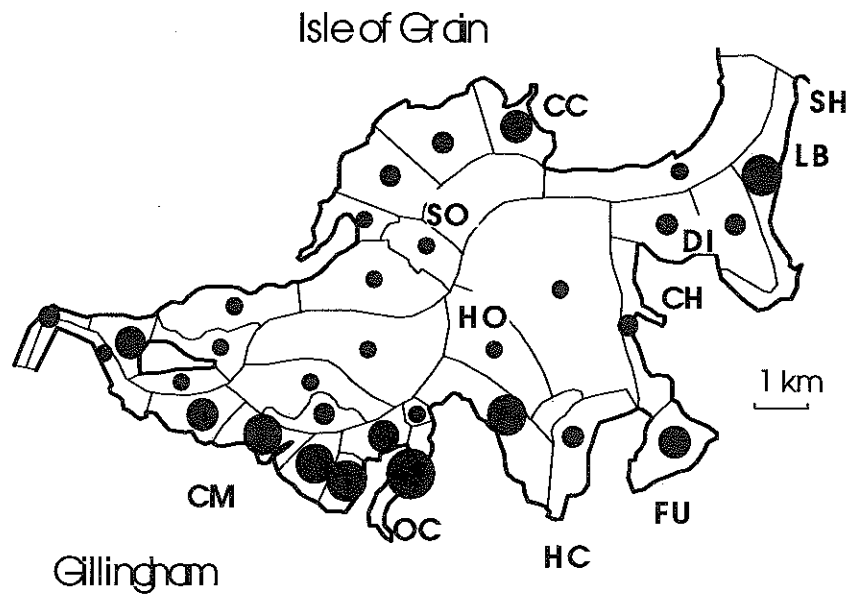
Mute Swans favoured the Funton area, along with a small flock of Bewick's Swans during January 1997. Feral flocks of Greylag Geese and Canada Geese were found at Chetney (CH) and Otterham, with the latter species also frequenting Deadman's Island (DI). Great Crested Grebes were widespread in central and western areas, but Little Grebes, despite the Medway qualifying as nationally important for this species, could only muster a mean of three per month during the WeBS Low Tide Counts. It is possible that this species is being missed amongst creeks as the tide drops. Grey Herons favoured the central and eastern parts of the site, whereas Cormorants were to be found in larger numbers at the western end. Only a few Little Egrets were recorded.

The accompanying figure illustrates the low tide distribution of Redshanks within the Medway during 1996-97; the species was widespread but apparently favoured the southern shore. Also very widespread were Oystercatchers, Dunlins and Curlews, with the last of these species reaching their highest density at the mouth of Otterham creek. The highest densities of Dunlins occurred along the south shore between Copperhouse and Otterham, at Stoke Ooze (SO) and on the southern shore near the mouth of the estuary. Ringed Plovers were also concentrated near to the mouth of the estuary, as well as along the south-west shore. Grey Plovers were widespread with their highest density found at Stoke Ooze. The highest densities of Knots were in the Ham Ooze (HO) area. Funton creek was the most important area for Avocets, although reasonable numbers were also to be found at the western end of Deadman's Island and at Bartlett/Otterham. Lapwing flocks were scattered throughout the site but the only Golden Plovers noted were at Halstow creek. Black-tailed Godwits occurred in three distinct areas: at Colemouth creek, off the Lappel Bank and along the south-west shore. Small numbers of Turnstones were found throughout the site but very few Sanderlings or Bar-tailed Godwits were noted.

REDSHANK

Birds/hectare

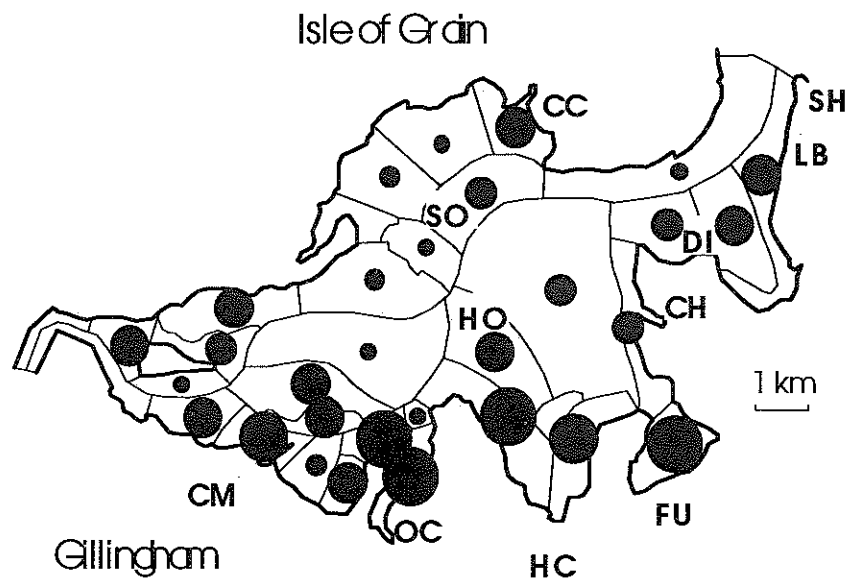
- 0.01-0.40
- 0.41-0.80
- 0.81-1.60
- 1.61-3.20
- 3.21-6.40
- >6.40



SHELDUCK

Birds/hectare

- 0.01-0.20
- 0.21-0.40
- 0.41-0.80
- 0.81-1.60
- 1.61-3.20
- >3.20



MERSEY ESTUARY***Merseyside / Cheshire*****Internationally important species:**

Shelduck, Teal, Pintail, Dunlin, Black-tailed Godwit, Redshank

Nationally important species:

Great Crested Grebe, Wigeon, Golden Plover, Grey Plover

Site description

The Mersey is one of the most heavily developed and polluted estuaries in the UK (although pollution levels have lessened somewhat in recent years), with the outer sections of the estuary in particular infringed upon by Liverpool and Birkenhead. The large towns of Widnes, Runcorn and Ellesmere Port are also adjacent to the site. A large area of saltmarsh on the southern shore as well as the important Ince (IB) and Stanlow Banks (SB) are protected from disturbance to some degree by the Manchester Ship Canal. The large pools at Frodsham (FR) on the south side of the estuary are extremely important as one of the roosts for birds feeding on the estuary. As well as the usual problems which occur on heavily industrialised estuaries, such as pollution and disturbance, a more specific issue which could be detrimental to wintering waterfowl is a proposed second runway for Liverpool Airport (LA) to be built on land claimed from the estuary. Additionally, there has been a proposal in recent years for a Mersey barrage to generate power from tidal energy, which could resurface in the event of the economics of tidal power being considered more realistic by energy producers (Prater 1981, Pritchard *et al.* 1992).

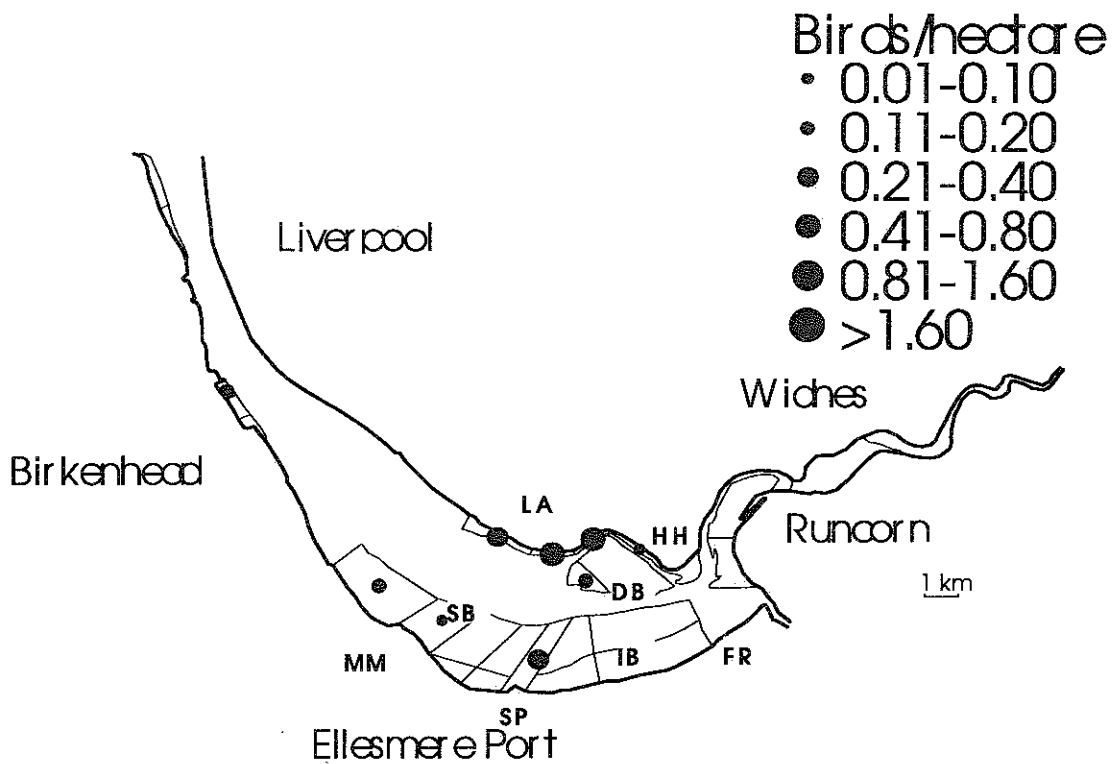
Bird distribution

As with the Dee, there were a few areas of the Mersey which could not be fully covered due, in part, to access difficulties. The maps depict the count areas but not uncounted sections. The areas which were not counted were considered to hold only a small minority of the birds present at the site. Despite the amount of pressure on the estuary, the Mersey is still an extremely important site for wintering waterfowl, with recent totals of the order of 100,000 waterfowl. Wildfowl, in particular, are well represented here with internationally important populations of Shelduck, Teal and Pintail and nationally important numbers of Wigeon. Numbers of Pintail have been declining over recent years; over 6,000 were present over the 1991-92 winter but only 900 were noted during WeBS Core Counts over the 1996-97 winter. This compares

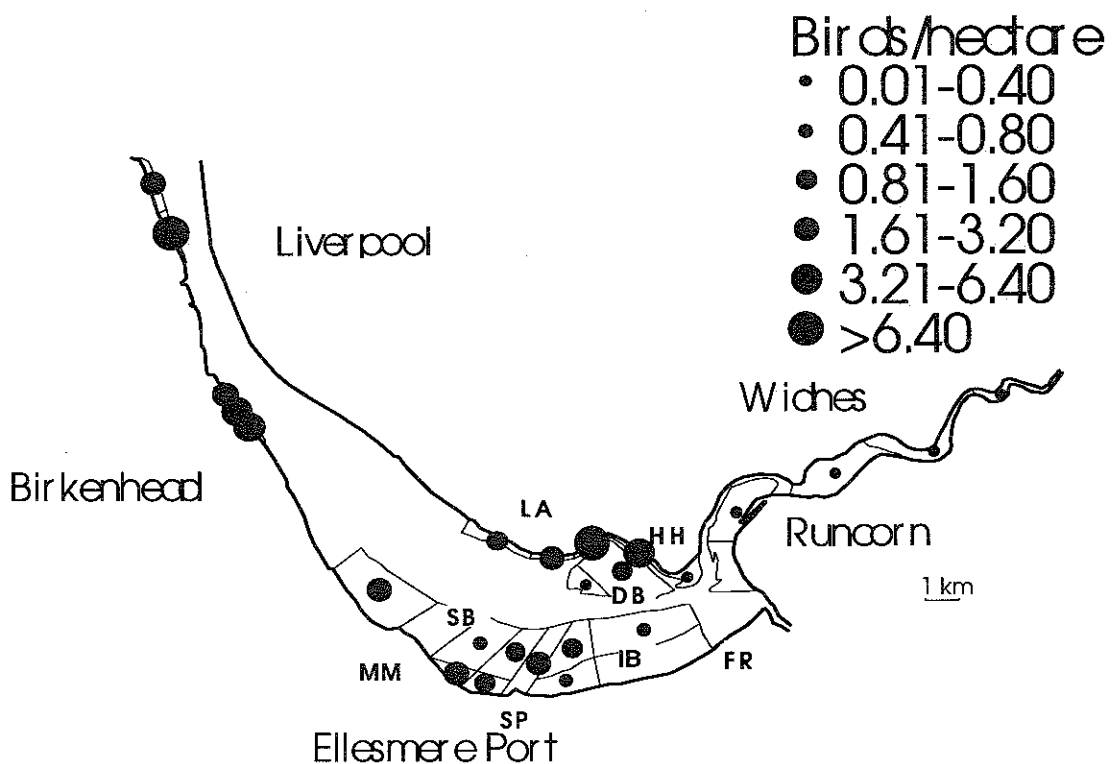
with a mean count of only 150 Pintails during the Low Tide Counts, which were concentrated along the areas close to the shore just south of Liverpool Airport as well as on the south shore off Stanlow Point (SP) and to the north of Mount Manisty (MM). The distribution of Teal was broadly similar to that of Pintail but much more widespread, being principally absent from the outer estuary and the mudflats to the west of Runcorn. A mean count of over 6,000 Teal was made at low tide; the Mersey is currently the second most important site in the UK for this species. Even higher numbers of Wigeon (a mean of over 8,500) were noted but were more concentrated along the outer parts of Stanlow and Ince Banks. Shelducks occurred widely with highest densities to be found west of Stanlow Point and at Dungeon Banks (DB). Of the other wildfowl species, over 1,000 Mallards were of note, distributed widely throughout the inner estuary.

The most numerous wader species on the Mersey is the Dunlin (only Morecambe Bay supports higher numbers of this species). A mean of nearly 40,000 were noted at low tide which were distributed widely but with the highest concentrations on Stanlow Banks. Redshanks also occur in internationally important numbers and were also widespread but with high densities on the count sections towards the mouth of the estuary, as well as along the north shore around Liverpool Airport. Numbers of Black-tailed Godwits have increased sharply in the last few years on the Mersey, with a peak of 1,703 on the WeBS Core Count in February 1997. A mean count of over 700 was noted at low tide with the majority of birds feeding at Hale Head (HH) and Dungeon Banks. The most important area for Grey Plovers was just to the west of Hale Head, with Stanlow Banks also important for this species. Curlews were typically widespread. Oystercatchers were mostly found towards the mouth of the estuary, as were Ringed Plovers, Turnstones and a few Purple Sandpipers. Golden Plovers roosted on the inner parts of the site, principally at Runcorn and Ince Banks. Lapwings were more widespread but also favoured the inner half of the estuary.

PINT AIL



REDSHANK



ORWELL ESTUARY**Suffolk****Internationally important species:**

Redshank

Nationally important species:

Little Grebe, Dark-bellied Brent Goose, Shelduck, Gadwall, Pintail, Ringed Plover, Dunlin, Black-tailed Godwit

Site description

The long, narrow intertidal reaches of the Orwell Estuary extend from Ipswich to the Port of Felixstowe where they meet up with the Stour Estuary (the Stour holding many more waterfowl than the Orwell). Inter-estuarine movement involving several species of birds regularly occurs and is especially noticeable on a flooding tide. Much of the intertidal substrate is fairly muddy but it becomes sandier towards the mouth. In the past, the main conservation concerns were about dockland expansion schemes and marina developments. Dockland expansion at Felixstowe, since around 1964, has claimed all of the outer reaches of the Orwell's northern shore. As a result of the latest development and as legal mitigation for the loss of an important intertidal habitat, the Felixstowe Dock and Railway Company had to lease an area of land and provide the finances to establish a nature reserve at Trimley marshes (TR). The reserve, established in 1989, has been managed by the Suffolk Wildlife Trust. Although the reserve does not replace the lost estuarine habitat it does provide a roost and safe refuge site for several thousand waterfowl during the winter period. Other problems confronting the Orwell are pollution and heavy disturbance from sailing and other leisure activities (M. Wright pers. comm., Beecroft 1990, Pritchard *et al.* 1992, Buck 1997b).

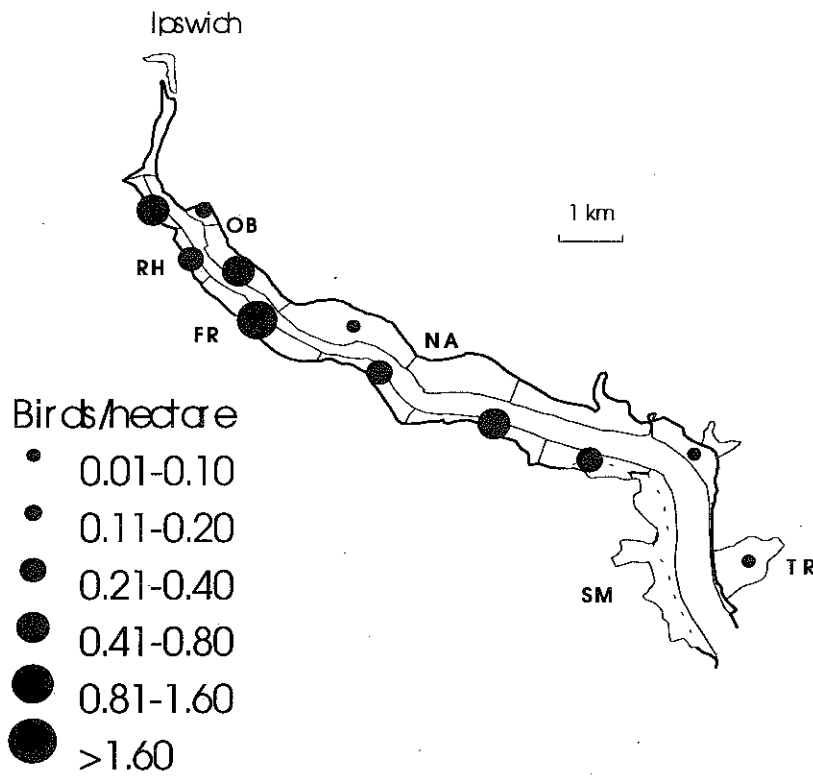
Bird distribution

Black-tailed Godwits were widely distributed at low tide, although the upper stretches of the river, particularly along the southern shore, were favoured. The highest mean density was found on the Freston (FR) shore, although higher peak counts were made on the opposite shore. This pattern of distribution was extremely similar to that seen during the WeBS Low Tide Counts which were carried out

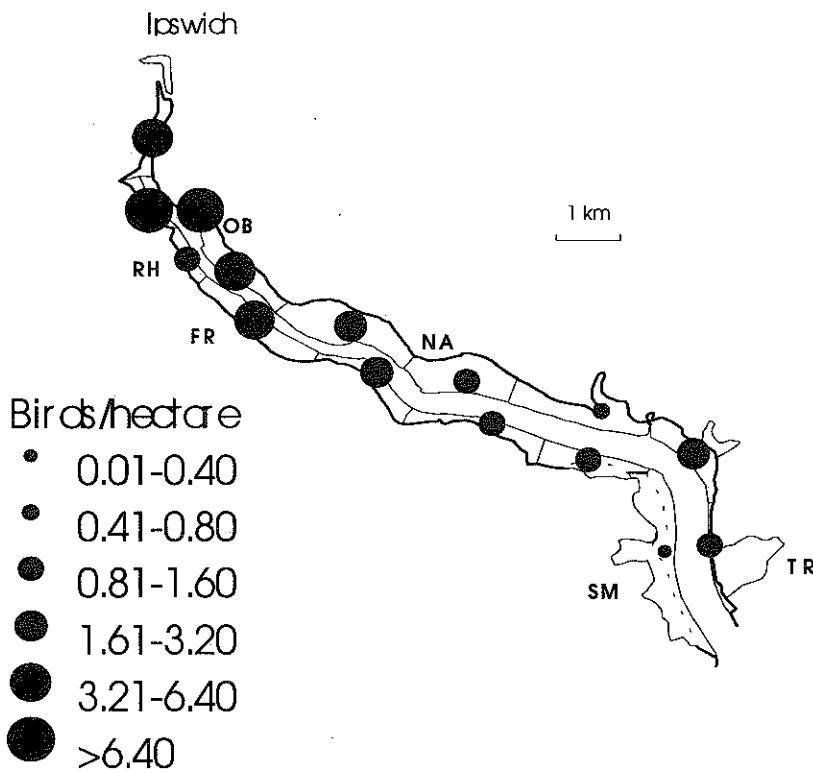
on the Orwell in 1995-96. Also showing a very similar pattern to that seen in 1995-96, Redshanks were found to be very widespread but with the highest densities to be found at the northern end of the estuary, just north of the Orwell bridge (OB). Curlews showed a preference for the same area. Dunlins and Ringed Plovers occurred along almost the whole estuary but showed a preference for the north shore of the northern end of the estuary. Numbers of Dunlins counted at low tide dropped after last year's high totals to a maximum of 9,500 in January. Knots favoured the middle stretches of the north shore and were much less widespread than Dunlin. Oystercatchers, Grey Plovers and Turnstones occurred along the whole length of the estuary. There were several large flocks of Lapwings, with the highest concentration at Redgate Hard (RH), but there were only a few Golden Plovers on the lower stretches of the estuary.

Most of the nationally important population of Dark-bellied Brent Geese was found at the southern end of the estuary, extending north in smaller numbers, with by the far the highest densities being found at Shotley Marshes (SM). Conversely, the highest concentrations of Shelducks were found at the north of the estuary, although this species was found commonly throughout. Pintail were also widespread but were most concentrated upstream of Nacton (NA). The highest concentrations of Wigeon, and all the Teal, were found at the southern end of the estuary. Mallard were widespread although less common on the middle stretches. Also favouring the southern end of the Orwell were Grey Heron, Mute Swan, Canada Goose and Greylag Goose, although there was also a herd of Mute Swans in Ipswich. Both Goldeneye and Red-breasted Merganser were found along much of the estuary.

BLACK-TAILED GODWIT



REDSHANK



PAGHAM HARBOUR

West Sussex

Internationally important species:

Pintail

Nationally important species:

Cormorant, Dark-bellied Brent Goose, Wigeon, Teal, Grey Plover, Black-tailed Godwit

Site description

Pagham Harbour is a relatively small estuary located just east of Selsey Bill in Sussex. A central area of mudflats and saltmarsh is flanked by brackish marsh and damp pastures. The outlet to the sea is a narrow channel flowing through a shingle beach. There is a brackish lagoon at Pagham and a small pool at Sidlesham Ferry (SF). The area was once claimed as agricultural land but was flooded again early in the 20th century. The harbour is now a designated SPA and Ramsar site. No sailing or fishing takes place in the harbour and there are no pressing conservation concerns (Pritchard *et al.* 1992, Buck 1997a).

Bird distribution

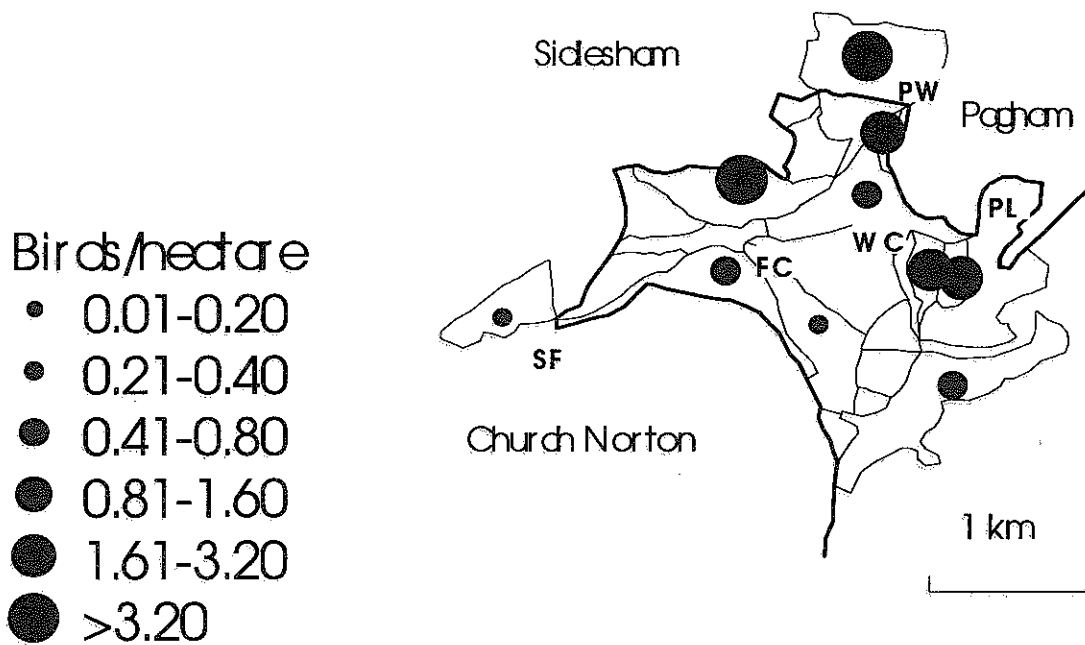
The accompanying figure illustrates the low tide distribution of the internationally important population of approximately 600 Pintail wintering in Pagham Harbour; the low tide and high tide counts of Pintail at Pagham Harbour agree fairly well with one another. Most of the birds were found along the Ferry Channel (FC), especially the lower section, and along White's Creek (WC). This was precisely the same pattern that was noted during the WeBS Low Tide Counts carried out during the 1995-96 winter. Wigeon also favoured these two areas, but this species was somewhat more widespread. Teal were concentrated along the north-west side of the harbour and Mallard were widely scattered. Shelducks favoured the inner half of the estuary, with Goldeneyes and Red-breasted Mergansers being found towards the harbour mouth. Dark-bellied Brent Geese were again widespread at Pagham, and again the fields to the north of Pagham Wall (PW) were the favoured feeding spot. The saltmarsh in the north-west corner of the harbour also held large numbers of this species. However, the geese were much less numerous this winter, with a mean low tide count total of 785 compared to about 3,000 during the previous winter. The nationally important

numbers of Cormorants were concentrated around the outer parts of the estuary. Grey Herons were restricted to the upper parts of the Ferry Channel but Little Egrets occurred more widely. The few Mute Swans present were confined to Pagham lagoon (PL) and the north-east corner of the estuary.

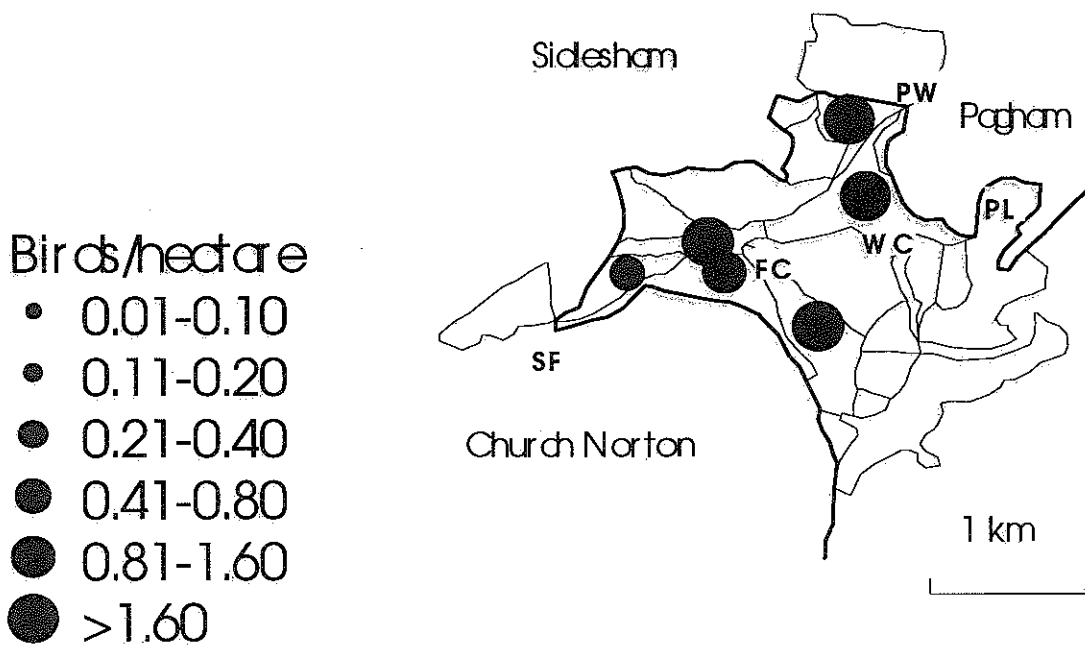
Grey Plovers were found virtually throughout the whole site, although they showed a preference for the outer parts of the estuary; numbers noted at low tide were a little less than those found on WeBS Core Counts. The other wader species occurring in nationally important numbers at Pagham, the Black-tailed Godwit, was noted in very small numbers at low tide, with the main concentration in the north-east corner of the estuary. Numbers were only about a quarter of those noted on the WeBS Core Counts and it would appear that this species is either becoming less visible at low tide, or is moving out of the estuary completely. A similar difference between WeBS Core Counts and WeBS Low Tide Counts was noted during the 1995-96 winter.

Several species of wader favoured the outer parts of the estuary. This preference was shown by Oystercatcher, Ringed Plover, Knot, Bar-tailed Godwit and Turnstone, although all of these species were also found, to a variable extent, further into the estuary. Dunlins occurred in higher densities towards the mouth of the estuary although they were widely distributed within it. Lapwings were most concentrated to the south of Pagham Wall and at Sidlesham lagoon, while Golden Plovers were found roosting at White's Creek. Both Curlews and Redshanks were very widely distributed, although the latter species occurred in its highest densities in the areas just south of Pagham Wall. Avocets were again present this winter in the harbour, and were noted in small numbers in four count sectors.

DARK-BELLIED BRENT GOOSE



PINTAIL



SOUTHAMPTON WATER**Hampshire****Internationally important species:**

Black-tailed Godwit

Nationally important species:

Little Grebe, Cormorant, Dark-bellied Brent Goose, Teal

Site description

Southampton Water is a part of the Solent complex, and lies between the city of Southampton and the New Forest. The three principal rivers entering Southampton Water are the Test (TE), Itchen (IT) and Hamble (HA). There are extensive areas of mud on both shores of the estuary, with a large area of *Spartina* saltmarsh along the southern shore. In addition, an important area of river valley consisting of water meadows, reedbeds and lagoons exists at Titchfield Haven (TH), at the south-eastern corner of the site. Southampton Water is one of the most heavily developed estuaries in Britain (1.1 million people live within 15 km of the Solent), and as well as being adjacent to a large city, also has important docks, an oil refinery and a power station along its shores. The area is also extremely heavily used by sailing enthusiasts. One of the most significant current development issues is at Dibden Bay (DB), which is actually no longer a bay since dredgings were pumped onto the land here. This area has now dried out and there are plans for further development, which may result in the loss of the remaining intertidal mud (Buck 1997a, Pritchard *et al.* 1992).

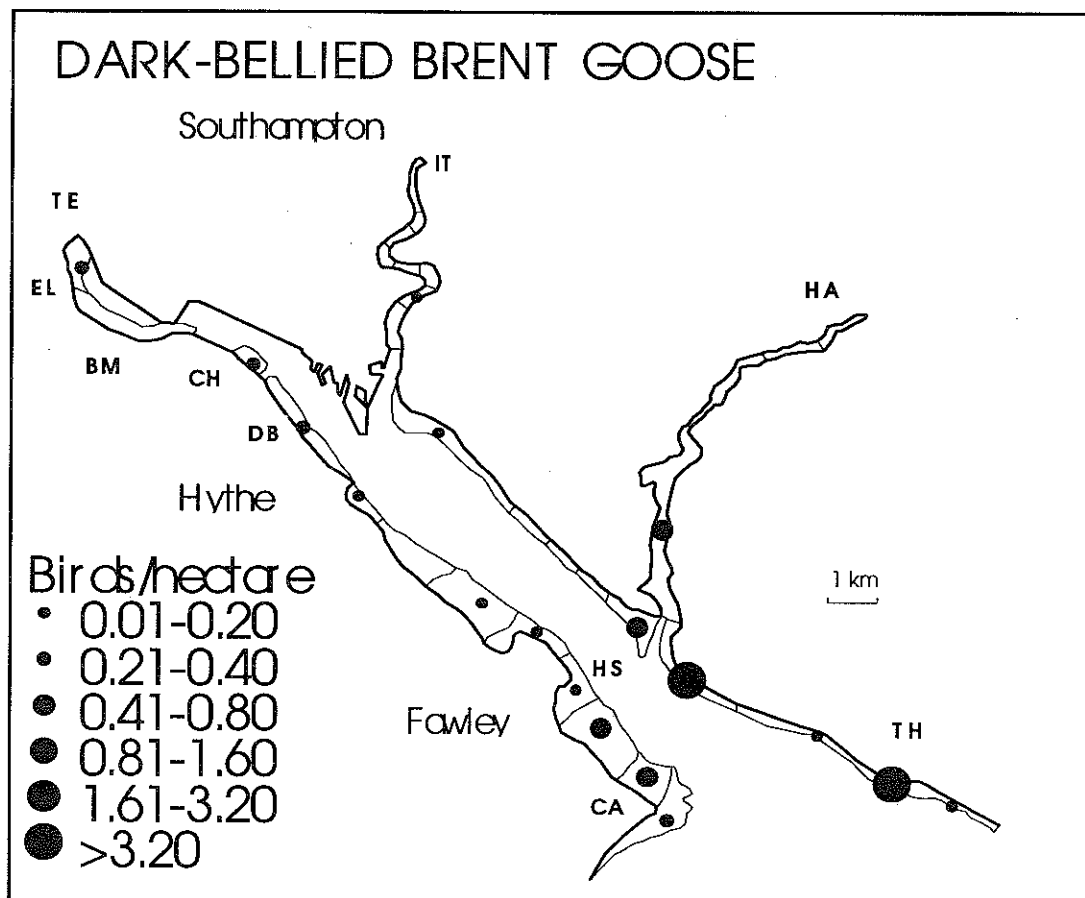
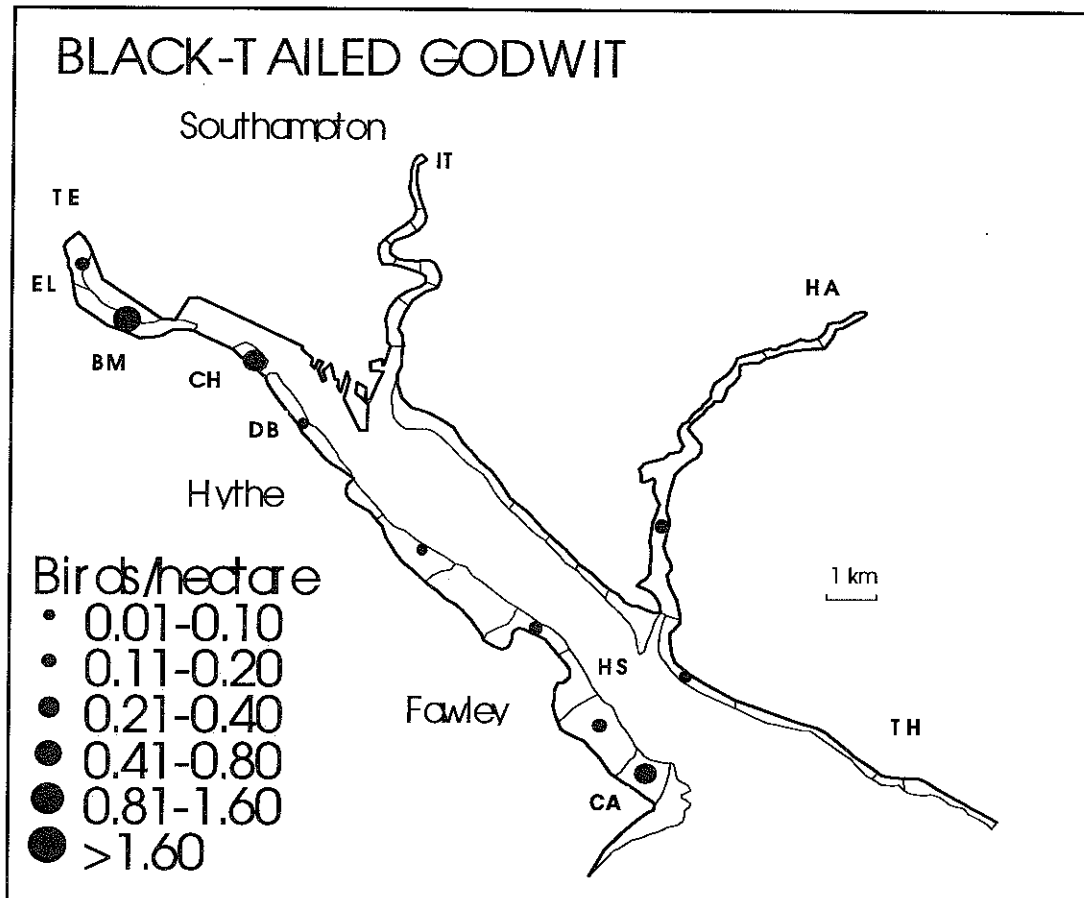
Bird distribution

The accompanying figure depicts the low tide distribution of Black-tailed Godwits at Southampton Water during 1996-97. As was mentioned in *Wildfowl and Wader Counts 1995-96*, the majority of the internationally important population of this species at Southampton Water usually occurs at Titchfield Haven, which is not counted for the WeBS Low Tide Counts. Elsewhere, birds were recorded widely, mostly along the west shore, with the highest mean density at Bury Marsh (BM).

The most numerous wader, the Dunlin, occurred almost throughout the whole site, with surprisingly high densities along the Itchen in Southampton, as well as at the Hamble Spit (HS), along the Lower Hamble and at Fawley-Calshot

(CA). Oystercatchers were also numerous and reached their highest densities at Cracknore Hard (CH) and Dibden Bay. Dibden was also the most important part of Southampton Water for Grey Plovers, which occurred widely except for the upper river stretches. Curlews and Redshanks occurred across almost the entire site. The highest densities of Curlews were at Dibden Bay whilst the highest concentrations of Redshanks were located upstream on the Itchen and Hamble Rivers. The shoreline at Hythe held the highest densities of both Turnstones and Ringed Plovers. Both of these widespread species also favoured the Hamble Spit. The most important area for roosting Lapwings and Golden Plovers was along the Lower Hamble, although large numbers of Lapwings also occurred at Bury/Eling (EL) Marshes. Very few Knots and Bar-tailed Godwits were recorded. The few Greenshanks present were confined to the Hamble River.

The low tide distribution of Dark-bellied Brent Geese at Southampton Water was fairly similar to that noted in 1995-96, with the highest densities at the south-eastern corner of the site and small numbers over much of the rest of the site (except for the upper stretches of the Itchen and Hamble). The most important concentration of Teals was at Fawley, followed by Bury Marshes and the Lower Hamble. Wigeon also favoured the Bury/Eling area and the stretch of shore from Hythe to Fawley. The only Pintail noted were at Fawley and Mallard, although widespread, showed a distinct preference for the upper stretches of the Hamble and Itchen. Shelducks were widespread, but favoured the Calshot-Hythe and Bury/Eling stretches. Goldeneyes preferred the waters off Dibden Bay and Cracknore Hard. Red-breasted Mergansers were also found off Dibden but were more widespread, particularly in the Itchen. The Itchen was also favoured by Mute Swans and Little Grebes. Nationally important numbers of Cormorants occur at Southampton Water, with concentrations at Eling, Hythe-Fawley and along the Itchen.



STOUR ESTUARY**Suffolk / Essex****Internationally important species:****Nationally important species:**

Ringed Plover, Grey Plover, Knot, Dunlin, Black-tailed Godwit, Redshank
Great Crested Grebe, Cormorant, Dark-bellied Brent Goose, Shelduck,
Wigeon, Pintail, Curlew

Site description

The Stour Estuary is a long, relatively straight estuary which forms the eastern end of the border between Suffolk and Essex. The estuary's mouth joins that of the Orwell as the two rivers enter the North Sea between Felixstowe and Harwich. The outer parts of the site are sandy, but shores become progressively muddier further upstream. There are five shallow bays; Seafeld (SE), Holbrook (HO) and Erwarton (ER) along the north shore and Copperas (CO) and Jacques (JA) on the south side. The estuary is backed by wooded cliffs and agricultural land. Since much of this land is private, there is very little disturbance to most of the estuary. Some sailing and shooting occurs (Buck 1997b, Prater 1981, Pritchard *et al.* 1992).

Bird distribution

The Stour Estuary currently holds about 50,000 wintering waterfowl. The accompanying figure shows the low tide distribution of Black-tailed Godwits on the Stour during 1996-97. This map illustrates very well the preference of this species for the muddy upper stretches of the estuary. The majority of birds are to be found upstream of Wrabness Point (WP), with a smaller concentration in the central parts of Copperas Bay. A mean count of 1,743 was made at low tide, which compares well with the totals from the WeBS Core Counts. The map showing the low tide distribution of Grey Plovers reveals a somewhat more even spread along the length of the estuary, although the mean count of only 1,405 Grey Plovers at low tide was only approximately half that counted at high tide. This species is either being overlooked at low tide, or else there is substantial movement in and out of the site.

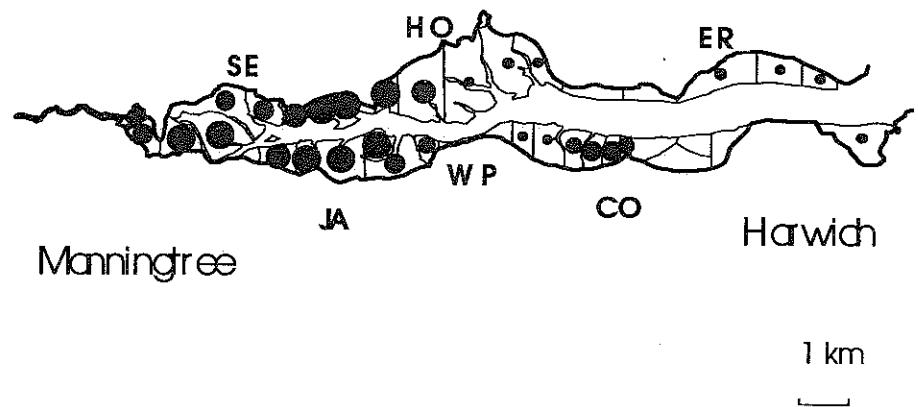
Of the other important wader species wintering on the Stour, Redshanks displayed a similar upstream-biased distribution to Black-tailed Godwits, whereas Dunlins showed more similarity in their habitat preferences to Grey Plovers. Ringed Plovers and Knots were a little more restricted in their distribution, although still fairly widespread. Ringed Plovers reached their highest densities at the western side of Holbrook Bay, to the north of Manningtree and near the estuary mouth. The highest density of feeding Knots, at about nine birds per hectare, was to be found at the western end of Copperas Bay. Lapwings, Oystercatchers and Curlews were widespread, although the former species favoured the inner estuary. Golden Plovers were much more localised, with most birds found in Copperas Bay, at Manningtree and in Jacques Bay; very few were present on the north shore. Turnstones appeared to prefer the central reaches of the estuary, with Copperas and Holbrook Bays favoured. Only relatively few Bar-tailed Godwits were recorded.

The Stour is also an important site for wildfowl. Wigeon occurred along the whole length of the site, but Pintails were more localised with most found either in Copperas Bay or upstream from the western end of Holbrook Bay. Mallards also showed a notable preference for Copperas Bay whilst Teal were found in their highest densities at the east end of Copperas Bay and at the far western end of the estuary. Both Shelduck and Brent Goose occurred widely, as did the nationally important Great Crested Grebes and Cormorants. Mute Swans tended to congregate at the western end of the estuary, as did any feral geese. Goldeneyes and Red-breasted Mergansers displayed an interesting difference in distribution, with the former more numerous in the inner parts of the estuary and the latter tending to be found more widely downstream.

BLACK-TAILED GODWIT

Birds/hectare

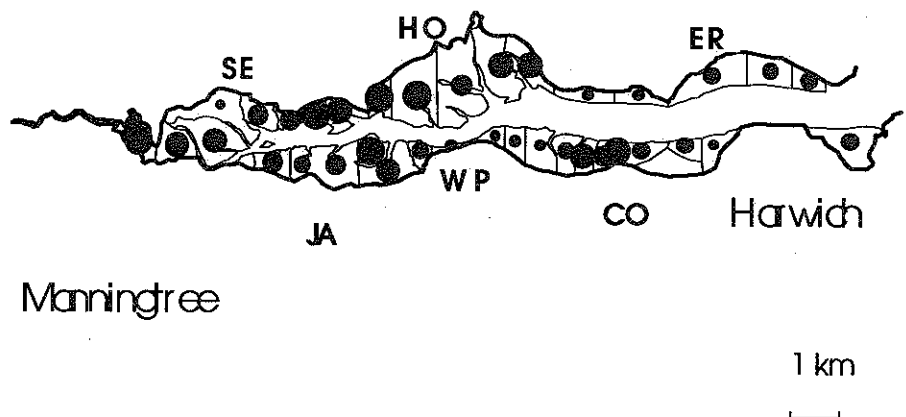
- 0.01-0.10
- 0.11-0.20
- 0.21-0.40
- 0.41-0.80
- 0.81-1.60
- >1.60



GREY PLOVER

Birds/hectare

- 0.01-0.10
- 0.11-0.20
- 0.21-0.40
- 0.41-0.80
- 0.81-1.60
- >1.60



TEES ESTUARY***Unitary authorities of Hartlepool, Stockton and Redcar & Cleveland*****Internationally important species:**

Knot

Nationally important species:

Little Grebe, Cormorant, Shelduck, Shoveler, Sanderling, Redshank

Site description

The Tees Estuary is, with the exception of Lindisfarne, the only sizable estuarine site on the east coast between the Humber and the Forth. The surveyed site includes the lower estuary of the River Tees, the adjacent Greatham Creek (GC) and Seal Sands (SS), along with the associated sandy beaches of Tees Bay between Hartlepool and Redcar. However, the peripheral non-tidal wetlands were not counted for the low tide survey. The Tees Estuary has suffered greatly from habitat loss caused by land-claim; around 3,300 hectares of intertidal land have been lost since 1720, initially for agriculture but latterly for industrial and port-related development. The result is a highly industrialised estuary, dominated by petrochemical plants, which may pose a potential pollution threat to the site's wintering waterfowl. However, given that little or no new land-claim is likely, more serious long-term impacts are thought to derive from sediment change (the incursion of coarser marine sediments) and possibly eutrophication (leading to the development of dense *Enteromorpha* beds). There is also disturbance from watersports around the estuary mouth, and from beach recreation along the length of Tees Bay (M. Leahey pers. comm., Pritchard *et al.* 1992, Buck 1997b).

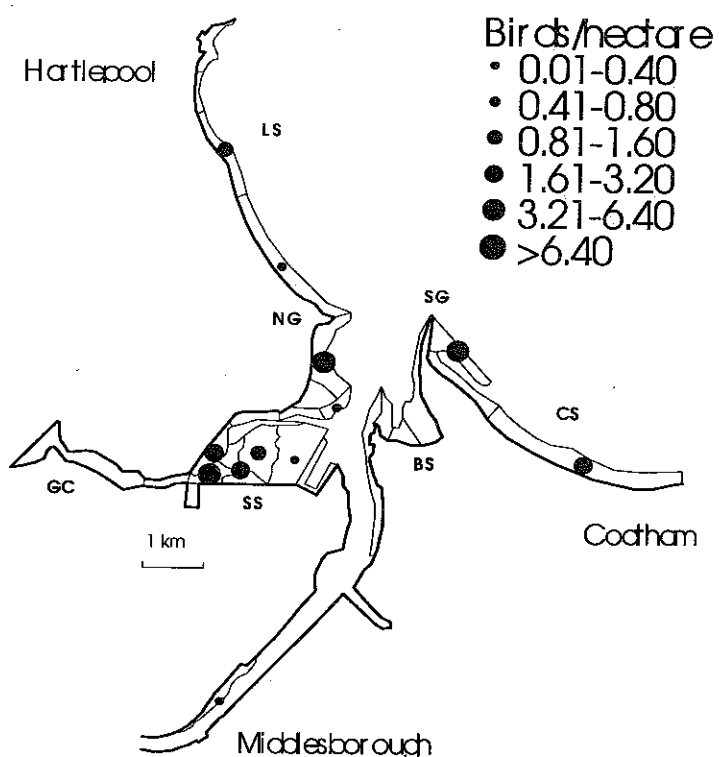
Bird distribution

The accompanying figure illustrates the low tide distribution of Knots on the Tees during the winter of 1996-97. The species favoured the western mudflats of Seal Sands, North Gare (NG), South Gare (SG) and Coatham Sands (CS). The mean low tide count was of only approximately 800 birds, much lower than the counts of over 3,000 on the site at high tide. Although it is probable that birds were not counted as accurately at low tide, the explanation is most likely to lie in the fact that much of the population vacates the inner estuary at low tide, preferring to feed on rocky reefs to seaward (for example, at Long Scar (LS) in Hartlepool Bay). Unfortunately, the Great Knot discovered on the October WeBS Core Count moved on before the WeBS Low Tide Counts began.

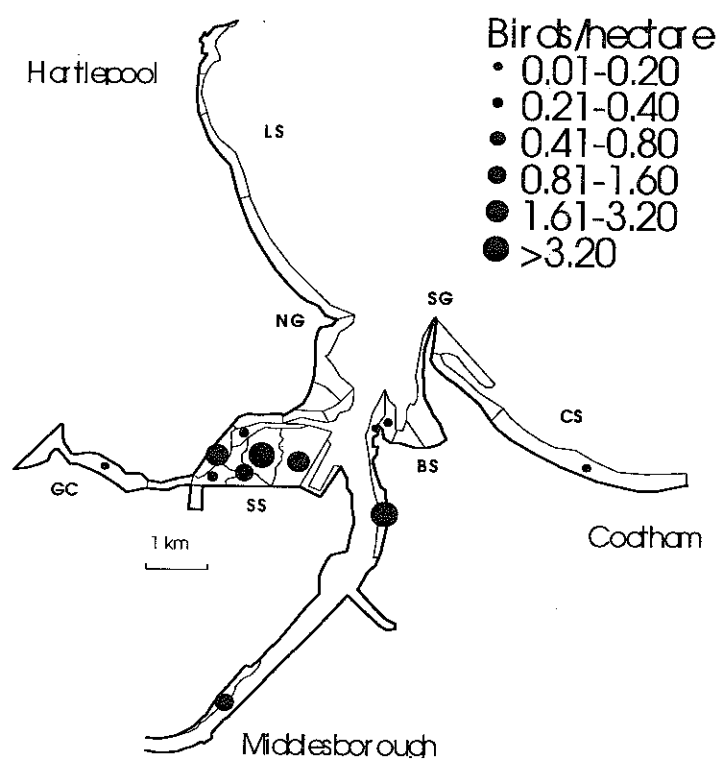
Many of the other waders of the Tees Estuary showed a preference for Seal Sands where, for example, the majority of Dunlins and Curlews were to be found. Grey Plovers also occurred here as well as at Bran Sands (BS). Bar-tailed Godwits reached their highest densities at the western end of Seal Sands and on Bran Sands. The majority of Redshanks favoured Seal Sands, but high densities were also found on the few remaining mudflats along the River Tees itself. Ringed Plovers were concentrated on Seal Sands and on the northern sections of Hartlepool Bay. Conversely, Sanderlings were virtually restricted to the beaches of Tees Bay, especially towards Hartlepool and Redcar. Turnstones were widespread but favoured South Gare and Hartlepool, and Purple Sandpipers were restricted to South Gare (the counted area did not extend to another favoured foraging area for this species on Hartlepool Headland). Oystercatchers reached their highest density at South Gare, but also frequented Seal Sands in good numbers. Lapwings, the majority of which were roosting, were found at Greatham Creek, in the north of Seal Sands and along the River Tees. A few Golden Plovers were present at the western end of Seal Sands. Only very small numbers of Ruffs and Black-tailed Godwits were noted.

The nationally important population of Shelducks on the Tees Estuary was also concentrated on Seal Sands, but reasonable densities were also found on the mudflats along the River Tees. However, the other nationally important wildfowl species, Shoveler, was virtually unrecorded during this survey, with just a handful recorded on Seal Sands. Almost all of the Shovelers at the Tees Estuary prefer the non-tidal wetlands around the edge of the estuary. Both Wigeons and Teals were found in good numbers at Greatham Creek. Wigeons were also present on Seal Sands (along with a handful of Pintails) while Teals and Mallards were also prominent along the River Tees. Cormorants favoured the south bank of the Tees. Gulls were present in good numbers and were widespread: Kittiwake, Little Gull and Mediterranean Gull were all recorded, but there were no records of Lesser Black-backed Gull.

KNOT



SHELDUCK



I-WeBS

The Irish Wetland Bird Survey (I-WeBS) was launched in November 1994 as a joint partnership between BirdWatch Ireland, National Parks and Wildlife Service of the Department of Arts, Culture and the Gaeltacht (Ireland), and The Wildfowl & Wetlands Trust, supported by the Heritage Council and WWF UK (World Wide Fund for Nature). The scheme is similar to, and compatible with, WeBS in the UK, with the main aim being to monitor waterfowl in the Republic of Ireland during the winter. Day-to-day organisation of the scheme is the responsibility

of the I-WeBS National Organiser, based at BirdWatch Ireland.

Total counts for 1996-97, the third season of I-WeBS counts, are presented in Table 84. Although a few important sites were known to be only partly counted, coverage is comprehensive and is believed to provide a reasonable picture of waterfowl numbers and distribution in Ireland (Figure 2). Full details and results are provided in Colhoun (1998).

Table 84. TOTAL NUMBERS OF WATERFOWL RECORDED BY I-WeBS IN THE REPUBLIC OF IRELAND DURING 1996-97

	Sep	Oct	Nov	Dec	Jan	Feb	Mar
<i>No. of sites covered</i>	176	167	191	191	310	195	193
<i>No. of sub-sites covered</i>	339	256	291	279	651	287	312
Red-throated Diver	83	149	147	314	312	42	175
Black-throated Diver	0	0	2	0	13	0	8
Great Northern Diver	13	41	180	95	357	81	200
Little Grebe	787	517	530	547	578	281	257
Great Crested Grebe	990	399	919	434	1,253	379	1,066
Red-necked Grebe	0	0	0	0	2	0	0
Slavonian Grebe	1	1	12	3	19	18	26
Black-necked Grebe	1	4	4	3	4	1	0
Cormorant	2,943	2,229	2,197	1,980	4,426	1,291	1,710
Grey Heron	863	503	646	354	754	215	333
Little Egret	33	48	27	27	40	25	29
Mute Swan	3,693	1,989	2,384	2,127	5,319	1,896	2,299
Bewick's Swan	0	1	78	287	1,025	335	13
Whooper Swan	13	334	2,531	2,206	5,814	1,825	2,104
Pink-footed Goose	1	1	26	8	22	8	12
European White-fronted Goose	0	0	0	0	2	0	2
Greenland White-fronted Goose	0	955	7,909	8,407	9,459	7,448	10,224
Greylag Goose	634	256	3,015	2,193	4,753	2,688	2,261
Canada Goose	143	61	91	15	141	177	159
Barnacle Goose	2	1	197	1,178	3,387	603	826
Light-bellied Brent Goose	33	905	4,900	7,189	9,725	6,325	4,103
Feral/hybrid Goose	3	0	6	72	63	0	27
Shelduck	199	393	3,034	4,975	13,129	6,488	4,333
Wigeon	14,982	18,135	21,700	30,812	53,388	23,946	13,217
American Wigeon	0	1	1	1	3	0	4
Gadwall	80	104	178	186	361	112	417
Teal	8,965	6,245	13,894	14,986	23,995	8,109	7,341
Mallard	17,945	10,923	11,124	9,836	16,339	5,464	3,062
Pintail	84	249	633	622	1,642	173	112
Garganey	6	1	0	0	0	0	0
Shoveler	168	397	1,127	1,611	2,082	718	669
Pochard	8,244	162	10,024	3,909	13,402	1,207	2,192
Ring-necked Duck	0	0	0	1	1	1	0
Ferruginous Duck	0	0	0	1	1	1	0
Tufted Duck	5,864	994	2,685	3,307	13,496	3,779	4,572
Scaup	5	1,164	107	252	2,906	261	421
Eider	3	3	1	3	11	2	9
Long-tailed Duck	0	0	20	1	81	59	90
Common Scoter	4,842	12,729	11,944	6,335	7,463	1,064	2,506
Surf Scoter	0	1	0	0	2	0	0
Velvet Scoter	0	0	0	2	4	1	4
Goldeneye	3	7	785	690	2,390	907	1,246
Smew	0	0	0	0	2	1	0
Red-breasted Merganser	634	380	805	581	1,340	376	614
Goosander	16	0	6	16	7	1	4
Ruddy Duck	0	0	4	1	11	1	1

	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Hybrid/Feral Mallard type	0	0	15	18	23	4	10
Hybrid Aythya	0	0	0	2	0	0	1
Water Rail	25	28	16	25	37	11	20
Moorhen	658	503	470	444	575	369	535
Coot	12,576	2,599	5,210	5,843	14,688	1,113	2,382
Total wildfowl & allies	85,535	63,412	109,584	111,899	214,847	77,806	69,596
Oystercatcher	22,675	20,355	12,722	11,444	27,256	9,936	9,681
Ringed Plover	3,528	2,274	2,201	1,732	3,051	1,080	567
Golden Plover	1,443	53,478	47,662	63,741	79,612	36,853	26,402
Grey Plover	1,420	1,199	5,931	2,643	5,107	1,802	773
Lapwing	3,550	11,494	46,601	66,549	200,376	52,955	2,530
Knot	953	2,710	5,102	5,937	27,180	5,285	1,904
Sanderling	899	959	1,309	629	1,473	422	524
Little Stint	422	10	0	1	1	0	0
Baird's Sandpiper	0	1	0	0	0	0	0
Curlew Sandpiper	395	44	2	2	3	1	0
Purple Sandpiper	0	0	97	16	452	29	39
Dunlin	11,373	17,326	45,094	48,858	98,570	22,318	14,538
Buff-breasted Sandpiper	2	0	0	0	0	0	0
Ruff	48	16	20	7	7	2	4
Jack Snipe	1	1	16	19	18	3	16
Snipe	318	341	1,131	647	1,441	527	519
Woodcock	1	0	0	9	21	0	1
Black-tailed Godwit	5,779	7,786	4,051	4,703	6,551	4,690	4,319
Bar-tailed Godwit	2,888	4,062	3,576	6,199	16,423	3,244	3,191
Whimbrel	6	3	2	2	3	5	0
Curlew	13,761	10,732	11,635	11,832	23,542	14,300	7,220
Spotted Redshank	28	31	34	21	23	13	7
Redshank	11,455	10,206	7,689	5,719	11,648	8,574	6,316
Greenshank	522	353	253	141	338	113	163
Green Sandpiper	11	4	0	1	6	10	7
Wood Sandpiper	12	1	0	0	0	0	0
Common Sandpiper	14	3	4	3	3	5	10
Turnstone	1,073	1,208	1,504	1,086	2,434	1,231	892
Total waders	82,577	144,597	196,636	231,941	505,539	163,398	79,623
Mediterranean Gull	1	4	3	3	9	8	2
Little Gull	1	0	0	0	6	3	5
Sabines Gull	1	0	0	0	0	0	0
Black-headed Gull	24,850	15,768	14,826	13,170	38,527	18,199	13,634
Ring-billed Gull	1	2	3	2	4	2	3
Common Gull	3,654	2,168	5,048	3,127	8,259	1,790	930
Lesser Black-backed Gull	8,607	2,489	3,594	2,018	9,981	1,652	1,243
Herring Gull	3,995	6,277	5,379	6,339	9,361	10,769	5,390
Iceland Gull	0	0	1	0	4	0	2
Glaucous Gull	0	0	0	2	8	1	0
Great Black-backed Gull	1,989	2,270	1,686	1,055	2,152	1,768	749
Kittiwake	321	11	451	55	115	9	125
Total gulls	43,420	28,989	30,991	25,771	68,426	34,201	22,083
Sandwich Tern	1,353	14	0	0	0	0	4
Common Tern	53	1	0	0	0	0	0
Arctic Tern	14	0	0	0	0	0	0
Forster's Tern	0	0	0	0	0	0	1
Total terns	1,420	15	0	0	0	0	5
Kingfisher	22	17	12	11	15	2	11
TOTAL WATERFOWL	212,974	237,030	337,223	369,622	788,827	275,407	171,318

REFERENCES

- Austin, G.E., Rehfish, M.M. & Waters, R.J. 1995. *Regional Trends in Wader Populations*. A report by the British Trust for Ornithology to the WeBS partners. 48 pp.
- Beecroft, R. 1990. Trimley Marshes Nature Reserve. In: Piotrowski, S.H. (Ed.) *Suffolk Birds 1990*. The Suffolk Naturalists' Society, Ipswich.
- Bibby, C.J., Burgess, N.D. & Hill, D.A. 1992. *Bird Census Techniques*. Academic Press, London.
- BOURC. 1997. British Ornithologists' Union Records Committee: Twenty-third Report (July 1996). *Ibis* 139: 197-201.
- Bowler, J.M., Butler, L., Liggett, C. & Rees, E.C. 1994. Bewick's and Whooper Swans *Cygnus columbianus bewickii* and *C. cygnus*: the 1993-94 season. *Wildfowl* 45: 269-275.
- Bowler, J., Still, L., Bevan, R., & Hughes, B. 1997. Feeding behaviour of fish-eating birds in Great Britain. Preliminary Report to the Department of the Environment, Transport & the Regions.
- Buck, A.L. 1997a. *An inventory of UK estuaries. Volume 6. Southern England*. Joint Nature Conservation Committee, Peterborough.
- Buck, A.L. 1997b. *An inventory of UK estuaries. Volume 5. Eastern England*. Joint Nature Conservation Committee, Peterborough.
- Buck, A.L. & Donaghy, A. 1996 *An inventory of UK estuaries. Volume 7. Northern Ireland*. Joint Nature Conservation Committee, Peterborough.
- Burton, N.H.K. & Evans, P.R. 1997. Survival and winter site-fidelity of Turnstones *Arenaria interpres* and Purple Sandpipers *Calidris maritima* in northeast England. *Bird Study* 44: 35-44.
- Cayford, J.T. & Waters R.J. 1996. Population estimates for waders Charadrii wintering in Great Britain, 1987/88-1991/92. *Biol. Conserv.* 77: 7-17.
- Chandler, R.J. 1986. Slavonian Grebe. Pp 46-47. In: Lack, P. (Ed.) *The Atlas of Wintering Birds in Britain and Ireland*. T. & A.D. Poyser, London.
- Clausen, P., Madsen, J., Percival, S.P., O'Connor, D. & Anderson, G.Q.A. 1998. Population development and changes in winter site use by the Svalbard light-bellied brent goose, *Branta bernicla hrota* 1980-1994. *Biol. Cons.* 84: 157-165.
- Colhoun, K. 1998. *Irish Wetland Bird Survey 1996-97*. BirdWatch Ireland, Dublin.
- Cosgrove, P.J. 1997. A winter survey of sawbill ducks and Cormorants on the River Deveron, north east Scotland. *Scot. Birds* 19: 93-100.
- Cranswick, P.A., Kirby, J.S., Salmon, D.G., Atkinson-Willes, G.L., Pollitt, M.S. & Owen, M. 1997. A history of wildfowl counts by WWT. *Wildfowl* 47: 217-230.
- Danielsen, F., Skov, H. & Durnick, J. 1993. Estimates of the wintering population of Red-throated Diver *Gavia stellata* and Black-throated Diver *Gavia arctica* in northwest Europe. *Proc. 7th Nordic Congress of Ornithology, 1990*. pp. 18-24.
- Davidson, N.C. & Evans, P.R. 1986. The role and potential of man-made and man-modified wetlands in the enhancement of the survival of overwintering shorebirds. *Colonial Waterbirds* 9: 176-188.
- Davidson, N.C., Laffoley, D.d'A., Doody, J.P., Way, L.S., Key, R., Drake, C.M., Pienkowski, M.W., Mitchell, R. & Duff, K.L. 1991. *Nature conservation and estuaries in Great Britain*. Nature Conservancy Council, Northminster House, Peterborough.
- Delany, S.N. 1997. *Irish Wetland Bird Survey 1995-96*. BirdWatch Ireland, Dublin.
- Delany, S.N. & Orr, J. 1997. Numbers of Light-bellied Brent Geese in Ireland, 4-10 October 1996. Unpublished report, BirdWatch Ireland, 7pp.
- Dott, H.E.M. 1997. Declines in Turnstones and Purple Sandpipers wintering in south east Scotland. *Scot. Birds*, 19: 101-104.
- Elliott, G. 1993. Black-necked Grebe. pp 30-31. In: Gibbons, D.W., Reid, J.B. & Chapman, R. (Eds) 1993. *The New Atlas of Breeding Birds in Britain and Ireland: 1988-1991*. T. & A.D. Poyser, London.
- Forshaw, W.D. 1995. *Report on wild geese and swans in Lancashire, 1994/95*. Unpubl. report, 12 pp.
- Fox, A.D. & Francis, I. 1997. *Report of the 1996/97 national census of Greenland White-fronted Geese in Britain*. GWGS, Kalø, Denmark, 10 pp.
- Fox, A.D., Norriss, D.W., Stroud, D.A. & Wilson, H.J. 1994. *Greenland White-fronted Goose in Ireland and Britain 1982/83 - 1993-94 - the first twelve years of international monitoring*. GWGS/NPWS, Aberystwyth/Dublin. 56 pp.
- Fox, A.D., Norriss, D.W., Stroud, D.A., Wilson, H.J. & Merne, O.J. 1998. The Greenland white-fronted goose *Anser albifrons flavirostris* in Ireland and Britain 1982/83-1994/95: Population change under conservation legislation. *Wildlife Biology* 4: 1-12.
- Fox, A.D. 1996. *Zostera* exploitation by Brent Geese and Wigeon on the Exe Estuary, southern England. *Bird Study* 43: 257-268.
- Gardarsson, A. & Einarsson, A. 1997. Numbers and production of Eurasian Wigeon in relation to conditions in a breeding area, Lake Myvatn, Iceland. *J. Appl. Ecol.* 66: 439-451.
- Gibbons, D.W., Bainbridge, I.P., Mudge, G.P., Tharme, A.P., & Ellis, P.M. 1997. The Status and distribution of the Red-throated Diver (*Gavia stellata*) in Britain in 1994. *Bird Study* 44: 194-205.
- Green, M. & Elliott, D. 1993. *Surveys of wintering birds and cetaceans in northern Cardigan Bay, 1990-93*. Report by Friends of Cardigan Bay, 32 pp.
- Holloway, S.J. 1997. *Winter Distribution and Disturbance of Wildfowl and Waders on Findhorn Bay*. BTO Research Report No. 179.
- Holloway, S. 1996. *The historical atlas of breeding birds in Britain and Ireland, 1875-1900*. T. & A.D. Poyser, London, 476 pp.
- Holmes, J.S. & Stroud, D.A. 1995. Naturalised birds: feral, exotic, introduced or alien? *Brit. Birds* 88: 602-603.
- Hutchinson, C.D. 1979. *Ireland's Wetlands and their birds*. IWC, Dublin, 201 pp.
- Kershaw, M. & Hughes, B. 1997. *Trends in the numbers of Cormorants Phalacrocorax carbo, Goosanders Mergus merganser and Red-breasted Mergansers M. serrator wintering in the UK*. Report to the British Trust for Ornithology.
- Kirby, J.S. 1995. Winter population estimates for selected waterfowl species in Britain. *Biol. Cons.* 73: 189-198.
- Kirby, J.S. & Bell, M.C. 1997. The detection of unusual population behaviour: applications for wildfowl at a national and flyway level. Pp. 161-197. In: Van Vesslem, J. (Ed). *Proceedings International Conference of Wetlands and Development*, Kuala

- Lumpur, Malaysia, 9-13 October 1995. Wetlands International, Kuala Lumpur.
- Kirby, J.S., Salmon, D.G. & Atkinson-Willes, G.L. & Cranswick, P.A. 1995. Index numbers for waterbird populations, III. Long-term trends in the abundance of wintering wildfowl in Great Britain, 1966/67 to 1991/2. *J. Appl. Ecol.* 32: 536-551.
- Lloyd, C., Tasker, M.L. & Partridge, K. 1991. *The Status of Seabirds in Britain and Ireland*. T. & A.D. Poyser, London.
- McElwaine, J.G., Wells, J.H. & Bowler, J.M. 1995. Winter movements of Whooper Swans visiting Ireland: preliminary results. *Irish Birds* 5: 265-278.
- Mitchell, C.R. 1997. *The 1996 national census of Pink-footed and Greylag Geese in Britain*. WWT report to JNCC, Slimbridge, 13 pp.
- Mitchell, C.R., MacDonald, R. & Boyer, P.R. 1995. *Greylag Geese on the Uists*. WWT report to JNCC, Slimbridge, 6 pp.
- Mooij, J.H. 1997. The status of White-fronted Goose (*Anser a. albifrons*) in the Western Palearctic. *Die Vogelwarte* 39: 61-81.
- Moss, D. & Moss, G.M. 1993. Breeding biology of the Little Grebe *Tachybaptus ruficollis* in Britain and Ireland. *Bird Study* 40: 107-114.
- Musgrove, A.J. 1997. *Validation of WeBS Methodology - the relationship between waterfowl counts carried out at high and low tide*. BTO Research Report No. 190.
- Musgrove, A.J. & Holloway, S.J. 1997. *Counting Waterfowl on Large Estuaries at Low Tide*. BTO Research Report No. 178.
- Newson, S., Hughes, B. & Sellers, R.M. 1997. *Status and breeding success of Cormorants Phalacrocorax carbo in Wales in 1996: The effect of the Sea Empress oil spill*. Report to the Sea Empress Environmental Evaluation Committee.
- Owen, M., Atkinson-Willes, G.L. & Salmon, D.G. 1986. *Wildfowl in Great Britain*. 2nd Edition. University Press, Cambridge.
- Parrack, J.D. 1986. Great Northern Diver. Pp 38-39. In Lack, P. *The Atlas of Wintering Birds in Britain and Ireland*. T. & A.D. Poyser, Calton.
- Pirot, J.-Y., Laursen, K., Madsen, J. & Monval, J.-Y. 1989. Population estimates of swans, geese, ducks and Eurasian Coot *Fulica atra* in the Western Palearctic and Sahelian Africa. In: Boyd, H. & Pirot, J.-Y. (Eds.) *Flyways and Reserve Networks for Water Birds*. *IWRB Spec. Publ.* 9, IWRB, Slimbridge: 12-23.
- Prater, A.J. 1981. *Estuary birds of Britain and Ireland*. T. & A.D. Poyser, Carlton.
- Prater, A.J. 1993. Egyptian Goose. pp 54-55. In: Gibbons, D.W., Reid, J.B. & Chapman, R. (Eds.) 1993. *The New Atlas of Breeding Birds in Britain and Ireland: 1988-91*. T. & A.D. Poyser, London.
- Pritchard, D.E., Housden, S.D., Mudge, G.P., Galbraith, C.A. & Pienkowski, M.W. (Eds.) 1992. *Important Bird Areas in the UK including the Channel Islands and the Isle of Man*. RSPB, Sandy.
- Prŷs-Jones, R. P., Underhill, L.G. & Waters, R.J. 1994. Index numbers for waterbird populations. II Coastal wintering waders in the United Kingdom, 1970/71 - 1990/91. *J. Appl. Ecol.* 31: 481-492.
- Ramsar Convention Bureau 1998. *Convention on Wetlands of International Importance especially as Waterfowl Habitat*. Proceedings of the third meeting of the Conference of the Contracting Parties, Regina, Canada, 1987. Ramsar, Switzerland.
- Riddlington, R., Hassall, M., Lane, S.J., Turner, P.A. & Walters, R. 1996 The impact of disturbance on the behaviour and energy budgets of Brent Geese *Branta b. bernicla*. *Bird Study* 43: 269-279.
- Rogers, M.J. & the Rarities Committee. 1996. Report on rare birds in Great Britain in 1995. *Brit. Birds* 89: 481-531.
- Rose, P.M. & Scott, D.A. 1997. *Waterfowl Population Estimates*. Second Edition. *Wetlands International Publ.* 44, Wageningen, The Netherlands.
- Scott, D.A. & Rose, P.M. 1996. *Atlas of Anatidae Populations in Africa and Western Eurasia*. Wetlands International Publ. No. 41, Wetlands International, Wageningen, The Netherlands.
- Sellers, R.M. & Hughes, B. 1997. *Inventory of inland Cormorant roosts and breeding sites in Great Britain*. Report to the Joint Nature Conservation Committee.
- Sheppard, R. 1993. *Ireland's Wetland Wealth*. Birdwatch Ireland, Dublin, 152 pp.
- Simpson, J. & Maciver, A. 1997. *Population and Distribution of Bean Geese in the Slamannan Area, year 1996/97*. The Bean Goose Working Group.
- Smit, C.J. & Piersma, T. 1989. Numbers, midwinter distribution and migration of wader populations using the East Atlantic flyway. In: Boyd, H. & Pirot, J.-Y. (Eds.) *Flyways and reserve networks for waterbirds*. *IWRB Spec. Publ.* 9, Slimbridge: 24-64.
- Smith, T., Bainbridge, I. & O'Brien, M. 1994. *Distribution and habitat use by Bean Geese in the Slamannan area*. RSPB report to SNH, 71 pp.
- Stenning, J. 1994. *Moray Firth Monitoring: winter 1993-94*. RSPB report, 36 pp.
- Stewart, B. 1996. *Common Scoters in Carmarthen Bay*. Unpubl. report to CCW, 7 pp.
- Stewart, B., Hughes, B., Bullock, I. & Haycock, R. 1997. *Common Scoter Melanitta nigra monitoring in Carmarthen Bay following the Sea Empress oil spill*. WWT Wetlands Advisory Service report to the Sea Empress Environmental Evaluation Committee (CCW contract no. FC 73-02-53), Slimbridge.
- Stone, B.H., Sears, J., Cranswick, P.A., Gregory, R.D., Gibbons, D.W., Rehfish, M.M., Aebischer, N.J. & Reid, J.B. 1997. Population estimates of birds in Britain and in the United Kingdom. *Brit. Birds* 90: 1-22.
- Stroud, D.A., Mudge, G.P. & Pienkowski, M.W. 1990. *Protecting internationally important bird sites: a review of the EEC Special Protection Area network in Great Britain*. NCC, Peterborough, 230 pp.
- Underhill, L.G. 1989. Indices for waterbird populations. *BTO Research Report* 52.
- Underhill, L.G. & Prŷs-Jones, R. 1994 Index numbers for waterbird populations. I. Review and methodology. *J. Appl. Ecol.* 31: 463-480.
- Waters, R.J. 1994. Wintering gulls 1953-1993. *BTO News* 190: 9-10.
- Way, L.S., Grice, P., MacKay, A., Galbraith, C.A., Stroud, D.A. & Pienkowski, M.W. 1993. *Ireland's internationally important bird sites: a review of sites for the EC Special Protection Area network*. JNCC, Peterborough, 231 pp.

GLOSSARY

The terms listed below are generally restricted to those that have been adopted specifically for use within WeBS or more widely for monitoring.

Autumn For waders, autumn comprises July to October inclusive.

Due to differences in seasonality between species (see *Monthly Fluctuations*), a strict definition of autumn is not used for wildfowl.

British Trust for Ornithology (BTO) The BTO is a well respected organisation, combining the skills of professional scientists and volunteer birdwatchers to carry out research on birds in all habitats and throughout the year. Data collected by the various surveys form the basis of extensive and unique databases which enable the BTO to objectively advise conservation bodies, government agencies, planners and scientists on a diverse range of issues involving birds.

Complex site A *WeBS site* that consists of two or more *sectors*.

Core Counts The basic WeBS counts that monitor all wetlands throughout the UK once per month on priority dates. Used to determine population estimates and trends and identify important sites.

Local Organiser Person responsible for co-ordinating counters and counts at a local level, normally a county or large estuary, and the usual point of contact with WeBS partner HQs.

Incomplete counts When presenting counts of an individual species, a large proportion of the number of birds was suspected to have been missed, e.g. due to part coverage of the site or poor counting conditions, or when presenting the total number of birds of all species on the site, a significant proportion of the total number was missed.

I-WeBS An independent but complementary scheme operating in the Republic of Ireland to monitor non-breeding waterfowl, organised by the IWC Birdwatch Ireland, the National Parks and Wildlife Service (Ireland) and The Wildfowl & Wetlands Trust.

Joint Nature Conservation Committee (JNCC) JNCC is the statutory body constituted by the Environmental Protection Act 1990 to be responsible for research and advice on nature conservation at both UK and international levels. The committee is established by English Nature, Scottish Natural Heritage and the Countryside Council for Wales, together with independent members and representatives from the Countryside Commission and Northern Ireland, and is supported by specialist staff.

Low Tide Counts (LTC) WeBS counts made at low tide to assess the relative importance of different parts of individual estuaries as feeding areas for intertidal waterfowl.

Royal Society for the Protection of Birds (RSPB) The RSPB is the charity that takes action for wild birds and the environment in the UK. The RSPB is the national BirdLife partner in the UK.

Spring For waders, spring comprises April to June inclusive. Due to differences in seasonality between species (see *Monthly Fluctuations*), a strict definition of spring is not used for wildfowl.

Waterfowl WeBS follows the definition adopted by Wetlands International. This includes a large number of families, those occurring regularly in the UK being divers, grebes,

cormorants, herons, storks, ibises and spoonbills, wildfowl, cranes, rails, waders and gulls and terns. Note that, due to differences in coverage, not all families may be included in the 'waterfowl totals' given in this report, although the species excluded and the reasons for this will be given in each case.

WeBS count sector The unit of division of large *sites* into areas which can be counted by one person in a reasonable time period. They are often demarcated by geographic features to facilitate recognition of the boundary by counters. The finest level at which data are recorded.

WeBS count site A biologically meaningful area that represents a discrete area used by waterfowl such that birds regularly move within but only occasionally between sites. The highest level at which count data are stored.

WeBS count sub-site A grouping of *sectors* within a *site* to facilitate co-ordination. In most cases, sub-sites also relate to biologically meaningful units for describing waterfowl distribution.

WeBS count unit The area/boundary within which a count is made. The generic term for *sites*, *sub-sites* and *sectors*.

Wetland Advisory Service (WAS) The environmental consultancy wing of The Wildfowl & Wetlands Trust.

The Wildfowl & Wetlands Trust (WWT) Founded by Sir Peter Scott in 1946, WWT is the only wildlife conservation charity specialising in wetlands and the wildlife they support. It has pioneered the bringing together of people and wildlife for the benefit of both and seeks to raise awareness of the value of wetlands, the threats they face and the actions needed to save them. To this end, WWT has eight centres throughout the UK and is dedicated to saving wetlands for wildlife and people.

Winter For waders, winter comprises November to March inclusive. Due to differences in seasonality between species (see *Monthly Fluctuations*), a strict definition of winter is not used for wildfowl.

Winter (five-year) peak mean Calculated by averaging the peak count in each season for a particular species at an individual site (i.e. the right hand column of figures in the table in each species account). Normally calculated using the most recent five years' data, this figure is compared with the respective 1% *thresholds* to determine if the site qualifies as nationally or internationally important.

1% criterion The Ramsar Convention has established site selection criteria. One such criterion (currently numbered Criterion 3c) indicates that a site is identified as being of international importance if it holds 1% or more of a population of waterfowl. A change in the 1% criterion would be if the selection threshold changes to, say, 2% of a population (the 2% criterion) or 0.5% of a population (0.5% criterion). The term thus relates to the proportion (1%) that is used as a criterion for internationally important site selection.

1% threshold This logically derives from the 1% *criterion* and relates to the number of birds that are used as the nominal 1% of the population for the purposes of site selection. Thus, an international population of 75,215 Shelduck has a derived 1% threshold (adopting rounding conventions) of 750.

Appendix 1. INTERNATIONAL AND NATIONAL IMPORTANCE

Site designations

Criteria for assessing the international importance of wetlands have been agreed by the Contracting Parties to the Ramsar Convention on Wetlands of International Importance (Ramsar Convention Bureau 1988). Under one criterion, a wetland is considered internationally important if it regularly holds at least 1% of the individuals in a population of one species or subspecies of waterfowl, while any site regularly holding a total of 20,000 or more waterfowl also qualifies. Britain and Ireland's wildfowl belong to the north-west European population (Pirrot *et al.* 1989), and the waders to the east Atlantic flyway population (Smit & Piersma 1989). A wetland in Britain is considered nationally important if it regularly holds 1% or more of the estimated British population of one species or subspecies of waterfowl, and in Northern Ireland important in an all-Ireland context if it holds 1% or more of the estimated all-Ireland population (see Table 74).

Between 1 December 1996 and 31 December 1997, a total of 27 SPAs and 10 Ramsar sites were designated by the UK. Since most of the major important estuarine areas have already been designated, new SPA designations during this period included many areas of importance for non-waterfowl species. However, key waterfowl areas to benefit included the Dornoch Firth and Loch Fleet and the Somerest Levels and Moors in Great Britain

and Larne Lough and Upper Lough Erne in Northern Ireland. We look forward to further progress on site designations by government in 1998.

Ramsar designation only

Midland Meres and Mosses Phase 2

SPA designation only

South Pennine Moors Phase 2, Tamar Estuaries Complex, Rathlin Island, Achanalt Marshes, Caenlochan, Cairngorms, Drumochter Hills, Loch Ashie, Loch Flemington, Loch Knockie and Nearby Lochs, Loch Lomond, Lochs of Spiggie and Brow, North Colonsay and Western Cliffs, North Harris Mountains, North Inverness Lochs, Pentland Firth Islands, St Abb's Head to Fast Castle, Troup Pennan and Lion's Head

SPA and Ramsar designation

Somerset Levels and Moors, Larne Lough, Upper Lough Erne, Dornoch Firth and Loch Fleet, East Sanday Coast, Moray and Nairn Coast, River Spey - Insh Marshes, Ronas Hill - North Roe and Tingon, South Uist Machair and Lochs

By 31 December 1997, 115 Ramsar sites and 164 SPAs have been designated in the UK, with a further three UK Ramsar sites in Dependent Territories.

(R) = Ramsar site only; (S) = SPA only; the remainder have dual designation.

Abberton Reservoir	Cors Caron (R)	Grassholm (S)	Loch Spynie
Abernethy Forest (S)	Cors Fochno/Dyfi (R)	Great Yarmouth North	Loch Vaa (S)
Achanalt Marshes (S)	Crymlyn Bog (R)	Denes (S)	Lochs Druidibeg/ a'Machair/
Ailsa Craig (S)	Deben Estuary	Greenlaw Moor	Stillgary
Alde-Ore Estuary	Dee Estuary	Gruinart Flats	Lochs of Spiggie and
Alt Estuary	Dengie (Mid-Essex Coast	Harnford Water	Brow (S)
Ashdown Forest (S)	Phase 1)	Handa Island (S)	Lough Neagh and Lough
Benacre to Easton	Dersingham Bog (R)	Hermaness & Saxa Vord (S)	Beg (R)
Bavents (S)	Derwent Ings	Hickling Broad/Horsey	Lower Derwent Valley
Benfleet & Southend	Dornoch Firth and Loch Fleet	Mere (R)	Malham Tarn (R)
Blackwater Estuary (mid-	Drumochter Hills (S)	Holburn Lake and Moss	Martin Mere
Essex Coast Phase 4)	East Caithness Cliffs (S)	Hornsea Mere (S)	Marwick Head (S)
Bowland Fells (S)	East Sanday Coast	Hoselaw Loch	Medway Estuary and Marshes
Breydon Water	Eilean na Muice Duibhe	Humber Flats & Marshes	Mersey Estuary
Bridgend Flats	(Duich Moss)	Irlinghead Mires (R)	Midland Meres and
Bridgwater Bay (R)	Elenydd Mallaen (S)	Laggan Peninsula (S)	Mosses (R)
Broadland	Esthwaite Water (R)	Larne Lough	Midland Meres and Mosses
Bure Marshes (R)	Exe Estuary	Leighton Moss	Phase 2 (R)
Burry Inlet	Fair Isle (S)	Lindisfarne	Mingulay & Berneray (S)
Caenlochan (S)	Fala Flow	Llyn Idwal (R)	Minsmere/Walberswick
Cairngorm Lochs (R)	Farne Islands (S)	Llyn Tegid (R)	Monach Isles (S)
Cairngorms (S)	Fetlar (S)	Loch An Duin (R)	Montrose Basin
Cameron Reservoir	Feur Lochain	Loch Ashie (S)	Moor House (S)
Cape Wrath (S)	Flamborough Head &	Loch Eye	Moray and Nairn Coast
Castle Loch, Lochmaben	Bémpton Cliffs (S)	Loch Flemington(S)	Morecambe Bay
Castlemark Coast (S)	Flannan Isles (S)	Loch Ken/Dee Marshes	Mousa (S)
Chesil Beach/Fleet	Forth Islands (S)	Loch Knockie and Nearby	Nene Washes
Chew Valley Lake (S)	Foula (S)	Lochs (S)	North Caithness Cliffs (S)
Chichester/Langstone	Foulness	Loch Leven (R)	North Colonsay and Western
Harbours	Fowlsheugh (S)	Loch Lomond (R)	Cliffs (S)
Chippenham Fen (R)	Gibraltar Point/The Wash	Loch Lomond(S)	North Harris Mountains(S)
Claish Moss (R)	(Phase 2)	Loch Maree	North Inverness Lochs(S)
Coll	Glac-na-Criche	Loch of Kinnordy	North Norfolk Coast
Colne Estuary (Mid-Essex	Gladhouse Reservoir	Loch of Lintrathen	Noss (S)
Coast Phase 2)	Glannau Aberdaron (S)	Loch of Skene	Old Hall Marshes
Copinsay (S)	Glannau Ynys Gybi (S)	Loch of Strathbeg	Orfordness/Havergate (S)
Coquet Island (S)	Glen Tanar (S)	Loch Ruthven	Ouse Washes

Pagham Harbour	River Crouch Marshes (Mid-	Phase 2 (S)	The Wash
Papa Westray (S)	Essex Coast Phase 3)	South Tayside Goose Roosts	Thursley & Ockley Bogs (R)
Pentland Firth Islands(S)	River Spey - Insh Marshes	South Uist Machair and Lochs	(the above two sites overlap)
Pettigoe Plateau	Rockcliffe Marshes	St Abb's Head to Fast	Thursley, Hankley and
Porton Down (S)	Ronas Hill - North Roe and	Castle (S)	Frensham (S)
Portsmouth Harbour	Tingon	St Kilda (S)	Traeth Lafan (S)
Priest Island (S)	Rostherne Mere (R)	Stodmarsh	Treshnish Isles (S)
Ramna Stacks and	Roydon Common (R)	Stour and Orwell	Troup, Pennan and Lion's
Gruney (S)	Rutland Water	Sule Skerry & Sule Stack (S)	Head (S)
Ramsey and St David's	Salisbury Plain (S)	Sumburgh Head (S)	Upper Lough Erne
Peninsula Coast (S)	Severn Estuary	Swan Island (S)	Upper Severn Estuary
Rannoch Moor (R)	Sheep Island (S)	Tamar Estuaries Complex (S)	Upper Solway
Redgrave and South Lopham	Shiant Isles (S)	Rathlin Island (S)	Walmore Common
Fens (R)	Silver Flowe (R)	Teesmouth and Cleveland	West Water
Rhins of Islay	Skokholm and Skomer	Coast	West Westray (S)
Rhum (S)	Islands (S)	Thanet Coast & Sandwich	Wicken Fen (R)
Ribble and Alt Estuaries	Somerset Levels and Moors	Bay	Woodwalton Fen (R)
(Phase 2)	South Penines (Phase 1) (S)	The New Forest	Ynys Feurig (S)
Ribble Estuary (part) (S)	South Pennine Moors	The Swale	

1% levels for national and international importance

A wetland is considered important in a national or all-Ireland context if it regularly holds at least 1% of one species, sub-species or population of waterfowl in Great Britain or the island of Ireland respectively. Similarly, a wetland is of international importance if it supports 1% or more of the international population. Many wildfowl wintering in Britain and Ireland form part of the North-West European population, whilst many waders form part of populations that may range over much of the East Atlantic. Table 74 lists the numbers of each species that represent 1% of the British, all-Ireland and international waterfowl populations where known. Thus, any site regularly supporting at least this number of birds potentially qualifies for designation under national legislation or international Directives or Conventions. The international population for each species and sub-species is also specified in the table. However, it should be noted that, where 1% of the national population is less than 50 birds, 50 is normally

used as a minimum qualifying threshold for the designation of sites of national importance. 1% thresholds have not been derived for introduced species, for these species, protected sites (e.g. SSSIs) would not be identified on the basis of numbers for these birds. Sources of qualifying levels represent the most up-to-date figures following recent reviews: for British wildfowl see Kirby (1995); for British waders see Cayford & Waters (1996); for all-Ireland importance for divers see Danielsen *et al.* (1993) and for other waterfowl see Whilde (in prep.) cited in Way *et al.* (1993). International criteria follow Smit & Piersma (1989) or Scott & Rose (1996). It was agreed at the meeting of the Ramsar Convention in Brisbane that population estimates will be reviewed by Wetlands International every three years and 1% thresholds revised every nine years (Rose & Stroud 1994). Note the revision of several international thresholds following Scott & Rose (1996) (see *Conservation and Management*).

Table 85 1% THRESHOLDS FOR NATIONAL AND INTERNATIONAL IMPORTANCE

	Great Britain	all-Ireland	International	Population
Red-throated Diver	50	10 *	750	Europe/Greenland
Black-throated Diver	7 *	1 *	1,200	Europe/W Siberia
Great Northern Diver	30 *	?	50	Europe
Little Grebe	30 *	?	?	W Palaearctic
Great Crested Grebe	100	30 *	?	NW Europe
Red-necked Grebe	1 *	?	330	NW Europe
Slavonian Grebe	4 *	?	50	NW Europe
Black-necked Grebe	1 *	?	1,000	W Palaearctic
Cormorant	130	?	1,200	NW Europe
Little Egret	?	?	800	W Mediterranean
Grey Heron	?	?	4,500	Europe/N Africa
Mute Swan	260	55	2,400	NW Europe
Bewick's Swan	70	25 *	170	W Siberia/NW Europe
Whooper Swan	55	100	160	Iceland/UK/Ireland
Bean Goose	4 *	+	800	NE & NW Europe
Pink-footed Goose: Iceland/Greenland	1,900	+	2,250	E Greenland/Iceland/UK
European White-fronted Goose	60	+	6,000	NW Siberia/NE & NW Europe
Greenland White-fronted Goose	140	140	300	Greenland/Ireland/UK
Greylag Goose: Iceland	1,000	40 *	1,000	Iceland/UK/Ireland
Hebrides/N Scotland	50	n/a	50	NW Scotland
Barnacle Goose: Greenland	270	75	320	E Greenland/Ireland/Scotland
Svalbard	120	+	120	Svalbard/SW Scotland
Dark-bellied Brent Goose	1,000	+	3,000	<i>bernica</i>
Light-bellied Brent Goose: Canada/Greenland	+	200	200	Canada/Ireland
Svalbard	25 *	+	50	Svalbard/Denmark/UK
Shelduck	750	70	3,000	NW Europe
Wigeon	2,800	1,250	12,500	NW Europe

	Great Britain	all-Ireland	International	Population
Gadwall	80	+ *	300	NW Europe
Teal	1,400	650	4,000	NW Europe
Mallard	5,000	500	20,000 **	NW Europe
Pintail	280	60	600	NW Europe
Garganey	+ *	+ *	20,000 **	Europe/W Africa
Shoveler	100	65	400	NW Europe/Central Europe
Red-crested Pochard	+ *	+ *	250	C & SW Europe/W Mediterranean
Pochard	440	400	3,500	NW Europe
Tufted Duck	600	400	10,000	NW Europe
Scaup	110	30 *	3,100	NW Europe
Eider	750	20 *	20,000 **	Europe
Long-tailed Duck	230	+ *	20,000 **	Iceland/Greenland/NW Europe
Common Scoter	350	40 *	16,000	W Siberia/W Europe/NW Africa
Velvet Scoter	30 *	+ *	10,000	W Siberia/NW Europe
Goldeneye	170	110	3,000	NW & Central Europe
Smew	2 *	+ *	250	NW & Central Europe
Red-breasted Merganser	100	20 *	1,250	NW & Central Europe
Goosander	90	+ *	2,000	NW & Central Europe
Coot	1,100	250	15,000	NW Europe
Oystercatcher	3,600	500	9,000	Europe/W Africa (wintering)
Avocet	10 *	+ *	700	Europe/NW Africa (breeding)
Little Ringed Plover	?	?	?	Europe/W Africa
Ringed Plover	290	125	500	Europe/NW Africa (wintering)
passage	300			
Golden Plover	2,500	2,000	18,000	NW Europe (breeding)
Grey Plover	430	40 *	1,500	E Atlantic
Lapwing	20,000 **	2,500	20,000 **	Europe/W Africa
Knot <i>C. c. islandica</i>	2,900	375	3,500	W Europe/Canada
<i>C. c. canutus</i>			5,000	W Africa/W Siberia
Sanderling	230	35 *	1,000	E Atlantic
passage	300			
Little Stint	?	?	2,100	W Africa/Europe
Curlew Sandpiper	?	?	4,500	W Africa/SW Europe (wintering)
Purple Sandpiper	210	10 *	500	E Atlantic
Dunlin <i>C. a. arctica</i>			150	Greenland (breeding)
<i>C. a. schinzii</i> (Icelandic)			8,000	Iceland/Greenland (breeding)
<i>C. a. schinzii</i> (temperate)			200	UK/Ireland/Baltic
<i>C. a. alpina</i>	5,300	1,250	14,000	Europe (breeding)
passage	2,000			
Ruff	7 *	+ *	10,000	W Africa (wintering)
Jack Snipe	?	250	?	Europe/W Africa (wintering)
Snipe	?	?	10,000	Europe/W Africa (breeding)
Woodcock	?	?	20,000 **	Africa/Europe
Black-tailed Godwit	70	90	700	Iceland (breeding)
Bar-tailed Godwit	530	175	1,000	W Europe (wintering)
Whimbrel	+ *	+ *	6,500	Europe/W Africa (wintering)
passage	50			
Curlew	1,200	875	3,500	Europe/NW Africa
Spotted Redshank	+ *	+ *	1,500	Europe/W Africa
Redshank <i>T. t. totonus</i>	1,100	245	1,500	Europe/W Africa (wintering)
<i>T. t. robusta</i>	1,100		1,500	NW Europe (wintering)
passage	1,200			
Greenshank	+ *	9 *	3,000	Europe/W Africa
Green Sandpiper	?	?	?	Europe (breeding)
Common Sandpiper	?	?	?	Europe (breeding)
Turnstone	640	225	700	Europe (wintering)
Little Gull	?	?	750	Cent/E Europe (breeding)
Black-headed Gull	?	?	20,000 **	NW Europe
Common Gull	?	?	16,000	NW Europe
Lesser Black-backed Gull	?	?	4,500	W Europe
Herring Gull	?	?	13,000	W Europe/Iceland
Great Black-backed Gull	?	?	4,800	W Atlantic
Kittiwake	?	?	20,000 **	E Atlantic
Sandwich Tern	?	?	1,500	W Europe/W Africa
Common Tern	?	?	6,000	N/E Europe
Little Tern	?	?	340	E Atlantic
Black Tern	?	?	2,000	Europe/Asia

? Population size not accurately known

+ Population too small for meaningful figure to be obtained

* Where 1% of the British or all-Ireland wintering population is less than 50 birds, 50 is normally used as a minimum qualifying level for national or all-Ireland importance respectively

** A site regularly holding more than 20,000 waterfowl qualifies as internationally important by virtue of absolute numbers

Appendix 2. LOCATIONS OF WeBS COUNT SITES

The location of all counts sites or areas mentioned in this report are given here. Sites are listed alphabetically, with the 1km square OS grid reference for the centre of the site, the habitat (H) and the county or district. Note that this is not an exhaustive list of WeBS sites counted in 1996-97, simply those mentioned by name in this report. Figure 3 shows the location of many of the more important sites for waterfowl.

Habitat codes (the predominant habitat type is given for complex sites containing many different habitats)

L Lake
R Reservoir
P Gravel or sand pit
V River
C Canal

M Marsh
S Sewage treatment works
E Estuary
O Open coast
N Non-wetland

Site	I km sq	H	County	Site	I km sq	H	County
Abberton Reservoir	TL9818	R	Essex	Brading Harbour	SZ6388	E	Isle of Wight
Abercairny Loch	NN9122	L	Tayside	Bramhill Park	SK7560	L	Hampshire
Aberlady Bay	NT4581	E	Lothian	Brent Reservoir	TQ2287	R	Greater London
Alaw Reservoir	SH3968	R	Gwynedd	Breydon Water & Berney Marshes	TG4907	E	Norfolk
Alde Complex	TM4257	E	Suffolk	Bridge of Earn	NO1417	N	Tayside
Allan Water: Ashfield to Cambushinnie	NN7905	V	Central	Broad Water Canal	J1462	C	Antrim
Alloa Inch	NS8792	N	Central	Buckden/Stirtloe Gravel Pits	TL2066	P	Cambridgeshire
Alnmouth to Boulmer	NU2511	O	Northumberland	Buckenham Marshes	TG3505	M	Norfolk
Alt Estuary	SD2903	E	Merseyside	Budle Point to Seahouses	NU2231	O	Northumberland
Alton Water	TM1356	R	Essex	Burghfield Gravel Pits	SU6870	P	Berkshire
Appin/Erriska/Benderloch	NM9043	O	Strathclyde	Burnfoot Reservoir	NS4544	R	Strathclyde
Aqualate Mere	SJ7720	L	Staffordshire	Burry Inlet	SS5096	E	West Glamorgan, Dyfed
Arbroath Coast	NO6440	O	Tayside	Busbridge Lakes	SU9742	L	Surrey
Ardleigh Reservoir	TM0328	R	Essex	Bush River: Deepstown	C9434	V	Antrim
Arran	NR9535	O	Strathclyde	Bute	NS0761	L	Strathclyde
Arun Valley	TQ0314	V	West Sussex	Caistron Quarry	NU0001	P	Northumberland
Ashford Common Waterworks	TQ0869	S	Surrey	Caithness Lochs	ND1859	L	Highland
Ash Levels	TR3162	M	Kent	Caldecotte Gravel Pits	SP8935	P	Buckinghamshire
Attenborough Gravel Pits	SK5234	P	Nottinghamshire	Cambois to Newbiggin	NZ3084	O	Northumberland
Audenshaw Reservoir	SJ9196	R	Greater Manchester	Camel Estuary	SW9474	E	Cornwall
Avon Estuary	SX6745	E	Devon	Cameron Reservoir	NO4711	R	Fife
Avon Valley (Lower)	SZ1499	M	Hampshire	Canary Road	H8755	M	Armagh
Avon Valley (Mid)	SU1510	M	Hampshire	Cardigan Bay	SH5020	O	Gwynedd, Dyfed
Ayr Harbour - Greenan Castle	NS3322	O	Strathclyde	Carlingford Lough	J2013	E	Down
Ayr to Prestwick	NS3324	O	Strathclyde	Carmarthen Bay	SN2501	E	Dyfed
Ayr to Troon	NS3425	O	Strathclyde	Carron Valley Reservoir	NS6884	R	Central
Ballyrone Lake	J229382	L	Down	Carsebreck/Rhynd Lochs	NN8609	L	Tayside
Ballysaggart Lough	H7961	L	Tyrone	Carsington Water	SK2151	R	Derbyshire
Bann Estuary	C7935	E	Londonderry	Castle Howard Lake	SE7170	L	North Yorkshire
Bardolf Water Meadow	ST7796	M	Dorset	Castle Loch, Lochmaben	NY0881	L	Dumfries & Galloway
Barleycroft Gravel Pits	TL3672	P	Cambridgeshire	Cemlyn Bay	SH3393	O	Gwynedd
Barn Elms Reservoir	TQ2277	R	Greater London	Chasewater	SK0307	R	West Midlands
Barnstone Pool	SK7334	P	Nottinghamshire	Cheddar Reservoir	ST4454	R	Somerset
Baron's Folly	NT6426	L	Borders	Cheshunt Gravel Pits	TL3602	P	Hertfordshire
Baron's Haugh	NS7555	L	Strathclyde	Chew Valley Lake	ST5659	R	Avon
Barrow Gurney Reservoir	ST5367	R	Avon	Chichester Gravel Pits	SU8703	P	West Sussex
Barton Pits	SK2017	P	Staffordshire	Chichester Harbour	SU7700	E	West Sussex
Baston/Langtoft Gravel Pits	TF1212	P	Lincolnshire	Chilham & Chartham Gravel Pits	TR0954	P	Kent
Bayfield Loch	NH8271	L	Highland	Chorlton Water Park	SJ8291	P	Greater Manchester
Beadnell to Seahouses	NU2231	O	Northumberland	Christchurch Harbour	SZ1792	E	Dorset
Beaulieu Estuary	SZ4298	E	Hampshire	Clachan	NR7656	N	Strathclyde
Beddington Sewage Farm	TQ2966	S	Greater London	Clea Lake I	J506557	L	Down
Bedfont & Ashford Gravel Pits	TQ0872	P	Greater London	Cleddau Estuary	SN0005	E	Dyfed
Beesands Ley	SX8141	L	Devon	Clifford Hill Gravel Pits	SP8061	P	Northamptonshire
Belfast Lough	J4083	E	Down	Clumber Park Lake	SK6374	L	Nottinghamshire
Belvide Reservoir	SJ8610	R	Staffordshire	Clwyd Estuary	SJ0079	E	Clwyd
Benbecula	NF8150	N	Western Isles	Clyde Est.	NS3576	E	Strathclyde
Berwick Little Beach	NU0053	O	Northumberland	Coll	NM2055	N	Strathclyde
Besthorpe & Gilton Gravel Pits	SK8165	P	Nottinghamshire	Colliford Reservoir	SX1871	R	Cornwall
Bewl Water	TQ6733	R	Sussex	Colne Estuary	TM0614	E	Essex
Bicton Reservoir	SM8407	R	Dyfed	Colne Valley Gravel Pits	TQ0489	P	Greater London
Black Cart Water	NS4767	M	Borders	Colonsay/Oronsay	NR3896	N	Strathclyde
Blackwater Estuary	TL9307	E	Essex	Colwick Country Park	SK6039	L	Nottinghamshire
Blagdon Lake	ST5150	R	Avon	Colwyn Bay	SH9079	O	Clwyd
Blenheim Park Lake	SP4316	L	Oxfordshire	Combermere	SJ5884	L	Cheshire
Blickling Lake	TG1729	L	Norfolk	Combs Reservoir	SK0379	R	Derbyshire
Blithfield Reservoir	SK0524	R	Staffordshire	Connaught Water	TQ4095	L	Essex
Blyth Estuary (Suffolk)	TM4675	E	Suffolk	Coombe Pool	SP3979	L	Warwickshire
Blyth to Newbiggin	NZ3084	O	Northumberland	Coquet Estuary	NU2706	E	Gwynedd
Boghill Fields	C8734	N	Londonderry	Corby Loch	NJ9214	L	Grampian
Bolton-on-Swale Gravel Pits	SE2498	P	North Yorkshire				

Site	I km sq	H	County	Site	I km sq	H	County
Cotswold Water Park (East)	SU1999	P	Glos, Oxon	Forth/Teith Valley	NS7595	N	Central
Cotswold Water Park (West)	SU0595	P	Glos, Wilts	Foryd Bay	SH4559	E	Gwynedd
Cowgill Reservoirs	NT0327	R	Strathclyde	Frainslake to Freshwater West	SR8898	O	Dyfed
Craigalea to Newcastle	J704337	O	Down	Frenchess Road Pond	TO2851	L	Surrey
Cresswell to Chevington Burn	NZ2895	O	Northumberland	Girvan to Turnberry	NS2002	O	Strathclyde
Cromarty Firth	NH7771	E	Highland	Gladhouse Reservoir	NT2953	R	Lothian
Crombie Reservoir	NO5240	R	Tayside	Glenfarg Reservoir	NO1011	R	Tayside
Cropston Reservoir	SK5410	R	Leicestershire	Grafham Water	TL1568	R	Cambridgeshire
Crouch/Roach Estuary	TQ8496	E	Essex	Great Cumbrae	NS1656	O	Strathclyde
Crowdy Reservoir	SX1483	R	Cornwall	Great Pool Westwood Park	SO8763	L	Hereford & Worcs
Cults Reservoir	NJ9002	R	Grampian	Grouville Marsh	WV6949	M	Channel Islands
Cuthlie	NO5941	N	Tayside	Gunthorpe Gravel Pits	SK6744	P	Nottinghamshire
Danna/Keills Peninsula	NR7383	O	Strathclyde	Gunton Park Lake	TG2234	L	Norfolk
Dart Estuary	SX8258	E	Devon	Haddo House Lakes	NJ8734	L	Grampian
Deben Estuary	TM2942	E	Suffolk	Hamford Water	TM2225	E	Essex
Dee Estuary (England/Wales)	SJ2675	E	Merseyside, Cheshire, Clwyd	Hamilton Low Parks	NS7257	L	Strathclyde
Dee Estuary (Scotland)	NJ9505	E	Grampian	Hammer Wood Pond	SU8423	L	West Sussex
Deeping St James Gravel Pits	TF1808	P	Lincolnshire	Hampton & Kempton Reservoirs	TQ1269	R	Greater London
Dengie Flats	TM0300	E	Essex	Hanningfield Reservoir	TQ7398	R	Essex
Deveron Estuary	NJ6964	E	Grampian	Hardley Flood	TM3899	M	Norfolk
Didlington	TL7796	P	Norfolk	Harewood Lake	SE3144	L	West Yorkshire
Dinnet Lochs	NJ4800	L	Grampian	Haverton Hole	NZ4923	L	Cleveland
Dinton Pastures	SU7872	M	Berkshire	Haweswater	NY4713	R	Cumbria
Ditchford Gravel Pits	SP9468	P	Northamptonshire	Hay-a-Park Gravel Pits	SE3658	P	North Yorkshire
Doddington Pool	SJ7146	L	Cheshire	Hayle Estuary	SW5537	E	Cornwall
Don Mouth to Ythan Mouth	NJ9815	O	Grampian	Heigham Holmes	TG4420	M	Norfolk
Doon Estuary	NS3219	O	Strathclyde	Helford Estuary	SW7526	E	Cornwall
Dorchester Gravel Pits	SU5795	P	Oxfordshire	Herne Bay	TR1768	O	Kent
Dornoch Firth	NH7384	E	Highland	Hilfield Park Reservoir	TQ1596	R	Hertfordshire
Draycote Water	SP4469	R	Warwickshire	Hillsborough Main Lake	J2458	L	Down
Drift Reservoir	SW4328	R	Cornwall	Hirsel Lake	NT8240	L	Borders
Drummond Pond	NN8518	L	Tayside	Hogganfield Loch	NS6467	L	Strathclyde
Duddon Estuary	SD2081	E	Cumbria	Holburn Moss	NU0536	L	Northumberland
Dundrum Bay	J4235	E	Down	Holkham	TF8845	E	Norfolk
Dungeness Gravel Pits	TR0619	P	Kent	Hollowell Reservoir	SP6872	R	Northamptonshire
Dupplin Loch	NO0320	L	Tayside	Holme Pierrepont Gravel Pits	SK6239	P	Nottinghamshire
Durham Coast	NZ4349	O	Durham	Hornsea Mere	TA1947	L	Humberside
Dyfi Estuary	SN6394	E	Dyfed	Houghton Green Pool	SJ6292	L	Cheshire
Dysynni Estuary	SH5702	E	Gwynedd	Howick to Beadnell	NU2327	O	Northumberland
Earls Barton Gravel Pits	SP8966	P	Northamptonshire	Hule Moss	NT7149	L	Borders
Earlsferry to Anstruther	NO5302	O	Fife	Humber Estuary	TA2020	E	Humberside, Lincolnshire
Easterloch/Uyeasound	HP5901	O	Shetland	Hurleston Reservoir	SJ6255	R	Cheshire
East Fortune Ponds	NT5580	L	Lothian	Inland Sea	SH2779	E	Gwynedd
East Sanday Coast	HY7241	O	Orkney	Inner Clyde Estuary	NS3576	E	Strathclyde
Eccleston Mere	SJ4894	L	Merseyside	Inner Moray Firth	NH6752	E	Highland
Eccup Reservoir	SE2941	R	West Yorkshire	Irvine/Garnock Estuary	NS3038	E	Strathclyde
Eden Estuary	NO4719	E	Fife	Irvine to Saltcoats	NS2839	E	Strathclyde
Eglwys Nunydd Reservoir	SS7984	R	West Glamorgan	Islay	NR3560	N	Strathclyde
Ellesmere	SJ4035	L	Shropshire	Islesteps	NX9772	V	Dumfries & Galloway
Emberton Gravel Pits	SP8850	P	Buckinghamshire	Jersey Shore	WV6249	O	Channel Islands
Esthwaite Water	SD3596	L	Cumbria	Jura	NR5672	N	Strathclyde
Etherow Country Park	SJ9791	L	Greater Manchester	Kedleston Park Lake	SK3141	L	Derbyshire
Eversley Cross & Yateley GPs	SU8601	P	Hampshire	Kessingland Levels	TM5185	L	Suffolk
Exe Estuary	SX9883	E	Devon	Kilconquhar Loch	NO4801	L	Fife
Eyebrook Reservoir	SP8595	R	Leicestershire	Kilkeel to Lee Stone Point	J3214	O	Down
Fairburn Ings	SE4627	P	North Yorkshire	Killough Harbour	J5437	O	Down
Fala Flow	NT4258	L	Lothian	King George VI Reservoir	TQ0473	R	Surrey
Fal Complex	SW8541	E	Cornwall	King George V Reservoir	TQ3796	R	Greater London
Farmoor Reservoirs	SP4406	R	Oxfordshire	Kingsbridge Estuary	EX7411	E	Devon
Farmwood Pool	SJ8173	L	Cheshire	Kings Bromley Gravel Pits	SK1116	P	Staffordshire
Fen Drayton Gravel Pits	TL3470	P	Cambridgeshire	Kingsbury Water Park	SP2096	P	Staffordshire, Warwickshire
Fiddlers Ferry Power Station	SJ5585	P	Cheshire	Kings Mill Reservoir	SK5159	R	Nottinghamshire
Lagoons				Knight & Bessborough Reservoirs	TQ1268	R	Surrey
Fincastle Loch	NN8762	L	Tayside	Knockshinnoch Lagoons	NS6013	L	Strathclyde
Findhorn Bay	NJ0462	E	Grampian	Lackford Gravel Pits	TL7971	P	Suffolk
Fisherwick & Elford Gravel Pits	SK1710	P	Staffordshire	Lade Sands	TR0921	O	Kent
Fleet/Wey	SY6976	E	Dorset	Lancaster Canal	SD4766	C	Lancashire
Fleet Pond	SU8255	L	Hampshire	Langstone Harbour	SU6902	E	Hampshire
Fonhill Lake	ST9331	L	Wiltshire	Langtoft West End Gravel Pits	TF1111	P	Lincolnshire
Foreland	SZ6584	O	Isle of Wight	Larne Lough	D4200	E	Antrim
Foremark Reservoir	SK3224	R	Derbyshire	Lavan Sands	SH6474	E	Gwynedd
Fort Henry Ponds & Exton Park Lake	SK9412	L	Leicestershire	Lee Valley Gravel Pits	TL3702	P	Hertfordshire, Essex
Forth Estuary	NT2080	E	Lothians, Central, Fife	Leighton Moss	SD4875	L	Lancashire

Site	I km sq	H	County	Site	I km sq	H	County
Leventhorpe Ash Ponds	SE3629	P	West Yorkshire	Morecambe Bay	SD4070	E	Lancashire, Cumbria
Lindisfarne	NU1041	E	Northumberland	N-E Glamorgan Moorland Pools	SO0808	L	Glamorgan
Linford Gravel Pits	SP8442	P	Buckinghamshire	Nene Washes	TF3300	M	Cambridgeshire
Linne Mhuirich & Loch Na Cille	NR7080	O	Strathclyde	Netherfield Gravel Pits	SK6339	P	Nottinghamshire
Little Paxton Gravel Pits	TL1963	P	Cambridgeshire	New Road Pits	TI1549	P	Bedfordshire
Little Stour Valley	TR2056	M	Kent	Newtown Estuary	SZ4291	E	Isle of Wight
Livermere	TL8771	L	Suffolk	North Norfolk Marshes	TF8546	E	Norfolk
Llangorse Lake	SO1326	L	Powys	North Ronaldsay	HY7655	N	Orkney
Llyn Coron	SH3770	L	Gwynedd	North Uist	NF8370	N	Western Isles
Llyn Penrhyn	SH3077	L	Gwynedd	North Warren & Thorpeness Mere	TM4658	L	Suffolk
Llyn Traffwl	SH3276	L	Gwynedd	North West Solent	SZ3395	E	Hampshire
Llysyfran Reservoir	SN0324	R	Dyfed	Nunnery Lakes	TL8781	L	Norfolk
Loch Branahuaie & Aignish	NB4732	L	Western Isles	Orkney	HY4010	N	Orkney
Loch Calder	ND0760	L	Highland	Orkney North Mainland Shore	HY2915	O	Orkney
Loch Clunie	NO1144	L	Tayside	Orwell Estuary	TM2238	E	Suffolk
Loch Ellrig	NS8874	L	Central	Osterley Park Lakes	TL1478	L	Greater London
Loch Ewe: Aultbea	NG8788	L	Highland	Ouse Washes	TL5394	M	Cambridgeshire
Loch Eye	NH8379	L	Highland	Outer Ards	J6663	O	Down
Loch Fleet Complex	NH7896	E	Highland	Overstone Park Lakes	SP8065	L	Northamptonshire
Loch Garten & Mallachie	NH9718	L	Highland	Pagham Harbour	SZ8796	E	West Sussex
Loch Gelly	NT2092	L	Fife	Pannal Valley	TQ8815	M	East Sussex
Loch Gruinart	NR2971	E	Strathclyde	Panshanger Estate	TL2812	L	Hertfordshire
Lochs Heilen & Mey	ND2568	L	Highland	Passfield Lake	SU8234	L	Hampshire
Loch Indaal	NR3261	E	Strathclyde	Paultons Bird Park	SU3116	L	Hampshire
Loch Insh & Spey Marshes	NH8304	L	Highland	Pegwell Bay	TR3563	E	Kent
Loch Leven	NO1401	L	Tayside	Pen Ponds	TQ1972	L	Greater London
Loch Lomond	NS4388	L	Strathclyde	Pentney Gravel Pits	TF7013	P	Norfolk
Loch Mahaick	NN7006	L	Central	Pirton Pool	SO8847	L	Hereford & Worcestershire
Loch of Boardhouse	HY2725	L	Orkney	Pitsford Reservoir	SP7669	R	Northamptonshire
Loch of Harray	HY2915	L	Orkney	Poole Harbour	SY9988	E	Dorset
Loch of Hundland	HY2926	L	Orkney	Portavo Lake	J5582	L	Down
Loch of Kinnordy	NO3655	L	Tayside	Porth Hellick Pool	SV9210	L	Cornwall
Loch of Lintrathen	NO2754	L	Tayside	Port Meadow	SP4908	M	Oxfordshire
Loch of Skail	HY2418	L	Orkney	Portsmouth Harbour	SU6204	E	Hampshire
Loch of Skene	NJ7807	L	Grampian	Port Talbot Docks	SS7689	R	West Glamorgan
Loch of Spiggie	HU3716	L	Shetland	Portworthy Mica Dam	SX5660	P	Devon
Loch of Stenness	NY2812	L	Orkney	Powburn to Barassie Shore	NS3130	O	Strathclyde
Loch of Strathbeg	NK0758	L	Grampian	Pugney Water	SE3218	P	West Yorkshire
Loch of the Lowes	NO0443	L	Tayside	Queen Elizabeth II Reservoir	TQ1167	R	Surrey
Loch of Wester	ND3259	L	Highland	Queen Mary Reservoir	TQ0769	R	Surrey
Loch Paible	NF7268	L	Western Isles	Queen Mother Reservoir	TQ0076	R	Berkshire
Loch Ryan	NX0565	E	Dumfries & Galloway	Queens Park, Chesterfield	SK3770	L	Derbyshire
Lochs Beg & Scridain	NM5027	L	Strathclyde	Ranworth & Cockshoot Broads	TG2515	L	Norfolk
Loch Spynie	NJ2366	L	Grampian	Reddish Vale Visitors Centre	SJ9390	L	Greater Manchester
Loch Tullybelton	NO0034	L	Tayside	Rhunahaorine	NR7049	N	Argyll
Loch Watten	ND2256	L	Highland	Ribble Estuary	SD3825	E	Lancashire
Longueville Marsh	WV6748	M	Channel Islands	Ringstead Gravel Pits	SP9775	P	Northamptonshire
Loons/Loch of Isbister	HY2523	L	Orkney	R Arrow/R Lugg Floodplain	SO5057	R	Hereford
Lothing Lake & Oulton Broad	TM5292	E	Suffolk	R Avon: Britford Water Meadows	SU1628	M	Wiltshire
Lough Foyle	C6025	E	Londonderry	River Clyde: The Meetings	NS9744	V	Strathclyde
Lough Money	J5345	L	Down	River Clyde: Lamington	NS9833	V	Strathclyde
Loughs Neagh & Beg	J0575	L	Down, Antrim, Londonderry, Tyrone, Armagh	River Derwent: Chatsworth	SK2569	V	Derbyshire
Lower Bogrotten	NJ4861	N	Grampian	R Eamont: Watersmeet to Pooley Bridge	NY5329	V	Cumbria
Lower Derwent Valley	SE6938	M	Humberside	River Foyle: Grange	C3606	V	Tyrone
Lower Windrush Valley GPs	SP4004	P	Oxfordshire	River Idle: Bawtry to Miserton	SK7195	V	Nottinghamshire
Lurgashall Mill Pond	SU9326	L	West Sussex	River Lagan: Flatfield	J1961	V	Down
Machrihanish	NR6522	N	Strathclyde	River Lugg: Lugg Bridge	SO5343	R	Hereford
Maer Marsh	SK2070	M	Cornwall	River Nith: Keltonbank to Nutholm	NX9774	V	Dumfries & Galloway
Marsh Lane Gravel Pits	TL3069	P	Cambridgeshire	River Soar: Leicester	SK5805	V	Leicestershire
Martin Mere	SD4105	L	Lancashire	River Spey: Boat of Balliefirth	NH9922	V	Highland
Meadow Lane Gravel Pits	TL3270	P	Cambridgeshire	River Tay: Dunkeld	NO0042	V	Tayside
Medway Estuary	TQ8471	E	Kent	River Tay: Scone	NO1026	V	Tayside
Mere Sands Wood	SD4415	L	Lancashire	River Test: Broadlands Estate	SU3520	V	Hampshire
Merryton Ponds	NS7654	L	Strathclyde	R Test: Fullerton to Stockbridge	SU3535	V	Hampshire
Mersey Estuary	SJ4578	E	Cheshire	R Teviot: Kalemouth to Roxborough	NT7030	V	Borders
Middle Tame Valley Gravel Pits	SP2096	P	Staffordshire, Warwickshire	R Teviot: Nisbet to Kalemouth	NT6925	V	Borders
Middle Yare Valley	TG3504	M	Norfolk	R Tweed: Kelso to Coldstream	NT7737	V	Borders
Milldam & Balfour Mains Pools	HY4817	L	Orkney	River Tweed: Magdalenehall	NT6331	V	Borders
Minsmere	TM4666	L	Suffolk	River Usk: Pencelli	SO0925	R	Powys
Monikie Reservoir	NO5038	R	Tayside	R Wensum: F'kn'h'm to G't Ryburgh	TF9428	V	Norfolk
Montrose Basin	NO6958	E	Tayside	River Wye: Bakewell to Haddon	SK2366	V	Derbyshire
Moray Coast	NJ3067	O	Grampian	Rookery South Gravel Pits	TL0141	P	Bedfordshire
Moray Firth	NH8060	E	Highland				

Site	1 km sq	H	County	Site	1 km sq	H	County
Rostherne Mere	SJ7484	L	Cheshire	Swanholme Lake	SK9468	L	Lincolnshire
Rough Firth	NX8453	E	Dumfries & Galloway	Swanpool (Falmouth)	SW8031	L	Cornwall
Rufford Lake	SK6465	L	Nottinghamshire	Swillington Ings	SE3828	P	West Yorkshire
Rutherford	NT6431	V	Borders	Swithland Reservoir	SK5513	R	Leicestershire
Rutland Water	SK9207	R	Leicestershire	Tabley Mere	SJ7276	L	Cheshire
Ryde Pier to Puckpool Point	SZ6092	O	Isles of Wight	Tamar Complex	SX4363	E	Devon, Cornwall
Rye Harbour/Pett Level	TQ9418	E	East Sussex	Tattershall Pits	TF2057	P	Lincolnshire
Saintear Loch	HY4347	L	Orkney	Taw/Torridge Estuary	SS4733	E	Devon
Salford Docks	SJ8097	C	Greater Manchester	Tay/Isla Valley	NO1438	L	Tayside
Scot Head	TF8046	E	Norfolk	Tay Estuary	NO3225	E	Fife, Tayside
Sea Bank	TF5477	P	Lincolnshire	Tees Estuary	NZ5528	E	Cleveland
S-E Deerness	HY5606	N	Orkney	Temple Water	J5750	L	Down
Seaforde Lakes	J401431	L	Down	Thames Estuary	TQ7880	E	Kent, Essex, Greater London
Seahouses to Budle Point	NU2231	O	Northumberland	Thanet Coast	TR2669	O	Kent
Seaton Gravel Pits	TR2258	P	Kent	Thorpe Water Park	TQ0268	P	Surrey
Sennowe Park Lakes	TF9825	L	Norfolk	Thrapston Gravel Pit	SP9979	P	Northamptonshire
S-E Stronsay	HY6822	N	Orkney	Thursley Ponds	SU9140	L	Surrey
Severn Estuary	ST5058	E	Glos, Avon, Somerset, Gwent, Mid Glam, South Glam	Timbury Gravel Pits	SU3624	P	Hampshire
Shobrooke Park Lakes	SS8501	L	Devon	Tiree	NL9741	N	Strathclyde
Shrigley Lake	J518544	L	Down	Tophill Low Reservoirs	TA0748	R	Humberside
Skelton Lake	SE3430	L	West Yorkshire	Topmill Ponds	SJ9390	L	Greater Manchester
Skinflats	NS9284	E	Central	Tottenham Gravel Pits	TF6311	P	Norfolk
Slains Lochs	NK0230	L	Grampian	Traeth Bach	SH5736	E	Gwynedd
Slamannan Plateau	NS8474	N	Central	Traighear	NF8276	N	Western Isles
Slapton Ley	SX8243	L	Devon	Traigh Luskentyre	NG0798	E	Western Isles
S Muskham & N Newark GPs	SK7956	P	Nottinghamshire	Tresco Great Pool	SV8914	L	Isles of Scilly
Snettisham	TF6535	E	Norfolk	Tring Reservoirs	SP9113	R	Hertfordshire
Solway Estuary	NY1060	E	Cumbria	Tweed Estuary	NT9853	E	Northumberland
Somerset Levels	ST4040	M	Somerset	Twyford Gravel Pits	SU7875	P	Berkshire
Sonning Gravel Pits	SU7475	P	Oxfordshire	Twyners Fishing Complex	TQ0367	P	Surrey
Sound of Tarransay	NG0498	O	Western Isles	Tynningame Estuary	NT6379	E	Lothian
Southampton Water	SU4507	E	Hampshire	Tyrella	J4735	O	Down
South Down	J5036	O	Down	Upper Lough Erne	H3231	L	Fermanagh
South Ford	NF7747	O	Western Isles	Upper Quoile	J4745	V	Down
South Huish Marsh	SX6841	M	Devon	Virginia Water	SU9769	L	Berkshire
South Iver Gravel Pits	TQ0377	P	Buckinghamshire	Vow Meadows Lower Bann	C9122	M	Antrim
Southport Marina	SD3317	L	Merseyside	Walland Marsh	TQ9824	M	Kent
South Uist	NF8032	N	Western Isles	Walmore Common	SO7425	M	Gloucestershire
South Walls	ND3089	N	Orkney	Walthamstow Reservoir	TQ3589	R	Greater London
South West Lancashire	SD4015	N	Lancashire	Walton Lock	SJ6086	C	Cheshire
South Westray	HY4646	N	Orkney	Wash	TF5540	E	Lincolnshire, Norfolk
Spade Oak Gravel Pit	SU8887	P	Buckinghamshire	Water Sound	ND4394	O	Orkney
Spey Mouth	NJ3465	E	Grampian	Wath Main Ings	SE4302	P	South Yorkshire
Staines Reservoir	TQ0575	R	Surrey	Weirwood Reservoir	TQ3934	R	Sussex
St Andrews Bay	NO5121	O	Fife	Wellington Country Park	SU7362	L	Hampshire
Stanford Reservoir	SP6080	R	Leicestershire	Westbere Lakes	TR1960	L	Kent
Stanford Training Area	TL8695	L	Norfolk	Westfield Marshes	ND0664	M	Highland
St Benets Levels	TG3815	M	Norfolk	West Water Reservoir	NT1252	R	Borders
St Johns Loch	ND2272	L	Highland	Whisby Gravel Pits	SK9167	P	Lincolnshire
St Mary's Island to N Shields	NZ3672	O	Northumberland	Whitrig Moss	NT6235	L	Borders
Fish Quay				Widewall Bay	ND4292	O	Orkney
Stodmarsh	TR2061	L	Kent	Wigtown Bay	NX4456	E	Dumfries & Galloway
Stoke Newington Reservoirs	TQ3287	R	Greater London	Wilderness Pond	SS8277	L	Glamorgan
St Ouen's Pond	WV5652	L	Jersey	William Girling Reservoir	TQ3694	R	Greater London
Stour Estuary	TM1732	E	Essex, Suffolk	Windermere	SD3995	L	Cumbria
Strangford Lough	J5560	E	Down	Winterset & Cold Hiendley Reservoirs	SE3714	R	West Yorkshire
Stranraer Lochs	NX1161	L	Dumfries & Galloway	Woburn Park Lakes	SP9632	L	Bedfordshire
Stratfield Saye	SU6759	R	Hampshire	Woolston Eyes	SJ6588	P	Cheshire
Strathearn	NN8819	N	Tayside	Worsborough Reservoir	SE3403	R	Greater Manchester
Studland Bay	SZ0383	O	Dorset	Wraysbury Gravel Pits	TQ0073	P	Berkshire
Sutton/Lound Gravel Pits	SK6985	P	Nottinghamshire	Wraysbury Reservoir	TQ0274	R	Surrey
Swale Estuary	TQ9765	E	Kent	Ythan Estuary	NK0026	E	Grampian
Swanbourne Lake	TQ0108	L	West Sussex				

Appendix 3. TOTAL NUMBERS OF WADERS RECORDED BY WeBS AT COASTAL AND INLAND SITES, 1996-97.

GREAT BRITAIN

Waders at estuarine/ coastal sites	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Number of sites counted	86	84	88	93	112	155	190	179	193	180	186	166
Oystercatcher	44,995	33,332	25,392	67,201	157,677	207,131	259,734	221,058	265,754	252,154	247,255	147,412
Black-winged Stilt	0	0	0	0	0	1	0	0	1	0	0	0
Avocet	319	47	157	564	1,174	1,844	1,348	2,630	2,651	1,504	1,623	932
Little Ringed Plover	12	18	20	17	14	4	0	0	0	0	0	0
Ringed Plover	5,570	8,804	1,043	1,525	18,054	14,465	12,950	8,098	9,284	7,008	7,613	3,594
Kentish Plover	0	0	0	0	0	0	0	0	1	1	1	1
Golden Plover	1,911	26	11	3,054	11,109	32,499	58,967	45,656	97,547	19,545	48,825	16,074
Grey Plover	9,476	6,239	247	1,066	22,793	34,160	41,275	30,643	49,165	47,000	48,524	32,148
Lapwing	2,818	2,014	6,035	15,359	27,444	40,425	81,381	108,573	214,324	48,232	127,131	16,890
Great Knot	0	0	0	0	0	0	1	0	0	0	0	0
Knot	66,230	6,861	4,798	17,644	82,587	93,087	106,865	142,814	187,142	239,761	255,410	126,437
Sanderling	2,287	12,021	494	7,168	9,985	8,496	8,065	6,355	8,469	7,746	8,390	5,565
Little Stint	0	6	3	2	14	497	235	27	9	1	0	0
Baird's Sandpiper	0	0	0	0	0	1	0	0	0	0	0	0
Pectoral Sandpiper	0	0	0	0	0	0	1	0	0	0	0	0
Curlew Sandpiper	0	3	1	17	66	528	206	19	3	0	0	0
Purple Sandpiper	340	17	0	10	49	89	200	697	1,019	823	842	859
Dunlin	77,164	60,196	526	40,977	62,272	106,738	216,938	319,505	455,526	540,333	515,249	221,508
Buff-breasted Sandpiper	0	0	0	0	1	0	0	0	0	0	0	0
Ruff	35	7	1	33	258	179	66	63	222	88	197	116
Jack Snipe	3	0	0	0	0	5	10	50	55	28	19	19
Snipe	131	19	19	33	278	662	1,044	1,410	2,213	1,044	1,120	740
Woodcock	0	0	0	0	0	0	0	4	15	53	5	0
Black-tailed Godwit	3,320	734	1,118	6,607	10,769	17,298	11,902	11,691	10,630	11,364	12,637	18,776
Bar-tailed Godwit	1,681	1,376	497	11,889	20,253	22,954	26,136	21,171	38,619	72,821	81,319	21,036
Whimbrel	497	657	15	705	783	139	38	5	5	3	6	18
Curlew	11,211	3,125	6,394	50,011	75,395	86,673	79,351	52,236	62,698	47,732	70,569	55,865
Spotted Redshank	23	5	6	109	272	259	201	65	72	63	69	54
Redshank	16,806	1,617	1,898	19,664	43,816	68,882	77,439	65,226	70,272	64,994	63,910	56,757
Greenishank	88	50	14	518	1,245	1,556	1,037	227	177	115	127	172
Green Sandpiper	8	1	11	58	153	77	40	16	18	18	11	12
Wood Sandpiper	0	4	0	5	25	5	4	1	1	1	0	0
Common Sandpiper	105	107	51	392	620	185	37	15	20	3	9	5
Spotted Sandpiper	1	1	0	0	0	0	0	0	0	0	0	0
Turnstone	4,606	1,377	210	883	5,422	8,001	11,730	9,880	13,017	11,944	10,369	9,204
Grey Phalarope	0	0	0	0	0	0	0	0	1	0	0	0
TOTAL	249,637	138,664	48,961	245,511	552,528	746,840	1,048,135	1,488,930	1,374,379	1,501,230	734,194	

Waders at inland sites	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Number of sites counted	616	590	557	590	609	1,056	1,243	1,262	1,244	1,250	1,297	1,249
Oystercatcher	1,587	801	988	705	286	97	118	433	176	332	3,806	9,652
Avocet	188	181	17	62	11	11	0	0	0	0	2	8
Little Ringed Plover	220	232	225	199	78	19	7	0	0	0	0	1
Ringed Plover	150	234	131	151	112	141	37	36	120	7	154	227
Golden Plover	838	28	13	63	512	2,348	14,156	25,952	23,970	2,305	8,207	10,170
Grey Plover	1	6	0	1	13	13	65	71	74	81	43	385
Lapwing	2,926	1,755	4,013	15,442	28,122	30,286	42,542	79,813	90,026	16,386	91,882	20,434
Knot	47	0	1	1	5	31	1	9	233	101	85	4
Sanderling	0	17	0	8	0	1	8	0	6	5	0	8
Little Stint	0	4	1	1	18	343	140	8	13	1	1	1
Pectoral Sandpiper	0	0	0	0	0	1	3	0	0	0	0	0
Curlew Sandpiper	1	1	0	5	4	207	58	7	0	0	0	0
Purple Sandpiper	0	0	0	0	0	0	2	1	0	0	0	0
Dunlin	109	143	20	406	156	817	1,349	1,796	3,347	1,201	4,053	4,585
Ruff	45	13	2	88	220	335	216	248	227	123	222	308
Jack Snipe	11	0	0	0	0	2	41	74	44	27	35	40
Snipe	369	56	42	107	707	1,805	2,560	4,099	3,133	1,569	1,418	1,938
Woodcock	2	2	3	1	0	2	7	22	43	31	63	16
Black-tailed Godwit	155	48	1	53	535	726	1,372	184	50	4	714	1,039
Bar-tailed Godwit	0	2	0	1	1	1	1	7	0	0	141	0
Whimbrel	138	33	0	28	16	3	32	0	0	0	0	1
Curlew	275	211	194	308	810	1,390	2,924	4,172	6,011	2,954	7,518	9,031
Spotted Redshank	5	0	2	4	10	76	16	1	2	2	1	4
Redshank	837	503	559	211	585	2,055	867	1,903	1,879	842	2,043	2,559

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Greenshank	21	20	1	74	216	236	61	6	3	3	2	3
Lesser Yellowlegs	1	0	0	0	0	0	0	0	0	0	0	0
Green Sandpiper	32	3	4	184	301	210	127	77	62	36	60	58
Wood Sandpiper	1	2	0	1	35	5	2	1	0	0	0	0
Common Sandpiper	272	367	211	453	579	204	24	14	3	5	2	11
Turnstone	9	11	0	5	16	9	15	17	50	10	83	5
TOTAL	8,240	4,673	6,428	18,562	33,348	41,374	66,751	118,951	129,472	26,025	120,535	60,488

NORTHERN IRELAND

Waders at estuarine/ coastal sites	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
<i>Number of sites counted</i>	2	2	2	3	3	6	5	7	8	8	8	6
Oystercatcher	1,056	198	269	1,442	3,629	13,664	9,365	14,378	15,711	16,086	17,328	7,000
Ringed Plover	17	3	13	33	125	343	279	1,052	667	578	770	113
Golden Plover	2,756	0	0	0	0	912	7,813	9,313	25,073	18,151	18,522	5,251
Grey Plover	0	0	0	0	0	35	157	78	176	507	592	176
Lapwing	161	28	85	215	340	1,335	3,998	4,275	21,620	22,325	17,512	278
Knot	320	17	0	1	3	9	84	3,285	8,007	11,040	13,108	269
Sanderling	0	0	0	0	7	19	13	48	77	163	68	94
Little Stint	0	0	0	0	0	9	0	0	0	0	0	0
Curlew Sandpiper	0	0	0	0	0	20	13	0	0	0	0	0
Purple Sandpiper	0	0	0	0	0	2	0	60	91	105	92	89
Dunlin	206	8	9	46	412	1,032	2,362	9,036	19,429	20,925	22,279	7,078
Ruff	1	0	0	0	2	7	1	0	0	0	0	0
Jack Snipe	0	0	0	0	0	0	0	1	1	3	0	2
Snipe	0	0	0	0	8	15	19	52	102	81	59	83
Black-tailed Godwit	4	0	2	18	13	891	116	102	593	293	474	25
Bar-tailed Godwit	236	0	0	0	42	262	996	409	1,283	3,329	3,714	779
Whimbrel	8	7	1	0	6	5	1	0	0	0	0	0
Curlew	761	135	214	1,723	3,033	5,084	3,252	3,278	3,530	4,756	6,115	3,737
Spotted Redshank	2	0	0	0	0	1	0	1	2	2	1	1
Redshank	814	18	5	459	1,215	5,784	4,537	7,187	7,257	6,290	7,125	4,861
Greenshank	2	0	0	14	43	67	84	59	63	53	56	47
Common Sandpiper	0	0	0	4	2	2	0	0	0	0	0	0
Turnstone	7	2	1	1	38	695	370	1,644	1,783	1,688	1,624	1,173
Wilson's Phalarope	0	0	0	0	0	1	0	0	0	0	0	0
TOTAL	6,351	416	599	3,956	8,918	30,194	33,460	54,258	105,465	106,375	109,439	31,056

Waders at inland sites	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
<i>Number of sites counted</i>	0	1	0	0	1	1	17	18	19	21	17	19
Oystercatcher	0	5	0	0	3	0	0	0	0	22	0	5
Golden Plover	0	0	0	0	0	0	1,649	876	3,902	2,878	1,129	1,585
Lapwing	0	13	0	0	1,155	460	1,066	1,600	9,782	9,374	2,819	1,353
Dunlin	0	183	0	0	0	5	40	69	20	188	44	187
Snipe	0	1	0	0	12	9	28	47	85	53	75	106
Woodcock	0	0	0	0	0	0	0	0	1	0	0	0
Curlew	0	3	0	0	338	147	18	194	869	876	490	944
Redshank	0	24	0	0	0	0	3	0	13	3	4	280
TOTAL	0	229	0	0	1,508	621	2,804	2,786	14,672	13,394	4,561	4,460

Appendix 4. TOTAL NUMBERS OF WATERFOWL RECORDED BY WeBS IN ENGLAND, 1996-97.

Wildfowl at all sites	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
No. of sites visited	593	563	536	546	568	805	893	916	925	933	929	894
No. of count units visited	994	894	776	829	933	1,341	1,541	1,579	1,570	1,603	1,559	1,529
Red-throated Diver	66	5	5	2	5	30	37	111	264	673	181	113
Black-throated Diver	2	4	0	0	0	1	1	4	7	4	6	0
Great Northern Diver	4	1	0	0	2	0	3	10	19	19	11	14
Pied-billed Grebe	0	0	0	0	0	0	0	0	0	1	2	1
Little Grebe	1089	633	591	892	1569	2881	2645	2756	2338	1765	1521	1592
Great Crested Grebe	4383	3149	3125	3456	5037	7099	6703	7533	6704	4302	4665	5482
Red-necked Grebe	5	1	2	1	2	5	6	10	9	9	8	10
Slavonian Grebe	18	0	0	0	0	0	6	31	96	60	86	64
Black-necked Grebe	10	10	3	6	5	17	14	16	44	34	31	16
Cormorant	7146	3432	2781	3973	5909	9626	10778	10786	10661	7975	9192	7580
Mute Swan	7134	5346	6396	7429	8399	10581	11787	12967	12370	12001	10638	9456
Black Swan	17	15	4	11	21	14	11	17	12	5	9	8
Bewick's Swan	5	1	13	0	0	1	19	3614	5066	3762	8406	2127
Whooper Swan	163	3	2	2	2	8	180	1866	2201	1210	2077	1676
Swan Goose	4	13	13	13	1	26	10	7	17	18	5	20
Bean Goose	3	0	0	0	0	0	1	27	44	37	118	33
Pink-footed Goose	3400	47	22	11	15	924	42011	65171	71479	64753	30768	23375
White-fronted Goose ¹	1	0	0	0	0	0	0	0	0	0	0	0
European Whitefront	5	3	0	1	4	2	40	695	2577	3831	7029	2528
Greenland Whitefront	0	0	0	0	0	0	0	0	1	6	1	1
Lesser White-fronted Goose	0	0	0	0	0	1	1	0	0	0	0	0
Greylag Goose ²	4959	3186	5559	6111	8063	14310	14761	13027	16830	13026	12533	7830
Bar-headed Goose	7	6	3	6	9	20	10	9	13	13	15	12
Snow Goose	29	21	31	54	29	53	94	56	60	92	54	52
Ross's Goose	1	0	0	0	0	0	1	1	1	2	1	1
Emperor Goose	0	0	1	0	1	1	0	1	1	1	1	2
Hawaiian Goose	0	0	0	0	0	1	0	0	0	0	0	0
Canada Goose	11255	10552	18580	18710	28718	40636	37356	33398	37231	36861	28263	19343
Barnacle Goose	6689	4369	74	145	130	203	1454	7428	2414	12238	1052	288
Brent Goose ¹	0	0	0	1	0	0	0	1	9	0	0	8
Dark-bellied Brent	21073	9529	15	30	30	1728	44784	72787	93056	90773	86680	62322
Black Brant	0	0	0	0	0	0	0	0	0	1	0	1
Light-bellied Brent	4	0	0	0	1	340	991	2305	2625	4281	1826	412
Red-breasted Goose	0	0	0	0	0	0	0	1	1	0	0	2
Egyptian Goose	34	23	39	41	72	196	166	126	121	116	99	37
Feral/hybrid Goose	49	45	40	43	32	100	387	126	71	68	124	211
Unidentified Goose	14	0	0	0	0	0	0	0	0	0	0	0
Ruddy Shelduck	3	1	1	5	7	3	1	7	3	2	5	3
Cape Shelduck	0	0	1	0	0	0	0	0	0	0	1	0
Paradise Shelduck	1	1	0	0	0	1	1	1	1	1	1	0
Shelduck	41166	17937	11976	10917	11554	16414	29523	34211	48596	66401	58945	41384
Muscovy Duck	20	19	16	16	18	87	64	110	115	86	71	15
Wood Duck	1	1	1	1	1	1	2	2	1	3	1	3
Mandarin	105	76	88	119	116	141	224	184	203	159	177	165
Wigeon	9168	172	93	128	382	42471	124321	171672	256852	336645	279055	136765
American Wigeon	1	0	0	0	0	0	3	0	1	2	6	3
Chiloe Wigeon	0	1	0	0	2	0	1	0	2	0	0	0
Gadwall	2867	1284	1427	692	2437	5463	7512	9975	10269	8242	9117	5609
Teal	11835	385	233	984	7054	50409	64422	80983	95561	89898	75965	44117
Speckled Teal	1	0	0	0	0	0	0	0	0	0	0	0
Mallard	25718	18779	26992	31053	56154	82589	91152	97595	105972	110865	71501	45676
Black Duck	0	0	0	0	0	0	1	0	0	0	0	0
Pintail	803	27	9	5	16	4440	9558	16736	20029	18334	16788	6137
Bahama Pintail	0	0	0	0	0	0	1	0	1	0	0	0
Red-billed Teal	0	0	0	0	0	0	0	1	1	0	0	0
Garganey	29	18	7	17	50	39	8	0	0	0	0	2
Blue-winged Teal	0	0	0	0	0	2	0	0	0	0	0	0
Shoveler	3238	360	256	292	2184	6702	7741	7553	6951	4451	5412	5957
Maned Duck	0	0	1	0	1	0	0	0	0	0	0	0
Red-crested Pochard	4	1	0	4	3	16	28	18	73	36	62	62
Pochard	1324	569	785	2214	5116	9714	12054	22537	23260	27416	28346	13741
Redhead	0	0	0	0	0	0	0	0	0	0	1	0
Ring-necked Duck	0	0	1	0	1	0	2	0	1	1	0	1
Tufted Duck	15876	7951	6535	15229	22008	30227	27369	37014	37428	38119	37228	29785

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Scaup	377	2	1	2	3	10	13	137	350	2342	717	1547
Lesser Scaup	1	0	0	0	0	0	0	1	0	1	1	1
Eider	12041	5945	5929	6961	5534	5393	3909	3915	8122	9349	7552	7174
Long-tailed Duck	16	1	0	0	0	0	0	161	111	6	3	26
Common Scoter	3072	34	45	403	40	278	421	514	798	1995	2374	967
Velvet Scoter	0	0	0	0	0	0	5	2	1	6	0	0
Goldeneye	1697	31	11	5	8	39	66	3010	5273	7365	7219	6422
Hooded Merganser	0	0	0	0	0	0	0	1	1	1	1	1
Smew	0	0	0	0	0	0	0	12	43	378	376	110
Red-breasted Merganser	1343	215	329	75	161	368	823	1840	2272	2118	1684	1605
Goosander	263	109	76	77	113	204	331	872	2152	5184	4059	2101
Ruddy Duck	1233	617	372	473	910	1747	1916	2673	2415	3471	2373	2611
Feral/hybrid Mallard type	79	74	45	64	76	82	125	57	99	64	59	60
Hybrid Aythya	1	0	0	0	0	1	0	1	0	1	1	0
Unidentified duck	0	0	0	0	0	0	0	0	0	1	0	0
Water Rail	68	34	35	25	45	60	135	225	279	279	200	163
Spotted Crake	1	0	0	0	0	1	0	0	0	0	0	0
Moorhen	4816	3255	2814	3795	5143	8738	8540	9537	10434	9613	8259	8108
Coot	20167	13105	16744	27553	45566	69042	77739	83753	83773	78691	65213	41361
TOTAL WILDFOWL³	224904	111398	112122	142047	222759	423486	642268	820197	1079463	888175	546299	

Waders at estuarine/ coastal sites	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Number of sites counted	47	42	46	51	59	83	95	96	95	91	90	87
Oystercatcher	32,584	22,750	17,278	47,772	105,146	134,993	160,469	139,265	175,668	149,863	155,583	98,499
Black-winged Stilt	0	0	0	0	0	1	0	0	1	0	0	0
Avocet	304	47	157	564	1,174	1,844	1,348	2,630	2,651	1,504	1,623	915
Little Ringed Plover	9	12	14	17	14	4	0	0	0	0	0	0
Ringed Plover	4,278	6,279	557	1,057	14,215	11,601	10,377	5,430	6,262	4,532	5,345	2,671
Kentish Plover	0	0	0	0	0	0	0	0	1	1	1	1
Golden Plover	1,522	24	4	1,901	9,043	26,257	48,081	33,569	78,402	14,852	34,493	14,213
Grey Plover	8,263	5,755	172	1,014	21,905	33,037	39,256	28,777	47,154	44,233	45,847	30,251
Lapwing	2,361	1,599	5,132	11,330	19,467	28,914	62,038	88,811	184,150	31,370	111,996	14,312
Great Knot	0	0	0	0	0	0	1	0	0	0	0	0
Knot	64,107	6,559	4,697	17,398	81,968	91,534	103,723	138,900	176,651	193,444	229,139	121,231
Sanderling	1,936	11,734	465	7,055	9,582	8,006	6,683	5,176	7,572	6,413	7,314	4,777
Little Stint	0	6	3	1	10	460	208	26	8	1	0	0
Baird's Sandpiper	0	0	0	0	0	1	0	0	0	0	0	0
Pectoral Sandpiper	0	0	0	0	0	0	1	0	0	0	0	0
Curlew Sandpiper	0	3	1	14	44	361	161	16	1	0	0	0
Purple Sandpiper	191	6	0	9	28	56	122	540	351	343	451	610
Dunlin	71,789	57,080	212	38,750	57,669	97,465	196,346	292,768	397,621	459,633	434,832	206,267
Ruff	30	7	1	30	209	138	57	62	220	78	188	111
Jack Snipe	3	0	0	0	0	5	8	41	48	23	13	18
Snipe	110	6	11	19	235	463	803	1,043	1,430	682	752	622
Woodcock	0	0	0	0	0	0	0	2	7	46	3	0
Black-tailed Godwit	3,081	677	1,055	6,442	10,464	16,814	11,001	11,322	10,120	10,855	11,003	17,469
Bar-tailed Godwit	1,023	969	247	10,985	19,023	20,549	22,615	18,174	31,811	60,904	71,134	17,964
Whimbrel	337	479	12	613	711	117	35	5	5	3	5	3
Curlew	9,346	2,295	4,627	40,204	59,104	67,696	57,660	38,263	45,386	30,290	48,383	43,706
Spotted Redshank	21	5	6	100	263	243	181	50	58	50	57	50
Redshank	12,393	1,326	1,466	15,339	32,375	48,107	52,707	46,535	48,910	46,367	46,380	45,560
Greenshank	74	44	8	471	1,105	1,285	862	148	108	72	81	99
Green Sandpiper	8	1	11	57	145	72	39	15	15	17	9	12
Wood Sandpiper	0	1	0	5	25	5	4	1	1	1	0	0
Common Sandpiper	67	63	4	297	491	141	28	15	20	3	9	5
Spotted Sandpiper	1	1	0	0	0	0	0	0	0	0	0	0
Turnstone	3,461	951	116	737	4,356	6,109	8,795	7,554	9,280	9,015	7,872	7,358
Grey Phalarope	0	0	0	0	0	0	0	0	1	0	0	0
TOTAL	217,299	118,679	36,256	202,181	448,771	596,278	783,609	859,138	1,064,595	1,212,513	626,724	

Waders at inland sites	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
<i>Number of sites counted</i>	481	469	445	461	476	667	729	742	748	754	773	738
Oystercatcher	956	523	418	283	98	41	75	346	107	224	1,116	1,843
Avocet	188	181	17	62	11	11	0	0	0	0	2	8
Little Ringed Plover	220	232	223	199	78	19	7	0	0	0	0	1
Ringed Plover	137	230	125	110	94	120	37	28	108	7	152	187
Golden Plover	391	28	12	35	499	1,941	12,331	24,753	23,078	2,173	6,932	9,944
Grey Plover	1	6	0	1	13	13	65	71	74	81	43	385
Lapwing	2,565	1,568	3,534	14,150	25,279	25,860	35,244	72,827	83,742	14,061	82,104	15,685
Knot	1	0	1	1	5	29	1	9	233	101	0	4
Sanderling	0	17	0	8	0	1	8	0	6	5	0	8
Little Stint	0	4	1	1	18	288	140	8	13	1	1	1
Pectoral Sandpiper	0	0	0	0	0	1	3	0	0	0	0	0
Curlew Sandpiper	1	1	0	5	4	197	49	7	0	0	0	0
Purple Sandpiper	0	0	0	0	0	0	2	1	0	0	0	0
Dunlin	106	138	18	320	146	532	1,086	1,696	3,222	1,177	3,188	4,541
Ruff	44	13	2	76	206	308	208	248	227	123	222	308
Jack Snipe	11	0	0	0	0	1	38	61	34	26	24	39
Snipe	358	52	39	79	633	1,387	1,932	2,895	2,680	1,291	1,133	1,765
Woodcock	2	2	3	1	0	1	6	21	41	28	61	11
Black-tailed Godwit	147	47	1	41	504	716	1,310	169	24	4	613	1,035
Bar-tailed Godwit	0	2	0	1	1	1	1	7	0	0	141	0
Whimbrel	138	24	0	28	16	3	0	0	0	0	0	1
Curlew	149	97	109	92	153	441	1,036	1,248	2,430	1,215	2,330	4,017
Spotted Redshank	4	0	2	4	10	74	16	1	2	2	1	4
Redshank	757	464	477	142	529	1,104	524	957	1,463	697	1,694	2,216
Greenshank	21	14	1	72	205	225	60	4	2	2	2	3
Lesser Yellowlegs	1	0	0	0	0	0	0	0	0	0	0	0
Green Sandpiper	32	3	4	184	300	201	118	73	61	34	56	57
Wood Sandpiper	1	2	0	1	35	5	2	1	0	0	0	0
Common Sandpiper	238	317	175	370	534	190	20	13	3	5	2	4
Turnstone	9	11	0	5	16	2	0	14	36	2	46	3
TOTAL	6,478	3,976	5,162	16,271	29,387	33,712	54,319	105,458	117,586	21,259	99,863	42,070

Counts include data from the following goose censuses: national census of Pink-footed and Greylag Geese in October and November; January and February census of Dark-bellied Brent Geese. See Surveys and Projects for more details.

- 1 Indicates White-fronted or Brent Geese which were not identified to subspecies.
- 2 Comprises mainly feral birds, and small numbers of the Icelandic breeding population.
- 3 Total wildfowl represents numbers of all divers, grebes, Cormorant, swans, geese, ducks and rails.

Footnote: Where a WeBS site crosses a country boundary (e.g. The Severn Estuary), only waterfowl within the English part of the site are included in the above table.

Appendix 5. TOTAL NUMBERS OF WATERFOWL RECORDED BY WeBS IN SCOTLAND, 1996-97.

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Wildfowl at all sites												
No. of sites visited	206	156	153	141	169	410	549	544	543	533	559	521
No. of count units visited	243	191	184	176	210	467	641	614	644	629	657	584
Red-throated Diver	196	63	28	17	12	53	107	172	250	180	197	409
Black-throated Diver	16	25	6	5	7	4	5	10	13	15	8	19
Great Northern Diver	39	8	1	2	1	1	9	49	9	27	9	11
Unidentified diver	0	0	0	0	0	1	0	1	0	0	0	0
Little Grebe	117	70	67	106	238	625	521	248	247	199	150	241
Great Crested Grebe	256	157	145	260	463	917	528	443	345	356	314	361
Red-necked Grebe	19	2	2	24	15	44	26	23	32	28	15	39
Slavonian Grebe	37	1	0	1	4	20	34	60	105	70	70	159
Black-necked Grebe	2	4	2	8	4	3	1	0	2	1	0	2
Cormorant	734	394	382	558	1,122	1,810	2,505	2,132	2,873	1,914	2,272	1,433
Mute Swan	1,490	1,109	1,179	1,436	1,721	2,715	3,566	3,138	3,400	3,041	2,997	2,455
Black Swan	0	0	0	0	0	1	2	3	1	0	0	1
Bewick's Swan	0	0	0	0	0	0	1	4	10	4	3	1
Whooper Swan	254	21	12	5	5	17	1,033	1,321	1,699	1,365	1,263	1,009
Bean Goose	0	1	0	0	0	0	0	0	23	4	109	2
Pink-footed Goose	42,103	577	18	18	20	5,098	192,368	98,492	22,036	27,135	34,880	35,777
European Whitefront	1	0	0	0	0	0	0	1	0	0	0	0
Greenland Whitefront	75	0	0	0	0	1	70	257	231	314	250	286
Greylag Goose ¹	5,177	235	401	324	568	1,820	42,187	77,141	19,269	13,202	14,914	20,000
naturalised	-	-	-	-	3,340	-	-	-	-	-	3,471	-
Snow Goose	5	4	5	3	4	5	5	3	4	5	4	1
Emperor Goose	0	0	0	0	0	0	0	0	0	0	1	0
Canada Goose	129	76	84	124	321	1,241	878	419	548	523	486	355
Barnacle Goose	6,914	53	23	17	18	268	13,065	8,666	18,548	6,245	5,435	12,692
Dark-bellied Brent	0	0	0	0	0	3	12	10	1	0	0	0
Light-bellied Brent	3	0	0	0	0	19	88	32	35	63	46	1
Egyptian Goose	2	2	2	2	0	0	0	0	0	0	0	0
Feral/hybrid Goose	0	1	1	0	1	96	112	105	90	80	67	84
Unidentified Goose	0	0	0	0	0	0	0	50	0	0	0	0
Shelduck	2,277	2,299	1,831	842	5,465	4,875	4,466	5,465	6,401	7,026	5,671	3,785
Muscovy Duck	7	6	5	0	0	0	6	6	6	6	6	6
Mandarin	0	0	1	1	1	1	0	0	0	2	1	0
Wigeon	1,711	116	83	81	299	9,266	51,447	31,276	59,171	49,825	43,081	16,321
American Wigeon	0	0	0	0	0	0	1	1	2	0	0	1
Gadwall	64	31	4	5	24	261	336	90	81	42	71	152
Teal	1,504	165	88	98	719	6,405	16,213	9,534	16,216	13,325	12,974	4,207
Mallard	3,202	2,720	3,298	5,162	8,695	25,738	32,043	28,682	32,505	30,198	22,391	9,285
Black Duck	0	0	0	0	0	0	0	0	0	1	1	0
Pintail	143	6	0	0	4	862	2,528	3,413	4,686	3,046	2,929	448
Garganey	0	2	1	0	0	2	0	0	0	0	0	0
Shoveler	113	21	17	10	70	695	938	401	308	150	134	145
Red-crested Pochard	0	0	0	1	0	0	1	1	0	0	0	0
Pochard	115	45	22	153	1,025	2,450	5,096	6,138	6,804	3,462	4,675	1,808
Tufted Duck	3,272	1,183	810	2,267	3,332	9,091	9,965	8,058	8,851	7,905	8,022	6,193
Scaup	357	31	4	5	4	345	558	747	2,380	3,409	2,100	1,888
Lesser Scaup	0	0	0	0	0	0	0	0	0	1	0	0
Eider	13,585	11,655	14,331	15,468	15,627	19,232	16,587	16,258	16,430	15,906	14,358	14,273
King Eider	1	1	0	0	0	0	0	1	0	0	0	0
Long-tailed Duck	268	124	0	0	0	1	163	488	1,855	1,315	1,146	982
Common Scoter	2,384	985	248	248	1,226	1,224	1,979	2,518	2,012	2,488	1,878	2,405
Surf Scoter	5	1	0	0	0	0	1	4	3	3	3	3
Velvet Scoter	692	258	135	216	164	205	350	1,066	741	562	319	868
Goldeneye	1,499	155	68	123	93	78	432	4,296	8,810	8,999	9,977	6,451
Smew	2	0	0	0	0	0	0	1	5	22	19	14
Red-breasted Merganser	794	369	267	431	878	1,118	2,045	990	1,641	1,296	1,570	1,097
Goosander	300	298	111	458	568	561	1,050	871	1,199	1,303	1,228	887
Ruddy Duck	78	62	44	53	106	167	133	92	12	10	5	16
Feral/hybrid Mallard type	0	0	0	0	0	0	0	0	0	0	8	6
Unidentified duck	0	0	0	0	0	0	0	0	0	1	0	0
Water Rail	16	5	6	3	5	19	5	8	9	4	12	24
Moorhen	344	207	209	290	349	857	848	769	767	658	623	639
Coot	1,387	828	1,017	1,616	3,012	6,758	8,124	8,983	8,442	7,136	5,488	3,729
TOTAL WILDFOWL²	91,689	24,376	24,958	30,441	49,530	104,973	412,438	322,937	249,108	212,872	205,651	150,971

Waders at estuarine/ coastal sites	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
<i>Number of sites counted</i>	22	25	27	25	34	43	62	55	64	60	66	50
Oystercatcher	7,717	6,885	5,794	14,325	32,427	41,527	59,796	57,622	61,633	61,720	60,988	25,692
Avocet	15	0	0	0	0	0	0	0	0	0	0	17
Ringed Plover	1,096	2,222	398	391	2,962	2,056	2,074	1,813	2,289	1,901	1,639	582
Golden Plover	151	2	7	1,152	2,063	6,102	10,569	8,263	7,252	2,846	2,517	1,639
Grey Plover	1,212	468	73	51	885	1,063	1,748	1,714	1,655	1,739	2,021	1,492
Lapwing	362	315	645	3,262	6,828	10,128	18,023	11,050	17,433	11,069	7,919	2,129
Knot	2,123	302	101	241	616	1,507	3,023	3,675	8,861	37,321	25,244	5,144
Sanderling	89	103	13	109	369	305	430	375	306	381	405	346
Little Stint	0	0	0	1	1	3	13	0	0	0	0	0
Curlew Sandpiper	0	0	0	3	16	66	11	1	2	0	0	0
Purple Sandpiper	144	11	0	1	21	32	78	156	656	472	382	238
Dunlin	4,394	2,393	290	1,936	3,980	6,865	18,345	17,153	35,780	46,042	44,304	5,576
Buff-breasted Sandpiper	0	0	0	0	1	0	0	0	0	0	0	0
Ruff	5	0	0	3	44	32	5	1	2	9	6	5
Jack Snipe	0	0	0	0	0	0	2	4	5	3	2	1
Snipe	19	13	8	13	35	137	189	135	372	274	155	25
Woodcock	0	0	0	0	0	0	0	2	0	1	0	0
Black-tailed Godwit	197	21	8	62	196	226	468	214	214	140	231	174
Bar-tailed Godwit	641	381	248	903	1,230	2,335	3,242	2,881	5,864	10,986	9,708	2,878
Whimbrel	3	73	1	15	21	13	3	0	0	0	0	0
Curlew	1,138	530	1,135	5,586	11,108	10,361	13,394	7,355	10,704	11,669	13,243	7,342
Spotted Redshank	1	0	0	0	4	4	3	3	0	1	0	0
Redshank	3,738	238	376	2,752	8,754	14,196	21,686	13,593	16,547	14,005	13,473	8,386
Greenshank	5	2	5	12	76	78	87	45	44	25	31	20
Green Sandpiper	0	0	0	0	2	1	0	0	1	0	0	0
Wood Sandpiper	0	1	0	0	0	0	0	0	0	0	0	0
Common Sandpiper	11	30	43	63	62	7	5	0	0	0	0	0
Turnstone	960	345	93	139	949	1,621	2,609	1,922	3,081	2,477	2,145	1,441
TOTAL	24,021	14,335	9,238	31,020	72,650	98,665	155,803	127,977	172,701	203,081	184,413	63,127
Waders at inland sites	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
<i>Number of sites counted</i>	103	89	89	97	100	331	440	439	423	411	449	429
Oystercatcher	614	267	549	410	183	56	42	86	69	104	2,664	7,736
Little Ringed Plover	0	0	2	0	0	0	0	0	0	0	0	0
Ringed Plover	13	4	6	41	18	20	0	8	12	0	2	40
Golden Plover	400	0	1	28	13	407	1,825	1,168	824	127	1,089	215
Lapwing	301	134	455	1,264	2,686	4,351	7,116	5,390	3,093	1,032	8,018	4,574
Knot	46	0	0	0	0	0	0	0	0	0	85	0
Little Stint	0	0	0	0	0	17	0	0	0	0	0	0
Curlew Sandpiper	0	0	0	0	0	3	6	0	0	0	0	0
Dunlin	3	5	2	86	10	272	260	87	125	24	865	43
Ruff	1	0	0	12	14	22	7	0	0	0	0	0
Jack Snipe	0	0	0	0	0	1	3	8	2	0	11	1
Snipe	7	4	3	28	58	382	576	890	246	223	143	67
Woodcock	0	0	0	0	0	0	1	0	0	1	0	5
Black-tailed Godwit	8	0	0	11	30	3	61	15	26	0	98	3
Curlew	121	108	84	195	592	861	1,707	2,497	3,001	1,401	4,808	4,489
Spotted Redshank	1	0	0	0	0	2	0	0	0	0	0	0
Redshank	79	39	81	69	55	111	143	706	416	94	348	335
Greenshank	0	6	0	2	7	8	0	1	1	0	0	0
Green Sandpiper	0	0	0	0	1	1	1	0	0	0	0	0
Common Sandpiper	24	47	34	74	33	3	3	1	0	0	0	7
Turnstone	0	0	0	0	0	7	15	3	14	8	37	2
TOTAL	1,618	614	1,217	2,220	3,700	6,527	11,766	10,860	7,829	3,014	18,168	17,517

Counts include data from the following goose censuses: national census of Pink-footed and Greylag Geese in October and November; international censuses of Greenland White-fronted Geese in November/December and March/April; and November and January censuses of Greelandic Barnacle Geese on Islay. See Surveys and Projects for more details.

- 1 Comprises mainly birds from the Icelandic breeding population, with up to 2,340 feral birds (Delany 1992)
- 2 Total wildfowl represents numbers of all divers, grebes, Cormorant, swans, geese, ducks and rails

Footnote: Where a WeBS site crosses a country boundary (e.g. The Solway Estuary), only waterfowl within the Scottish part of the site are included in the above table.

Appendix 6. TOTAL NUMBERS OF WATERFOWL RECORDED BY WeBS IN WALES, 1996-97.

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Wildfowl at all sites												
<i>No. of sites visited</i>	55	57	46	53	57	91	116	120	116	129	119	119
<i>No. of count units visited</i>	98	98	73	87	99	165	198	209	202	218	203	191
Red-throated Diver	6	1	0	0	0	1	0	0	5	25	15	38
Black-throated Diver	0	0	0	0	0	0	0	2	1	2	0	0
Great Northern Diver	0	0	0	0	0	0	1	0	4	0	1	0
Little Grebe	41	16	12	30	51	166	198	272	257	194	167	112
Great Crested Grebe	83	82	75	83	55	193	133	139	283	151	227	168
Red-necked Grebe	0	0	0	0	0	0	0	0	0	0	0	1
Slavonian Grebe	0	0	0	0	0	0	1	2	3	6	2	11
Black-necked Grebe	1	0	0	0	0	1	0	0	0	0	0	0
Cormorant	360	494	322	269	798	1,228	848	570	624	359	474	344
Mute Swan	243	216	227	274	346	517	461	465	493	469	436	380
Black Swan	0	0	0	0	0	0	1	0	0	0	0	0
Bewick's Swan	0	0	0	0	0	0	0	8	16	62	34	0
Whooper Swan	0	0	0	0	0	0	10	34	63	40	41	42
Bean Goose	0	0	0	0	0	0	0	0	0	1	1	0
Pink-footed Goose	0	0	0	0	2	0	1	3	39	92	1	1
Greenland Whitefront	0	0	0	0	0	0	73	117	125	124	124	125
Greylag Goose	145	208	622	512	303	888	590	579	398	234	460	311
Snow Goose	0	0	2	1	0	0	0	0	0	0	0	0
Ross's Goose	0	0	0	0	0	0	1	1	1	1	0	1
Canada Goose	115	355	715	847	903	2,086	1,570	1,533	1,914	1,541	952	688
Barnacle Goose	1	0	2	2	3	10	19	27	32	33	4	3
Brent Goose	0	0	0	0	0	0	0	1	0	0	1	4
Dark-bellied Brent	0	0	1	0	0	1	269	289	620	809	480	1,041
Light-bellied Brent	2	0	0	0	0	0	2	9	36	45	27	71
Feral/hybrid Goose	0	0	1	1	0	7	0	6	8	8	2	4
Ruddy Shelduck	0	0	0	1	0	2	0	0	1	0	1	0
Shelduck	2,266	1,311	1,336	341	207	339	859	2,424	3,349	5,755	5,123	3,592
Muscovy Duck	0	0	0	0	0	0	0	18	16	13	13	14
Wood Duck	0	0	0	0	0	0	0	1	0	0	0	0
Mandarin	1	1	1	1	0	0	3	2	2	1	1	1
Wigeon	151	15	0	3	32	6,306	13,410	14,797	17,088	18,993	16,916	3,494
American Wigeon	0	0	0	0	0	0	1	0	1	0	0	0
Gadwall	53	28	46	4	23	46	35	106	134	193	144	67
Teal	258	27	3	6	227	1,632	3,596	5,972	7,893	8,837	5,614	1,995
Mallard	695	766	2,108	1,677	3,456	6,531	7,867	6,887	7,079	5,608	4,500	2,159
Pintail	47	2	0	0	1	18	392	903	2,913	3,778	2,207	201
Garganey	1	2	0	0	1	1	0	0	0	0	0	0
Shoveler	175	25	20	23	47	85	328	363	409	534	767	429
Red-crested Pochard	0	0	0	0	1	1	1	1	2	1	0	0
Pochard	167	67	49	86	89	126	518	1,129	1,053	1,002	1,062	443
Tufted Duck	441	196	254	730	1,007	840	751	1,275	1,091	881	1,307	1,032
Scaup	0	0	0	0	0	0	24	1	41	55	13	65
Eider	90	29	58	0	0	0	25	6	46	165	89	2
Common Scoter	2	0	8	0	0	3	214	148	696	1,063	553	460
Goldeneye	87	1	1	0	0	1	8	243	421	529	633	468
Smew	0	0	0	0	0	0	0	0	1	12	15	3
Red-breasted Merganser	83	86	69	30	103	304	320	278	363	206	240	212
Goosander	6	2	1	0	3	22	14	60	80	67	143	89
Ruddy Duck	63	41	29	41	70	87	88	107	184	144	156	52
Feral/hybrid Mallard type	17	19	25	11	17	21	17	27	5	34	5	26
Water Rail	1	7	0	8	2	7	12	21	36	19	16	7
Spotted Crake	0	0	0	0	0	1	0	0	0	0	0	0
Moorhen	347	198	179	228	284	480	427	590	537	575	467	419
Coot	611	403	623	1,221	1,721	2,648	2,788	3,358	3,050	3,609	2,310	1,462
TOTAL WILDFOWL¹	6,559	4,598	6,789	6,430	9,752	24,599	35,876	42,774	51,413	56,270	45,744	20,037

Waders at estuarine/ coastal sites	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
<i>Number of sites counted</i>	18	18	16	18	20	30	34	29	34	29	30	30
Oystercatcher	4,618	3,617	2,258	5,054	20,069	30,515	39,417	24,103	28,427	40,478	30,643	23,187
Little Ringed Plover	3	6	6	0	0	0	0	0	0	0	0	0
Ringed Plover	138	238	88	77	877	798	499	850	683	561	589	341
Golden Plover	198	0	0	1	3	120	317	3,824	11,893	1,847	11,815	222
Grey Plover	1	16	2	1	3	60	271	152	356	1,027	652	405
Lapwing	91	96	248	765	1,147	1,379	1,320	8,712	12,737	5,793	7,216	449
Knot	0	0	0	5	3	46	119	239	1,630	8,996	1,027	62
Sanderling	261	158	16	4	34	185	952	804	591	952	671	442
Little Stint	0	0	0	0	3	34	14	1	1	0	0	0
Curlew Sandpiper	0	0	0	0	6	101	34	2	0	0	0	0
Purple Sandpiper	5	0	0	0	0	1	0	1	12	8	9	11
Dunlin	971	661	24	291	623	2,396	2,247	9,584	22,114	34,631	36,106	9,665
Ruff	0	0	0	0	5	9	4	0	0	1	3	0
Jack Snipe	0	0	0	0	0	0	0	5	2	2	4	0
Snipe	2	0	0	1	8	62	52	232	411	88	213	93
Woodcock	0	0	0	0	0	0	0	0	8	6	2	0
Black-tailed Godwit	42	36	55	103	109	258	433	155	296	369	1,403	1,133
Bar-tailed Godwit	17	26	2	1	0	70	278	116	943	931	477	194
Whimbrel	149	101	2	77	51	9	0	0	0	0	1	15
Curlew	712	300	625	4,221	5,183	8,466	8,282	6,468	6,602	5,763	8,906	4,799
Spotted Redshank	1	0	0	9	5	12	17	12	14	12	12	4
Redshank	663	51	54	1,571	2,685	6,573	3,039	5,082	4,805	4,605	4,051	2,809
Greenshank	9	4	1	35	64	193	88	34	25	18	15	53
Green Sandpiper	0	0	0	1	6	4	1	1	2	1	2	0
Wood Sandpiper	0	2	0	0	0	0	0	0	0	0	0	0
Common Sandpiper	27	14	4	32	67	37	4	0	0	0	0	0
Turnstone	179	77	1	7	117	265	325	400	649	432	352	405
TOTAL	8,087	5,403	3,386	12,256	31,068	51,593	57,713	60,777	92,201	106,521	104,169	44,289
Waders at inland sites												
<i>Number of sites recorded</i>	33	32	23	32	34	58	69	74	65	77	68	75
Oystercatcher	17	11	21	12	5	0	1	1	0	4	26	73
Ringed Plover	0	0	0	0	0	1	0	0	0	0	0	0
Golden Plover	47	0	0	0	0	0	0	31	68	5	186	11
Lapwing	60	53	24	28	157	75	182	1,596	3,191	1,293	1,760	175
Knot	0	0	0	0	0	2	0	0	0	0	0	0
Little Stint	0	0	0	0	0	38	0	0	0	0	0	0
Curlew Sandpiper	0	0	0	0	0	7	3	0	0	0	0	0
Dunlin	0	0	0	0	0	13	3	13	0	0	0	1
Ruff	0	0	0	0	0	5	1	0	0	0	0	0
Jack Snipe	0	0	0	0	0	0	0	5	8	1	0	0
Snipe	4	0	0	0	16	36	52	314	207	55	142	106
Woodcock	0	0	0	0	0	1	0	1	2	2	2	0
Black-tailed Godwit	0	1	0	1	1	7	1	0	0	0	3	1
Whimbrel	0	9	0	0	0	0	32	0	0	0	0	0
Curlew	5	6	1	21	65	88	181	427	580	338	380	525
Redshank	1	0	1	0	1	840	200	240	0	51	1	8
Greenshank	0	0	0	0	4	3	1	1	0	1	0	0
Green Sandpiper	0	0	0	0	0	8	8	4	1	2	4	1
Common Sandpiper	10	3	2	9	12	11	1	0	0	0	0	0
TOTAL	144	83	49	71	261	1,135	666	2,633	4,057	1,752	2,504	901

1 Total wildfowl represents numbers of all divers, grebes, Cormorant, swans, geese, ducks and rails.

Footnote: Where a WeBS site crosses a country boundary (e.g. The Severn Estuary), only waterfowl within the Welsh part of the site are included in the above table.

Appendix 7. TOTAL NUMBERS OF WATERFOWL RECORDED BY WeBS IN THE ISLE OF MAN DURING 1996-97.

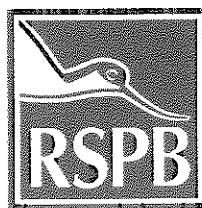
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Wildfowl at all sites												
No. of sites visited	1	1	1	1	1	1	1	1	1	1	1	1
No. of count units visited	1	1	1	1	1	1	1	1	1	1	1	1
Great Northern Diver	0	0	0	0	0	0	0	0	0	1	0	0
Cormorant	1	2	0	0	0	3	1	0	0	0	1	0
Mute Swan	2	2	2	2	2	2	0	0	0	2	0	0
Shelduck	20	12	29	4	0	0	0	0	10	4	15	28
Wigeon	0	0	0	0	0	0	27	120	62	99	103	57
Teal	6	0	0	0	0	0	0	3	4	0	0	0
Mallard	29	42	20	10	35	44	8	51	11	23	14	1
Eider	0	0	0	0	0	0	0	0	0	0	0	2
Goldeneye	0	0	0	0	0	0	0	1	0	0	5	0
Red-breasted Merganser	0	2	0	0	0	0	0	0	0	0	0	0
TOTAL WILDFOWL¹	58	60	51	16	37	49	36	175	87	129	138	88
Waders at estuarine/ coastal sites												
Number of sites counted	1	1	1	1	1	1	1	1	1	1	1	1
Oystercatcher	76	80	62	50	35	96	52	68	26	93	41	34
Ringed Plover	58	65	0	0	0	10	0	5	50	14	40	0
Golden Plover	40	0	0	0	0	20	0	0	0	0	0	0
Grey Plover	0	0	0	0	0	0	0	0	0	1	4	0
Lapwing	4	4	10	2	2	4	0	0	4	0	0	0
Sanderling	1	26	0	0	0	0	0	0	0	0	0	0
Dunlin	10	62	0	0	0	12	0	0	11	27	7	0
Bar-tailed Godwit	0	0	0	0	0	0	1	0	1	0	0	0
Whimbrel	8	4	0	0	0	0	0	0	0	0	0	0
Curlew	15	0	7	0	0	150	15	150	6	10	37	18
Redshank	12	2	2	2	2	6	7	16	10	17	6	2
Turnstone	6	4	0	0	0	6	1	4	7	20	0	0
TOTAL	230	247	81	54	39	304	76	243	115	182	135	54

¹ Total wildfowl represents numbers of all divers, grebes, Cormorant, swans, geese, ducks and rails

Footnote: No counts of waders at inland sites were made on the Isle of Man in 1996-97.

Appendix 8. TOTAL NUMBERS OF WATERFOWL RECORDED BY WeBS IN THE CHANNEL ISLANDS, 1996-97.

Wildfowl at all sites	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
<i>No. of sites visited</i>	2	2	1	1	1	1	7	9	11	12	11	10
<i>No. of count units visited</i>	7	7	9	9	9	9	15	18	31	32	33	19
Great Northern Diver	0	0	0	0	0	0	0	0	0	1	0	0
Little Grebe	0	0	0	0	0	0	5	4	8	8	6	5
Great Crested Grebe	0	0	0	0	0	0	0	1	19	11	76	10
Slavonian Grebe	0	0	0	0	0	0	0	1	0	0	0	1
Black-necked Grebe	0	0	0	0	0	0	1	0	0	2	0	0
Cormorant	6	7	6	2	7	14	9	16	36	45	4	13
Mute Swan	0	0	0	0	0	0	5	2	0	5	0	0
Dark-bellied Brent	51	65	0	0	0	0	0	76	143	225	100	21
Light-bellied Brent	0	0	0	0	0	0	0	0	12	0	13	0
Shelduck	0	0	0	0	0	0	0	0	0	0	1	0
Mandarin	0	0	0	0	0	0	0	0	0	0	1	0
Wigeon	0	0	0	0	0	0	0	17	31	128	64	1
Gadwall	0	0	0	0	0	0	0	0	3	9	7	0
Teal	2	0	0	0	0	0	8	38	41	92	54	30
Mallard	64	42	43	6	12	8	232	129	157	206	216	132
Shoveler	0	0	0	0	0	0	0	27	22	31	50	48
Pochard	0	0	0	0	0	0	5	6	19	17	21	13
Tufted Duck	2	19	0	0	0	0	33	16	38	75	21	47
Goldeneye	0	0	0	0	0	0	0	0	0	3	1	0
Smew	0	0	0	0	0	0	0	0	0	5	0	0
Red-breasted Merganser	0	0	0	0	0	0	0	0	0	3	5	0
Goosander	0	0	0	0	0	0	0	0	0	7	8	3
Feral/hybrid Mallard type	0	0	0	0	0	0	0	35	40	49	36	8
Water Rail	0	0	0	0	0	0	15	25	30	15	15	5
Moorhen	15	15	2	0	0	14	100	159	196	156	189	170
Coot	0	0	3	0	0	4	58	30	39	85	75	43
TOTAL WILDFOWL	140	148	54	8	19	40	471	582	834	1,178	963	550
Waders at estuarine/ coastal sites	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
<i>Number of sites counted</i>	1	1	1	1	1	1	1	1	2	2	2	1
Oystercatcher	446	340	234	50	427	351	664	773	2,646	1,084	1,886	488
Ringed Plover	11	131	2	0	159	77	137	60	331	346	272	79
Golden Plover	0	0	0	0	0	0	0	0	2	37	64	80
Grey Plover	0	8	0	1	10	48	71	82	324	385	517	144
Lapwing	0	0	0	0	0	0	0	0	0	100	30	1
Knot	0	0	0	0	0	0	0	0	2	0	2	0
Sanderling	1	34	0	0	8	18	2	14	355	402	376	24
Purple Sandpiper	9	0	0	0	0	1	0	7	22	8	23	17
Dunlin	13	173	0	0	7	26	4	196	2,325	2,256	2,779	349
Bar-tailed Godwit	0	15	0	0	0	2	0	5	17	266	525	0
Whimbrel	6	6	0	0	0	0	0	0	0	0	0	0
Curlew	7	16	18	16	3	34	61	35	286	67	297	74
Redshank	4	1	13	13	16	29	54	81	281	145	284	53
Greenshank	0	0	0	0	0	0	0	0	6	1	7	0
Common Sandpiper	3	2	0	1	7	1	0	0	0	0	0	0
Turnstone	344	49	0	1	101	163	284	553	1,056	855	827	535
TOTAL	844	775	267	82	738	750	1,277	1,806	7,653	5,952	7,889	1,844
Waders at inland sites	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
<i>Number of sites counted</i>	0	0	0	0	0	0	6	8	9	9	8	8
Golden Plover	0	0	0	0	0	0	0	0	115	0	63	3
Lapwing	0	0	0	0	0	0	0	39	85	41	437	28
Little Stint	0	0	0	0	0	0	3	0	0	0	0	0
Dunlin	0	0	0	0	0	0	0	0	0	0	0	3
Jack Snipe	0	0	0	0	0	0	0	1	0	0	0	0
Snipe	0	0	0	0	0	0	9	35	111	57	155	82
Woodcock	0	0	0	0	0	0	0	0	1	45	40	0
Curlew	0	0	0	0	0	0	0	3	4	5	44	13
Redshank	0	0	0	0	0	0	0	0	0	0	0	1
Greenshank	0	0	0	0	0	0	0	0	0	0	5	6
TOTAL	0	0	0	0	0	0	12	78	316	148	744	136



WeBS is the monitoring scheme for non-breeding waterfowl in the UK which aims to provide the principal data for the conservation of their populations and wetland habitats. The data collected are used to assess the size of waterfowl populations, assess trends in numbers and distribution, and identify and monitor important sites for waterfowl. A programme of research underpins these objectives. Continuing a tradition begun in 1947, around 3,000 volunteer counters participate in synchronised monthly counts at wetlands of all habitat types, mainly during the winter period. WeBS is a partnership between the British Trust for Ornithology, The Wildfowl & Wetlands Trust, Royal Society for the Protection of Birds and the Joint Nature Conservation Committee (the last on behalf of English Nature, Scottish Natural Heritage and the Countryside Council for Wales, and the Environment and Heritage Service in Northern Ireland).