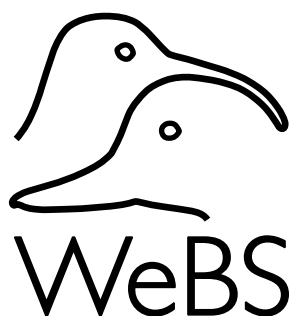


The Wetland Bird Survey 1999-2000

Wildfowl and Wader Counts

**Andy Musgrove, Mark Pollitt, Colette Hall, Richard Hearn,
Steve Holloway, Paul Marshall, James Robinson and
Peter Cranswick**



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This report is provided free to all WeBS counters and those who participate in the other national waterbird surveys, none of whom receive financial reward for their invaluable work. Further feedback is provided to counters through the twice-yearly WeBS Newsletter. For further information please contact the WeBS Secretariat or relevant National Organiser.

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Data collated under a WWT/JNCC partnership
programme

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SUMMARY

The Wetland Bird Survey and Wildfowl and Wader Counts

The Wetland Bird Survey (WeBS) is a joint scheme of the British Trust for Ornithology (BTO), The Wildfowl & Wetlands Trust (WWT), Royal Society for the Protection of Birds (RSPB) and Joint Nature Conservation Committee (JNCC) to monitor non-breeding waterbirds in the UK. The principal aims of the scheme are to identify population sizes, determine trends in numbers and distribution, and to identify important sites for waterbirds. WeBS Core Counts are made annually at around 2,000 wetland sites of all habitats; estuaries and large still waters predominate. Monthly co-ordinated counts are made mostly by volunteers, principally from September to March, with fewer observations during summer months. Data from other sources, e.g. roost counts of grey geese, are included in this report where relevant.

This report presents total numbers counted for all species in the most recent year in Great Britain and Northern Ireland. Annual indices, calculated using the 'Underhill' method, are provided for the more numerous species. For certain wildfowl species, monthly indices, showing relative abundance during the winter, are also provided.

Species accounts provide yearly maxima for all sites supporting internationally and nationally important numbers. Sites with changed status are highlighted and significant counts at a national or site level are discussed. Counts are placed in an international context where possible, and relevant research is summarised. Waterbird totals are provided for all sites meeting criteria for international importance and species occurring in internationally important numbers on each are identified. Brief overviews of research initiated by WeBS or using WeBS data, and of conservation issues pertaining to UK waterbirds, are provided.

WeBS Low Tide Counts are made on selected estuaries to determine the distribution of birds during low tide and to identify important feeding areas that may not be recognised during Core Counts which are made mostly at high tide. A summary of results for these estuaries, and distribution maps for selected species, are provided.

Waterbird totals recorded by the Irish Wetland Bird Survey, a similar scheme operating in the Republic of Ireland, are also included.

Appendices list all UK sites designated under the Ramsar Convention and Special Protection Areas classified under the EC Directive on the Conservation of Wild Birds. Also, waterbird count totals for the most recent year are provided separately for England, Scotland, Wales, the Isle of Man and the Channel Islands.

The 1999-2000 year

This report summaries counts during 1999-2000 and previous years (since 1960 for wildfowl, 1969 for waders and the early 1980s or 1990s for other species groups). Coverage remained at the same relatively high levels, with over 1,600 sites counted each month during the winter. Weather was generally mild, as has often been the case in recent years, with no prolonged periods of cold weather in continental Europe.

Many species in Great Britain fared well in 1999-2000. Both common grebe species recorded increases from the previous winter, whilst Cormorant numbers reached record levels, surpassing 16,000 for the first time. Both Grey Heron and Little Egret counts were the highest recorded by WeBS to date, the latter peaking in September at over 1,000 birds in WeBS Core Counts whilst roost counts suggest a total as high as 1,700 birds in September. The long-term increase in the numbers of Mute Swans was sustained, with three counts in excess of 19,000 birds, a figure previously unsurpassed. European White-fronted Geese numbers have been steadily dwindling during the 1990s and low counts once again continued this trend. Naturalised Canada Geese in contrast fared much better, with a peak total of almost 50,000 birds a considerable jump up from recent years. Dark-bellied Brent Geese, whose numbers have been affected by a continued run of poor breeding success, peaked around 90,000 birds following a successful breeding season (23.5% young). This is the first time that productivity has exceeded mortality (estimated at 15%) since 1993.

Peak Shelduck counts in Great Britain fell for the third consecutive winter, with only 57,000 recorded in January and February, the lowest since the 1970s. Wigeon numbers were lower than in recent winters, though this was one of the few wildfowl species that increased in Northern Ireland. Gadwall numbers in Britain once again exceeded all previous counts, whilst Pintail numbers worryingly plummeted, with only 17,000 birds present during the midwinter months

(compared to a typical figure of around 25,000). Mallard numbers fell once again, the tenth fall in twelve winters. Numbers of all diving duck species were unexceptional. Seaduck numbers counted by WeBS were similarly unremarkable, although bespoke surveys of Carmarthen Bay recorded over 21,000 Common Scoters, numbers clearly having recovered from the *Sea Empress* oil spill of February 1996.

Lapwing and Golden Plover numbers in Britain were both high, peaking in November following a brief period of cold weather mid month. Avocets rose to record levels, with more than 4,000 present in January. Curlew Sandpiper autumn passage coincided well with the September counts, numbers almost matching the record counts of the previous year. Dunlin counts on both sides of the Irish Sea were in the lower range of usual fluctuations, whilst peak counts of Knot and Bar-tailed Godwit in Northern Ireland were also well down on the previous year, the latter being less than one third of the previous

winter's peak. Numbers of Black-tailed Godwits remained high, the UK annual index reaching its highest level to date, whilst Curlew numbers in Great Britain also reached an all-time high. Turnstone fared less favourably, the peak British count being the lowest since the mid 1980s. Counts of Oystercatchers and Redshank, numbers of which have remained relatively stable for many years, were unremarkable.

Black-headed and Common Gull counts in Great Britain were the highest recorded by WeBS to date, though totals represent only a small proportion of the British population. Numbers of other gull and tern species were near normal.

Perhaps most notable overall was a geographical split along the Irish Sea, with numbers of many waterbird species in Great Britain faring much better than those in Northern Ireland. Several wildfowl species registered record counts in Britain, whilst few totals in Northern Ireland were exceptional. Waders, in particular, fared poorly in Northern Ireland.

INTRODUCTION

The UK is of outstanding international importance for waterbirds. Lying on some of the major flyways for arctic-nesting species, large numbers of waterbirds are attracted, especially during winter, by the relatively mild climate and extensive areas of wetland, notably estuaries. The UK thus has both moral and legal obligations to conserve both these waterbirds and the wetlands upon which they depend.

The UK is bound by international law by being a signatory to a number of international conservation conventions, as well as being a member of the EU. In particular, the 'Ramsar' Convention on Wetlands of International Importance especially as Waterfowl Habitat, the EC Birds Directive and the EU Habitats and Species Directive, between them, require the UK to identify important examples of wetland and other habitats and sites important for birds and designate them for protection. Implicit in these obligations is the need for regular monitoring to identify and monitor such sites. These instruments also lay particular significance on the need to conserve migratory populations, and consequently most of the waterbird populations in the UK.

The UK has ratified the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA) of the 'Bonn' Convention on the Conservation of Migratory Species of Wild Animals. AEWA entered into force in 1999. It is a specific Agreement requiring nations to take co-ordinated measures to conserve migratory waterbirds given their particular vulnerability due to their migration over long distances and their dependence on networks that are decreasing in extent and becoming degraded through non-sustainable human activities. Article three of the Agreement requires, among other things, that sites and habitats for migratory waterbirds are identified, protected and managed appropriately, that parties initiate or support research into the ecology of these species, and exchange information and results. Explicit in this Agreement is that adequate monitoring programmes are set in place to fulfil these objectives and the Action Plan to the Agreement specifically requires that nations endeavour to monitor waterbird populations.

Aims and objectives of WeBS

The Wetland Bird Survey (WeBS) aims to monitor all non-breeding waterbirds in the UK to provide the principal data on which the

conservation of their populations and wetland habitats is based. To this end, WeBS has three main objectives:

- to assess the size of non-breeding waterbird populations in the UK;
- to assess trends in their numbers and distribution; and
- to assess the importance of individual sites for waterbirds.

A programme of research, to understand the ecology of waterbirds and investigate the effects of habitat change and anthropogenic impact, underpins and enhances these objectives.

These results also form the basis for informed decision-making by conservation bodies, planners and developers and contribute to the sustainable and wise use and management of wetlands and their dependent waterbirds. The data and the WeBS report also fulfil some of the objectives of the Conventions and Directives listed above. WeBS also provides UK data to Wetlands International to assist their function to co-ordinate and report upon waterbird monitoring at an international scale.

Structure and organization of WeBS

WeBS is partnership scheme of the British Trust for Ornithology (BTO), The Wildfowl & Wetlands Trust (WWT), Royal Society for the Protection of Birds (RSPB) and the Joint Nature Conservation Committee (JNCC), the last on behalf of English Nature (EN), Scottish Natural Heritage (SNH) and the Countryside Council for Wales (CCW), and the Environment and Heritage Service in Northern Ireland (EHS).

WeBS continues the traditions of two, long-running count schemes which formed the mainstay of UK waterbird monitoring since 1947 (Cranswick *et al.* 1997). WeBS Core Counts are made at a wide variety of wetlands throughout the UK. Synchronised counts are conducted once per month, primarily from September to March, to fulfil all three main objectives. In addition, WeBS Low Tide Counts are undertaken on selected estuaries with the aim of identifying key areas used during the low tide period, principally by feeding birds; areas not otherwise noted for their importance by Core Counts which are normally conducted at high tide.

The day-to-day running of the Core and Low Tide Count schemes is the responsibility of the National Organisers, with assistance from a number of other staff.

The success and growth of these count

schemes reflects accurately the enthusiasm and dedication of the several thousands of volunteer ornithologists who participate. It is largely due to their efforts that waterbird monitoring in the UK is held in such international high regard.

Aim of this report

This report presents syntheses of data collected in 1999-2000 and previous years in line with the WeBS objectives. Data from other national and local waterbird monitoring schemes are included

WEATHER IN 1999-2000

This summary of UK weather is drawn from the journals *Weather* and *British Wildlife*. Figures in brackets denote the WeBS priority count date in that month. European weather is summarised from *Weather* and arctic breeding conditions for birds that winter in the UK, are summarised from Soloviev & Tomkovich (2001).

United Kingdom

Continuing the recent trend, winter 1999-2000 was mild and wet. There were no prolonged spells of cold weather and almost all months were warmer than average; in England and Wales, June was the only month to show a negative temperature anomaly.

April (18) began warm giving way to northerly airflows and a cool, wintry spell mid-month. This brought several inches of snow in south Wales and the Severn Vale and in the Pennines with harsh frosts across many areas. Mild and unsettled conditions prevailed thereafter until high pressure brought very warm conditions to all areas at the month end. Rainfall was above average in most areas. **May** (16) was warm and changeable, typically more unsettled in the northwest and drier in the southeast. **June** (13) was slightly cooler than average in all parts of the country, with only Northern Ireland being drier than normal. **July** (18) was very warm and sunny, particularly in the south, though less so in northern and western areas. In England and Wales, it was the driest July since 1911. **August** (15) began very warm, Heathrow Airport recording 32.7°C on the 1st. Cooler and more unsettled conditions prevailed from the second week, although Scotland was unusually drier than most of England and Wales.

A warm start to **September** (12) brought with it thundery outbreaks leading to localised flooding. Giant hail fell at Purley (Surrey), an event which has been associated with

where WeBS data alone are insufficient to fulfil this aim, so that the report provides a single, comprehensive source of information on waterbird status and distribution in the UK. All nationally and internationally important sites for which data exist are listed, as are all sites designated under international law or Conventions (see Appendices 1 & 2).

We recommend that the National Organisers (see *Contacts*) are contacted in the first instance by anyone with queries regarding this report or requiring further information.

considerable bird mortalities locally. Gravesend on the Swale Estuary recorded 30.4°C, the highest September temperature since 1973. The hot weather gave way to more unsettled conditions mid month, though warm periods and heavy rainfall saw further localised flooding in England and Wales. A tornado at Pagham in Surrey on the 23rd caused extensive damage to dwellings and vessels. Overall temperatures were 1.5-2.5°C above average.

Anticyclonic conditions dominated throughout the first part of **October** (10), with warm sunny days and occasional night-time frosts. A cold spell from the 18th to the 21st was the only notable event. Rainfall was near normal in most areas though it was notably dry in Northern Ireland, and temperatures were only fractionally above the long term mean.

The mild weather continued for the first two weeks of **November** (28), though a vigorous depression tracked across northern areas on the 5th causing localised flooding in Wales and Cumbria. A cold front crossed the country between the 16th and the 21st bringing colder weather and wintry showers. Milder more unsettled conditions returned for the remainder of the month, though in England and Wales it remained the driest November of the decade.

December (26) was dominated by a series of fronts bringing strong winds, heavy rain and sunny spells. Scotland and Northern Ireland were particularly wet, and both had mean temperatures below the long term average. A cold spell during the third week gave a brief period of snow across south Wales and England and temperatures in Northumberland failed to rise above -5°C on the 20th. Gales were common on the west coast during the latter part of the month.

Atlantic fronts and westerly wind dominated the early part of **January** (16) bringing mild and

unsettled conditions. A high pressure centred to the west of the UK brought settled and cooler conditions towards mid month, with night-time frosts widespread. Mild, wet and windy conditions returned to all areas at the end of the month. January was mild, with all bar southwest England and Wales recording mean temperatures 1-2°C above the long term average. Some meteorological stations in the northern and western isles recorded a totally frost free month. Southern and central England were particularly dry with less than half the typical precipitation.

Early **February** (13) saw the continuation of the unsettled conditions prevail for the first two weeks. Cooler conditions during the third week brought snow to some parts of England and up to 12 cm in parts of lowland Scotland. The resumption of mild, wet and windy weather brought the month to a close, with temperatures above average in all parts of the country and some northern and western areas experiencing more than twice the normal rainfall.

The WeBS year concluded in **March** (12) with another mild month. After a changeable first week with widespread frosts in the south and east, temperatures rose during the second week with Torquay, Devon, recording an exceptional 19.7°C on the 13th. High pressure in the third week brought more mild weather and some night-time frosts, with more unsettled anticyclonic conditions bringing the month to a close. A very dry month, March saw many parts of England receive less than half the typical rainfall, with only northwest Scotland being wetter than normal.

Northwest Europe

As in the UK, the weather throughout most of continental Europe was milder than average in almost all months, with no prolonged periods of cold weather. September was mild throughout all of Europe, with Scandinavian and Baltic countries typically averaging 2-4°C above normal. October was unexceptional, temperatures being near normal though slightly milder in the eastern Baltic and western Russia. As in the UK, most countries in western Europe experienced their coldest spell around 18th and 19th, and some central parts remained relatively dry. Iceland and Scandinavian countries experienced another mild month in November, temperatures around 2°C above the long term mean. Elsewhere most places were drier than average with temperatures near normal or below, particularly cooler in eastern Europe with Russia and the Ukraine 3-4°C below average. The coldest spell

Table i. The proportion of stillwater count units (lakes, reservoirs and gravel pits) in the UK with any ice and with three-quarters or more of their surface covered by ice during WeBS counts in 1999-2000 (England divided by a line drawn roughly between the Humber and the Mersey Estuaries).

Region	Ice	S	O	N	D	J	F	M
Northern Ireland	>0%	0	0	7	0	5	0	0
	>74%	0	0	0	0	0	0	0
Scotland	>0%	0	0	4	20	16	8	<1
	>74%	0	0	1	18	13	3	0
N England	>0%	0	0	<1	6	17	<1	0
	>74%	0	0	<1	2	8	0	0
S England	>0%	0	0	<1	4	5	<1	0
	>74%	0	0	0	2	<1	<1	0
Wales	>0%	2	0	2	5	2	2	0
	>74%	0	0	0	0	0	0	0

occurred between 20-24th just before the November priority count date. December was notably wet in most countries, particularly so in Scandinavia and western Europe, with temperatures typically 1-2°C above normal. As in November, the coolest period occurred just prior to the priority date on 26th. The remainder of the winter was consistently warmer than average in all areas. January was unusually dry, whilst March saw wet conditions in almost all parts. The coldest spells occurred in late January and late February, in both months after the priority count dates.

Arctic breeding conditions

Productivity in arctic-breeding birds was generally noted as good in 1999 (Soloviev & Tomkovich 2001), perhaps rather surprisingly in view of prevailing weather conditions and rodent abundance. Spring weather was generally warmer than normal in northern Scandinavia and the Taimyr, though cold and late in the Pechora region, Greenland and eastern Canada. Summer was around 1°C colder than average in most areas, again except for the Kola and Taimyr peninsulas where it remained slightly warmer than normal. Rodent abundance was generally low across Canada, Greenland, and much of Russia, although it was high in the western Taimyr.

WeBS Core Counts

SURVEY METHODS

The main source of data for this report is the WeBS scheme, providing regular monthly counts for most waterbird species at the majority of the UK's important wetlands. In order to fulfil the WeBS objectives, however, data from a number of additional schemes are included in this report. In particular, a number of species groups necessitate different counting methodologies in order to monitor numbers adequately, notably other national and local schemes for these species are routinely included. Additional, *ad hoc*, data are also sought for important sites not otherwise covered by regular monitoring, particularly open coast sections in Scotland, whilst the results of periodic, co-ordinated surveys, such as the non-estuarine coastal waterfowl survey, are included where the data collected are compatible with the presentation formats used in this report. The methods for these survey types are outlined below and more detail can be found in Gilbert *et al.* (1998). Although the precise methods for some of the additional count data presented within this report are unknown, it is safe to assume that they will follow closely the general methods presented here.

WeBS Core Counts

WeBS Core Counts are made using so-called "look-see" methodology (Bibby *et al.* 2000), whereby the observer, familiar with the species involved, surveys the whole of a predefined area.

Counts are made at all wetland habitats, including lakes, lochs/loughs, ponds, reservoirs, gravel pits, rivers, freshwater marshes, canals, sections of open coast and estuaries.

Numbers of all waterbird species, as defined by Wetlands International (Rose & Scott 1997), are recorded. In the UK, this includes divers, grebes, Cormorant, herons, Spoonbill, swans, geese, ducks, rail, cranes, waders and Kingfisher. Counts of gulls and terns are optional. Vagrants, introductions and escapes are included.

Most waterbirds are readily visible. Secretive species, such as snipes, are generally under-recorded. No allowance is made for these habits by the observer and only birds seen or heard are recorded. The species affected by such biases are well known and the problems of

interpretation are highlighted individually in the *Species Accounts*.

Most species and many sub-species are readily identifiable during the counts. Categories may be used, e.g. unidentified scoter species, where it is not possible to be confident of identification, e.g. under poor light conditions.

Species present in relatively small numbers or dispersed widely may be counted singly. The number of birds in large flocks is generally estimated by mentally dividing the birds into groups, which may vary from five to 1,000 depending on the size of the flock, and counting the number of groups. Notebooks and tally counters may be used to aid counts.

Counts are made once per month, ideally on predetermined 'priority dates'. This enables counts across the whole country to be synchronised, thus reducing the likelihood of birds being double-counted or missed. Such synchronisation is imperative at large sites which are divided into sectors, each of which can be practicably counted by a single person in a reasonable amount of time. Local Organisers ensure co-ordination in these cases due to the high possibility of local movements affecting count totals.

The priority dates are pre-selected with a view to optimising tidal conditions for counters covering coastal sites at high tide on a Sunday (see *Coverage*). The dates used for individual sites may vary due to differences in the tidal regime around the country. Co-ordination within a site takes priority over national synchronisation.

The accuracy of each count is recorded. Counts suspected to be gross underestimates of the true number of non-secretive species present are specifically noted, e.g. a large flock of roosting waders only partially counted before being flushed by a predator, or a distant flock of sea-duck in heavy swell. These counts may then be treated differently when calculating site totals (see *Analysis*).

Data are input by a professional data input company. Data are keyed twice by different people and discrepancies identified by computer for correction. Any particularly unusual counts are checked by the National Organisers and are confirmed with the counters if necessary.

Goose roost censuses

Since many 'grey geese' spend daylight hours in agricultural landscapes, most are missed during counts at wetlands by WeBS. These species are usually best counted as they fly to or from their roost sites at dawn or dusk since these are generally discrete wetlands and birds often follow traditional flight lines approaching or leaving the site. Even in half-light, birds can generally be counted with relative ease against the sky, although they may not be specifically identifiable at mixed species roosts.

In order to produce population estimates, counts are synchronised nationally for particular species (see Appendix 3), though normally only one or two such counts are made each year. The priority count dates are determined according to the state of the moon, since large numbers of geese may remain on fields during moonlit nights. Additional counts are made by some observers, particularly during times of high turnover when large numbers may occur for just a few days.

In some areas, where roost sites are poorly known or difficult to access, counts are made during daytime of birds in fields.

As with WeBS Core Counts, the accuracy of the count is noted.

Sea-ducks

The accuracy of counts of waterbirds on the sea is particularly dependent on prevailing weather conditions at the time of or directly preceding the count. Birds are often distant from land, and wind or rain can cause considerable difficulty with identifying and counting birds. Wind not only causes telescope shake, but even moderate swell at all sites except those with high vantage points can hamper counts considerably. Many sites may be best covered using aerial surveys, though these are usually expensive and require experienced, professional counters. In many cases, birds can only be identified to genus, e.g. grebe species or scoter species.

Consequently, the best counts of most divers, grebes and sea-duck at open coast and many

estuarine sites are made simply when conditions allow; only rarely will such conditions occur by chance during WeBS counts. Synchronisation between different sites may be difficult or impossible to achieve, and thus co-ordination of most counts to date has occurred at a regional or site level, e.g. within the Moray Firth, within North Cardigan Bay.

Irish Wetland Bird Survey

The Irish Wetland Bird Survey (I-WeBS) monitors non-breeding waterbirds in the Republic of Ireland (Colhoun 2001). I-WeBS was launched in 1994 as a joint partnership between BirdWatch Ireland, National Parks and Wildlife Service of Dúchas The Heritage Service of the Department of Arts, Heritage, Gaeltacht and the Islands (Ireland), and WWT, supported by the Heritage Council and WWF UK (World Wide Fund for Nature). I-WeBS is complementary to and compatible with the UK scheme. The main methodological difference from UK-WeBS is that counts are made only between September and March, inclusive.



Productivity monitoring

Changes in numbers of waterbirds counted in the UK between years are likely to result from a number of factors, including coverage and weather, particularly for European and Russian-breeding species which may winter further east or west within Europe according to the severity of the winter. However, genuine changes in population size will result from differences in recruitment and mortality between years.

For several species of swans and geese, young of the year can be readily identified in the field and a measure of productivity can be obtained by recording the number of young birds in sampled flocks, expressed as a percentage of the total number of birds aged. Experienced fieldworkers, by observing the behaviour of and relationship between individuals in a flock, can record brood sizes as the number of young birds associating with two adults.

ANALYSIS

In fulfilment of the WeBS objectives, results are presented in a number of different sections. An outline of the analyses undertaken for each is given here; further detail is provided in Appendix 3. A number of limitations of the data or these analytical techniques necessitate caution when interpreting the results presented in this report (see *Interpretation of Waterbird Counts*).

National totals

Population estimates are revised once every three years, in keeping with internationally agreed timetables (Rose & Stroud 1994). UK waterbird populations will next be revised in 2001, although a number have been revised recently (Appendix 2) for inclusion in the third edition of international *Waterfowl Population Estimates* endorsed by the Seventh Conference of the Contracting Parties to the Ramsar Convention, in Costa Rica in May 1999.

Total numbers of waterbirds recorded by WeBS and other schemes are presented separately for Great Britain (including the Isle of Man but excluding the Channel Islands) and Northern Ireland in recognition of the different legislation that applies to each. Separate totals for England, Scotland, Wales, and the Channel Islands are provided in Appendices 4-7. Numbers of waterbirds found on coastal (including estuarine) and inland habitats are provided separately in Appendix 8, particularly for comparison of numbers of waders with those in reports prior to 1994 when waders were not counted at inland sites.

Numbers presented in this report are not rounded. National and site totals calculated as the sum of counts from several sectors or sites may imply a false sense of accuracy if different methods for recording numbers have been used, e.g. 1,000 birds estimated on one sector and a count of seven individuals on another is presented as 1,007. It is safe to assume that any large count includes a proportion of estimated birds. However, reproducing the submitted counts in this way is deemed the most appropriate means of presentation and avoids the summation of 'rounding error'.

The count nearest the monthly priority date or, alternatively, the count co-ordinated with nearby sites if there is considered to be significant interchange, is chosen for use in this report if several accurate counts are available for the same month. A count from any date is used

if it is the only one available.

Data from other national surveys are used instead of WeBS Core Counts where the census total provides a better estimate of the total numbers, e.g. the national census of Pink-footed and Greylag Geese in October and November. Totals from different censuses are not combined to produce national totals due to lack of synchronisation (birds counted at roost by one method may be effectively double-counted during the WeBS count at a different site in that month), with the exception of a few goose populations where the risk of double-counting is minimal (see Appendix 2). Consequently, counts from site or regional-based surveys of sea-ducks, for example, are not included in national totals. Data from NEWS are not included in national totals.

For some scarcer species, including many escaped or introduced species, an estimate of the total number recorded by WeBS throughout the country has been provided using summed site maxima, calculated by summing the highest count at each site, irrespective of the month in which it occurred. For some species, this is likely to result in double-counting where birds move between sites.

Annual indices

Because the same WeBS sites are not necessarily covered each year, changes in waterbird population sizes cannot be determined simply by comparing the total number of birds counted in each year. Consequently, indexing techniques have been developed which allow between-year comparisons of numbers, even if the true population size is unknown.

The 'Underhill index' (Underhill 1989) was specifically developed for waterbird populations and is used in this report for most species. A full explanation of this indexing process is given in Prÿs-Jones *et al.* (1994), Underhill & Prÿs-Jones (1994) and Kirby *et al.* (1995), with additional information on its use in this report in Appendix 3.

In summary, where sites have not been visited, a count for each species is calculated based on counts in other months and years and at other sites. This effectively means that data are available for the same set of sites in each year and counts are thus directly comparable from one year to the next. Changes in the population can be calculated and the relative difference expressed as an index.

Not all species are included in the indexing process. Notably, many of the goose populations are excluded, partly because their reliance on non-wetland sites requires different count methodologies, but also because regular censusing of substantially the whole of the British populations negates the need for an index to be calculated using the Underhill technique. Thus, change indices for Pink-footed, Icelandic Greylag, Greenland White-fronted and Svalbard Barnacle Geese have been derived from the highest total count obtained during censuses of the population in each year (see Appendix 3). Many sea-duck are also excluded from the indexing process because of the extreme counting difficulties involved. Waders excluded from the index include those for which large numbers occur away from wetlands, e.g. Lapwing and Golden Plover, and those that are difficult to count accurately using WeBS methods, e.g. Snipe and Jack Snipe. Waterbird species which only occur in small numbers in Britain and Ireland have also been excluded.

Index values for wildfowl species have been provided separately for Britain and Northern Ireland. However, values calculated for waders in Northern Ireland were found to be statistically unreliable due to the small number of estuaries contributing to each index value, and consequently indices have been calculated for the UK as a whole for these species.

For all species, the index value has been constrained to equal 100 in the most recent year. In particular, this enables direct comparison of values for wildfowl in Great Britain with Northern Ireland despite the different availability of data as a consequence of the later start of the scheme in the province (see Appendix 3 for availability of data for different species groups and countries).

Monthly indices

The abundance of different wildfowl species varies during the winter due to a number factors, most notably the timing of their movements along the flyway, whilst severe weather, particularly on the continent, may also affect numbers in the UK. However, due to differences in site coverage between months, such patterns cannot be reliably detected using count totals. Consequently, an index is calculated for each month to reflect changes in relative abundance during the season.

The index uses only counts from sites covered in all seven months (September to March). Totals calculated for each month from

these sites only can then be compared directly (expressed as a percentage of the maximum numbers), thus revealing patterns of seasonality for the species considered. These are presented as graphs in the species accounts, giving both the value for the 1999-2000 winter, and the average value from the five preceding winters, 1994-95 to 1998-99. Non-migratory, scarce and irregularly counted species are omitted and only WeBS Core Counts have been used in the index.

Broad differences in the monthly values between species reflect their status in the UK. Resident species, or those with large UK breeding populations, e.g. some grebes and Mallard, are present in large numbers early in the winter. Declines through the winter result in part from mortality of first year birds, but also birds returning to remote or small breeding sites that are not covered by WeBS. The majority of UK wildfowl either occur solely as winter visitors, or have small breeding populations that are swelled by winter immigrants, with peak abundance generally occurring in mid winter.

The vast majority of the wintering populations of many wader species are found on estuaries, and, since coverage of this habitat is relatively complete and more or less constant throughout winter, meaningful comparisons of total monthly counts can be made for many species. Consequently, monthly indices are not calculated for waders. As counting of gulls and terns is optional, indices are not calculated for these species either.

Site importance

Tables in the *Species Accounts* rank the principal sites for each species according to average seasonal maxima for the last five seasons in line with recommendations of the Ramsar Convention (see Appendix 2 and *Presentation and notation*).

The count nearest the priority date or, alternatively, the count co-ordinated with nearby sites if there is considered to be significant interchange, is chosen for use in this report if several accurate counts are available for the same month. A count from any date is used if it is the only one available.

In accounts for most divers, grebes, Cormorant, herons, wildfowl and Kingfisher, annual maxima are derived from any month, with the season running from July to June inclusive. Average maxima for sites listed in the wader accounts are calculated using data from only the winter period, November to March. For species

which occur primarily as summer visitors, e.g. Garganey, Little Ringed Plover, annual statistics are calculated using the calendar year.

Data from other sources, often involving different methods, e.g. goose roost censuses, are used where these provide better, i.e. larger, counts for individual sites. NEWS data have only been presented for selected species (Ringed Plover, Sanderling, Purple Sandpiper, Bar-tailed Godwit and Turnstone) and only for sites previously noted as being of national importance.

In the first instance, average maxima were calculated using only complete counts but, if any incomplete counts exceeded this initial average, they were also incorporated and the averages recalculated. Averages enclosed by brackets are based solely on incomplete counts.

Counts at any site are considered to be incomplete whenever significant under-recording is thought to have occurred, due to part of the site not being counted or adverse counting conditions. This information is provided by the observer on the accuracy of the overall count (either 'OK' or 'Low', the latter indicating that a significant proportion of birds present were thought to have been missed, e.g. due to poor visibility) or for individual species.

For sites comprising just one count unit, completeness is assessed on a species-by-species basis using the accuracy information provided by the observer.

For complex sites (i.e. those comprising more than one count unit), counts from individual count sectors might have been made under very different conditions, particularly at very large sites, and consequently may have quite different qualities assigned to accuracy of the count. Additionally a variable amount of the overall site may have been uncounted.

For wildfowl and their allies, completeness assessments for the major complex sites (most

estuaries, gravel pit complexes etc.) have been made according to the number of sectors covered. If a significant proportion of the total number of sectors were not counted, and the total number of wildfowl was correspondingly lower than normal, all counts of those species at that site in that month are deemed incomplete.

For waders, gulls, terns and herons, more sophisticated species-by-species completeness qualities are assigned. In this case, the importance of the contribution of each count sector to the site total is based on its average contribution to the total at the time of year in question and on recent years (to allow for seasonal and long-term trends). Further, consideration is given to the fact that a count sector which normally holds a significant proportion of a site total for species A may hold only a small proportion of the site total for species B. Consequently, if such a count sector is not completely counted, the site total will now be treated as complete for species B but incomplete for species A.

In addition to the assessment of sites in *Species Accounts*, sites are identified for their importance in terms of overall waterbird numbers in *Principal Sites*. The peak count at each site is calculated by summing the individual species maxima during the season, irrespective of the month in which they occurred. Only WeBS Core Counts and national goose censuses (see Appendix 3) are included in totals. Note that non-native introduced or escaped species (i.e. those not in BOURC category A; see *Introduced and Escaped Waterbirds* under *Total Numbers*) are not included in these totals. Additional counts made using different methodologies, such as those of sea-ducks on the Moray Firth, are not incorporated.

The locations of all sites named in this report are given in Appendix 9.

PRESENTATION AND NOTATION

Detail is provided here on the format of presentation and the notation used in *Species Accounts* in particular. The information provided in *Analysis and Interpretation of Waterbird Counts* should mean that results presented in other sections are self-explanatory.

The main purpose of the *Species Accounts* is to list important sites for each species, subspecies or populations, as relevant. This is done using certain numerical criteria adopted widely for use in conservation legislation and guidelines

for site designation (see Appendix 2), although a number of exceptions have been made in some cases. Where available, the international and national importance thresholds are listed at the start of each account, although, for some numerous species, no population estimates, and therefore no thresholds, are available. Less numerous species, for which thresholds are not likely to be produced, are classified as "scarce" whilst species are classified as a "vagrant" where the UK does not fall within its normal range of

distribution. In line with the recommendations of Vinicombe *et al.* (1993), records of all species recorded by WeBS, including escapes, have been published to contribute to the proper assessment of naturalised populations and escaped birds. Following Holmes & Stroud (1995), non-native species which have become established are termed “naturalised”. These species are categorised according to the process by which they became established: naturalised feral (domesticated species gone wild); naturalised introduction (introduced by man); naturalised re-establishment (species re-established in an area of former occurrence); or naturalised establishment (a species which occurs, but does not breed naturally, e.g. potentially Barnacle Goose in southern England). With the exception of vagrants, all other non-native species have been classed as “escapes”. The native range is given in the species account for naturalised species, escapes and vagrants.

The maximum count in any month of 1999-2000, and the month of occurrence, is given for Great Britain and Northern Ireland in each account except for species occurring in very small numbers. Where productivity data have been collected, the proportion of young and mean brood size, where available, are also listed at the start of the account for ease of reference.

Index values, where calculated, are graphed within each account. Annual indices are presented on a log scale, as is the scientific norm for population growth. Where separate British and Northern Ireland values have been calculated (for certain wildfowl species), these are presented on the same graph to allow direct comparison but with different y-axes (vertical axes) for clarity. British indices are denoted using circles and the left-hand axis, and Northern Ireland values using squares and the right hand axis. Where only one index series is presented, circles and the left-hand axis have been used regardless of country.

Monthly indices, where calculated, are graphed within each account. Mean values for the previous five years (1992-93 to 1996-97) are shown using black columns and values for the most recent year using white columns.

Text in each account highlights significant points, e.g. coverage, changes in numbers or indices and at individual sites, and provides an overview of any recently published relevant research or surveys. The terms “recent average” and “previous average” refer to averages based on the winters 1992-93 to 1996-97, i.e. those presented in the previous WeBS report.

Tables provide data for all internationally important sites and all nationally important sites (either in a Great Britain context or, for sites in Northern Ireland, in an all-Ireland context) monitored by WeBS or other appropriate surveys. For each site, the maximum count in each of the five most recent years, the month of occurrence of the 1999-2000 peak and the mean of the maxima is given. Incomplete counts are bracketed and missing counts are denoted using a dash “-”.

Sites are selected for presentation using a strict interpretation of the 1% threshold (for convenience, sites in the Channel Islands and Isle of Man are identified using 1% thresholds for Great Britain and included under the Great Britain section of the tables). For some species with very small national populations, and consequently very low 1% thresholds, an arbitrary, higher level has been chosen for the inclusion of sites and is highlighted in the text. Where no thresholds are given, e.g. for introduced species, and where no or very few sites in the UK reach the relevant national qualifying levels, an arbitrary threshold has been chosen to select a list of sites for this report. These thresholds are highlighted in the text, whilst a blank line has been inserted in the table to separate sites that qualify as nationally important from those selected for the purposes of this report using lower thresholds, including 1% thresholds of less than 50 birds.

Where the importance of a site has changed as a result of the 1999-2000 count, i.e. it has become nationally or internationally important but was not following the previous year, or it has changed from international to national importance or vice versa, this is indicated in the table. Sites with elevated status have a black triangle pointing up (▲) to the right of the average, whilst those with lowered status are indicated using a triangle pointing down (▼). Sites for which the average fell below the threshold for national importance following 1999-2000 are listed under the heading “Sites no longer meeting table qualifying levels”.

A few sites that have not been counted in recent years, in most cases due to their isolated location, but were of national or international importance for one or more species when last counted (and thus retain that status in the absence of data to the contrary), are listed in the accounts under the section “Internationally or nationally important sites not counted in last five years”. This also serves to highlight the need for counting to be resumed.

All sites which, in 1999-2000, held numbers exceeding the relevant national threshold (or adopted qualifying level), but with five year means below this value are listed under "Other sites surpassing table qualifying levels in 1999-2000". This serves to highlight important sites worthy of continued close attention. For waders, this includes counts from any month of the year.

It should be noted that a site may appear to have been flagged erroneously as having elevated status if the most recent count was below the relevant threshold. However, a particularly low count six years previously will have depressed the mean in the previous report. The converse

may be true for sites with lowered status and thus, in exceptional circumstances, a site may be listed in the relevant sections of the table as both no longer being of national importance and with a peak count in the most recent year exceeding the national threshold.

For a number of wader species, different thresholds exist for passage periods. The list of "sites surpassing passage thresholds in 1999-2000" includes all those with counts above the relevant number, even if already listed in the main part of the table by virtue of the winter mean surpassing the national threshold.

See page 32 for symbols and notation used.

INTERPRETATION OF WATERBIRD COUNTS

Caution is always necessary in the interpretation and application of waterbird counts given the limitations of these data. This is especially true of the summary form which, by necessity, is used in this report. A primary aim here remains the rapid feedback of key results to the many participants in the WeBS scheme. More detailed information on how to make use of the data for research or site assessment purposes can be obtained from the appropriate National Organisers.

Information collated by WeBS and other surveys can be held or used in a variety of ways. Data may also be summarised and analysed differently depending on the requirements of the user. Consequently, calculations used to interpret data and their presentation may vary between this and other publications, and indeed between organisations or individual users. The terminology used by different organisations may not always highlight these differences. This particularly applies to summary data. Such variations do not detract from the value of each different method, but offer greater choice to users according to the different questions being addressed. This should always be borne in mind when using data presented here.

For ease of reference, the caveats provided below are broadly categorised according to the presentation of results for each of the key objectives of WeBS. Several points, however, are general in nature and apply to a broad range of uses of the data.

National totals

The majority of count data are collected between September and March, when most species of waterbird are present in the UK in highest

numbers. Data are collected during other months and have been presented where relevant. However, caution is urged regarding their interpretation both due to the relative sparsity of counts from this period and the different count effort for different sites.

A number of systematic biases of WeBS or other count methodology must be borne in mind when considering the data. Coverage of estuarine habitats and large, standing waters by WeBS is good or excellent. Consequently, counted totals of those species which occur wholly or primarily on this habitat during winter will approximate the true number. However, those species dispersed widely over rivers, non-estuarine coast or small inland waters are likely to be considerably under-represented, as will secretive or cryptic species, such as snipes, or those which occur on non-wetlands, e.g. grassland plovers. Species which occur in large numbers during passage are also likely to be under-represented, not only because of poorer coverage at this time, but due to the high turnover of birds in a short period. Further, since counts of gulls and terns are optional, national totals are likely to be considerable underestimates of the number using the WeBS network of sites. Only for a handful of species, primarily geese, do count totals approach the true number in the UK.

One instance of possible over-estimation is the use of summed site maxima to determine the total number of scarcer species. For species with mobile flocks in an area well covered by WeBS, e.g. Snow Goose in south-east England, it is likely that a degree of double-counting will occur, particularly if birds move between sites at different times of the year. These cases are

highlighted in the *Species Accounts*.

The publication of records of vagrants in this report does not imply acceptance by the *British Birds* Rarities Committee (e.g. Rogers and the Rarities Committee 1998).

Annual indices

For all species, the long-term trends in index values can be used with confidence to assess changes in overall wintering populations. Because short-term fluctuations provide a less rigorous indication of population changes, care should be taken in their interpretation.

Caution should be used in interpreting figures for species which only occur in small numbers. Thus, numbers tend to fluctuate more widely for many species in Northern Ireland, largely as a result of the smaller numbers of birds involved but also, being at the westernmost limit of their range, due to variable use being made of Ireland by wintering wildfowl.

It should be borne in mind that the missing values used in the Underhill index are calculated anew each year. Because the index formula uses data from all years, each new year's counts will slightly alter the site, month and year factors. In turn, the missing counts may differ slightly and, as a result, the index values produced each year are likely to differ from those published in the previous *Wildfowl and Wader Counts*. The indices published here represent an improvement on previous figures as the additional year's data allow calculation of the site, month and year factors with greater confidence. Index values are given in Appendix 3.

Monthly indices

As for annual indices, the reduced numbers of both sites and birds in Northern Ireland result in a greater degree of fluctuation in numbers used in the analyses of data from the province.

Site importance

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 1998). Under criterion 6, a wetland is considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of waterbird, whilst any site regularly supporting 20,000 or more waterbirds qualifies under

criterion 5. Similar criteria have been adopted for identification of SPAs under the EC Birds Directive in the UK legislation. 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 waterbird, and in Northern Ireland, important in an all-Ireland context if it holds 1% or more of the estimated all-Ireland population. The relevant 1% thresholds are given in Appendix 2.

Sites are selected for presentation in this report using a strict interpretation of the 1% threshold. 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. It should also be noted that the 'qualifying levels' used for introduced species are used purely as a guide for presentation of sites in this report and do not infer any conservation importance for the species or the sites concerned since protected sites would not be identified for these non-native birds.

It is necessary to bear in mind the distinction between sites that *regularly* hold wintering populations of national or international importance and those which may happen to exceed the appropriate qualifying levels only in occasional winters. This follows the Ramsar Convention, which states that key sites must be identified on the basis of demonstrated regular use (calculated as the mean winter maxima from the last five seasons for most species in this report), otherwise a large number of sites might qualify as a consequence of irregular visitation by one-off large numbers of waterbirds. However, the Convention also indicates that provisional assessments may be made on the basis of a minimum of three years' data. These rules of thumb are applied to SPAs and national assessments also. Sites with just one or two years' data are also included in the tables if the mean exceeds the relevant threshold for completeness but this does not, as such, imply qualification.

Nevertheless, sites which irregularly support nationally or internationally important numbers may be extremely important at certain times, e.g. when the UK population is high, during the main migratory periods, or during cold weather, when they may act as refuges for birds away from traditionally used sites. For this reason also, the ranking of sites according to the total numbers of birds they support (particularly in *Principal Sites*) should not be taken as a rank order of the conservation importance of these sites, since

certain sites, perhaps low down in terms of their total 'average' numbers, may nevertheless be of critical importance to certain species or populations at particular times.

Peak counts derived from a number of visits to a particular site in a given season will reflect more accurately the relative importance of the site for the species than do single visits. It is important to bear this in mind since, despite considerable improvements in coverage, data for a few sites presented in this report derive from single counts in some years. Similarly, in assessing the importance of a site, peak counts from several winters should ideally be used, as the peak count made in any one year may be unreliable due to gaps in coverage and disturbance- or weather-induced effects. The short-term movement of birds between closely adjacent sites may lead to altered assessments of a site's apparent importance for a particular species. More frequent counts than the once-monthly WeBS visits are necessary to assess more accurately the rapid turnover of waterbird populations that occurs during migration or cold weather movements.

This list of potential sources of error in counting wetland birds, though not exhaustive, suggests that the net effect tends towards under- rather than over-estimation of numbers and provides justification for the use of maximum counts for the assessment of site importance or the size of a populations. Factors causing under-estimation are normally constant at a given site in a given month, so that while under-estimates may occur, comparisons between sites and years remain valid.

It should be recognised that, in presenting only sites of national importance, this report provides just one means of identifying important sites and does not provide a definitive statement on the conservation value of individual sites for waterbirds, let alone other conservation interests. The national thresholds have been chosen to provide a reasonable amount of information in the context of this report only. Thus, for example, many sites of regional importance or those of importance because of the assemblage of species present are not included here. European Directives and conservation Conventions stress the need for a holistic approach to effect successful conservation, and lay great

importance on maintaining the distribution and range of species, in addition to the conservation of networks of individual key sites.

For the above reasons of poor coverage, geographically or temporally, outlined above, it should be recognised that lists of internationally and nationally important sites are limited by the availability of WeBS and other survey data. Whilst the counter network is likely to cover the vast majority of important sites, others may be missed and therefore will not be listed in the tables due to lack of appropriate data.

Some counts in this report differ from those presented previously. This results from the submission of late data and corrections, and in some cases, the use of different count seasons or changes to site structures. Additionally, some sites may have been omitted from tables previously due to oversight. It is likely that small changes will continue as part of the current site mapping project and as the database, developed initially for waders, is brought on line for wildfowl. Most changes are minor, but comment is made in the text where they are significant. Where a site has apparently changed status as a result of recalculations or omissions, comment is made in the text but it is not flagged in the tables in the *Species Accounts*.

Note that sites listed under "Sites no longer of national/all-Ireland importance" represent those that were listed in the 1998-99 report as of national importance but which, following the 1999-2000 counts, no longer meet the relevant threshold. It is not an exhaustive list of sites which, at any time in the past, have been of national or all-Ireland importance.

Counts made using non-WeBS methodologies, such as those of sea-ducks on the Moray Firth, are not incorporated into the site totals presented in *Principal Sites*, with the exception of goose roost counts. Thus, it should be borne in mind that other sites that are important for certain waterbird 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.

Lastly, owing to possible boundary differences, totals given for WeBS sites in this report are not necessarily the same as totals for designated statutory sites (ASSIs/SSSIs, SPAs or Ramsar Sites) having the same or similar names.

COVERAGE

WeBS Core Counts

Co-ordinated, synchronous counts are advocated to prevent double-counting or birds being missed. Consequently, priority dates are recommended nationally. Due to differences in tidal regimes around the country, counts at a few estuaries were made on other dates to match the most suitable conditions. Weather and counter availability also result in some counts being made on alternative dates.

Table ii. WeBS Core Count priority count dates in 1999-2000

18 April	10 October
16 May	28 November
13 June	26 December
18 July	16 January
15 August	13 February
12 September	12 March

Counts were received from 2,135 sites of all habitats for the period April 1999 to March 2000, comprising 3,445 count units (the sub-divisions of large sites for which separate counts are provided). The number of sites and count units remains at the high level of recent years. Extensive coverage of the NW Scottish mainland was for the second year undertaken in late winter by the Royal Air Force Ornithological Society providing valuable information on a remote and sparsely populated area which has traditionally received little coverage. Also of note was excellent coverage in Shetland, an important area where relatively few counts had been conducted in recent years. Of the key waterbird sites, 1999-2000 counts for the Blyth Estuary (Suffolk) and the Exe Estuary were not received in time for inclusion in this report.

WeBS and I-WeBS coverage in 1999-2000 is shown by 10km squares in Figure 1. The location of each count unit is shown using only its central grid reference. Thus, for example, the 19 count sectors of the North Norfolk Coast fall in four 10km squares, broadly indicating the extent of the whole site. In all, WeBS count units were visited in 1,109 different 10km squares during 1999-2000, typical of coverage in recent years. As ever, areas with few wetlands or small human populations are apparent on

the map as areas with little coverage. The location of many of the key sites mentioned in the report and all estuaries is shown in Appendix 9. The county and grid reference of all sites mentioned by name in this report are given in Appendix 8.

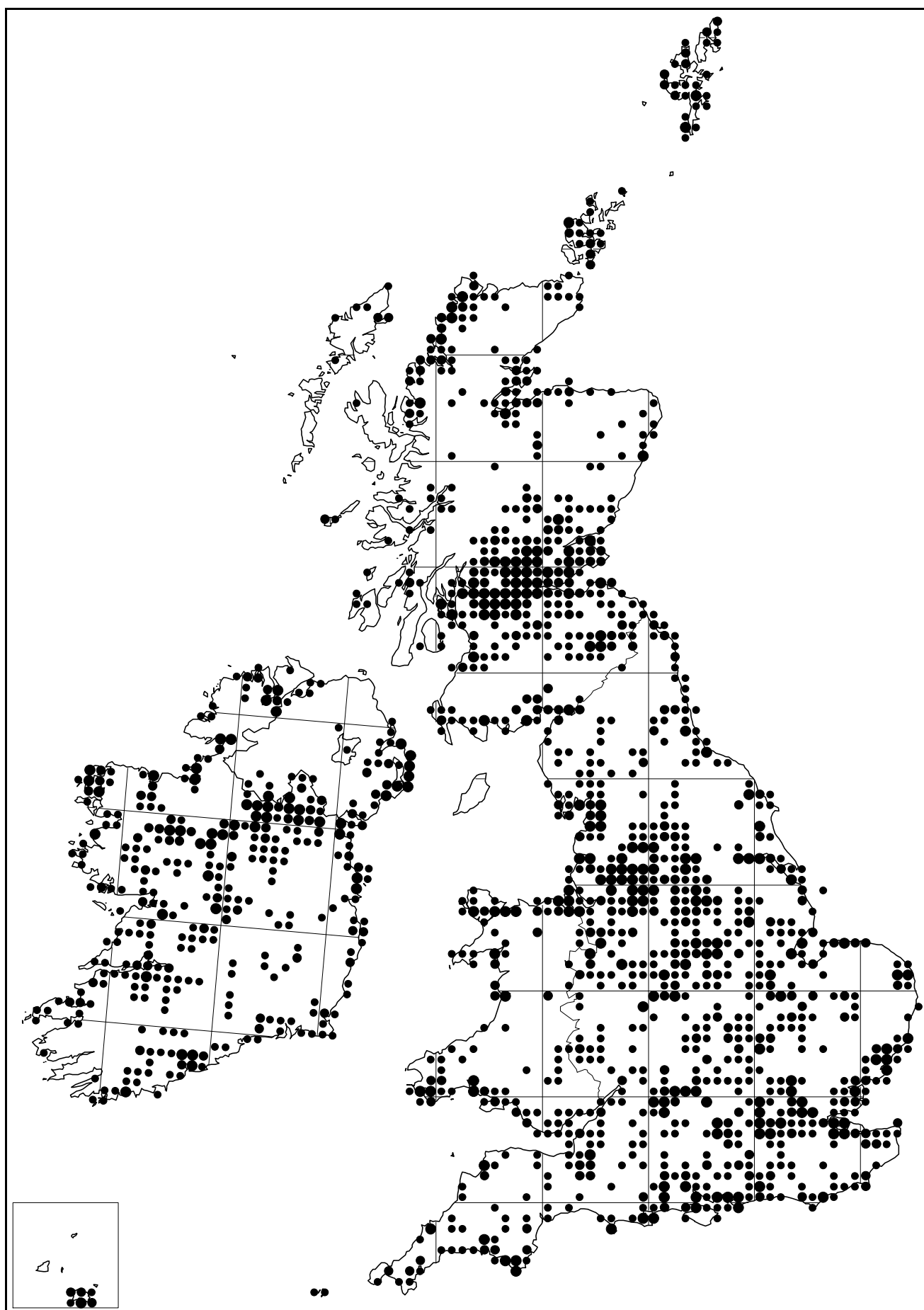
Goose censuses

In 1999-2000, as in previous years, Bean Geese were censused regularly on the Slamannan Plateau (Simpson & MacIver 2001). National surveys of Pink-footed and Icelandic Greylag Geese were undertaken in October and November (Hearn 2000a), involving counts of birds arriving at or leaving roosts. Censuses of the native Scottish Greylag population on the Uists were made in August and February (R. MacDonald *in litt.*). Censuses of Greenland White-fronted Geese, including birds in Ireland, were undertaken in autumn 1999 and spring 2000 by the Greenland White-fronted Goose Study and Irish National Parks and Wildlife Service (Fox & Francis 2001). Greenland Barnacle Geese were counted regularly by SNH and others on Islay and main islands in Argyll (M. McKay *in litt.*). The Svalbard Barnacle Goose population was counted frequently on the Solway Firth by WWT staff (WWT unpubl. data). Dark-bellied Brent Geese were censused in January and February by the WeBS network, with counters at key sites making special effort to locate birds using adjacent areas, particularly fields, which would ordinarily be missed during normal Core Counts.

Sea-duck surveys

Data were received from the following regional or site-based surveys for counts of sea-duck, divers and grebes at coastal sites, many continuing studies from previous years: counts in the Moray Firth between November and January (D. Butterfield *in litt.*); at least once monthly aerial and/or land-based counts of Common Scoter in Carmarthen Bay between April and March (L. Smith *in litt.*); and counts of key sites around the Isles of Shetland by SOTEAG (Heubeck 2000). However, no data were received for Cardigan Bay, Scapa Flow or parts of SE Scotland where dedicated counts have been made in recent years.

Figure 1. Coverage by 10-km grid squares for WeBS Core Counts in the UK, Isle of Man and the Channel Islands and for I-WeBS in the Republic of Ireland in 1999-2000. Small dots represent 1-2 count units per 10-km square, medium dots represent 3-4 units and large dots represent five or more units.



TOTAL NUMBERS

The total numbers of waterbirds recorded by WeBS in 1999-2000 are given in Tables 1 & 2 for Great Britain (including the Isle of Man, but excluding the Channel Islands) and Northern Ireland, respectively. Brief comment on these figures are provided below. In addition, counts of waterbirds in the Republic of Ireland by I-WeBS are provided in Table 3.

Site coverage for gulls and terns is given separately since counts of these species were optional.

As in 1998-99, winter 1999-2000 was mild with no prolonged periods of cold weather in continental Europe. There were no obvious overall patterns in waterbird totals for Great Britain, some species showing continued increases, many were around average, and a small number continued to decline. However, whilst several species reached record counts in Great Britain, relatively few did so in Northern Ireland.

Introduced and escaped waterbirds

Many species of waterbird occur in the UK as a result of introductions, particularly through escape from collections. Several have become established, such as Canada Goose and Ruddy Duck. The British Ornithologists' Union Records Committee recently established a category 'E' for "Species that have been recorded as introductions, transportees or escapees from captivity, and whose breeding populations (if any) are not thought to be self-sustaining" (BOURC 1999).

WeBS records of these species are included in this report both for the sake of completeness and in order to assess their status and monitor any changes in numbers, a key requirement given the need, under the African-Eurasian Waterbird Agreement of the Bonn Convention

"... to prevent the unintentional release of such species ..." and, once introduced, the need "... to prevent these species becoming a potential threat to indigenous species" (Holmes *et al.* 1998). Numbers of established populations (e.g. Canada Goose and Ruddy Duck, which are placed in category 'C') are excluded from the statistics below since the large numbers involved would swamp numbers of other species.

Figure 2 shows data for species in category E, although these data exclude species which occur in both category A and E, e.g. Pink-footed Geese, since separation of escaped from wild birds is not readily possible using WeBS methods. The total number of species recorded by WeBS in 1999-2000 was 26, slightly below the 28 of 1998-99. The total of 222 sites is the highest to date and continues a steady upward trend. Following the slight blip in 1998-99, the summed site maxima increased sharply once again (now some 36% higher than in 1995-96), although the figure of 731 birds will undoubtedly include some duplication of individuals and some records of pinioned birds.

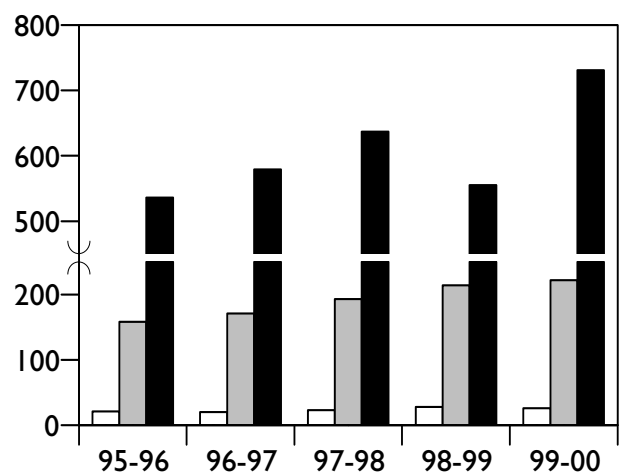


Figure 2. Number of species (white bars), number of sites at which birds were recorded (grey bars) and summed site maxima (black bars) for waterbird species in the BOURC's category E.

Table 1. Total numbers of waterbirds recorded by WeBS Core Counts in Great Britain, 1999-2000†.

		Apr	May	Jun	Jul	Aug
	<i>Number of sites visited</i>	846	763	777	755	809
	<i>Number of count units visited</i>	1,409	1,236	1,191	1,217	1,293
RH	Red-throated Diver	316	21	31	25	33
BV	Black-throated Diver	16	10	3	10	1
ND	Great Northern Diver	60	32	2	1	0
UL	Unidentified diver	0	0	0	0	0
PJ	Pied-billed Grebe	1	0	0	0	0
LG	Little Grebe	1,103	797	770	1,232	2,333
GG	Great Crested Grebe	3,897	3,271	3,078	4,404	5,779
RX	Red-necked Grebe	13	2	4	3	58
SZ	Slavonian Grebe	32	0	0	2	1
BN	Black-necked Grebe	42	17	8	12	24
CA	Cormorant	5,264	4,201	3,642	5,180	7,740
BI	Bittern	0	0	1	0	1
EC	Cattle Egret	0	0	0	0	0
ET	Little Egret	164	50	59	267	633
HW	Great White Egret	0	0	0	0	0
H	Grey Heron	1,962	1,765	1,893	2,130	2,573
UR	Purple Heron	0	0	0	0	0
OR	White Stork	2	1	2	2	0
IS	Sacred Ibis	0	0	0	0	0
NB	Spoonbill	5	4	18	11	10
MS	Mute Swan	8,590	8,243	8,634	10,615	13,202
AS	Black Swan	28	19	25	21	22
BS	Bewick's Swan	4	0	0	0	0
WS	Whooper Swan	80	11	12	9	10
HN	Swan Goose	6	4	9	12	1
BE	Bean Goose	1	4	1	0	0
XF	Taiga Bean Goose	0	0	0	0	0
PG	Pink-footed Goose	22,599	1,079	31	29	21
EW	European Whitefront	7	3	2	0	11
NW	Greenland Whitefront	255	0	0	0	0
LC	Lesser White-fronted Goose	0	1	0	1	1
JI	Greylag Goose (Iceland)	1,310	0	0	0	0
JH	Greylag Goose (NW Scotland)	162	40	4	0	6,434
JE	Greylag Goose (naturalised)	4,540	4,705	7,911	9,912	13,617
HD	Bar-headed Goose	10	7	21	17	10
SJ	Snow Goose	23	21	8	19	23
RJ	Ross's Goose	0	1	0	0	0
EM	Emperor Goose	3	0	3	2	2
CG	Canada Goose	10,734	10,591	21,417	24,430	29,393
YN	Barnacle Goose (Greenland)	778	19	0	0	0
YS	Barnacle Goose (Svalbard)	1,805	3,005	0	0	0
YE	Barnacle Goose (naturalised)	67	74	84	158	249
BG	Brent Goose	0	0	0	0	0
DB	Dark-bellied Brent	12,247	9,563	40	566	40
BB	Black Brant	0	0	0	0	0
QS	Light-bellied Brent (Svalbard)	1	2	0	2	1
QN	Light-bellied Brent (Canada)	2	0	0	0	0
EB	Red-breasted Goose	1	1	1	1	1
EG	Egyptian Goose	104	78	275	278	326
ZL	Hybrid goose	29	19	32	48	44
ZM	Herl/domestic goose	35	44	30	35	43
UO	Unidentified goose	3	5	11	0	7
UD	Ruddy Shelduck	1	2	1	6	7
UE	Cape Shelduck	0	0	0	0	0
UB	Paradise Shelduck	0	0	0	0	0
SU	Shelduck	24,364	14,441	16,076	19,751	21,556
ZT	Hybrid Shelduck	0	0	2	0	0

Table I. continued

	Sep	Oct	Nov	Dec	Jan	Feb	Mar
<i>Sites</i>	1,442	1,649	1,673	1,630	1,818	1,719	1,743
<i>Count units</i>	2,265	2,628	2,622	2,571	2,867	2,885	2,702
RH	181	253	396	321	771	573	405
BV	1	9	26	25	19	83	13
ND	23	25	88	82	94	107	52
UL	0	0	2	0	0	0	0
PJ	0	0	0	0	0	0	0
LG	4,287	4,382	3,899	3,633	3,709	3,340	3,060
GG	8,644	9,190	8,409	7,879	8,588	7,919	7,545
RX	16	16	25	12	16	13	21
SZ	22	110	160	139	169	175	136
BN	35	33	27	25	35	28	21
CA	13,320	16,243	14,516	13,596	15,430	13,399	10,474
BI	1	2	11	13	9	16	6
EC	0	0	0	2	1	0	1
ET	1,016	927	641	445	503	589	615
HW	1	0	0	0	0	0	0
H.	4,527	4,294	3,143	2,907	3,471	3,151	2,963
UR	1	0	0	0	0	0	0
OR	0	2	3	0	2	1	2
IS	0	1	0	0	0	0	0
NB	4	5	3	3	7	4	1
MS	17,562	19,616	19,092	18,393	19,287	17,065	15,895
AS	30	52	48	42	37	27	34
BS	1	16	635	428	1,815	1,051	262
WS	40	1,273	3,720	3,241	6,701	3,373	4,594
HN	20	30	14	13	32	24	14
BE	2	8	153	153	47	13	2
XF	0	0	0	0	1	1	0
PG	489	208,595	212,493	34,795	73,108	70,393	44,167
EW	5	24	943	2,050	3,862	3,025	601
NW	0	574	20,660	262	659	725	19,017
LC	1	2	0	0	0	0	0
J1	2,276	47,970	73,344	20,228	19,273	25,761	24,387
JH	104	854	366	230	408	5,599	335
JE	18,515	17,916	20,827	19,983	21,004	15,560	11,979
HD	29	18	30	19	8	6	14
SJ	34	40	48	47	59	53	57
RJ	3	0	1	0	1	1	1
EM	2	7	8	6	5	6	4
CG	46,211	44,632	49,990	43,103	48,514	35,639	28,691
YN	19	335	37,766	958	100	1,058	32,501
YS	5	24,664	25,858	22,185	23,770	24,152	25,037
YE	367	286	716	858	393	477	306
BG	0	0	0	0	0	95	117
DB	218	19,423	90,919	82,421	86,234	86,808	46,509
BB	0	1	0	3	1	0	1
QS	568	1,552	1,784	902	780	159	18
QN	50	78	32	68	83	85	43
EB	2	1	2	0	1	3	1
EG	421	176	78	125	146	115	137
ZL	189	193	179	178	155	187	163
ZM	98	93	95	100	113	121	163
UO	8	0	0	0	0	0	0
UD	8	8	5	6	4	2	6
UE	1	0	0	0	0	0	0
UB	1	0	0	0	0	0	0
SU	37,807	43,624	50,865	52,044	57,421	56,996	45,224
ZT	0	1	0	0	0	0	0

Table 1. Great Britain, continued

		Apr	May	Jun	Jul	Aug
QF	Magellan Goose	1	1	1	1	1
MY	Muscovy Duck	5	4	5	10	11
DC	Wood Duck	1	2	0	1	2
MN	Mandarin	69	61	124	65	92
QD	Crested Duck	0	0	0	0	0
WN	Wigeon	4,819	561	154	197	758
AW	American Wigeon	0	2	1	1	0
HL	Chiloe Wigeon	1	0	0	0	0
GA	Gadwall	2,281	1,398	2,030	1,864	4,070
T.	Eurasian Teal	8,282	331	746	1,575	15,222
TA	Green-winged Teal	1	0	0	0	0
KQ	Speckled Teal	2	0	0	2	4
MA	Mallard	22,856	22,345	31,705	42,761	69,076
BD	Black Duck	0	0	1	0	0
PT	Pintail	341	26	8	11	36
PN	Bahama Pintail	0	1	0	0	0
YR	Red-billed Teal	0	0	0	0	0
QC	Cape Teal	0	0	0	0	0
GY	Garganey	35	66	18	16	97
TB	Blue-winged Teal	0	0	0	1	1
QA	Cinnamon Teal	0	0	0	0	0
VE	Red Shoveler	0	0	0	0	0
SV	Shoveler	2,024	687	590	677	2,693
IE	Ringed Teal	0	0	0	0	0
MQ	Maned Duck	0	0	1	1	1
RQ	Red-crested Pochard	6	8	3	4	18
QR	Rosybill	0	0	0	0	1
PO	Pochard	910	673	1,147	3,583	10,520
NG	Ring-necked Duck	2	1	0	0	0
FD	Ferruginous Duck	0	0	0	0	0
NZ	New Zealand Scaup	0	0	0	0	0
TU	Tufted Duck	16,907	8,127	9,014	21,397	38,320
SP	Scaup	750	21	2	21	44
AY	Lesser Scaup	0	0	1	1	0
E.	Eider	16,609	14,976	14,584	16,509	15,649
KE	King Eider	0	0	1	0	1
LN	Long-tailed Duck	284	50	3	1	1
CX	Common Scoter	3,435	1,908	291	828	573
FS	Surf Scoter	2	0	0	0	0
VS	Velvet Scoter	284	438	62	0	65
GN	Goldeneye	2,673	142	73	96	100
SY	Smew	2	1	1	1	1
RM	Red-breasted Merganser	1,970	804	810	888	1,316
GD	Goosander	435	341	275	542	899
RY	Ruddy Duck	1,073	719	635	791	1,176
OI	Argentine Blue-bill	0	0	0	0	0
ZF	Feral/hybrid Mallard type	125	98	116	133	129
ZR	Hybrid <i>Anas</i>	0	0	0	0	0
ZD	Hybrid <i>Aythya</i>	1	1	2	1	1
UM	Unidentified duck	0	0	0	0	0
WA	Water Rail	143	46	40	97	94
AK	Spotted Crake	0	0	0	0	1
VC	Baillon's Crake	0	0	0	1	0
MH	Moorhen	4,714	3,358	3,088	4,565	6,406
CO	Coot	16,129	13,806	18,813	36,668	59,011
AN	Crane	2	0	0	0	0
	TOTAL WILDFOWL²	207,840	133,156	148,486	212,501	330,597

Table I. continued.

	Sep	Oct	Nov	Dec	Jan	Feb	Mar
QF	1	1	1	1	1	1	1
MY	26	49	70	59	43	49	53
DC	0	1	6	9	6	7	3
MN	167	196	201	239	268	157	152
QD	1	1	1	0	0	0	0
WN	43,537	171,956	237,816	312,719	325,803	275,426	158,171
AW	1	1	2	1	2	3	2
HL	1	0	2	0	1	0	0
GA	9,280	10,828	15,007	14,160	15,542	12,073	8,414
T.	67,155	90,695	120,456	140,225	121,548	92,412	51,400
TA	0	0	2	1	0	3	3
KQ	5	1	7	3	3	1	1
MA	123,188	139,026	139,450	145,590	133,541	93,178	60,710
BD	0	0	1	0	0	1	0
PT	4,550	12,639	17,333	17,249	17,331	12,408	3,628
PN	0	0	0	0	0	1	2
YR	0	0	1	0	1	0	0
QC	0	0	0	0	1	0	0
GY	77	4	1	1	1	2	5
TB	1	2	0	1	0	1	1
QA	1	0	0	0	0	0	0
VE	0	1	0	0	0	0	0
SV	8,649	10,682	9,166	8,461	7,946	8,467	7,061
IE	0	0	1	0	0	2	1
MQ	1	0	0	0	0	0	0
RQ	69	73	77	77	56	74	33
QR	0	0	0	0	0	1	1
PO	12,081	16,741	35,301	33,351	36,324	31,618	11,093
NG	2	1	0	1	1	1	3
FD	1	2	2	3	0	1	4
NZ	0	0	1	0	0	1	0
TU	44,951	49,673	56,875	52,257	54,987	50,072	44,641
SP	111	762	1,412	5,588	3,317	3,203	1,123
AY	0	0	1	1	1	1	2
E.	23,052	23,862	22,528	19,365	15,712	18,080	12,989
KE	0	0	0	0	1	0	0
LN	42	291	989	1,593	1,931	1,370	1,004
CX	975	1,596	5,162	3,799	3,474	6,651	3,134
FS	1	5	1	1	2	5	5
VS	64	491	1,043	394	302	323	492
GN	220	888	9,642	13,836	14,401	16,174	13,478
SY	1	1	44	185	254	229	56
RM	1,462	2,244	3,566	3,868	3,178	4,216	3,128
GD	1,160	1,045	2,287	3,018	3,576	3,431	2,090
RY	2,450	3,468	3,058	3,728	4,565	4,032	2,773
OI	0	0	0	0	0	0	1
ZF	198	263	327	322	359	396	307
ZR	2	5	6	2	0	2	1
ZD	4	1	3	2	6	6	4
UM	1	0	0	0	0	0	0
WA	203	325	427	452	478	347	290
AK	2	0	0	0	0	0	0
VC	0	0	0	0	0	0	0
MH	11,811	13,661	12,990	13,502	14,375	13,604	12,373
CO	95,293	107,723	112,098	104,947	106,324	81,940	55,663
AN	1	0	0	0	0	0	0
WILDFOWL	607,963	1,126,758	1,411,657	1,230,934	1,282,508	1,107,948	748,262

Table I. Great Britain, continued

		Apr	May	Jun	Jul	Aug
OC	Oystercatcher	68,444	46,618	32,577	48,655	144,722
IT	Black-winged Stilt	1	1	1	0	1
AV	Avocet	1,078	702	540	1,591	810
LP	Little Ringed Plover	172	205	217	195	83
RP	Ringed Plover	4,008	13,019	1,652	1,596	12,216
KP	Kentish Plover	0	2	0	0	0
DO	Dotterel	0	4	0	0	0
ID	American Golden Plover	0	0	0	0	0
GP	Golden Plover	5,981	402	13	2,533	17,287
GV	Grey Plover	32,296	22,266	1,572	2,571	16,294
L.	Lapwing	6,095	4,087	6,677	29,198	48,467
KN	Knot	101,257	25,113	8,413	23,900	116,309
SS	Sanderling	10,869	15,196	1,074	3,078	13,093
LX	Little Stint	17	13	1	0	39
TK	Temminck's Stint	0	0	0	0	1
PP	Pectoral Sandpiper	0	0	0	2	0
VV	Sharp-tailed Sandpiper	0	0	0	0	0
CV	Curlew Sandpiper	2	15	3	2	97
PS	Purple Sandpiper	665	3	0	5	25
DN	Dunlin	84,762	78,366	2,995	61,741	66,063
RU	Ruff	584	94	11	234	420
JS	Jack Snipe	12	0	0	2	1
SN	Snipe	847	98	56	219	1,063
LD	Long-billed Dowitcher	3	0	0	1	1
WK	Woodcock	3	0	2	0	1
BW	Black-tailed Godwit	14,931	1,398	1,062	7,988	11,239
BA	Bar-tailed Godwit	4,761	3,400	2,414	4,592	15,170
WM	Whimbrel	186	1,337	141	623	960
CU	Curlew	36,199	7,787	6,743	43,882	62,531
DR	Spotted Redshank	72	10	22	51	143
RK	Redshank	39,674	5,221	2,664	23,388	46,432
MD	Marsh Sandpiper	0	0	0	0	2
GK	Greenshank	146	100	31	818	1,713
GE	Green Sandpiper	55	10	21	253	483
OD	Wood Sandpiper	0	8	6	3	50
CS	Common Sandpiper	221	413	258	814	1,603
TT	Turnstone	8,705	1,968	401	955	7,018
WF	Wilson's Phalarope	0	0	0	0	0
NK	Red-necked Phalarope	0	0	0	0	1
PL	Grey Phalarope	1	0	0	0	0
U.	Unidentified wader	0	0	0	0	0
	TOTAL WADERS	422,047	227,856	69,567	258,890	584,338
	TOTAL WATERFOWL ³	629,887	361,012	218,053	471,391	914,935

Table I. continued

	Sep	Oct	Nov	Dec	Jan	Feb	Mar
OC	219,802	252,417	194,366	224,402	242,474	233,094	123,467
IT	1	1	1	1	1	1	1
AV	1,626	2,570	2,461	3,369	4,121	3,477	2,581
LP	18	0	0	0	0	7	22
RP	17,816	13,025	9,011	7,473	7,617	7,283	3,620
KP	0	0	0	0	0	0	0
DO	0	0	0	0	0	0	0
ID	0	1	1	0	0	0	0
GP	38,476	91,274	193,113	97,205	129,513	128,245	29,893
GV	42,447	39,574	36,447	33,164	37,711	37,920	33,257
L	96,649	137,730	471,564	349,367	321,934	301,157	28,412
KN	149,587	167,567	161,647	168,686	223,200	164,354	107,326
SS	10,260	7,091	6,621	6,769	6,004	7,443	5,669
LX	166	41	16	21	21	17	8
TK	1	1	0	0	0	0	0
PP	10	2	0	0	0	0	0
VV	1	0	0	0	0	0	0
CV	1,042	63	1	0	0	0	0
PS	356	401	972	1,249	1,272	1,499	527
DN	81,581	141,591	334,549	296,288	371,085	361,640	115,442
RU	870	535	353	520	764	963	684
JS	6	69	108	79	113	108	106
SN	3,160	4,603	7,641	6,757	6,793	6,161	4,753
LD	0	0	0	0	1	0	0
WK	1	6	30	24	25	21	11
BW	16,308	16,556	14,887	13,543	11,871	15,915	11,027
BA	37,136	32,509	22,755	27,395	48,704	42,675	18,191
WM	356	92	8	3	7	5	84
CU	86,715	90,607	58,329	68,275	88,727	99,787	62,656
DR	271	143	48	30	82	55	88
RK	87,295	98,007	66,208	70,550	75,432	77,912	57,516
MD	0	0	0	0	0	0	0
GK	2,580	886	222	185	180	219	179
GE	358	162	126	97	101	100	129
OD	19	1	0	0	0	0	0
CS	570	102	36	32	27	39	28
TT	11,672	12,833	10,298	12,005	11,361	12,429	9,552
WF	0	1	0	0	0	0	0
NK	1	0	0	0	0	0	0
PL	0	0	0	0	0	0	0
U.	101	0	0	100	0	0	0
WADERS	907,157	1,110,461	1,591,819	1,387,489	1,589,141	1,502,526	615,229
WATERFOWL	1,515,120	2,237,219	3,003,476	2,618,423	2,871,649	2,610,474	1,363,491

Table 1. Great Britain, continued

	Apr	May	Jun	Jul	Aug
<i>Number of sites where gulls were counted ⁴</i>	<i>681</i>	<i>611</i>	<i>619</i>	<i>630</i>	<i>667</i>
MU Mediterranean Gull	52	36	10	74	39
LU Little Gull	133	33	83	174	63
ON Bonaparte's Gull	0	0	0	1	0
BH Black-headed Gull	44,842	28,984	28,026	84,016	112,648
IN Ring-billed Gull	1	0	1	0	0
CM Common Gull	8,838	3,298	2,136	4,905	13,086
LB Lesser Black-backed Gull	49,977	46,655	52,896	49,216	31,922
HG Herring Gull	42,862	36,609	35,664	40,008	36,964
YG Yellow-legged Gull	1	0	1	29	41
YC Caspian Gull	0	0	0	0	0
YM Western Yellow-legged Gull	0	0	1	0	2
IG Iceland Gull	2	2	0	0	0
GZ Glaucous Gull	7	1	0	0	0
GB Great Black-backed Gull	1,719	1,529	1,405	2,118	4,014
QG Ross's Gull	0	0	0	0	0
KI Kittiwake	427	755	288	1,350	3,691
IV Ivory Gull	0	0	0	0	0
UU Unidentified gull	375	16	54	136	1,150
ZU hybrid gull	0	0	0	0	0
TOTAL GULLS	149,236	117,918	120,565	182,027	203,620
<i>Number of sites where terns were counted ⁴</i>	<i>599</i>	<i>579</i>	<i>588</i>	<i>579</i>	<i>604</i>
TE Sandwich Tern	1,085	1,359	3,275	5,130	8,484
RS Roseate Tern	0	0	0	1	0
CN Common Tern	159	2,352	2,990	3,945	5,975
AE Arctic Tern	6	164	135	723	846
FO Forster's Tern	0	0	1	0	0
AF Little Tern	0	743	707	723	963
BJ Black Tern	0	4	8	2	22
WJ White-winged Black Tern	0	0	0	1	0
UI Common/Arctic tern	0	14	16	23	248
UT Unidentified tern	0	0	0	0	0
TOTAL TERNS	1,250	4,636	7,132	10,548	16,538
KF Kingfisher	76	69	106	119	206

† See Appendix 3 for calculation of national totals for goose populations

1 Indicates White-fronted and Brent Geese not identified to race

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

3 Total waterfowl represents numbers of all species except gulls and terns

4 Counting gulls and terns was optional, thus totals are incomplete at a national level

Table I. continued

	Sep	Oct	Nov	Dec	Jan	Feb	Mar
<i>Sites</i>	<i>1,003</i>	<i>1,137</i>	<i>1,218</i>	<i>1,183</i>	<i>1,341</i>	<i>1,291</i>	<i>1,245</i>
MU	85	36	36	25	43	32	56
LU	30	49	5	5	5	9	12
ON	0	0	1	0	0	0	1
BH	181,098	185,815	229,836	231,309	268,098	231,992	155,139
IN	1	2	5	4	4	3	4
CM	24,147	63,842	66,340	68,377	74,213	98,799	42,092
LB	20,279	17,797	16,287	9,294	8,021	11,201	15,327
HG	43,280	49,301	40,743	51,381	70,595	55,746	33,261
YG	97	128	37	20	11	6	7
YC	0	0	1	2	1	1	0
YM	15	9	11	11	8	4	2
IG	0	0	1	4	12	16	5
GZ	0	3	2	6	13	7	7
GB	7,765	11,199	9,099	9,839	6,395	4,141	3,114
QG	0	0	0	0	1	0	0
KI	6,354	3,104	1,504	946	532	417	109
IV	0	0	0	1	0	0	0
UU	2,132	6,717	2,902	5,628	8,030	4,838	440
ZU	3	1	0	0	1	1	0
GULLS	285,286	338,003	366,810	376,852	435,983	407,213	249,576
<i>Sites</i>	<i>559</i>	<i>386</i>	<i>359</i>	<i>365</i>	<i>434</i>	<i>411</i>	<i>423</i>
TE	4,126	90	22	34	1	0	9
RS	0	2	0	0	0	0	0
CN	2,074	60	100	82	0	0	0
AE	166	18	0	0	0	0	0
FO	0	0	1	1	0	0	1
AF	170	1	0	0	0	0	0
BJ	89	9	0	0	0	0	0
WJ	0	0	0	0	0	0	0
UI	0	0	0	0	0	0	0
UT	0	1	0	0	0	0	0
TERNs	6,625	181	123	117	1	0	10
KF	418	376	286	262	222	206	240

Table 2. Total numbers of waterbirds recorded by WeBS Core Counts in Northern Ireland, 1999-2000[†].

		Apr	May	Jun	Jul	Aug
	<i>Number of sites visited</i>	2	2	2	2	2
	<i>Number of count units visited</i>	10	10	10	10	10
RH	Red-throated Diver	0	0	0	0	0
BV	Black-throated Diver	0	0	0	0	0
ND	Great Northern Diver	0	0	0	0	0
LG	Little Grebe	0	0	0	0	0
GG	Great Crested Grebe	0	0	0	0	0
SZ	Slavonian Grebe	0	0	0	0	0
CA	Cormorant	12	15	19	27	61
H.	Grey Heron	2	9	12	14	14
MS	Mute Swan	69	89	21	3	8
BS	Bewick's Swan	0	0	0	0	0
WS	Whooper Swan	0	0	0	0	0
PG	Pink-footed Goose	0	0	0	0	0
NW	Greenland Whitefront	0	0	0	0	0
GJ	Greylag Goose	0	0	0	0	0
SJ	Snow Goose	0	0	0	0	0
CG	Canada Goose	0	0	0	0	0
BY	Barnacle Goose	0	0	0	0	0
DB	Dark-bellied Brent	0	0	0	0	0
BB	Black Brant	0	0	0	0	0
QN	Light-bellied Brent (Canada)	93	0	0	0	0
SU	Shelduck	41	56	62	28	0
MN	Mandarin	3	1	2	1	5
WN	Wigeon	0	0	2	0	0
GA	Gadwall	0	0	0	0	0
T.	Teal	6	0	0	0	10
TA	Green-winged Teal	0	0	0	0	0
MA	Mallard	53	54	77	135	228
PT	Pintail	0	0	0	0	0
SV	Shoveler	0	0	0	0	0
IE	Ringed Teal	0	0	0	0	0
PO	Pochard	0	0	0	0	0
TU	Tufted Duck	0	0	0	0	0
SP	Scaup	0	0	0	0	0
E.	Eider	6	6	6	0	0
LN	Long-tailed Duck	0	0	0	0	0
CX	Common Scoter	0	0	0	0	0
VS	Velvet Scoter	0	0	0	0	0
GN	Goldeneye	6	0	0	0	0
SY	Smew	0	0	0	0	0
RM	Red-breasted Merganser	2	0	0	0	0
GD	Goosander	0	0	0	0	0
RY	Ruddy Duck	0	0	0	0	0
WA	Water Rail	0	0	0	0	0
MH	Moorhen	0	0	0	0	1
CO	Coot	0	0	0	0	0
	TOTAL WILDFOWL [†]	293	230	201	208	327

Table 2. continued

	Sep	Oct	Nov	Dec	Jan	Feb	Mar
<i>Sites</i>	19	23	24	24	28	25	27
<i>Count units</i>	40	49	82	49	55	86	45
RH	3	3	43	10	25	23	25
BV	0	0	5	1	1	1	1
ND	0	0	1	8	5	2	6
LG	395	497	613	472	479	289	163
GG	2,406	2,018	1,700	1,972	2,169	1,425	1,477
SZ	0	1	0	3	1	1	0
CA	2,607	2,080	2,311	1,802	1,418	1,730	1,139
H.	463	446	219	201	185	171	128
MS	2,373	2,195	2,104	1,595	2,244	1,471	1,286
BS	0	0	5	2	21	7	2
WS	16	938	547	1,169	3,663	1,247	813
PG	2	3	0	1	1	0	0
NW	19	0	0	8	117	18	22
GJ	97	220	255	540	386	454	1,663
SJ	0	0	0	0	1	0	0
CG	7	153	147	111	610	43	100
BY	94	136	117	101	136	131	129
DB	0	9	0	0	0	0	0
BB	0	1	0	0	0	0	0
QN	4,878	13,860	15,356	9,260	3,733	3,060	2,179
SU	176	1,275	3,248	4,262	4,404	2,969	2,742
MN	5	0	0	0	0	0	0
WN	6,784	13,686	10,263	6,464	10,868	4,639	2,783
GA	112	136	127	130	132	251	171
T.	1,798	2,526	3,603	3,381	5,871	3,006	2,571
TA	0	0	0	0	1	0	0
MA	8,249	7,447	6,250	5,213	6,501	3,210	1,916
PT	13	95	242	306	236	298	31
SV	119	209	164	184	124	120	120
IE	0	0	0	1	0	0	3
PO	1,932	1,116	20,744	22,894	17,303	10,026	2,298
TU	3,943	10,457	17,094	20,340	17,989	13,428	8,454
SP	14	20	1,644	3,015	4,742	4,407	2,449
E.	1,317	1,052	1,146	844	761	1,292	278
LN	0	0	7	8	20	18	29
CX	0	0	0	53	10	2	0
VS	0	0	0	0	0	1	0
GN	112	92	6,551	2,959	8,002	7,812	6,137
SY	0	0	0	1	1	0	0
RM	537	345	434	530	274	376	365
GD	1	0	2	1	1	1	1
RY	15	17	0	0	0	0	0
WA	0	0	0	1	4	0	1
MH	175	244	225	190	258	173	141
CO	5,996	7,860	8,436	6,267	6,260	4,260	2,545
WILDFOWL	44,658	69,137	103,603	94,300	98,957	66,362	42,168

Table 2. Northern Ireland, continued

		Apr	May	Jun	Jul	Aug
OC	Oystercatcher	489	435	566	852	1,781
RP	Ringed Plover	0	29	1	0	36
GP	Golden Plover	4	0	0	0	0
GV	Grey Plover	0	0	0	0	0
L.	Lapwing	0	0	5	65	86
KN	Knot	5	0	0	0	1
SS	Sanderling	0	0	0	0	4
LX	Little Stint	0	0	0	0	0
CV	Curlew Sandpiper	0	0	0	0	0
PS	Purple Sandpiper	1	0	0	0	0
DN	Dunlin	31	30	0	6	255
RU	Ruff	0	0	0	0	0
JS	Jack Snipe	0	0	0	0	0
SN	Snipe	0	0	0	0	2
LD	Long-billed Dowitcher	0	0	0	0	0
B	Black-tailed Godwit	10	2	0	2	2
BA	Bar-tailed Godwit	0	0	0	0	0
W	Whimbrel	9	0	0	1	5
CU	Curlew	70	25	15	201	580
DR	Spotted Redshank	0	0	0	0	0
RK	Redshank	645	72	5	175	931
GK	Greenshank	3	0	2	7	17
LY	Lesser Yellowlegs	0	0	0	0	0
GE	Green Sandpiper	0	0	0	0	2
CS	Common Sandpiper	0	0	0	0	0
TT	Turnstone	18	0	0	0	29
	TOTAL WADERS	1,285	593	594	1,309	3,731
	TOTAL WATERFOWL ²	1,578	823	795	1,517	4,058
	<i>Number of sites where gulls were counted</i>	<i>2</i>	<i>2</i>	<i>2</i>	<i>2</i>	<i>2</i>
BH	Black-headed Gull	149	42	118	163	575
IN	Ring-billed Gull	0	0	0	0	0
CM	Common Gull	71	27	87	62	133
LB	Lesser Black-backed Gull	10	7	12	1	5
HG	Herring Gull	55	47	169	146	292
IG	Iceland Gull	0	0	0	0	0
GZ	Glaucous Gull	0	0	0	0	0
GB	Great Black-backed Gull	24	37	47	99	94
KI	Kittiwake	1	0	3	0	14
ZU	hybrid gull	0	0	0	0	0
	TOTAL GULLS	310	160	436	471	1,113
	<i>Number of sites where terns were counted</i>	<i>2</i>	<i>2</i>	<i>2</i>	<i>2</i>	<i>2</i>
TE	Sandwich Tern	180	109	38	219	248
CN	Common Tern	0	0	0	1	0
UI	Common/Arctic tern	0	0	0	0	24
UT	Unidentified tern	0	4	0	0	0
	TOTAL TERNS	180	113	38	220	272
KF	Kingfisher	0	0	0	0	0

† See Table 1 for footnotes

Table 2. continued.

	Sep	Oct	Nov	Dec	Jan	Feb	Mar
OC	13,617	12,511	14,947	12,372	15,062	13,344	9,149
RP	625	740	581	540	361	397	165
GP	727	6,853	15,669	8,802	10,568	14,310	6,326
GV	20	118	131	115	87	413	278
L.	2,047	4,921	20,597	14,342	21,920	15,188	239
KN	57	846	4,566	2,185	4,861	3,184	1,308
SS	4	60	1	49	155	45	0
LX	1	3	0	0	0	0	0
CV	6	13	0	0	0	0	0
PS	4	6	106	28	1	61	2
DN	593	2,566	7,798	6,256	12,959	8,674	3,690
RU	15	1	0	0	0	0	0
JS	1	0	0	1	5	2	0
SN	38	101	157	227	262	240	147
LD	1	0	0	0	0	1	0
BW	132	173	379	273	307	192	412
BA	274	266	963	593	1,554	862	638
WM	3	1	0	0	0	0	0
CU	5,316	4,062	4,391	4,741	5,050	7,369	3,816
DR	0	1	0	0	1	1	1
RK	7,800	8,389	6,539	6,602	6,868	8,060	4,746
GK	86	127	97	66	70	59	35
LY	0	1	0	0	0	0	0
GE	2	0	0	0	0	0	0
CS	0	1	0	0	0	0	0
TT	730	872	1,789	668	581	1,534	648
WADERS	32,099	42,632	78,711	57,860	80,672	73,936	31,600
WATERFOWL	76,757	111,769	182,314	152,160	179,629	140,298	73,768
Sites	15	19	20	20	20	21	19
BH	6,085	5,984	16,747	3,449	8,139	12,161	6,055
IN	0	0	0	0	0	0	1
CM	2,811	4,543	4,609	888	1,466	3,992	1,362
LB	85	35	34	11	7	37	94
HG	2,296	2,074	4,342	2,078	4,238	3,191	1,982
IG	0	0	0	0	1	1	0
GZ	0	0	0	0	0	1	4
GB	380	195	588	302	260	376	287
KI	38	1	0	0	20	1	4
ZU	0	0	0	0	0	1	0
GULLS	11,695	12,832	26,320	6,728	14,131	19,761	9,789
Sites	11	14	14	14	14	16	14
TE	290	46	0	0	0	0	0
CN	2	0	0	0	0	0	0
UI	0	0	0	0	0	0	0
UT	0	0	0	0	0	0	0
TERNs	292	46	0	0	0	0	0
KF	2	6	2	3	0	0	0

Table 3. Total numbers of waterbirds counted by I-WeBS in the Republic of Ireland, 1999-2000[†].

	Sep	Oct	Nov	Dec	Jan	Feb	Mar
<i>Number of sites visited</i>	142	177	216	191	332	196	200
<i>Number of count units visited</i>	254	319	400	360	706	374	400
Red-throated Diver	32	29	84	71	167	40	55
Black-throated Diver	0	1	95	1	38	0	23
Great Northern Diver	0	5	192	133	347	76	178
Little Grebe	577	538	698	483	583	270	360
Great Crested Grebe	1,124	397	492	724	1,520	457	613
Red-necked Grebe	1	1	1	1	1	0	0
Slavonian Grebe	0	1	1	14	28	3	0
Black-necked Grebe	0	2	2	3	3	3	0
Cormorant	1,391	2,505	2,627	1,877	3,094	1,583	1,647
Little Egret	56	66	52	50	39	49	49
Grey Heron	389	483	709	423	726	311	385
Spoonbill	0	0	0	1	0	1	0
Mute Swan	2,072	2,287	3,745	2,804	4,964	1,780	2,079
Bewick's Swan	4	18	163	236	272	73	2
Whooper Swan	68	436	2,920	3,171	5,743	1,735	1,681
Pink-footed Goose	0	7	7	28	32	24	39
Greenland White-fronted Goose	7	2,007	7,485	8,673	10,197	9,657	8,193
Greylag Goose	94	570	2,497	3,430	5,761	2,807	2,354
Canada Goose	159	177	63	49	91	55	160
Barnacle Goose	0	0	1,200	1,060	2,210	847	3,246
Dark-bellied Brent Goose	0	0	0	1	1	1	0
Light-bellied Brent Goose	218	1,528	4,135	9,607	11,218	7,164	8,838
feral/hybrid Goose	27	8	163	95	128	45	76
Shelduck	418	702	2,868	5,774	8,362	5,177	3,841
Wigeon	3,943	15,911	26,734	29,919	59,667	17,569	8,805
American Wigeon	0	0	2	1	3	2	2
Gadwall	107	95	257	266	165	128	102
Teal	3,960	8,519	14,423	14,942	32,800	10,436	6,357
American Green-winged Teal	0	0	0	2	1	1	0
Mallard	11,026	10,142	11,067	10,936	14,759	4,792	3,431
Pintail	26	54	421	548	612	250	25
Shoveler	120	363	790	908	1,996	787	655
Red-crested Pochard	0	0	0	1	1	0	0
Pochard	38	114	12,594	4,691	13,815	1,911	267
Ring-necked Duck	0	0	1	1	1	0	0
Tufted Duck	566	1,155	4,820	2,439	9,749	2,128	2,428
Scaup	0	16	105	43	302	164	64
Lesser Scaup	0	0	1	0	0	0	0
Eider	3	4	0	0	24	2	1
Long-tailed Duck	0	0	31	3	68	17	18
Common Scoter	7,589	6,997	4,920	495	3,847	739	472
Goldeneye	4	21	587	566	2,459	697	495
Smew	0	1	1	2	1	0	1
Red-breasted Merganser	76	363	736	526	1,104	487	545
Goosander	0	2	0	1	1	0	0
Ruddy Duck	0	1	2	0	0	0	5
feral/hybrid Mallard type	0	9	9	10	20	0	13
unidentified duck	0	0	0	0	55	0	0
Water Rail	16	20	24	22	36	15	17
Moorhen	310	471	662	465	635	389	583
Coot	3,249	2,783	16,184	6,880	8,988	1,782	907
TOTAL WILDFOWL[†]	37,225	58,260	123,809	111,902	205,869	74,093	58,578

Table 3. continued

	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Oystercatcher	18,811	27,508	15,168	18,496	26,041	15,924	14,223
Ringed Plover	1,761	2,333	2,490	1,972	3,240	1,629	884
Golden Plover	1,794	33,337	67,422	67,388	104,182	55,691	21,723
Grey Plover	243	476	786	1,845	2,350	1,682	643
Lapwing	3,403	7,965	41,322	50,440	125,798	30,541	2,128
Knot	4,063	3,116	4,181	10,368	15,534	9,993	7,474
Sanderling	715	805	1,066	991	1,271	927	1,327
Little Stint	0	12	0	1	0	0	0
Curlew Sandpiper	102	119	0	0	0	0	0
Purple Sandpiper	0	45	222	232	92	469	85
Dunlin	6,162	7,675	26,985	48,410	62,252	37,378	8,774
Ruff	15	6	8	9	8	5	4
Jack Snipe	0	3	3	6	5	4	12
Snipe	59	350	765	647	1,358	432	249
Woodcock	0	1	0	2	0	1	0
Black-tailed Godwit	5,404	5,108	5,898	6,001	8,558	8,411	3,003
Bar-tailed Godwit	1,902	3,823	4,068	6,174	8,681	6,017	3,062
Whimbrel	134	6	4	1	0	5	5
Curlew	10,737	11,982	13,031	16,500	27,232	15,192	6,081
Spotted Redshank	2	6	43	11	13	12	4
Redshank	7,024	10,372	11,325	7,871	12,497	8,004	7,892
Greenshank	214	288	396	265	418	177	225
Green Sandpiper	11	10	7	4	4	7	5
Wood Sandpiper	0	1	0	0	0	0	0
Common Sandpiper	27	2	4	3	9	2	12
Turnstone	944	1,539	1,942	1,377	2,342	1,711	1,697
TOTAL WADERS	63,527	116,888	197,136	239,014	401,885	194,214	79,512
TOTAL WATERFOWL ²	101,197	175,697	321,706	351,390	608,519	268,668	138,524
Mediterranean Gull	7	3	2	8	9	8	4
Little Gull	0	0	0	0	1	11	1
Black-headed Gull	14,467	20,467	24,479	25,465	33,094	20,504	9,562
Ring-billed Gull	0	0	2	4	6	6	3
Common Gull	1,681	2,391	4,899	8,645	8,451	3,031	2,140
Lesser Black-backed Gull	1,537	3,031	5,381	2,673	2,200	790	367
Herring Gull	2,038	2,018	1,493	3,065	2,254	1,391	3,715
Yellow-legged Gull	0	0	0	0	1	0	0
Iceland Gull	0	0	1	12	6	2	56
Glaucous Gull	1	0	0	7	8	3	6
Great Black-backed Gull	890	1,119	1,433	1,863	1,176	692	852
Ross's Gull	0	0	0	0	0	1	0
Kittiwake	95	93	78	8,018	417	2	6
unidentified gull	0	0	0	0	0	12,875	0
TOTAL GULLS	20,716	29,122	37,768	49,760	47,623	39,316	16,712
Sandwich Tern	312	10	0	0	0	0	11
Common Tern	62	1	1	0	0	0	0
Arctic Tern	1	0	0	0	0	0	0
Black Tern	2	0	0	0	0	0	0
unidentified tern	8	0	0	0	0	0	0
TOTAL TERNS	385	11	1	0	0	0	11
Kingfisher	11	11	12	5	19	4	4

† See Table 1 for footnotes

SPECIES ACCOUNTS

Key to symbols commonly used in the species accounts (see Presentation and notation)

As footnotes to thresholds (see Appendix 2)

- ? population size not accurately known
- + population too small for meaningful threshold
- * where 1% of the national population is less than 50 birds, 50 is normally used as a minimum threshold for national importance
- ** a site regularly holding more than 20,000 waterbirds (excluding non-native species) qualifies as internationally important by virtue of absolute numbers
- † denotes that a qualifying level different to the national threshold has been used for the purposes of presenting sites in this report

In tables of important sites:

- no data available
 - () incomplete count
 - † same meaning as when used for thresholds
 - ▲ site was of a lower importance status in the previous year
 - ▼ site was of a higher importance status in the previous year
 - ^{1, 2} count obtained using different survey methodology (see table below for sources and references)
- A blank line within a section of a table is used to separate sites holding 50 or more birds where the relevant threshold is below this figure (e.g. Little Grebe, p36) or to separate those meeting the national or all-Ireland threshold from additional sites selected for presentation in this report (e.g. Long-tailed Duck, p92).

Sources of additional survey information used in compiling tables of important sites. Non-WeBS counts are identified in the table by the relevant number or letter below given in superscript preceding the count, e.g. ¹⁰ 231 represents a count from Greenland White-fronted Goose Study surveys.

- | | |
|--|---|
| 1 A. Webb (<i>in litt.</i>) | 19 P. Collin (<i>in litt.</i>) |
| 2 Argyll Bird Report | 20 R. Godfrey (<i>in litt.</i>) |
| 3 Argyll Bird report & SNH | 21 R. MacDonald (<i>in litt.</i>) |
| 4 B. Martin (<i>in litt.</i>) | 22 RSPB pers comm. |
| 5 Bean Goose Working Group, e.g. Smith <i>et al.</i> (1994), Simpson & Maciver (2000) | 23 RSPB/Talisman Energy studies, e.g. Stenning (1998) and Butterfield (<i>in litt.</i>) |
| 6 Cranswick <i>et al.</i> (1998) | 24 Roost counts |
| 7 D. Walker (<i>in litt.</i>) | 25 S. Gibson (<i>in litt.</i>) |
| 8 Delany & Ogilvie (1994), SNH data and Mitchell <i>et al.</i> (1997) | 26 SNH 'adopted' counts |
| 9 Friends of Cardigan Bay, e.g. Green & Elliott (1993) & R. Thorpe (<i>in litt.</i>) | 27 SNH (<i>in litt.</i>) |
| 10 Greenland White-fronted Goose Study, e.g. Fox & Francis (2001) | 28 SNH Greenland Goose Census |
| 11 Hayward <i>et al.</i> (1999) | 29 SOTEAG reports, e.g. Heubeck (1998) |
| 12 Little Egret Roost counts | 30 Stewart <i>et al.</i> (1996) |
| 13 M Parslow-Otsu (<i>in litt.</i>) | 31 Supplementary daytime counts |
| 14 M. Howe (<i>in litt.</i>) | 32 WWT data |
| 15 M. Tickner (<i>in litt.</i>) | 33 WWT studies, e.g. Rees <i>et al.</i> (2000) |
| 16 NEWS data | 34 WWT/JNCC National Grey Goose Census |
| 17 Orkney Bird Report | 35 WWT/SNH surveys, WWT unpubl. data |
| 18 Orkney Bird Report & J. Plowman (<i>in litt.</i>) | 36 Waltho, C.M. (2000) |
| | 37 WeBS Low Tide Counts |
| | 38 Williams (1999) |

RED-THROATED DIVER

Gavia stellata

International threshold: 750

Great Britain threshold: 50

All-Ireland threshold: 10*

* 50 is normally used as a minimum threshold

GB max: 771 Jan

NI max: 43 Nov

Totals in Britain and Northern Ireland were average for recent years. Whilst both totals are considerable underestimates of the true numbers, the numbers recorded each year by WeBS are relatively consistent. This consistency extends also to the monthly patterns, with a general increase to a mid winter peak in Britain, followed by a steady decline. Although relatively high numbers are recorded from September onwards and are still found into April, there is no evidence of marked passage numbers at a national level. In Northern Ireland, there is usually an early winter peak, and often a small peak in late winter also. Although the pattern in the province is more variable than for Britain, this is to be expected given the much smaller numbers recorded.

There were no markedly high or low counts at individual sites in 1999-00 with the exception of a relatively low peak in the Moray. Whilst Red-

throated Divers are considered to occur closer to shore than other divers, they may still occur sufficiently far from land to make observations difficult and, particularly at large, open sites, may range widely. Thus it might be expected that counts in the Moray would vary between years. Elsewhere, although the peak on the Solway Firth in 1999-2000 was the lowest of the complete counts in the last five years, it was sufficient to elevate this site to national importance. The count on Traeth Lafan was also notable, particularly given the relatively small and enclosed nature of this site compared with others in the table.

As noted in previous reports, the mid Suffolk coast is of key importance for this species. A remarkable 2,680 birds recorded off Aldringham Walks, just south of Minsmere, in mid January 2000 demonstrates the continued importance of this area (Rafe 2000).

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain							
Cardigan Bay	900	528	⁹ 536	270	229	Jan	493
Moray Firth	(72)	(52)	²³ 284	²³ 179	²³ 103	Dec	189
Clyde Estuary	126	195	136	138	123	Mar	144
Forth Estuary	98	124	75	121	66	Oct	97
Don Mouth to Ythan Mouth	11	35	166	81	101	Sep	79
Dengie Flats	41	96	100	45	92	Feb	75
Wash	56	15	26	224	24	Jan	69
Scapa Flow	-	-	-	³⁸ 59	-		59
Solway Estuary	³¹ (9)	37	59	78	28	Feb	51 ▲
Sites of all-Ireland importance in Northern Ireland							
Lough Foyle	83	18	4	³¹ 50	15	Mar	34
Belfast Lough	10	11	41	57	39	Nov	32
Craigalea to Newcastle	13	-	-	-	-		13
Sites no longer meeting table qualifying levels							
Durham Coast							
Other sites surpassing table qualifying levels in 1999-2000							
Traeth Lafan	90	Feb					
Morecambe Bay	52	Jan					
Outer Ards	10	Feb					

BLACK-THROATED DIVER

Gavia arctica

GB max: 83 Feb
NI max: 5 Nov

International threshold: 1,200

Great Britain threshold: 7*

All-Ireland threshold: 1*

* 50 is normally used as a minimum threshold

Counts of Black-throated Divers in 1999-2000 were high by WeBS standards: the peak total in Northern Ireland was the highest in the province yet recorded by WeBS, whilst that in Britain was only six fewer than the largest total to date. However, counts in other months for both countries were very much smaller.

In winter, Black-throated Divers are found primarily off the west coast of Scotland, particularly in sandy, shallow areas around the Hebridean islands (Webb *et al.* 1990). The paucity of observers in this area is a key reason why WeBS records only a small fraction of the 700 or so birds estimated to use British waters. It is clear from the table below that, at many of the

coastal sites which are traditionally covered by WeBS, significant numbers are recorded on a regular basis.

A dedicated survey of divers, grebes and seaducks was made of the South Cornwall Coast Important Bird Area (IBA), stretching from Helford River to St Austell Bay (Geary & Lock 2001). Over 100 Black-throated Divers were recorded on four of five survey visits between December and March, with a peak of 160 in March. Following a peak of 135 birds in 1994-95 (Slade 1996), the site clearly continues to be of key importance for this species, almost certainly the most important in England and perhaps in Great Britain as a whole.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain							
Scapa Flow	-	-	-	³⁸ 57	-		57
Loch Ewe	-	-	-	26	29	Feb	28
Moray Firth	(5)	(5)	²³ 22	²³ 5	²³ 14	Nov	14
Loch Coalisport	-	-	-	12	-		12
Forth Estuary	19	7	8	10	(4)	Nov	11
Gruinard Bay	-	-	-	5	14	Feb	10 ▲
Girvan to Turnberry	6	8	23	3	7	Nov-Feb	9
Sites of all-Ireland importance in Northern Ireland							
Strangford Lough	³⁷ 5	³⁷ 2	³⁷ 7	0	0		3 ▲
Belfast Lough	2	2	0	0	3	Nov	1
Sites no longer meeting table qualifying levels							
Loch Indaal							
Polbain							
Other sites surpassing table qualifying levels in 1999-2000							
Red Point to Port Henderson	9	Feb					
Kentra Moss/Loch Shiel	7	Jul					
Outer Ards	2	Nov					

GREAT NORTHERN DIVER

Gavia immer

GB max: 107 Feb
NI max: 8 Dec

International threshold: 50

Great Britain threshold: 30*†

All-Ireland threshold: ?†

* 50 is normally used as a minimum threshold

The peak total recorded by WeBS in Britain rose again in 1999-2000, exceeding the previous highest of 95 in the preceding winter. Whilst the fact that WeBS monitors only a small proportion of the true number in Britain precludes any meaningful comment about trends, it does

appear that coverage by WeBS is improving. Counts in four months in 1999-2000 exceeded 80 birds, and all of these in midwinter rather than during passage, whilst it is immediately apparent from the table below that many of the key sites are being visited more regularly, at least

compared with the mid 1990s when counts were provided for only a proportion of these sites. Continued counts at Loch Eriboll may boost totals in future years, while the count on the Forth Estuary is particularly noteworthy given that counts of divers, grebes and seaducks at this have been made regularly there but never approached the 1999-2000 total.

A proper assessment of the status and distribution of this species requires extensive (and expensive) aerial or boat based survey to complement the land-based counts of birds in

sea lochs, since a large proportion of birds is found many kilometres from shore and particularly off the Scottish west coast and Hebrides (Webb *et al.* 1990). Dedicated land-based counts of the South Cornwall Important Bird Area (between Helford River and St Austell Bay) recorded over 50 birds during four of five winter counts in 1999-2000, with a peak of 109 in March (Geary & Lock 2001). This follows a peak of 89 birds in the same area in 1994-95 (Slade 1996) and indicates that the site is of national importance for this species.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Scapa Flow	-	-	-	³⁸ 781	-		781
Tankerness	-	²⁹ 393	²⁹ 330	-	-		362
Sites of national importance in Great Britain [†]							
Whiteness to Scarvister	-	-	-	²⁹ 44	-		44
Moray Firth	(1)	(8)	²³ 54	²³ 17	²³ 12	Dec	28
Loch Indaal	14	11	33	27	25	Nov	22
Traigh Luskentyre	12	39	8	16	8	Jan	17
Loch Eriboll	-	-	-	-	15	Jan	15 ▲
South Yell Sound	-	²⁹ 10	²⁹ 10	²⁹ 11	²⁹ 4	Feb	9
Kyle of Tongue	-	-	-	(9)	-		9 ▲
Gruinard Bay	-	-	-	5	9	Feb	7 ▲
Lochs Beg & Scridain	6	(6)	6	6	(8)	Nov	7
Red Point to Port Henderson	-	-	-	9	4	Feb	7
Sullom Voe	-	-	²⁹ 5	²⁹ 5	²⁹ 8	Dec	6
Loch Ewe	-	-	-	4	8	Feb	6 ▲
Forth Estuary	2	3	2	2	17	Sep	5 ▲
Easting/Sand Wick	-	-	-	-	5	Dec/Mar	5 ▲
Loch Coalisport	-	-	-	5	-		5
Sites of all-Ireland importance in Northern Ireland [†]							
Tyrella Shore	12	-	-	-	-		12
Lough Foyle	15	9	3	³¹ 22	2	Mar	10
Carlingford Lough	26	1	2	6	7	Dec	8
Kilkeel to Lee Stone Point	8	-	-	-	-		8
Dundrum Bay	2	0	0	23	0		5
Craigalea to Newcastle	5	-	-	-	-		5

Internationally or nationally important sites not counted in last five years

Sound of Taransay

Other sites surpassing table qualifying levels in 1999-2000

Fleet/Wey	8	Dec
Egilsay	6	Feb
North Norfolk Coast	6	Nov
Blackwater Estuary	5	Feb
Belfast Lough	5	Jan

[†] as few sites in Great Britain and Northern Ireland exceed the respective thresholds, a qualifying level of five has been chosen to select sites for presentation in this report

PIED-BILLED GREBE

Podilymbus podiceps

Vagrant

Native range: North America

A single was at Thompson Water during April.

LITTLE GREBE
Tachybaptus ruficollis

GB max: 4,382 **Oct**
NI max: 613 **Nov**

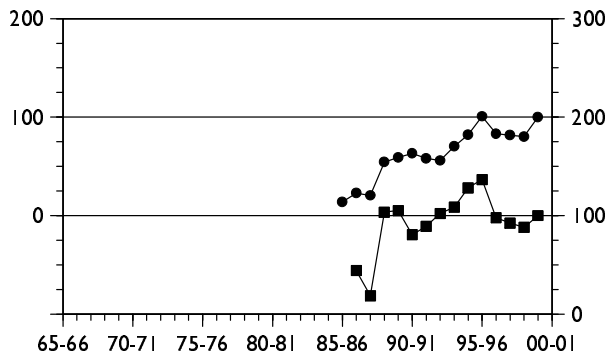


Figure 3. Annual indices for Little Grebe in GB (circles, left axis) and NI (squares, right axis)

The October 1999 count in Britain was the highest monthly total recorded by WeBS to date, surpassing the previous highest of 4,128 in 1995-96. Accordingly, annual indices also rose sharply, matching the value of 1995-96. Counts remained relatively high throughout the rest of the winter, exceeding 3,000 even in March, and monthly indices showed values to be around 25% higher than normal for recent years from January onwards. In Northern Ireland, numbers were slightly higher than in the preceding three winters, but remained below the 700-800 birds regularly recorded from the late 1980s to mid 1990s.

Despite the larger British totals, counts on the Thames Estuary and Chew Valley Lake, two of the key sites for Little Grebe, were much lower than normal and continued marked declines in

International threshold: ?
Great Britain threshold: 30*
All-Ireland threshold: ?†

* 50 is normally used as a minimum threshold

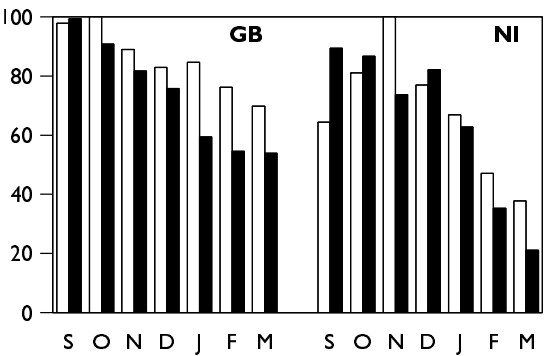


Figure 4. Monthly indices for Little Grebe in GB and NI (white bars 1999-2000; black bars 1994-95 to 1998-99)

recent years. Notably higher counts were recorded at around 10 sites, mostly those with average maxima of 40-50 birds, with several holding around double the normal number in 1999-2000. Several attained national importance status (with a mean of 50 or more birds) as a result. Both Lee Valley Gravel Pits and Middle Tame Valley Gravel Pits also achieved this status, although 1999-2000 counts were lower than average. It is also notable that in a year with a large national total, only two new sites were added to the table below whereas three dropped from the table as a result of their means falling below 30 birds. However, the number of sites which held 30 or more birds in 1999-2000 alone increased to 17 from the average of around 10 in recent years.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain							
Swale Estuary	195	213	244	201	238	Jan	218
Thames Estuary	477	255	124	130	87	Nov	215
Holme Pierrepont Gravel Pits	162	80	100	109	158	Sep	122
Chew Valley Lake	122	152	105	80	65	Sep	105
North Norfolk Coast	93	51	87	105	74	Jan	82
Rutland Water	83	35	62	78	120	Sep	76
Cleddau Estuary	75	91	72	56	69	Nov	73
Deben Estuary	49	63	78	84	72	Dec	69
Chichester Harbour	100	52	72	50	58	Nov	66
Wash	146	53	29	32	56	Dec	63
Eyebrook Reservoir	70	76	56	49	-		63
Sutton/Lound Gravel Pits	72	39	72	-	45	Mar	57
R. Test: Fullerton to Stockbridge	62	52	52	63	51	Jan	56
R. Avon: F'bridge to Ringwood	86	39	49	46	52	Mar	54
Tees Estuary	42	47	52	67	56	Sep	53
Blackwater Estuary	59	44	47	41	70	Sep	52 ▲
Somerset Levels	37	55	47	62	56	Oct/Mar	51
Lee Valley Gravel Pits	45	39	56	77	37	Oct	51 ▲

	95-96	96-97	97-98	98-99	99-00	Mon	Mean	
Alde Complex	51	38	44	47	72	Dec	50	▲
Kirkby-on-Bain Gravel Pits	-	(6)	40	43	68	Sep	50	▲
Middle Tame Valley Gravel Pits	52	(53)	(68)	36	40	Oct	50	▲
King's Dyke Pits	48	18	31	52	92	Oct	48	
Hogganfield Lough	31	45	56	35	72	Sep	48	
Abberton Reservoir	45	21	24	(12)	96	Sep	47	▲
Hamford Water	³¹ 83	18	26	61	41	Nov	46	
Rye Harbour & Pett Level	46	28	37	51	65	Aug	45	
Cameron Reservoir	70	33	56	44	24	Sep	45	▼
Bewl Water	57	44	36	43	38	Oct	44	
Portsmouth Harbour	36	30	35	43	65	Feb	42	
Kilconquhar Loch	52	42	49	25	44	Sep	42	
Langstone Harbour	30	24	37	60	55	Nov	41	
Southampton Water	37	³⁷ 46	34	³⁷ 43	40	Nov	40	
Pitsford Reservoir	64	32	10	(27)	50	Sep	39	
Blagdon Lake	59	23	31	29	46	Sep	38	
Dungeness Gravel Pits	29	16	19	39	73	Aug	35	▲
Fleet/Wey	37	30	34	27	47	Oct	35	
Avon Valley: Salisbury to F'bridge	42	38	33	25	38	Dec	35	
Barton Pits	19	43	44	47	24	Sep	35	
Wraysbury Gravel Pits	27	32	27	47	38	Mar	34	
Medway Estuary	60	42	(18)	16	17	Nov	34	
Orwell Estuary	36	45	34	21	³⁷ 28	Nov	33	
Lower Derwent Valley	³¹ 49	37	42	21	14	Several	33	▲
Humber Estuary	29	(10)	(22)	30	37	Dec	32	▲
Hampton & Kempton Reservoirs	54	28	16	30	29	Oct	31	
Pirton Pool	37	41	32	18	23	Sep	30	
Hilfield Park Reservoir	28	35	(34)	32	21	Aug/Sep	30	

Sites of all-Ireland importance in Northern Ireland †

Loughs Neagh & Beg	626	376	330	380	413	Nov	425	
Strangford Lough	169	140	101	99	87	Dec	119	
Upper Lough Erne	62	73	50	86	67	Mar	68	
Lough Money	33	35	51	46	55	Oct	44	
Larne Lough	20	24	28	48	35	Nov	31	▲

Sites no longer meeting table qualifying levels

Cemlyn Bay & Lagoon
Hickling Broad
King's Mill Reservoir

Internationally or nationally important sites not counted in last five years

R. Soar: Leicester

Other sites surpassing table qualifying levels in 1999-2000

R. Avon: R'wood to Christchurch	76	Dec	East Wretham Meres	32	Aug
Old Moor Wetlands	56	Sep	Burry Inlet	32	Jan
R. Irwell	50	Jan	Woolston Eyes	32	Sep
Netherfield Gravel Pits	45	Sep	Wimbleball Lake	31	Feb
Loch Etive: Connel to Taynuilt	42	Jan	Belfast Lough	31	Sep
Crouch-Roach Estuary	42	Sep	Haverton Hole	30	Aug
Brent Reservoir	42	Sep	Inner Moray Firth	30	Dec
Upper Quoile River	36	Dec	Poole Harbour	30	Nov
Carriston Reservoirs	35	Sep			

† as no all-Ireland threshold has been set for Little Grebe, a qualifying level of 30 has been chosen to select sites for presentation in this report

GREAT CRESTED GREBE
Podiceps cristatus

GB max: 9,190 Oct
NI max: 2,406 Sep

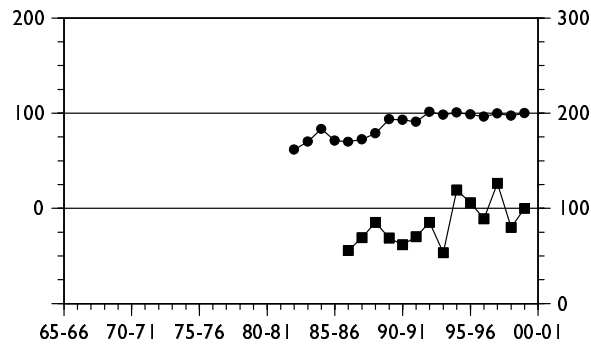


Figure 5. Annual indices for Great Crested Grebe in GB (circles, left axis) and NI (squares, right axis)

The peak British count of Great Crested Grebes has only once before exceeded 9,000, when 9,571 were recorded in 1992-93, although the figure of 8,000 has been surpassed in all years since 1989-90. This is reflected in the annual indices, which show values to have remained stable since the late 1980s. Numbers in Northern Ireland fluctuate between years, and the 1999-2000 peak was around average for the last decade, having ranged between 1,500 and 3,800. Monthly indices showed that numbers of Great Crested Grebes remained much higher than normal after mid winter, interestingly with almost exactly the same pattern as for Little Grebe. Monthly indices for Northern Ireland were almost twice the normal value for much of the winter, although this may in part be due to lower numbers on Loughs Neagh & Beg at the start and end of the winter.

The low count at Loughs Neagh & Beg in

International threshold: 1,500
Great Britain threshold: 100
All-Ireland threshold: *30

* 50 is normally used as a minimum threshold

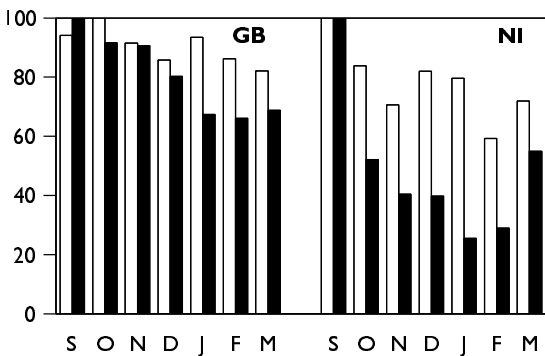


Figure 6. Monthly indices for Great Crested Grebe in GB and NI (white bars 1999-2000; black bars 1994-95 to 1998-99)

1999-2000 meant the site no longer qualified as internationally important and, with counts not surpassing 1,000 in two of the last five years, it seems unlikely that the site will regain this status in the near future. Although peak counts at Lough Foyle have been variable in recent years, that in 1999-2000 was especially low. Counts at most sites in Britain were around average for recent years. Numbers were low on the Forth Estuary, Grafham Water and Lafan Sands. Peak counts in 1999-2000 were markedly higher at just five sites, notably Lade Sands, where large numbers have been noted offshore previously, but perhaps only congregate or are visible from suitable vantage points under certain conditions. Perhaps part of the same concentration was responsible for the much larger than normal count at nearby Rye Harbour & Pett Level, elevating this site to national importance.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Belfast Lough	1,350	1,200	2,403	1,935	1,508	Dec	1,679
Sites of national importance in Great Britain							
Rutland Water	579	378	767	843	726	Sep	659
Chew Valley Lake	615	645	460	585	550	Sep	571
Lade Sands	⁷ 277	7	425	730	³¹ 1,100	Feb	508
Forth Estuary	411	597	491	319	297	Sep	423
Queen Mary Reservoir	298	593	271	185	312	Jan	332
Solway Estuary	36	³¹ (430)	³¹ 710	191	³⁷ 251	Feb	324
Grafham Water	377	506	197	272	150	Jan	300
Traeth Lafan	¹⁴ 283	¹⁴ 244	¹⁴ 360	¹⁴ 389	¹⁴ 165	Aug	288
Morecambe Bay	296	286	282	191	239	Dec	259
Stour Estuary	312	261	185	196	³⁷ 290	Nov	249
Wraysbury Gravel Pits	167	263	246	289	202	Jan	233
Cardigan Bay	⁹ 176	⁹ 311	⁹ 177	(58)	(29)	Jan	221
Pitsford Reservoir	188	304	147	(218)	195	Sep	210
Abberton Reservoir	238	248	149	185	207	Oct	205

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Cotswold Water Park (West)	189	181	175	235	224	Oct	201
Lee Valley Gravel Pits	132	164	175	148	201	Oct	164
Blithfield Reservoir	70	169	105	198	240	Dec	156
Bough Beech Reservoir	145	-	-	-	-		145
Loch Ryan	³¹ 201	³¹ 145	54	64	258	Sep	144
Queen Elizabeth II Reservoir	258	118	168	88	90	Jul	144
Loch Leven	210	98	112	119	170	Sep	142
Southampton Water	169	94	169	³⁷ 127	106	Nov	133
Attenborough Gravel Pits	120	155	135	107	135	Dec	130
Blagdon Lake	67	270	73	89	(98)	Oct	125
Draycote Water	77	93	84	133	200	Jan	117 ▲
Alton Water	120	109	73	139	143	Dec	117
Eyebrook Reservoir	167	155	103	37	-		116
Thrapston Gravel Pits	(110)	88	(82)	76	(179)	Nov	114 ▲
Blackwater Estuary	171	118	99	100	71	Oct/Mar	112
Ardleigh Reservoir	82	84	171	112	98	Jul	109
King George VI Reservoir	401	41	16	37	47	Sep/Oct	108
Mersey Estuary	61	169	214	³⁷ 70	13	Jan	105
Hanningfield Reservoir	124	59	123	80	130	Aug	103
Rye Harbour & Pett Level	33	22	88	68	299	Jan	102 ▲
Bewl Water	³¹ 85	73	111	136	104	Aug	102

Sites of all-Ireland importance in Northern Ireland

Loughs Neagh & Beg	2,440	1,537	863	1,596	847	Sep	1,457 ▼
Upper Lough Erne	90	276	304	145	243	Mar	212
Carlingford Lough	143	364	231	270	249	Nov	251
Lough Foyle	488	116	86	³¹ 189	24	Oct	181
Larne Lough	147	124	76	124	140	Sep	122
Strangford Lough	182	83	64	69	111	Jan	102

Craigalea to Newcastle

35 - - - - 35

Sites no longer meeting table qualifying levels

Dee Estuary (Eng/Wal)
Wraresbury Reservoir
Pegwell Bay
Thanet Coast

Other sites surpassing table qualifying levels in 1999-2000

Swansea Bay	204	Jan	S Muskham & N Newark GP	123	Nov
Thanet Coast	³¹ 202	Dec	Cotswold Water Park (East)	117	Sep
Fen Drayton Gravel Pits	140	Oct	Clyde Estuary	116	Sep
Langstone Harbour	129	Oct			

RED-NECKED GREBE

Podiceps grisegena

GB max: 58 **Aug**
NI max: 0

International threshold: 150

Great Britain threshold: 1*†

All-Ireland threshold: ?

* 50 is normally used as a minimum threshold

Although the size of the traditional late summer peak of Red-necked Grebes, almost wholly comprising birds on the Firth of Forth, was around average for recent years, national totals for the winter were period were only around half their normal value, only twice exceeding 20 birds.

Dedicated surveys of the south Cornwall Coast recorded small numbers throughout the winter, but with a marked increase to 35 birds in

March between Helford River and St Austell Bay (Geary & Lock 2001). Following a peak of 26 in 1994-95, it is clear that the area supports a sizeable proportion of the British total. The survey also hints that perhaps numbers of relatively dispersed and unobtrusive species, such as divers and the rarer grebes, might be easily overlooked in the absence of appropriate surveys.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain [†]							
Forth Estuary	³⁵ 52	44	64	41	55	Aug	51
Scapa Flow	-	-	-	³⁸ 23	-		23
North Norfolk Coast	19	2	17	8	6	Nov	10

[†] as the British threshold for national importance is so small, a qualifying level of five has been chosen to select sites for presentation in this report

SLAVONIAN GREBE

Podiceps auritus

GB max: 175 Feb
NI max: 3 Dec

International threshold: 50

Great Britain threshold: 4*

All-Ireland threshold: ?

* 50 is normally used as a minimum threshold

Country totals of Slavonian Grebes in 1999-2000 were lower than normal for recent winters, particularly in Northern Ireland. Although counts at many of the sites which traditionally hold fewer birds are rather variable, they were without exception smaller than usual in 1999-2000. Counts on the Moray Firth and Lough Foyle were especially low, the latter dropping well below international threshold as a consequence. The only notably above average count was at Traigh Luskentyre, Harris. A dedicated survey of the South Cornwall Coast between Helford River and St Austell Bay recorded a peak of 57 Slavonian Grebes (Geary & Lock 2001), sufficient to qualify the site as internationally important if such numbers occur on a regular basis.

Evans (2000) recently reviewed Slavonian Grebe status and distribution in Britain and Ireland, based on supplementary counts gleaned from dedicated surveys, county bird reports and other information, between 1986 and 1993. He estimated the midwinter total to be 725-730 birds, around 50% higher than the figure given in the Winter Atlas (Chandler 1986), but similar to the estimate of 670 given in Prater (1981). This clearly demonstrates the need for additional counts to WeBS to monitor such species adequately. Evans (2000) estimated the total for Britain as 670 birds, with over 50% concentrated at just 10 sites. A large proportion of the estimate of 55 birds in Ireland were found at Lough Foyle and Strangford Lough.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Scapa Flow	-	-	-	³⁸ 124	-		124
Moray Firth	(8)	(22)	²³ 163	²³ 98	²³ 24	Nov	95
Forth Estuary	³⁵ 108	107	75	57	67	Mar	83
Sites of national importance in Great Britain							
Whitness to Scarvister	-	-	-	²⁹ 33	-		33
Pagham Harbour	³⁷ 26	29	39	22	34	Feb	30
Loch Indaal	20	(13)	32	21	27	Feb	25
North Norfolk Coast	77	17	9	11	5	Feb	24
Clyde Estuary	25	32	25	5	22	Mar	22
Traigh Luskentyre	24	13	8	19	38	Nov	20
Loch of Harray	31	6	14	14	24	Oct	18
Studland Bay	16	-	-	-	-		16
Loch Ryan	¹⁹ 19	³¹ 21	11	9	10	Nov	14
Blackwater Estuary	22	14	18	10	8	Dec	14
North West Solent	13	12	(16)	14	8	Jan	13
Lindisfarne	15	2	12	19	1	Feb	10
Poole Harbour	13	10	9	10	3	Several	9
Chichester Harbour	3	13	³⁷ 9	³⁷ 6	2	Nov	7
Exe Estuary	6	2	11	7	-		7
Tamar Complex	9	7	5	4	4	Feb	6
Loch of Swannay	8	10	5	4	3	Feb	6
Loch Eriboll	-	-	-	-	5	Jan	5 ▲
Upper Loch Torridon	-	-	-	9	0		5

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of all-Ireland importance in Northern Ireland							
Lough Foyle	103	20	6	³¹ 48	2	Dec	36 ▼
Strangford Lough	³⁷ 6	³⁷ 4	³⁷ 11	0	0		4

Internationally or nationally important sites not counted in last five years

Sound of Taransay

Other sites surpassing table qualifying levels in 1999-2000

Camel Estuary	7	Dec
Newtown Estuary	³⁷ 6	Feb
Southampton Water	³⁷ 5	Feb
Dengie Flats	4	Feb
Traeth Lafan	4	Feb

† as no all-Ireland threshold has been set for Slavonian Grebe, a qualifying level of 4 has been chosen to select sites for presentation in this report

BLACK-NECKED GREBE

Podiceps nigricollis

International threshold: 1,000

Great Britain threshold: 1*†

All-Ireland threshold: ?

GB max: 42 Apr

NI max: 0

* 50 is normally used as a minimum threshold

National totals of Black-necked Grebes remained low in 1999-2000, particularly given that the peak for the period September to March was just 35 birds. In part, this is again due to the absence of counts from Carrick Roads in the Fal Complex. However, dedicated counts of this area in 1999-2000 found just 18 birds, and even then, four of five count visits recorded nil birds in the whole South Cornwall Coast IBA (Geary & Lock 2001). Although this species can be extremely difficult to find under all but ideal conditions, these results

suggest a marked drop in numbers at this site. Relatively low counts at other sites in the table might also suggest a general decline in numbers in recent years, but perusal of county bird reports shows, for example, that *ad hoc* counts of 10 or more birds are regularly made at both Studland Bay and Portland Harbour (Davenport 2000). The collection of supplementary counts for many sites along the south coast would greatly boost reported totals of this species.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain †							
Langstone Harbour	24	19	9	17	12	Jan	16
Fal Complex	24	23	33	0	0		16
Woolston Eyes	4	(6)	17	25	0		12
Studland Bay	12	-	-	-	-		12
Poole Harbour	15	7	12	2	1	Feb	7
William Girling Reservoir	3	3	4	11	11	Oct	6 ▲
Tamar Complex	8	4	6	6	6	Dec	6 ▲

Other sites surpassing table qualifying levels in 1999-2000

Fleet/Wey	11	Feb
Holme Pierrepont Gravel Pits	5	Sep

† as the British threshold for national importance is so small, a qualifying level of five has been chosen to select sites for presentation in this report

CORMORANT
Phalacrocorax carbo

GB max: 16,243 **Oct**
NI max: 2,607 **Sep**

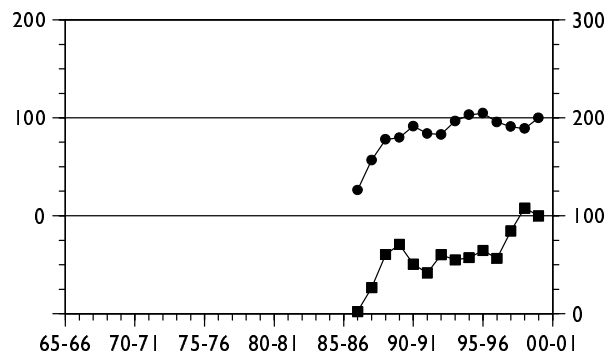


Figure 7. Annual indices for Cormorant in GB (circles, left axis) and NI (squares, right axis)

Peak counts of Cormorants in 1999-2000 were the highest on record, the British total surpassing the 15,752 counted in 1995-96, and the Northern Ireland total just two higher than in 1998-99. Annual indices jumped sharply in Britain after a consistent decline in recent winters, and both here and in Northern Ireland, values were close to the highest since Cormorants were included in WeBS.

Peak counts at the majority of individual sites in 1999-2000 were similar to their respective five year means. Although numbers dropped from the massive count in the previous winter at Loughs Neagh & Beg, the peak remained high and sufficient for the site to qualify as internationally important for Cormorants, the first site to attain this status in the UK. Numbers at two further sites in the province, Outer Ards and Strangford Lough, appeared to match this pattern, with higher than normal counts in the two most recent winters, although the converse

International threshold: 1,200
Great Britain threshold: 130
All-Ireland threshold: ?†

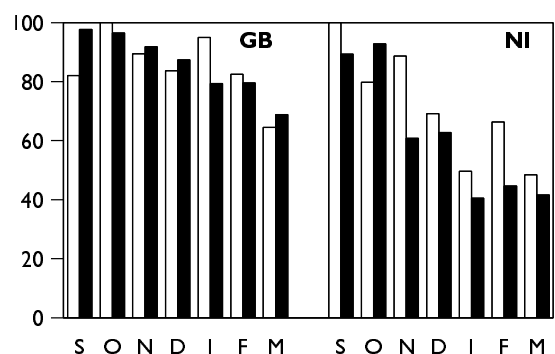


Figure 8. Monthly indices for Cormorant in GB and NI (white bars 1999-20000; black bars 1994-95 to 1998-99)

seems to have occurred at Belfast Lough. There is a reasonable degree of consistency in numbers between years at many sites in the table, though this does not apply to many sites in southeast England, particularly in the London area. High counts were made at Queen Mary, Hanningfield and Queen Mother Reservoirs, Wrasbury Gravel Pits and the Thames Estuary, yet much lower than normal numbers were found on Queen Elizabeth II and Wrasbury Reservoirs. Variation at these sites between years can be very large, with counts at Queen Mary Reservoir surpassing 1,000, yet failing to reach 100 in two of the last five years, and the fortunes of birds appear to vary markedly even on adjacent sites. Elsewhere, high counts were recorded at Loch Leven and on the Wash, whilst numbers at Poole Harbour, Blackwater Estuary, Dysynni Estuary and Inner Moray Firth were lower than expected, with general declines over the last five years apparent at the last two of these sites.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Loughs Neagh & Beg	951	927	1,184	2,071	1,643	Sep	1,355 ▲
Sites of national importance in Great Britain							
Morecambe Bay	1,115	977	1,099	963	1,030	Sep	1,037
Abberton Reservoir	800	900	710	600	(520)	Mar	753
Forth Estuary	806	657	632	701	665	Sep	692
Solway Estuary	639	457	510	586	628	Sep	564
Alt Estuary	285	514	397	779	574	Jan	510
Clyde Estuary	464	404	610	470	466	Sep	483
Tees Estuary	676	471	320	444	451	Sep	472
Queen Mary Reservoir	387	1,050	91	59	678	Jan	453
Loch Leven	410	405	31 400	442	608	Dec	453
Dee Estuary (Eng/Wal)	460	253	374	613	541	Oct	448
Rutland Water	655	391	385	350	330	Sep	422
Walthamstow Reservoirs	300	450	430	430	0		403

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Hanningfield Reservoir	211	223	272	758	539	Oct	401
Poole Harbour	471	375	400	440	298	Nov	397
Grafham Water	310	610	297	341	212	Dec	354
North Norfolk Coast	463	492	224	310	278	Oct	353
Wash	348	337	295	279	462	Sep	344
Ouse Washes	³¹ 429	391	³¹ 139	426	²⁴ 287	Mar	334
Ranworth & Cockshoot Broads	295	254	405	308	317	Jan	316
Dungeness Gravel Pits	186	144	330	550	344	Dec	311
Besthorpe & Girton Gravel Pits	255	262	236	453	323	Jun	306
Queen Elizabeth II Reservoir	169	380	268	360	172	Aug	270
Blackwater Estuary	249	348	273	278	190	Feb	268
Queen Mother Reservoir	105	600	46	7	535	Oct	259
Chichester Gravel Pits	²⁴ 265	²⁴ 346	²⁴ 213	²⁴ 252	²⁴ 216	Jan	258
Rostherne Mere	244	229	270	243	273	Jan	252
Irvine to Saltcoats	(250)	(230)	(230)	-	-		250
Medway Estuary	310	154	179	188	293	Oct	225
Lee Valley Gravel Pits	231	210	229	229	206	Jan	221
William Girling Reservoir	(200)	(91)	(180)	(200)	210	Sep	210
Pagham Harbour	204	246	183	177	234	Mar	209
Tay Estuary	245	212	³⁷ 234	134	196	Dec	204
Ardrossan-West Kilbride	-	-	-	-	194	Sep	194 ▲
Swale Estuary	174	200	187	(128)	203	Sep	191
Dysynni Estuary	248	214	173	(59)	129	Aug	191
South Stoke	²⁴ 105	²⁴ 332	²⁴ 187	²⁴ 136	-		190
Wraysbury Gravel Pits	206	169	105	180	276	Nov	187
Thames Estuary	205	164	150	162	248	Jan	186
Wraysbury Reservoir	241	142	479	16	39	Mar	183
Southampton Water	³⁷ 138	³⁷ 174	150	195	³⁷ 223	Nov	176
Middle Tame Valley Gravel Pits	157	(82)	150	171	207	Jan	171
Inner Moray Firth	388	133	99	³⁷ 153	71	Oct	169
Sonning Gravel Pit	72	150	312	161	140	Jan	167
Chew Valley Lake	250	170	190	90	120	Sep/Jan	164
Farmoor Reservoirs	225	185	120	168	109	Jan	161
Ribble Estuary	191	179	123	132	163	Jan	158
Rye Harbour & Pett Level	131	61	179	187	211	Aug	154
Blithfield Reservoir	88	323	77	92	146	Oct	145
Breydon Water & Berney Marshes	198	132	129	127	121	Sep	141
Exe Estuary	123	169	125	143	-		140
Stour Estuary	157	153	137	123	125	Aug	139
Alde Complex	191	121	120	104	150	Feb	137 ▲
Clwyd Estuary	123	255	84	50	146	Sep	132
Orwell Estuary	145	96	³⁷ 103	150	161	Nov	131 ▲
Attenborough Gravel Pits	121	181	137	103	112	Feb	131
Sites of all-Ireland importance in Northern Ireland †							
Belfast Lough	536	352	514	³⁷ 349	321	Sep	414
Outer Ards	147	152	158	359	303	Nov	224
Strangford Lough	180	167	164	300	285	Nov	219
Carlingford Lough	244	187	174	150	209	Sep	193

Internationally or nationally important sites not counted in last five years

Herne Bay

Sites no longer meeting table qualifying levels

Draycote Water

Windermere

Coombe Country Park

Other sites surpassing table qualifying levels in 1999-2000

Middle Yare Marshes	210	Mar
King George V Reservoirs	180	Oct
Colne Estuary	(176)	Jan
Tyne Estuary	169	Jan
Tophill Low Reservoirs	148	Oct
Humber Estuary	139	Mar
R. Thames: Lea - Roding	131	Oct

† as no all-Ireland threshold has been set for Cormorant, a qualifying level of 130 has been chosen to select sites for presentation in this report

BITTERN

Botaurus stellaris

International threshold: ?
Great Britain threshold: ?
All-Ireland threshold: ?

GB max: 16 Feb
NI max: 0

Following the previous year's record counts, numbers in 1999-2000 returned to more normal levels. The number of sites where two or more birds were recorded was fewer than half that of

the previous two years, with many traditional sites recording only one bird or none at all. The most surprising omission to this list is Leighton Moss which is usually the top site for Bittern.

Sites with two or more birds in 1999-2000

Rye Harbour and Pett Levels	4	Feb/Mar
Kingsbury Water Park	3	Dec
Fleet Pond	2	Dec
LNER Ballast Pits Lincoln	2	Dec/Feb

CATTLE EGRET

Bubulcus ibis

Vagrant
Native range: SW Europe, Asia, Africa, Americas

Single birds were found at Henfield Brooks and at WWT Martin Mere during December, the latter also recorded in January and March.

LITTLE EGRET

Egretta garzetta

International threshold: 1,250
Great Britain threshold: ?†
All-Ireland threshold: ?†

GB max: 1,016 Sep
NI max: 0

Data collected during the 1999-2000 Little Egret Roost Survey has improved our knowledge of the abundance and distribution of this species. For example, it has shown that day-time WeBS counts at many sites have generally underestimated their importance for Little Egrets. The peak count for Great Britain during late summer was almost 30% higher than the previous year, probably reflecting both greater accuracy of the roost survey methodology compared with WeBS Core Counts coupled with an actual increase over that period. However, detailed consideration of numbers both at roosts and during the day suggests that the true total in

Great Britain in September 1999 may have been closer to 1,700 birds (A. Musgrove in prep). This species has never been recorded by WeBS in Northern Ireland, yet numbers continue to climb in the Republic of Ireland (Colhoun 2001).

All key sites currently surpassing the national importance threshold are located in the south of England with high numbers of roosting birds recorded at many sites. Numbers have increased markedly at the majority of these sites over the last decade as this species continues to colonise Britain and Ireland. Chichester Harbour remains by far the most important site numerically on the mainland.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain †							
Chichester Harbour	99	74	¹² 130	134	¹² 271	Aug	142
Longueville Marsh	(82)	130	(98)	(125)	70	Oct	108
Poole Harbour	58	57	¹² 107	50	¹² 142	Sep	83
Tamar Complex	83	69	¹² 72	50	(95)	Sep	74
Kingsbridge Estuary	48	47	45	59	58	Feb	51
Camel Estuary	49	46	¹² 47	56	¹² 55	Sep	51
Exe Estuary	38	34	37	47	¹² 51	Oct	41
Medway Estuary	30	(17)	8	(21)	(71)	Sep	36
North West Solent	86	16	14	21	¹² 45	Aug/Sep	36
Taw-Torridge Estuary	22	23	19	32	¹² 77	Sep	35
Langstone Harbour	36	32	19	³⁷ 38	(51)	Oct	35
Fowey Estuary	30	35	27	39	¹² 40	Sep	34
Burry Inlet	23	³⁷ 11	14	32	(86)	Sep	33
Pagham Harbour	19	29	27	41	¹² 51	Aug	33
Newtown Estuary	(34)	21	34	26	¹² 46	Sep	32
Fal Complex	16	24	21	45	34	Aug	28
Teign Estuary	15	36	23	23	¹² 30	Aug	25
Portsmouth Harbour	10	0	³⁷ 15	17	(51)	Oct	23
Guernsey Shore	13	18	-	0	31	Mar	21
Fleet/Wey	8	18	(13)	6	30	Feb	16 ▲
Erme Estuary	17	13	13	12	¹² 26	Feb	16
Cleddau Estuary	9	14	21	21	(17)	Nov	16
Helford Estuary	11	7	7	(23)	(24)	Aug	14
Yealm Estuary	13	(11)	8	15	16	Sep	13 ▲
Thames Estuary	9	11	4	9	28	Aug	12 ▲
Avon Estuary	11	8	10	(12)	¹² 20	Aug	12
Beaulieu Estuary	14	21	9	11	7	Aug	12
Looe Estuary	9	17	6	8	(9)	Oct	10
Other sites surpassing table qualifying levels in 1999-2000							
Colne Estuary	¹² 27	Mar	Swale Estuary		¹² 10	Jan	
Rye Harbour & Pett Level	¹² 16	Sep	Severn Estuary		¹² 10	Aug	
Hayle Estuary	¹² 13	Nov					

† as no British or all-Ireland threshold has been set, a qualifying level of 10 has been chosen to select sites for presentation in this report

GREAT WHITE EGRET

Ardea alba

Vagrant
Native range: S Europe, Africa, Asia, North and C America

Following a blank year in 1998-99, one was seen on the River Avon between Salisbury and Fordingbridge during September.

GREY HERON

Ardea cinerea

International threshold: 4,500
Great Britain threshold: ?†
All-Ireland threshold: ?†

GB max: 4,527 Sep
NI max: 463 Sep

The peak total for Great Britain was the highest recorded to date, up 22% on the previous year and having only exceeded 4,000 on one previous occasion (October 1995). The total would have been higher if counts had been received for Walthamstow Reservoirs, the top site. The 1999-

2000 peak was typically in autumn. In Northern Ireland, where the majority of birds occur at two key sites, numbers were also the highest to date.

Despite record national counts, relatively few of the key sites held notable numbers. Hanningfield Reservoir joined the list of key sites

following an exceptionally high January count, whilst numbers in the Avon Valley between Fordingbridge and Salisbury continued to

increase. Counts at Coombe Country Park peaked well below the levels recorded in recent winters.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain [†]							
Walthamstow Reservoirs	200	300	280	330	-		278
Somerset Levels	100	115	(119)	(105)	143	Mar	119
Thames Estuary	119	98	92	89	98	Oct	99
Ribble Estuary	(40)	99	95	(54)	88	Sep	94
Coombe Country Park	31		169	144	31	Jun	94
Morecambe Bay	87	70	88	101	88	Sep	87
Taw-Torridge Estuary	78	125	94	47	78	Aug	84
Avon Valley: Salisbury to F'bridge	56	72	70	92	102	Feb	78
Dee Estuary (Eng/Wal)	73	58	76	(61)	80	Sep	72
Ouse Washes	39	63	57	133	61	Mar	71
Clyde Estuary	40	46	86	79	90	Nov	68
Tamar Complex	87	64	75	62	45	Jan	67
Severn Estuary	121	54	59	51	49	Jan	67
Besthorpe/Girton Gravel Pits	22	102	22	107	76	Jun	66
Montrose Basin	(74)	71	42	42	83	Aug	62
Wash	55	(35)	45	42	91	Sep	58
Alde complex	68	46	50	52	72	Oct	58
Hanningfield Reservoir	13	20	48	57	137	Jan	55 ▲
R. Avon: F'bridge to Ringwood	120	(9)	41	9	40	Oct	53
Burry Inlet	57	50	64	43	51	Sep	53
Durham Coast	49	40	58	50	60	Aug	51 ▲
Sites of all-Ireland importance in Northern Ireland [†]							
Loughs Neagh & Beg	76	197	217	359	269	Sep	224
Strangford Lough	87	79	87	85	96	Sep	87
Sites no longer meeting table qualifying levels							
Southampton Water							
Deeping St James							
Other sites surpassing table qualifying levels in 1999-2000							
Humber Estuary	85	Sep					
North Norfolk Coast	75	Sep					
Solway Estuary	63	Sep					
Chichester Harbour	59	Sep					
Tees Estuary	57	Sep					
Dornoch Firth	52	Oct					
Poole Harbour	50	Sep					

[†] as no British or all-Ireland threshold has been set, a qualifying level of 50 has been chosen to select sites for presentation in this report

PURPLE HERON

Scarce

Ardea purpurea

One was recorded on the Thames Estuary in September.

WHITE STORK

Ciconia ciconia

Vagrant and escape

Native range: Europe, Africa and Asia

All records in 1999-2000 came from Harewood Park, where birds are known to be escapes. A maximum of three were present in November.

SACRED IBIS

Threskiornis aethiopicus

Escape

Native range: Africa and Middle East

A single on the River Avon: Salisbury to Fordingbridge during October may have been the

bird present in Surrey from December to March the previous year.

SPOONBILL

Platalea leucorodia

Scarce

GB max: 18 Jun

NI max: 0

Summed site maxima for 1999-2000 produced 37 birds, one less than in the previous year but long-staying and wandering birds will undoubtedly

cause some repetition. Birds were recorded at 19 sites with a notably high peak count from the North Norfolk Coast in June.

Sites with two or more birds in 1999-2000

North Norfolk Coast	7	Jun
Breydon Water & Berney Marshes	5	Jul
Alde Complex	3	Sep
The Wash	3	May
Dee Estuary	2	Apr/Oct
Ribble Estuary	2	Jun/Aug
Tamar Complex	2	Jan
Taw/Torridge Estuary	2	Nov/Dec/Jan

MUTE SWAN

Cygnus olor

International threshold: 2,400

Great Britain threshold: 260

All-Ireland threshold: 55

GB max: 19,616 Oct

NI max: 2,373 Sep

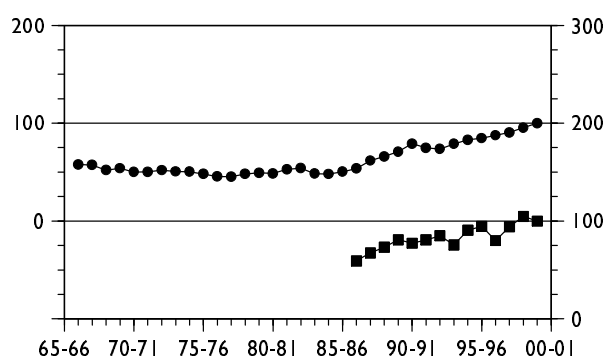


Figure 9. Annual indices for Mute Swan in GB (circles, left axis) and NI (squares, right axis)

The peak British count reached record levels, surpassing 19,000 in three separate months.

Consequently the national index rose by 5.2% to reach its highest level to date, the thirteenth increase in the last fifteen years. In Northern Ireland the peak was lower than the record 1998-99 count though around average for recent years, reflected by a slight fall in the index value.

Counts at most sites peaked near or above average, most notable being those at Somerset Levels, Rutland Water and Loch of Harray, the latter having shown successive increases for the last four years. In Northern Ireland the count at Strangford Lough was the highest at the site since the mid 1980s, whilst the inclusion of low tide counts for Belfast Lough revealed the site to be of all-Ireland importance.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain							
Fleet/Wey	1,151	1,185	1,313	1,141	1,177	Oct	1,193
Somerset Levels	608	731	734	733	1,011	Jan	763
Tweed Estuary	³¹ 450	664	544	615	580	Aug	571
Ouse Washes	³¹ 515	364	432	663	662	Dec	527
Abberton Reservoir	538	480	428	512	520	Aug	496

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Rutland Water	295	396	485	465	617	Jul	452
Hornsea Mere	-	-	(49)	394	364	Aug	379 ▲
Loch of Harray	219	249	413	441	495	Nov	363
Montrose Basin	299	356	315	304	343	Sep	323
Stour Estuary	226	426	307	276	274	Dec	302
Morecambe Bay	285	281	237	269	333	Feb	281
Tring Reservoirs	156	201	329	310	342	Dec	268 ▲

Sites of all-Ireland importance in Northern Ireland

Loughs Neagh & Beg	2,179	1,844	1,612	2,422	1,887	Sep	1,989
Upper Lough Erne	456	590	468	351	328	Jan	439
Strangford Lough	98	83	96	111	225	Sep	123
Castlecaldwell Refuge	-	-	116	-	-		116
Lough Foyle	104	130	110	115	115	Sep/Oct	115
Upper Quoile River	73	104	116	50	88	Oct	86
Broadwater Canal	-	78	66	71	-		72
Dundrum Bay	59	67	76	81	50	Nov	67
Lough Aghery	31	89	67	59	(54)	Nov	62 ▲
Belfast Lough	³⁷ 60	³⁷ 60	37	42	³⁷ 90	Feb	58 ▲

Internationally or nationally important sites not counted in last five years

Ballyronney Lake
Christchurch Harbour

Other sites surpassing table qualifying levels in 1999-2000

Loch Leven	406	Aug
Loch of Strathbeg	352	Aug
Fen Drayton Gravel Pits	316	Jul
Fisherwick & Elford Gravel Pits	301	Jan
R. Welland: Sp'ding to Borough Fen	287	Dec
Humber Estuary	271	Nov
Avon Valley: Salisbury to F'bridge	263	Oct

BLACK SWAN

Cygnus atratus

Escape
Native range: Australia

GB max: 53 Oct
NI max: 0

After a sharp rise in the previous winter, numbers of Black Swans recorded by WeBS jumped markedly for the second year. The British peak was slightly higher than the 43 recorded in 1998-99, but both the number of sites at which this species was recorded (82 *cf.* 59, 37 and 44 in the preceding three years) and summed site maxima (157 birds *cf.* 111, 67 and 62) showed marked

increases. Just one bird was recorded in Wales, and 12 singles at different sites in Scotland, the furthest north at Loch Harray, Orkney. Whilst it is likely that these figures relate to better reporting by WeBS, there are recent cases of breeding in the wild, and it is possible that Black Swans are fuelling their own increase in Britain.

Sites with three or more birds in 1999-2000

Fleet/Wey	10	Jun	R Kennet: Ramsbury to Chilton Foliat	4	Aug
Ramsbury Lake	9	Apr/Oct	R. Avon: West Amesbury	4	Dec
Woburn Park Lakes	8	Jul	Horrocks' Flash	4	Nov
Cotswold Water Park (West)	6	Jan	R. Avon: F'bridge to Ringwood	3	Jan
Avon Valley: Salisbury to F'bridge	5	Dec	Wicken Fen	3	Dec
Thorpe Water Park	5	Jan	Wigan Flashes	3	Mar
Deene Lake	5	Oct			

BEWICK'S SWAN

Cygnus columbianus

GB max: 7,101 Jan

NI max: 377 Jan

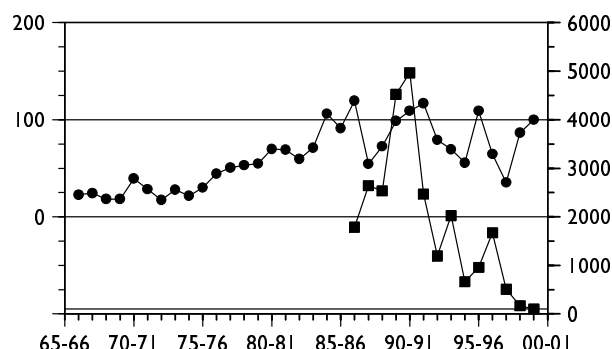


Figure 10. Annual indices for Bewick's Swan in GB (circles, left axis) and NI (squares, right axis)

Although WeBS counts for Great Britain were similar to those recorded in previous mild winters, national indices increased for the second consecutive year. Numbers recorded at the Ouse Washes were over 10% higher than in the previous year and this site remains the most important numerically for this species in the whole of northwest Europe (Delany *et al.* 1999). In contrast, as in 1998-99, peak counts at all other internationally important sites were much lower than their respective five-year means. The reasons underlying this redistribution of Bewick's Swans in Great Britain remain unclear but may be related, in part, to successful habitat management at the Ouse Washes by WWT and RSPB coupled with beneficially high water levels at this site. The international census of Bewick's and Whooper Swans throughout Europe in January 2000 recorded 400 more birds than WeBS (and Ouse Washes roost counts) in Britain, but substantially elevated the total in Northern Ireland from 21 to 377.

Monthly indices show that, after an early arrival of birds in November, peak numbers in

International threshold: 170

Great Britain threshold: 70

All-Ireland threshold: 25*

* 50 is normally used as a minimum threshold

% young: 11.1 brood size: 1.7

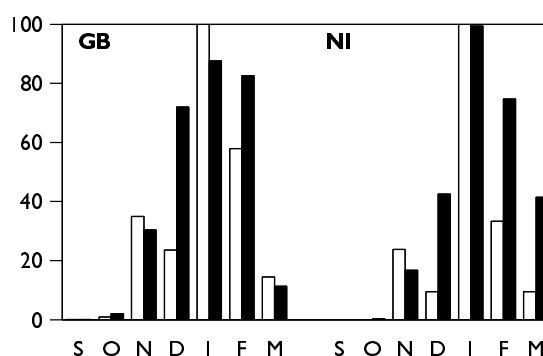


Figure 11. Monthly indices for Bewick's Swan in GB and NI (white bars 1999-2000; black bars 1994-95 to 1998-99)

Great Britain and Northern Ireland were recorded during January, with relatively low numbers in December and February. Productivity was average with 10.9% young birds in flocks at WWT Slimbridge, 15.3% at WWT Martin Mere, and 7.3% at WWT Welney (WWT, unpubl. data). Temporal changes in the proportion of juveniles recorded in flocks at these sites suggest that families return later in the season than do failed/non-breeders.

WeBS annual maxima and indices continue to fall in Northern Ireland, mirroring a similar trend in the Republic of Ireland (Colhoun 2001). The peak total for 1999-2000 was the lowest recorded since co-ordinated waterbird counts began. Particularly low numbers were recorded at the key sites in the province: Loughs Neagh & Beg and Foyle. The recent run of mild winters and hence favourable feeding conditions on the continent is probably linked to the reduction in the numbers of Bewick's Swans visiting Ireland during the winter. However, interspecific competition with increasing numbers of Whooper Swans in Ireland may be important and demands further attention.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Ouse Washes	4,830	³¹ 4,977	³² 4,257	³² 5,129	²⁴ 5,649	Jan	4,968
Nene Washes	1,025	863	2,585	723	327	Jan	1,105
Severn Estuary	³² 370	555	³² 393	³² 287	³² 216	Feb	364
Breydon Water & Berney Marshes	752	476	231	210	132	Feb	360
WWT Martin Mere/Ribble Est.	³² 350	³² 669	³² 368	²⁴ 144	³² 163	Dec	339
Walland Marsh	⁷ 327	324	306	256	64	Nov	255
St Benet's Levels	391	286	161	126	209	Feb	235
Somerset Levels	345	²⁴ 285	68	120	117	Jan	187

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain							
Medway Estuary	(9)	³⁷ 32	15	302	42	Jan	98
Alde Complex	178	(52)	165	4	12	Feb	90
Arun Valley	133	68	98	52	78	Jan	86
Walmore Common	106	135	(68)	43	16	Dec	75
Dee Estuary (Eng/Wal)	72	107	79	48	56	Jan	72 ▲
R. Avon: F'bridge to Ringwood	109	114	91	21	21	Dec	71
Sites of all-Ireland importance in Northern Ireland							
Loughs Neagh & Beg	80	117	77	53	16	Jan	69
Lough Foyle	94	90	14	10	5	Jan/Feb	43
R. Lagan: Flatfield	32	³¹ 49	38	-	-		40
Canary Road	43	-	26	-	-		35
Upper Lough Erne	0	122	7	0	0		26

WHOOPER SWAN

Cygnus cygnus

GB max: 6,711 Jan

NI max: 3,663 Jan

International threshold: 160

Great Britain threshold: 55

All-Ireland threshold: 100

% young: 16.8 **brood size:** 2.3

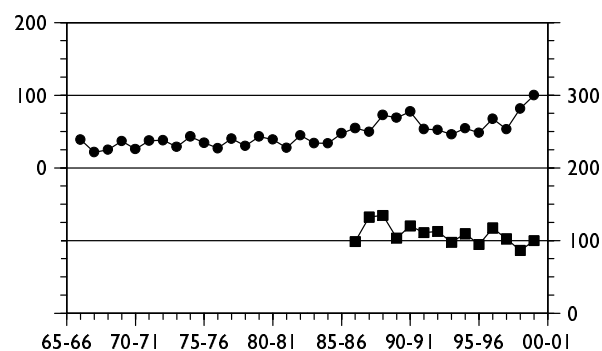


Figure 12. Annual indices for Whooper Swan in GB (circles, left axis) and NI (squares, right axis)

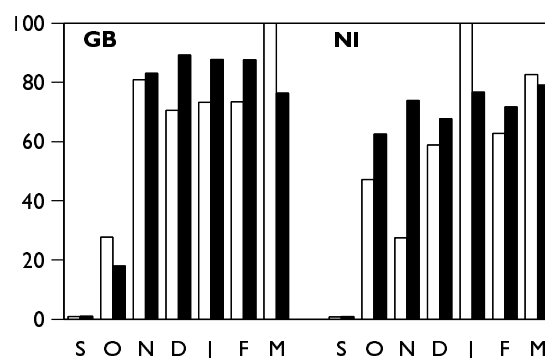


Figure 13. Monthly indices for Whooper Swan in GB and NI (white bars 1999-2000; black bars 1994-95 to 1998-99)

The results of the International Swan Census in January 2000 suggest that the population of Whooper Swans that breeds in Iceland has increased by over 30% since 1995, from around 15,840 to 20,655 individuals (Cranswick *et al.* in press). Individually, numbers in Great Britain and Northern Ireland have increased by around 34% and 32%, respectively; jointly, they represent over 50% of the international population. The results of the census indicate that WeBS typically records less than 60% of the Whooper Swan numbers in Great Britain and Northern Ireland.

National annual indices continue to increase in Great Britain and were up marginally in Northern Ireland after two successive years of decline. Monthly indices show that birds arrived later than usual in the province, peaking in January. Census results show that reproductive success in 1999 was relatively low. At key sites in Great Britain, 16% of birds in flocks were juveniles at WWT Caerlaverock, 18% at WWT

Martin Mere, and 17% at WWT Welney (WWT, unpubl. data).

Peak counts at the Ouse Washes and WWT Martin Mere in 1999-2000 were notably higher than average and numbers using the river Clyde between Carstairs Junction and Thankerton Bridge are now of international significance. Six new sites provisionally qualify as nationally important for this species. Counts at the Humber Estuary and Threave Estate were outstanding and contributed largely to promotion in site status.

Assessment of the importance of staging sites for migrating waterbirds is typically based on peak counts of birds, which underestimates the total number of birds passing through a site. A new technique for estimating the total numbers of Whooper Swans using a staging site, based on series of counts and concurrent re-sightings of marked individuals (Frederikson *et al.* 2001), may be useful for identifying important staging sites for waterbirds.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Ouse Washes	1,288	³¹ 1,211	1,299	²⁴ 1,623	²⁴ 2,120	Dec	1,508
WWT Martin Mere/Ribble Est.	³² 740	³² 827	³² 1,041	³² 1,130	³² 1,335	Jan	1,015
Upper Lough Erne	980	1,094	799	989	985	Jan	969
Loughs Neagh & Beg	906	1,169	1,113	830	641	Jan	932
Lough Foyle	1,521	671	566	642	657	Feb	811
Loch of Strathbeg	(221)	158	310	476	262	Nov	302
R. Foyle: Grange	266	380	150	-	-		265
Solway Estuary	³² 220	³² 350	³² 221	³² 188	³² 223	Mar	240
R. Clyde: Carstairs to Thankerton	-	60	(157)	125	393	Nov	193
Black Cart Water	³³ 149	³³ 163	³³ 180	³³ 244	³³ 187	Jan	185
Sites of national importance in Great Britain							
Loch Leven	94	97	98	134	144	Feb	113
R. Nith: Keltonbank to Nunholm	-	75	(115)	100	146	Dec	109
Loch of Spiggie	180	-	-	-	24	Nov	102
Loch Insh & Spey Marshes	115	82	-	-	-		99
Loch of Wester	-	98	114	(123)	45	Nov/Jan	95
Loch a'Phuill	-	-	23	101	142	Nov	89
Wigtown Bay	72	59	75	102	134	Mar	88
R. Tweed: Kelso to Coldstream	88	48	(138)	105	50	Feb	86
Loch Eye/Cromarty Firth	(89)	120	52	28	126	Oct	83
R. Tweed: Rutherford	110	36	-	29	³¹ 108	Dec	71
Loch of Lintrathen	(1)	67	(77)	(36)	68	Dec	71
Threave Estate	(31)	2	85	-	117	Mar	68 ▲
Tynninghame Estuary	44	65	44	113	76	Dec	68
Merryton Ponds	67	72	74	58	70	Jan/Mar	68
Lower Derwent Valley	42	96	61	45	81	Dec	65
Milldam & Balfour Mains Pools	46	87	76	³¹ 49	³¹ 53	Dec	62
Humber Estuary	(5)	(13)	12	16	155	Mar	61 ▲
Linton Pond	60	-	-	-	-		60 ▲
Loch Heilen	51	51	99	38	-		60
Dornoch Firth	31	13	73	89	84	Dec	58 ▲
Barons Folly	20	(123)	³¹ 73	0	71	Mar	57 ▲
Sites of all-Ireland importance in Northern Ireland							
R. Lagan: Flatfield	135	³¹ 76	152	-	-		121 ▲
Sites no longer meeting table qualifying levels							
Loch of Skail							
Internationally or nationally important sites not counted in last five years							
Easterloch/Uyeasound							
Islesteps							
R. Teviot: Kalemouth to Roxburgh							
R. Tweed : Magdalenehall							
Other sites surpassing table qualifying levels in 1999-2000							
Strangford Lough	177	Dec	Clyde Estuary		59	Mar	
Duddon Estuary	78	Mar	R. Earn: Millands Marsh & Floods		59	Nov	
Tarbat Ness to Rockfield	70	Feb	Glaslyn Marshes		57	Jan	
Loch Connell	63	Mar	Shearington Pond		56	Dec	

SWAN GOOSE

Anser cygnoides

Escape

Native range: Eastern Asia

Two sites held more than one bird: there were 19 at Etherow Country Park in January, and 12 were recorded at Esthwaite Water in July (having held 15 in

1997-98 and none in 1998-99). Singles were noted at a further six sites in 1999-2000.

BEAN GOOSE

Anser fabalis

GB max: 313 Nov/Dec
NI max: 0

Typically, the only flocks of any size were those at the Middle Yare Marshes, Norfolk and the Slamannan Plateau, Stirling, although the fortunes of these two flocks of Taiga Bean Goose *A. f. fabalis* were rather different. Still the largest of the two, the Yare flock was lower than the current five year peak mean and again present for a very short period due to increasingly early departures. The exact arrival date was unknown; the first count on 12 November revealed 125 birds and the peak count of 227 was recorded just once, on 31 December. Three days later, 199 of these left the area, equalling the earliest recorded date of departure for the majority of the flock (M. Parslow-Otsu *in litt.*). The final departures occurred between 1st and 4th February. Productivity in this flock was estimated at 4.6%

International threshold (*fabalis*): 800
Great Britain threshold: 4*†
All-Ireland threshold: +*

* 50 is normally used as a minimum threshold

% young: 4.6 brood size: n/a

young (M. Parslow-Otsu *in litt.*), a typically low proportion of juveniles.

In contrast, the Slamannan flock increased for the fourth consecutive winter and the peak count was 23% higher than the current five year peak mean. The first birds, a flock of 100, were noted on 6 October, rising to 167 by 23 October with a peak of 188 on 12 November. This flock remained until at least 2 February, when 180 were counted, with the last birds, a group of 103, seen on 19 February (A. MacIver *in litt.*).

Elsewhere, Bean Geese were very scarce during 1999-2000. Just two locations held more than four birds and for the second year in succession none were recorded at North Warren & Thorpeness Mere.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain †							
Middle Yare Marshes	²² 195	²² 224	²² 266	²² 296	¹³ 227	Dec	242
Slamannan Plateau	⁵ 123	⁵ 127	⁵ 157	⁵ 168	⁵ 188	Nov	153
Heigham Holmes	103	0	0	0	-		26
North Warren & Thorpeness Mere	48	36	12	0	0		19
Lower Derwent Valley	³¹ 11	18	11	42	7	Jan	18
Ouse Washes	³¹ 22	34	³¹ 9	7	9	Feb	16

† as the British threshold for national importance is so small, a qualifying level of 10 has been chosen to select sites for presentation in this report

PINK-FOOTED GOOSE

Anser brachyrhynchus

GB max: 212,493 Nov
NI max: 3 Oct

International threshold: 2,250
Great Britain threshold: 2,250
All-Ireland threshold: +

% young: 17.8 brood size: 2.2

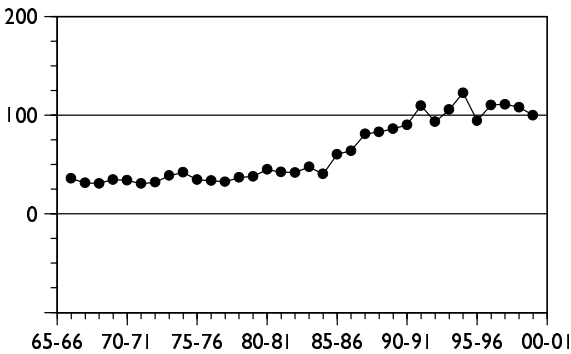


Figure 14. Annual indices for Pink-footed Goose in GB

The 40th national grey goose census in October and November 1999 (Hearn 2000a) revealed a

lower than expected total. The October census, the best time to count this population, produced a low total, thought to have arisen due to a late arrival of part of the population during the autumn. Consequently, the November census produced the highest estimate of 212,493. However, this is believed to be an undercount due to the omission of some sites from this count, but even if these sites are taken into account, it is likely there was a small decrease in population size between 1998 and 1999. Nevertheless, this does not affect the long-term trend of this population, namely one of stability for the past ten years.

Peak counts at the most important sites tended to be slightly lower than their current five year peak mean. The most notable of these was the roost at Snettisham, where just 57% of the peak mean was recorded in 1999-2000. However, this decrease was accommodated at the two other roosts in north Norfolk (Holkham Bay and Scolt Head) where increases of 8% and 52% respectively were recorded. The other major roosts in Norfolk, Horsey Mere and Breydon Water/Berney Marshes, also continue to attract increasing numbers of Pinkfeet. Although no counts were received from the former of these sites, anecdotal reports suggest this to be the case.

Other notable changes were recorded at Loch of Lintrathen, where the number of roosting Pinkfeet has increased in each of the past four years. In 1999-2000 the number there was 138% greater than the current five year peak mean, and this site achieved international importance for the first time. Marked increases were also recorded at Loch Mullion (up 144% on the mean), Fala Flow (up 54%) and Gladhouse Reservoir (up 38%).

In addition to Snettisham, notable decreases were also recorded at a number of key sites, reflecting the relatively dynamic nature of this species' winter distribution. At Dupplin Lochs, another fairly low peak count was recorded and at Aberlady Bay, although annual peak counts at these sites are often erratic and do not indicate declining trends. In contrast, numbers at Cameron Reservoir were low for the third time in the past five years and use of this site may be in decline. At Loch Eye/Cromarty Firth, there can be no doubt that Pinkfeet are abandoning the site as a roost. Numbers there have decreased dramatically over the last five years and the peak count in 1999-2000 was just 2% of the mean. Other low counts at sites such as Drummond Pond and Loch Mahaick are not unprecedented, but the complete lack of use of Loch Tullybelton was most unexpected. On the Solway Estuary, despite a large increase on the very low count of 1998-99, the peak still remained relatively low.

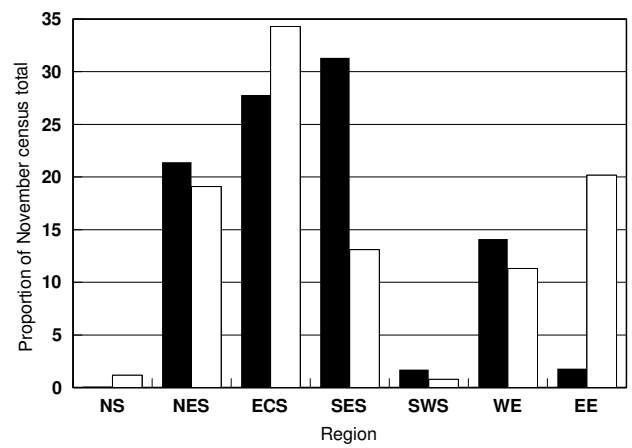


Figure 15. The regional distribution of Pink-footed Geese in Britain in October (black bars) and November (white bars) 1999. Key: NS - north Scotland, NES - northeast Scotland, ECS - east central Scotland, SES - southeast Scotland & northeast England, SWS - southwest Scotland & northwest England, WE - west England, EE - east England.

Productivity during 1999 was moderate, with 17.8% young in autumn flocks (mean for 1990-99 is 17.6%) and the mean brood size of 2.2 young per successful pair exactly matched the average for the past ten years. Hunting mortality in Iceland completed the set of average measures for 1999, with the total of 13,614 shot being very similar to the mean of 13,292 for 1995-99 (Icelandic Wildlife Management Institute).

Recent research on Pinkfeet has largely concerned the Svalbard population, although the results are directly applicable to the birds in the UK. Therkildsen & Madsen (2000) concluded that the marked increase in acreage of winter wheat in Denmark, which is a reliable and profitable food source even in severe winters, has allowed Pinkfeet to modify their wintering strategy and spend increasing periods of time further north than previously possible.

Finally, the proposed development of a hydroelectric power station at Eyjabakkar, in south-east Iceland, as reported in Pollitt *et al.* (2000), has been shelved indefinitely. This is excellent news for the protection of what remains to be the largest known concentration of moulting Pink-footed Geese.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
SW Lancashire	³⁴ 31,530	³⁴ 41,680	³⁴ 28,960	³⁴ 36,260	³⁴ 29,955	Oct	33,677
Loch of Strathbeg	³⁴ 48,500	32,000	³⁴ 33,556	37,078	31,031	Nov	36,433
West Water Reservoir	³⁴ 31,500	³¹ 55,000	38,700	³⁴ 21,670	³⁴ 28,000	Oct	34,974
Dupplin Lochs	³⁴ 35,000	³⁴ 40,500	³⁴ 29,850	³⁴ 42,500	³⁴ 22,800	Oct	34,130
Snettisham	³⁴ 39,130	³⁴ 35,930	³⁴ 40,350	35,555	³⁴ 19,450	Feb	34,083
Holkham Bay	³⁴ 19,230	³⁴ 26,000	³⁴ 33,700	³⁴ 34,100	³⁴ 31,190	Dec	28,844
Montrose Basin	³⁴ 18,500	³⁴ 17,150	³⁴ 35,000	³⁴ 33,012	³⁴ 18,480	Oct	24,428

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Scolt Head	³⁴ 15,635	17,900	18,800	³⁴ 28,510	²⁴ 35,180	Dec	23,205
Hule Moss	³¹ 24,900	19,400	³⁴ 19,675	11,253	³¹ 19,100	Oct	18,866
Ythan Estuary/Slains Lochs	³⁴ 25,000	³⁴ 17,400	³⁴ 12,200	³⁴ 16,400	³⁴ 15,500	Oct	17,300
Loch Leven	³⁴ 17,900	³⁴ 18,150	³⁴ 14,740	³⁴ 14,100	³⁴ 11,540	Oct	15,286
Carsebreck & Rhynd Lochs	³⁴ 13,500	³⁴ 12,000	³⁴ 13,560	³⁴ 18,500	³⁴ 15,400	Oct	14,592
Solway Estuary	³⁴ 22,523	³⁴ 19,586	³⁴ 17,971	³⁴ 3,710	³⁴ 6,434	Mar	14,045
Aberlady Bay	³⁴ 11,320	³⁴ 4,650	³⁴ 6,540	³⁴ 13,260	³⁴ 4,840	Oct	8,122
Carse of Stirling	³⁴ 6,700	-	-	-	-		6,700
Cameron Reservoir	³⁴ 11,260	³⁴ 3,460	³⁴ 11,280	4,104	3,168	Oct	6,654
Wigtown Bay	7,229	7,280	5,234	5,029	6,459	Feb	6,246
Tay Estuary	³⁴ 6,117	³⁴ 8,897	³⁴ 3,765	³⁴ 5,355	³⁴ 4,630	Nov	5,753
Fala Flow	³⁴ 2,437	³⁴ 5,000	³⁴ 7,500	³⁴ 2,100	³⁴ 7,550	Oct	4,917
R. Clyde: Carstairs to Thankerton	-	-	8,000	948	5,650	Mar	4,866
Loch Tullybelton	³⁴ 1,395	³⁴ 4,658	³⁴ 8,000	³⁴ 8,100	³⁴ 0	Oct	4,431
Loch Long	³⁴ 650	-	-	³⁴ 7,200	³⁴ 5,417	Nov	4,422
Loch of Lintrathen	-	³⁴ 920	³⁴ 2,800	³⁴ 3,350	³⁴ 10,400	Nov	4,368 ▲
Gladhouse Reservoir	³⁴ 3,290	6,200	³⁴ 5,000	³⁴ 1,300	³⁴ 6,000	Oct	4,358
Upper Cowgill Reservoir	³⁴ 4,560	³⁴ 6,060	³⁴ 6,000	³⁴ 1,000	³⁴ 2,900	Oct	4,104
Morecambe Bay	5,503	8,671	3,000	189	2,235	Mar	3,920
Breydon Water & Berney Marshes	1	1,100	5,500	5,500	6,600	Feb	3,740
Holburn Moss	³⁴ 300	2,100	4,500	³⁴ 4,350	³⁴ 2,000	Nov	2,650
Drummond Pond	³⁴ 110	³⁴ 7,000	³⁴ 3,300	³⁴ 2,644	³⁴ 170	Oct	2,645
Tay-Isla Valley	³⁴ 2,785	³⁴ 2,911	³⁴ 229	³⁴ 4,000	³⁴ 2,700	Nov	2,525
Loch Eye/Cromarty Firth	³⁴ 9,350	³⁴ 1,570	465	³⁴ 295	51	Feb	2,346
Loch Mahaick	³⁴ 600	³⁴ 2,700	³⁴ 6,465	³⁴ 1,300	³⁴ 600	Oct	2,333
Loch Mullion	³⁴ 750	³⁴ 0	³⁴ 3,000	³⁴ 2,000	³⁴ 5,500	Oct	2,250 ▲

Sites no longer meeting table qualifying levels

Haddo House Lakes

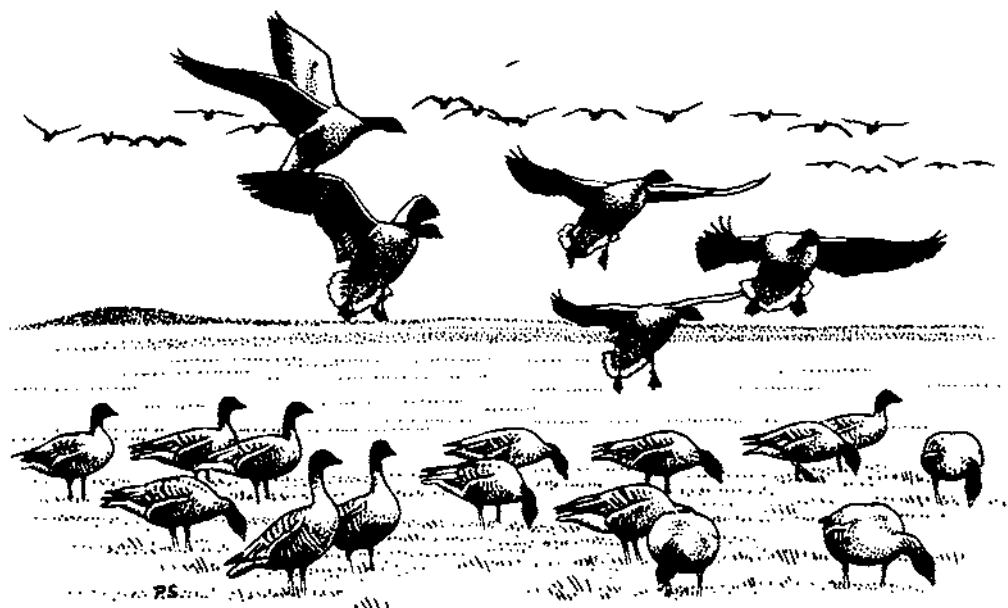
Internationally or nationally important sites not counted in last five years

Crombie Reservoir

Forth & Teith Valleys

Other sites surpassing table qualifying levels in 1999-2000

Whitton Loch	³⁴ 2,716	Oct
Humber Estuary	³⁴ 2,410	Nov
Duddon Estuary	3,000	Mar
Loch Flemington	³⁴ 2,500	Nov



EUROPEAN WHITE-FRONTED GOOSE

Anser albifrons albifrons

GB max: 3,862 Jan

NI max: 0

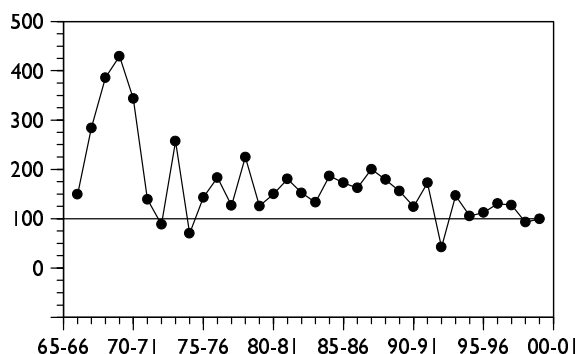


Figure 17. Annual indices for European White-fronted Goose in GB

Despite a slight increase in the index value, the peak total of European Whitefronts remained low; in fact, the fifth lowest year since the mid 1960s. This trend was repeated at the Severn Estuary, the key site in Britain, where there was a slight increase compared to the previous year, but numbers remained below 2,000.

Of the thirteen other sites of national importance, counts at seven were lower than their current five year peak mean and four were higher. No counts were received from two others. The most notable decrease was at the Swale, currently the second most important site in Britain, where just 35% of the five year peak mean was recorded, while numbers slumped further on the Lower Derwent Valley. Numbers were also very low on the Thames Estuary,

International threshold: 6,000

Great Britain threshold: 60

All-Ireland threshold: +

% young: 21.0

brood size: 2.2

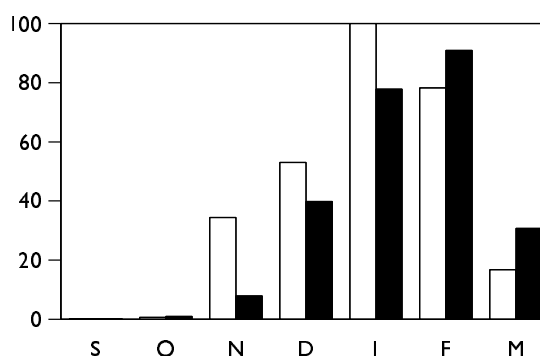


Figure 18. Monthly indices for European White-fronted Goose in GB (white bars 1999-2000; black bars 1994-95 to 1998-99)

although this was compensated to some degree by increases on other sites in southeast England, such as the Crouch-Roach Estuary and Hamford Water.

The arrival in 1999-2000 was slightly earlier than average in recent years, almost 40% of the peak count already present by November and increasing to a peak in January, rather than the more usual February. As is typical of recent years, birds departed rapidly during late February and early March.

Following poor breeding success in 1998, productivity in 1999, measured among birds at WWT Slimbridge, rose to 21%, though this was relatively low for a year with high lemming abundance in the arctic.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain							
Severn Estuary	2,170	2,780	2,501	1,840	1,931	Jan	2,244
Swale Estuary	2,088	1,604	1,402	973	455	Jan	1,304
Heigham Holmes	1,043	(640)	475	740	-		753
North Norfolk Coast	476	491	290	383	343	Jan	397
North Warren & Thorpeness Mere	450	302	220	³¹ 500	³¹ 350	Mar	364
Alde Complex	427	317	60	230	323	Dec	271
Dungeness Gravel Pits	8	355	240	320	³¹ 340	Mar	253
Walland Marsh	⁷ 300	328	198	198	230	Feb	251
Minsmere Levels	83	215	236	196	-		183
Lower Derwent Valley	244	114	152	60	18	Oct	118
Middle Yare Marshes	180	47	107	84	155	Jan	115
Breydon Water & Berney Marshes	64	69	90	91	51	Jan	73
Thames Estuary	59	146	69	76	7	Jan	71
Crouch-Roach Estuary	70	60	23	4	147	Jan	61 ▲

Internationally or nationally important sites not counted in last five years

Kessingland Levels

Other sites surpassing table qualifying levels in 1999-2000

Brent Reservoir 110 Jan

Hamford Water 74 Jan

GREENLAND WHITE-FRONTED GOOSE
Anser albifrons flavirostris

GB max: 20,660 **Nov**
NI max: 117 **Jan**

International threshold: 300
Great Britain threshold: 140
All-Ireland threshold: 140

% young: 9.5 **brood size:** 3.2

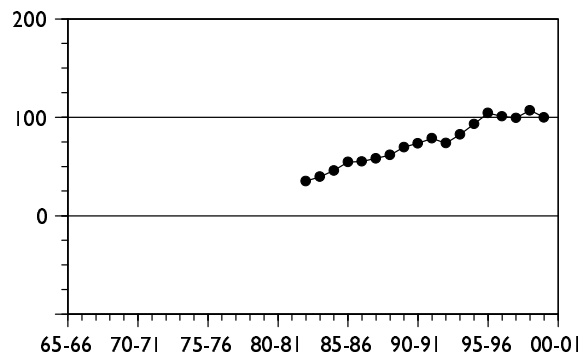


Figure 19. Annual indices for Greenland White-fronted Goose in GB

The peak count for Britain, obtained during the autumn international census by the Greenland White-fronted Goose Study (Fox & Francis 2001), revealed a slight decrease on the previous year, but no significant change in the population for the past five years. The total population estimate in the spring, including those birds wintering in the Republic of Ireland, was fewer than 32,000, suggesting a decrease of around 10% following the poor breeding success in 1999 (Fox & Francis 2001).

Most internationally important sites experienced decreases compared to the previous year. However, with the exception of Stranraer Lochs, where just 69% of the current five year peak mean was recorded, these were small and can be largely accounted for by the increases at nearby Islay and Rhunahaorine. Similarly, only minor changes were recorded at the sites of national importance, with slightly more decreases than increases. The most southerly regular wintering site remaining in Britain, the Dyfi Estuary, finally slipped from the list of nationally important sites.

The first arrival into Britain was a flock of 15 birds on Islay on 29 September. The main arrivals took place between 5th and 15 October, though some arrived as late as the first week of November. In spring, most geese departed from Islay on 15th and 16 April.

Productivity was well below the average for the past 15 years. On Islay, the proportion of young was estimated at 10.4% (*cf* mean of 15.1% for 1982-98) and in the rest of Scotland it was 8.0% (*cf* 15.0%), giving an overall value of 9.5%. This was primarily due to severe weather conditions in west Greenland during the summer. Irish wintering birds, which breed further north than Scottish birds, experienced even worse weather conditions and only produced 5.5% young, the worst breeding season on record (Fox & Francis 2001).

Hunting mortality in Iceland during autumn 1999 accounted for 3,285 birds, slightly higher than the mean for 1995-99 (3,180).

Recently published research has shown how Greenland Whitefronts benefit from associating with pre-breeding Greylag Geese on the Icelandic spring staging areas (Kristiansen *et al.* 2000a). By doing so, they are able to spend less time looking for predators and have up to 9% more time for feeding and other activities compared to birds in single species flocks. Kristiansen *et al.* (2000b) also showed how these birds are capable of fine-grained selection of the most profitable forage (in terms of nitrogen content) even during bouts of high peck rates. Not only do they select for the highest quality forage species, but they also select the part of each plant with the with the highest nutrient value and the individual plants with the largest nutrient value.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Islay	²⁶ 14,495	²⁶ 12,964	²⁶ 13,414	²⁶ 13,560	¹⁰ 14,474	Nov	13,781
Tiree	¹⁰ 1,387	¹⁰ 1,455	¹⁰ 1,464	¹⁰ 1,444	¹⁰ 1,347	Mar	1,419
Rhunahaorine	¹⁰ 1,360	¹⁰ 1,272	¹⁰ 1,193	¹⁰ 1,532	¹⁰ 1,585	Mar	1,388
Machrihanish	¹⁰ 1,339	¹⁰ 1,629	¹⁰ 931	¹⁰ 1,579	¹⁰ 1,322	Mar	1,360
Coll	¹⁰ 962	¹⁰ 1,047	¹⁰ 1,052	¹⁰ 1,122	¹⁰ 1,014	Apr	1,039
Stranraer Lochs/West Freugh	¹⁰ 550	¹⁰ 535	¹⁰ 680	¹⁰ 1,000	¹⁰ 440	Nov	641
Keills Peninsular & Isle of Danna	¹⁰ 414	¹⁰ 333	¹⁰ 441	¹⁰ 425	¹⁰ 290	Mar	381
Loch Ken	¹⁰ 360	¹⁰ 318	¹⁰ 450	¹⁰ 357	¹⁰ (330)	Jan	371

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain							
Appin/Eriska/Benderloch	¹⁰ 376	¹⁰ 217	¹⁰ 318	¹⁰ 270	¹⁰ 227	Dec	282 ▼
Westfield Marshes	¹⁰ 352	¹⁰ 210	¹⁰ 206	¹⁰ 230	¹⁰ 255	Nov	251
Loch Lomond: Endrick Mouth	¹⁰ 230	¹⁰ 245	¹⁰ 261	¹⁰ 306	200	Nov	248
Loch Heilen/Loch of Mey	¹⁰ 258	¹⁰ 199	¹⁰ 217	¹⁰ 215	¹⁰ 280	Oct	234
Bute	¹⁰ 210	¹⁰ 224	¹⁰ 223	¹⁰ 219	¹⁰ 192	Mar	214
Colonsay/Oronsay	¹⁰ 206	¹⁰ 169	¹⁰ 288	¹⁰ 163	¹⁰ 204	Mar	206
Clachan/Whitehouse	¹⁰ 191	¹⁰ 184	¹⁰ 203	¹⁰ 196	¹⁰ 232	Mar	201
Ulva	-	-	-	¹⁰ 191	¹⁰ 103	Nov	147 ▲

Sites no longer meeting table qualifying levels

Dyfi Estuary

LESSER WHITE-FRONTED GOOSE

Anser erythropus

Vagrant and escape

Native range: SE Europe and Asia

Singles were seen at Lunford Lake in August and perhaps the same on the Fleet/Way in October, at Weirwood Reservoir in September and

October and at Ogden Reservoir in May and July. All are likely to have been escapes.

GREYLAG GOOSE

Anser anser

ICELANDIC POPULATION

GB max: 73,344 Nov

NI max: 24 Nov

International threshold: 1,000

Great Britain threshold: 1,000

All-Ireland threshold: 40*

* 50 is normally used as a minimum threshold

% young: 13.9 brood size: 2.8

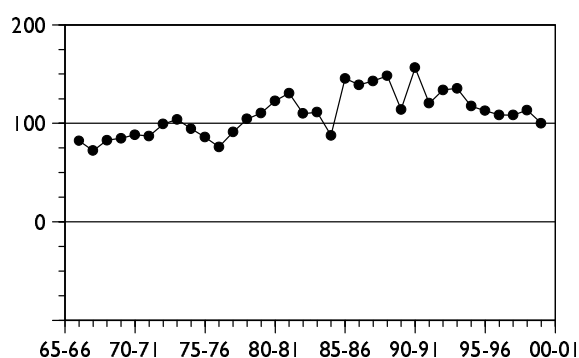


Figure 20. Annual indices for Icelandic Greylag Geese in GB

The 40th national grey goose census in autumn 1999 revealed a maxima of 75,866 Icelandic Greylag Geese during November (Hearn 2000a). This represents a decrease of 9% over the previous year and continues the downward trend started in the early 1990s. The index shows that, with the exception of an undercount in 1984, this is the lowest level for the population since 1978. Numbers in Ireland increased slightly to 2,522, largely due to improved coverage of sites during this census. The vast majority of these birds are located at sites in Eire, with only 24 counted in Northern Ireland. It should be noted that the

figure published in Pollitt et al. (2000) as the maximum for Northern Ireland (1,913) was in fact the all-Ireland peak count. The NI peak count in 1998-99 was 154 birds.

The arrival during autumn 1999 was typical of recent years, with just under two-thirds of the November peak count recorded during the October census. Their distribution was characteristically concentrated in north Scotland, with a notable increase in east central regions by November.

Of the key sites of international importance, both the two major roosts in Aberdeenshire supported below average numbers for the second year in succession. Whilst Lochs Davan & Kinord remain the principle site for the population and the numbers there have shown signs of returning to former levels after the very low peak of 1998-99, the importance of this site appears to be declining. However, it is still not possible to exclude the influence that the change in counting effort that took place two years ago may be having. Nearby, a third successive decrease was recorded at the Loch of Skene, meaning just 58% of the current five year peak

mean was seen there. Although this was considered to be an undercount, it is likely that a complete count would have still recorded a decrease and the overall trend at this site appears clear.

Similar declines are occurring at other key roost sites in Aberdeenshire and further south, for example at Haddo House Lakes, where 24% of the current five year peak mean was counted, and Loch of Lintrathen with 49% of the current five year peak mean. However, the long-term trend at these sites is currently less clear.

In Orkney, which has dramatically increased in importance for Icelandic Greylag Geese in recent years, numbers appear to have stabilised to some extent. This area is the most important of several where difficulties in determining the origins of the Greylags continue to hamper the accurate estimation of population size in this and the other two populations of Greylag Goose occurring in Scotland. Research and monitoring that provides a much improved understanding of the dynamics of these populations is urgently needed.

Two sites attained international importance. The first, Threipmuir & Harlaw Reservoirs supported an remarkable count of more than 5,000 birds. At the other, on the Rivers Eamont & Eden, a more modest increase was recorded but this is another area where doubts exist about the provenance of the Greylags and it is possible that at least a proportion of these birds are of naturalised origin.

Other notable counts were received from nine sites that do not qualify for international importance including a large count at the Ythan Estuary, an area that normally supports very few Greylags. Of interest is a count of 1,282 birds at Lough Foyle in March. Whilst most birds in Northern Ireland are thought to be of naturalised

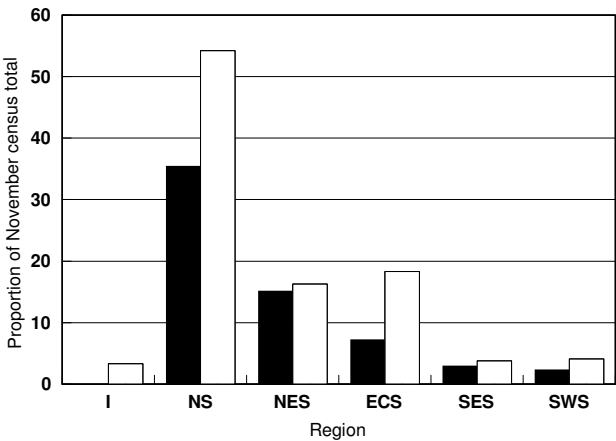


Figure 21. The regional distribution of Icelandic Greylag Geese in Britain and Ireland in October (black bars) and November (white bars) 1999. Key: I - Ireland, NS - north Scotland, NES - northeast Scotland, ECS - east central Scotland, SES - southeast Scotland & northeast England, SWS - southwest Scotland & northwest England.

stock, the size and timing of this count suggests that these may have been a pre-migratory gathering of Icelandic birds.

Productivity during 1999 was slightly below average with 13.9% young (*cf* a mean of 16.7% for 1990-99), though mean brood size of 2.8 young per successful pair compared favourably with a mean of 2.5 for the past ten years.

Hunting mortality in Iceland continued to fall to its lowest level since records began in 1995. However, it remains high and 33,901 were shot, compared to an average of 37,111 for the past five years. This decrease is a consequence of increased awareness among hunters there of the vulnerability of this population. However, despite this, the long-term trend for Icelandic Greylags is still one of decline and it may become necessary to enforce stricter hunting regulations to bring about a real change in fortunes for this population.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Lochs Davan & Kinord	³⁴ 36,525	³⁴ 26,185	³⁴ 24,346	³⁴ 4,400	³⁴ 10,000	Nov	20,291
Orkney Islands	³⁴ 9,931	³⁴ 9,338	³⁴ 13,361	³⁴ 18,110	³⁴ 17,933	Nov	13,735
Loch of Skene	12,300	³⁴ 12,876	³⁴ 11,200	9,890	³⁴ (6,110)	Oct	11,567
Caithness Lochs	³⁴ 12,376	³⁴ 5,378	³⁴ 7,200	³⁴ 12,731	³⁴ 10,017	Nov	9,540
Loch Eye/Cromarty Firth	³⁴ 8,716	³⁴ 5,320	³⁴ 5,416	³⁴ 9,181	³⁴ 5,674	Nov	6,861
Loch Spynie	³⁴ 5,500	³⁴ 5,500	³⁴ 3,000	³⁴ 6,500	³¹ 3,000	Dec	4,700
Bridge of Earn	³⁴ 3,000	-	-	-	-		3,000
Loch of Lintrathen	2,300	³⁴ 960	³⁴ 7,200	³⁴ 2,750	³⁴ 1,440	Oct	2,930
Haddo House Lakes	³⁴ 4,900	³⁴ 4,360	³⁴ 1,110	³⁴ 3,000	³⁴ 670	Nov	2,808
Dornoch Firth	³⁴ 1,937	1,132	3,211	2,352	³⁴ 3,351	Nov	2,397
Findhorn Bay	³⁴ 3,150	³⁴ 1,860	³⁴ 2,350	³⁴ 1,760	³⁴ 2,600	Oct	2,344
Tay-Isla Valley	³⁴ 1,661	2,096	³⁴ 1,155	³⁴ 4,640	³⁴ 2,075	Nov	2,325
Bute	³⁴ 4,280	³⁴ 1,797	³⁴ 1,200	³⁴ 1,055	³⁴ 1,780	Feb	2,022
Tay Estuary	³⁴ 1,358	³⁴ 1,080	³⁴ 650	4,350	³⁴ 2,221	Nov	1,932

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Drummond Pond	³⁴ 1,680	³⁴ 1,021	³⁴ 1,834	³⁴ 2,350	³⁴ 1,900	Nov	1,757
Carse of Stirling	³⁴ 1,535	-	-	-	-		1,535
Threipmuir & Harlaw Reservoirs	³⁴ 700	620	397	219	5,192	Mar	1,426 ▲
Loch Fleet Complex	³⁴ 960	³⁴ 1,200	³⁴ 843	³⁴ 2,970	980	Oct	1,391
Munlochy Bay	³⁴ 200	600	³⁴ 945	³⁴ 3,702	³⁴ 1,299	Nov	1,349
Strathearn (West sites)	³⁴ 2,665	³⁴ 0	-	-	-		1,333
Loch of the Clans	-	³⁴ 1,942	³⁴ 300	-	-		1,121
Loch Garten	³⁴ 1,987	³⁴ 587	³⁴ 735	-	-		1,103
Stranraer Lochs	³⁴ 760	-	³⁴ 645	2,717	³⁴ 176	Oct	1,075
R. Eamont & Eden: H'pot to E'hall	-	601	1,023	1,344	1,300	Mar	1,067 ▲
Kilconquhar Loch	1,135	1,300	1,216	797	³⁴ 844	Nov	1,058
Birgham Haugh	-	1,035	-	-	-		1,035

Internationally or nationally important sites not counted in last five years

Fincastle Loch
R. Spey: Boat of Balliefirth
R. Eamont: Watersmeet to Pooley Bridge
R. Tay: Dunkeld
Corby Loch

Sites no longer meeting table qualifying levels

Lower Bogrotten
Upper Tay Sites
R. Eden & Eamont confluence

Lindisfarne
Holburn Moss
Carlhurlie Reservoir

Other sites surpassing table qualifying levels in 1999-2000

Ythan Estuary/Slains Lochs 2,880 Dec
Loch Ken 1,742 Dec
Muir o' Lea Lochan 1,356 Mar
Eden Estuary 1,200 Mar
Carsebreck & Rhynd Lochs ³⁴ 1,060 Nov
Milton Loch 1,000 Feb
R. Forth: Meiklewood 1,000 Mar
Summerston 1,000 Nov

NORTHWEST SCOTTISH POPULATION

International threshold: 50
Great Britain threshold: 50

GB max: 6,434 Aug

% young: 29.1 brood size: 2.9

As with some other goose populations that frequent remote parts of Scotland, the annual monitoring effort currently in place for native Greylag Geese does not allow a full estimation of population size to be made each year. The index derived from the counts that are undertaken suggests that the population did increase during the previous twelve months, the peak total being 8% higher than in 1998-99. However, the full census conducted in 1997 recorded a minimum of 9,618 birds (Mitchell *et al.* 2000) and so it is

likely that the population now consists of at least 10,000 individuals.

The six key sites for this population listed in the table include a new addition, Colonsay/Oronsay. A notable count was also made at Kentra Moss/Loch Shiel in December. Of the five other sites, the count on North Uist was 23% greater than the five year peak mean. Numbers on South Uist and Tiree also remained above average, but decreases were recorded on Coll and, to a lesser extent, Benbecula.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Tiree	²⁷ 1,451	²⁸ 2,475	²⁷ 2,417	² 3,137	²⁸ 3,109	Nov	2,518
North Uist	²¹ 1,345	²¹ 1,630	²¹ 1,670	²¹ 1,318	²¹ 1,808	Aug	1,554
South Uist	²¹ 1,157	²¹ 1,270	²¹ 1,046	²¹ 1,336	²¹ 1,362	Aug	1,234
Coll	²⁷ 707	²⁸ 1,016	²⁸ 953	²⁸ 912	²⁸ 587	Mar	835
Benbecula	²¹ 264	²¹ 440	²¹ 595	²¹ 567	²¹ 374	Aug	448
Colonsay/Oronsay	-	²⁸ 175	²⁸ 225	²⁸ 208	²⁸ 174	Mar	196

RE-ESTABLISHED POPULATION

GB max: 21,004 Jan
NI max: 1,663 Mar

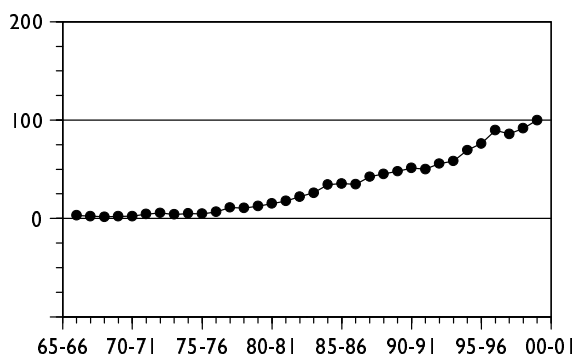


Figure 22. Annual indices for naturalised Greylag Geese in GB

The long-term increase in re-established Greylags continued during 1999-2000, reaching yet another all-time high. Similarly in Northern Ireland, there was a large increase on the previous peak count of 967. However, the accuracy of this estimate is compromised by uncertainties over the true status of some Greylag Geese there. Efforts to gain a better understanding of this are currently being developed and the national census of naturalised geese that took place during summer 2000 will provide an important starting point.

Naturalised re-establishment[†]

As in previous years, the most important area for this population was the North Norfolk Coast, where, despite a slight decrease in the peak count, the five year peak mean increased still further. A similar trend was noted at the Lower Derwent Valley, the second most important site and the only other to consistently hold more than 1,000 birds, although the decrease in numbers since the previous year was considerably sharper, with just 69% of the current five year mean recorded. However, such fluctuations in local population size are typical of re-established Greylag Geese and many of the other sites listed also showed such unpredictable increases or decreases in the number of birds.

In contrast, some sites do show clearer trends, for example the increases at Nosterfield Gravel Pits, although presumably the same birds were involved in the high count on the new workings, and Hornsea Mere, and the decreases at Llyn Traffwll, Wynyard Lake, Emberton Gravel Pits and Hamford Water.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites with mean peak counts of 300 or more birds in Great Britain[†]							
North Norfolk Coast	1,204	1,669	2,177	1,892	1,837	Aug	1,756
Lower Derwent Valley	1,304	1,200	1,063	1,200	763	Nov	1,106
Bolton-on-Swale Gravel Pits	572	955	635	508	880	Sep	710
Tophill Low Reservoirs	481	561	450	990	850	Dec	666
Bough Beech Reservoir	650	-	-	-	-		650
Sutton/Lound Gravel Pits	458	570	650	-	800	Jan	620
Alton Water	815	514	647	542	550	Dec	614
Orwell Estuary	237	440	³⁷ 799	563	³⁷ 989	Nov	606
Tattershall Pits	-	700	340	³¹ 770	570	Dec	595
Swale Estuary	673	456	589	574	653	Oct	589
Wash	511	747	314	683	476	Sep	546
Nosterfield Gravel Pits	23	129	771	682	993	Dec	520
Kirkby-on-Bain Gravel Pits	-	(64)	627	376	541	Nov	515
Little Paxton Gravel Pits	644	518	655	300	399	Sep	503
Ouse Washes	³¹ 532	521	453	276	³¹ 596	Oct	476
Heigham Holmes	373	538	410	577	-		475
Humber Estuary	126	459	854	419	443	Oct	460
Langtoft West End Gravel Pits	550	420	490	635	165	Dec	452
Dungeness Gravel Pits	446	381	473	440	517	Aug	451
WWT Martin Mere	458	420	419	435	460	Sep	438
Llyn Traffwll	466	349	646	464	252	Sep	435
Eccup Reservoir	259	393	368	550	600	Dec/Jan	434
Revesby Reservoir	602	273	571	385	302	Sep	427
Hornsea Mere	-	-	98	441	714	Sep	418
Derwent Reservoir	³¹ 950	198	442	360	128	Feb	416
Earls Barton Gravel Pits	486	542	284	363	398	Sep	415
Livermere	335	330	300	334	655	Aug	391
Abberton Reservoir	223	307	297	537	589	Oct	391

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Medway Estuary	361	290	203	722	365	Feb	388
Thrapston Gravel Pits	305	417	520	370	276	Dec	378
Llyn Alaw	335	445	312	376	384	Sep	370
Wynyard Lake	241	224	710	376	280	Sep	366
Morecambe Bay	287	370	401	351	411	Feb	364
Baston/Langtoft Gravel Pits	270	349	320	450	380	Jan	354
Willen Lake	186	569	280	392	295	Jul	344
Emberton Gravel Pits	99	315	602	420	280	Feb	343
Dee Flood Meadows	220	230	430	521	310	Oct	342
Bardney Pits	250	290	350	450	350	Jan	338 ▲
Buckden & Stirtloe Gravel Pits	16	506	149	649	330	Dec	330
Linford Gravel Pits	365	409	301	232	323	Dec	326 ▲
Hamford Water	576	358	168	284	182	Sep	314
Beaulieu Estuary	289	345	239	270	381	Feb	305 ▲
St Benet's Levels	336	268	268	118	528	Sep	304 ▲

Sites with mean peak counts of 50 or more birds in Northern Ireland †

Lough Foyle	43	88	383	157	1,282	Mar	391
Strangford Lough	173	351	379	489	367	Feb	352
Loughs Neagh & Beg	347	448	510	296	71	Jan	334
Belfast Lough	77	86	86	122	112	Jan	97
Temple Water	158	15	-	-	-		88

Important sites not counted in last five years

R. Wensum: Fakenham to Great Ryburgh

Other sites surpassing table qualifying levels in 1999-2000

Didlington Lakes	530	Jan	Rutland Water	340	Jan
Hay-a-Park Gravel Pits	501	Sep	Middle Yare Marshes	340	Sep
Hickling Broad	460	Dec	R. Avon: R'wood to Christchurch	339	Dec
Grimsthorpe Lake	365	Dec	Cranwich Gravel Pits	328	Aug
Benacre Broad	344	Sep	Fletton Brick Pits	310	Nov

† as site designation does not occur and the 1% criterion is not applied, qualifying levels of 300 and 50 have been chosen to select sites in Great Britain and Northern Ireland, respectively, for presentation in this report

BAR-HEADED GOOSE

Anser indicus

Escape

Native range: Southern Asia

For the second year running, numbers recorded by WeBS increased and gave a summed maximum of 97 birds. However, the number of sites where birds were recorded was slightly down on the previous year, from 54 to 46. Nineteen of these held more than one bird and

counts of six or more were as follows: 11 at Draycote Water, nine at Queen's Park, Derbyshire, eight at Spade Oak Gravel Pit, seven at Edington Lake and six at Stodmarsh NNR & Collards Lagoon.

SNOW GOOSE

Anser caerulescens

Escape and vagrant

Native range: North America

GB max: 59 Jan
NI max: 1 Jan

Numbers rose in 1999-2000 after the considerable decrease in the previous year. Summed site maxima for the 44 sites at which the species was found was 129 birds, compared with 110 in 1998-99. Sites that held ten or more birds were as follows: 21 at Eversley Cross & Yateley Gravel

Pits, 19 at Stratfield Saye and 12 at Blenheim Park Lake. A further sixteen sites held more than two birds. A single at Belfast Lough in January is noteworthy as this species is rarely recorded in Northern Ireland by WeBS.

ROSS'S GOOSE
Anser rossii

Escape
Native range: North America

Singles were at Croxall Pits, Drakelow Gravel Pit and Irvine/Garnock Estuary during 1999-2000.

EMPEROR GOOSE
Anser canagicus

Escape
Native range: Alaska and NE Siberia

Both the summed maxima and the number of sites where this species was recorded increased for the fifth consecutive year. In addition to singles at eight sites,

three were at Ramsbury Lake and two were at Morecambe Bay .

CANADA GOOSE
Branta canadensis

Naturalised introduction†
Native range: North America

GB max: 49,990 Nov
NI max: 610 Jan

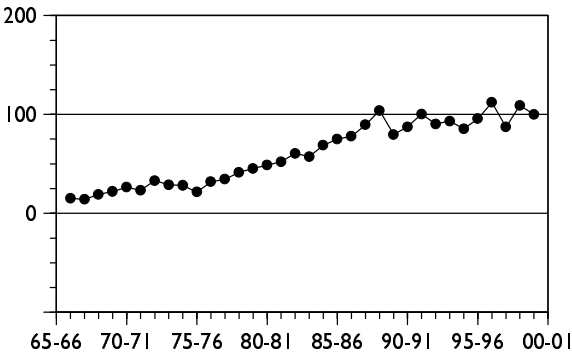


Figure 23. Annual indices for Canada Goose in GB

Not for the first time, the index value and peak national total provide a contrasting understanding of the British Canada Goose population. The index shows a decline since the previous year and a long-term trend of stability for the past 13 years. However, the peak national total has increased by 17.5% since 1998-99. This underlines the inadequacies of the index technique since sites where much of the expansion is occurring are not included in the current index calculations

due to an insufficient run of data.
The key sites remained Rutland Water and the Arun Valley, despite decreases from the previous year. Several other key sites have also shown declines over the past 3-5 years, including Fairburn Ings, Walthamstow Reservoirs and the Lower Derwent Valley. In contrast, the Dee Estuary (Eng/Wal) has shown a fairly consistent increase over the past five years, as have Blithfield and Abberton Reservoirs and Harewood Lake. Other large counts during 1999-2000 were recorded at the Dyfi Estuary, Bewl Water and the Middle Tame Valley Gravel Pits.
Few declines are evident over the current five year period, those at Holme Pierrepont Gravel Pits and Chew Valley Lake being the most striking.
In Northern Ireland, the peak total rose even though numbers at the top three sites showed no pattern of increase, suggesting that expansion away from the key sites is also occurring there.

Table with 8 columns: Sites with mean peak counts of 600 or more birds in Great Britain †, 95-96, 96-97, 97-98, 98-99, 99-00, Mon, Mean. Rows include Rutland Water, Arun Valley, Dyfi Estuary, Dee Estuary (Eng/Wal), Fairburn Ings, Walthamstow Reservoirs, Lower Derwent Valley, Blithfield Reservoir, Bewl Water, Middle Tame Valley Gravel Pits, Stour Estuary, and Southampton Water.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Chew Valley Lake	855	740	780	631	660	Jul	733
King's Bromley Gravel Pits	627	726	641	804	814	Jul	722
Abberton Reservoir	550	433	608	989	928	Aug	702 ▲
Kedleston Park Lake	(900)	360	650	650	800	Nov	672
Holme Pierrepont Gravel Pits	648	1,001	715	446	498	Jan	662
Tundry Pond	-	255	840	730	815	Sep	660
Harewood Lake	417	620	560	670	943	Nov	642 ▲
Port Meadow	(320)	700	500	710	³¹ 490	Jan	600

Sites with mean peak counts of 50 or more birds in Northern Ireland †

Upper Lough Erne	194	451	170	96	222	Jan	227
Drumgay Lough	265	236	172	260	110	Jan	209
Strangford Lough	185	257	³⁷ 204	161	153	Oct	192

Sites not counted in last five years

Woodford River

Other sites surpassing table qualifying levels in 1999-2000

Cleddau Estuary	1,108	Oct
Colliford Reservoir	759	Jun
Ellesmere Lakes	737	Sep
Watermead Gravel Pits	664	Nov

† as site designation does not occur and the 1% criterion is not applied, qualifying levels of 600 and 50 have been chosen to select sites in Great Britain and Northern Ireland, respectively, for presentation in this report

BARNACLE GOOSE

Branta leucopsis

GREENLAND POPULATION

GB max: 37,776 **Nov**
NI max: 0

International threshold: 320
Great Britain threshold: 270
All-Ireland threshold: 75

% young: 8.1 **brood size:** 1.9

Numbers on Islay increased slightly again, reaching another new peak count and maintaining the steady increase there. Elsewhere, there were decreases at a number of sites, namely Tiree, North Uist and Coll, although at the first site numbers were still above average. Counts were not available from South Walls.

Breeding success in 1999 among birds on Islay was lower than the average for the last ten years of 10.6% young and mean brood size of 2.0 (M.A. Ogilvie *in litt.*). Hunting mortality in Iceland accounted for 1,362 birds, considerably lower than the mean for the past five years (1,952).

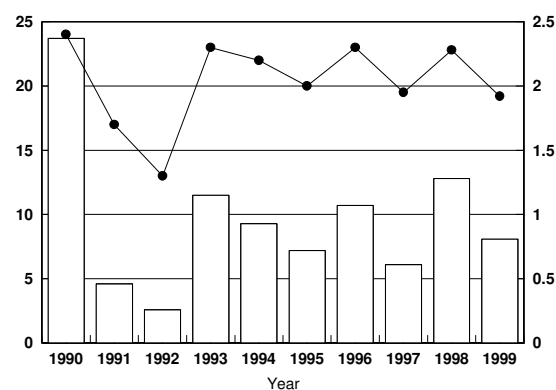


Figure 24. Productivity in Greenland Barnacle Geese, 1990-99; proportion of young (bars, left hand axis) and mean brood size (line, right hand axis) from age assessments on Islay.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Islay	²⁷ 31,099	²⁷ 35,013	²⁷ 32,812	²⁶ 35,172	²⁶ 35,429	Nov	33,905
Tiree	³ 1,465	³ 1,479	³ 1,158	² 1,572	²⁸ 1,123	Mar	1,359
Sound of Harris	-	⁸ 1,351	-	-	-	-	1,351
North Uist	-	⁸ 600	1,414	²¹ 1,648	²¹ 1,491	Feb	1,288
South Walls	¹⁸ 1,138	¹⁸ 1,170	¹⁸ 1,180	¹⁷ 1,140	-	-	1,157
North Sutherland	-	⁸ 792	-	-	-	-	792
Coll	³ 682	³ 861	³ 715	³ 931	²⁸ 667	Mar	771
Monach Isles	-	⁸ 760	-	-	-	-	760
Keills Peninsula & Isle of Danna	³ 120	³ 341	³ 469	²⁸ 720	²⁸ 610	Mar	452
Colonsay/Oronsay	³ 309	³ 429	³ 436	²⁸ 463	²⁸ 600	Mar	447

SVALBARD POPULATION

International threshold: 120
Great Britain threshold: 120

GB max: 25,858

% young: 10.9 brood size: 1.6

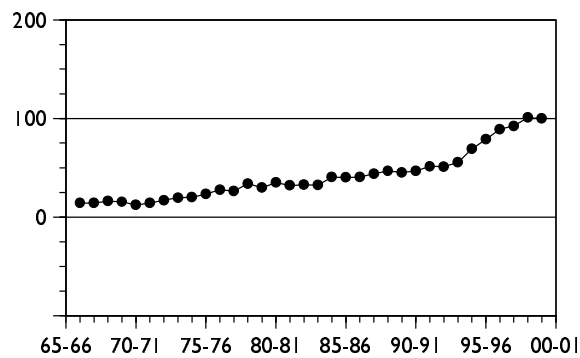


Figure 25. Annual indices for Svalbard Barnacle Geese in GB

The peak national total showed a slight decrease from 1998-99, though it remains too early to suggest that population growth may have levelled off. The decline arose due to low productivity in 1999, with just 10.9% young in autumn flocks recorded mean brood size among successful pairs of 1.6 goslings.

The arrival of birds on the Solway was later than normal overall, although the first birds, a flock of 80, were recorded on the same day as the previous year (20 September). By 2 October there were 2,650, but four days later there were 15,400. Many of these are thought to have arrived by an indirect route as thousands, probably forced south by strong winds, were observed flying north past South Tyneside on 4th and 5 October. The departure from the Solway was completed in late April, with 3,300 there on 25 April, falling to 470 on 29 April and none the following day (although a few were seen in early May).

At Loch of Strathbeg, the arrival was considerably later than the previous year, with no

more than 60 birds present until 8 October (Phillips *et al.* 2000), when the autumn peak of 217 was reached, far fewer than that of the previous autumn. However, the peak midwinter count was higher, with 513 counted in December. As usual, this site was little used during the northerly spring passage, with only 126 present on 1 May.

Current research continues in a number of areas. During winter 1999-2000, 20 birds on the Solway were fitted with radio transmitters: 10 at WWT Caerlaverock and 10 at RSPB Mersehead. Detailed information on the day-to-day movements of these individuals was collected and some interesting patterns on the use they made of the Solway area were apparent, although the final results of this study are not yet available. In total, 249 Barnacle Geese, or c. 1% of the Svalbard population, were caught and ringed during winter 1999-2000.

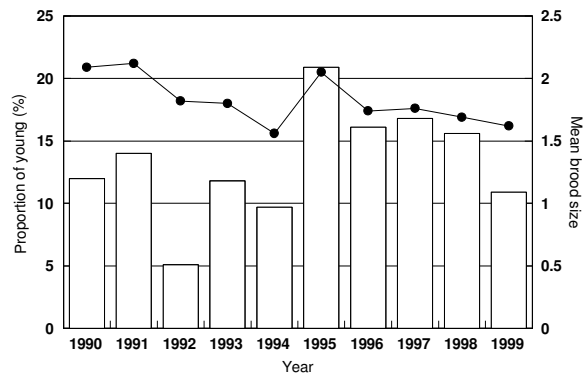


Figure 26. Productivity in Svalbard Geese, 1990-99: proportion of young (bars) and mean brood size (dots) from age assessments on the Solway.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Solway Estuary	³² 17,450	³² 24,360	³² 23,754	³² 26,040	³² 25,750	Nov	23,471
Loch of Strathbeg	533	165	353	6,200	²⁴ 513	Dec	1,553
Sites no longer meeting table qualifying levels							
Inner Moray Firth							

NATURALISED POPULATION

Naturalised establishment[†]

GB max: 858 Dec
NI max: 136 Oct/Jan

The top two sites remained Eversley Cross & Yateley Gravel Pits and Hornsea Mere, with an especially large count at the latter.

Elsewhere, the size of the naturalised flock on the Duddon Estuary remained similar to last year's high. The decline at Stratfield Saye is likely to be at least partly explained by the increase at nearby Eversley Cross. In Northern Ireland, numbers at the only site listed, Strangford Lough,

remained stable.

As with some other naturalised populations, there is always some uncertainty about the true origins of some of these birds. It is possible that some birds in East Anglia could be from the Russian/Baltic population that winters predominantly in the Netherlands, but this can only be determined with any certainty by the observation of marked individuals.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites with mean peak counts of 50 or more birds in Great Britain[†]							
Eversley Cross & Yateley GP	218	311	184	220	187	Feb	224
Hornsea Mere	-	-	0	314	326	Dec	213
Stratfield Saye	34	141	142	1	28	Dec	69
Severn Estuary	96	46	33	83	59	Sep-Dec	63
Duddon Estuary	4	0	1	152	155	Sep	62 ▲
Middle Yare Marshes	16	56	56	70	80	Nov	56 ▲
Sites with mean peak counts of 50 or more birds in Northern Ireland[†]							
Strangford Lough	89	129	148	122	136	Oct/Jan	125
Sites surpassing table qualifying levels in 1999-2000							
Benacre Broad	56	Sep					
Medway Estuary	63	Feb					

[†] as site designation does not occur and the 1% criterion is not applied, a qualifying level of 50 has been chosen to select sites for presentation in this report

DARK-BELLIED BRENT GOOSE

Branta bernicla bernicla

GB max: 90,919 Nov
NI max: 9 Oct

International threshold: 3,000
Great Britain threshold: 1,000
All-Ireland threshold: +

% young: 23.5 **brood size:** 2.44

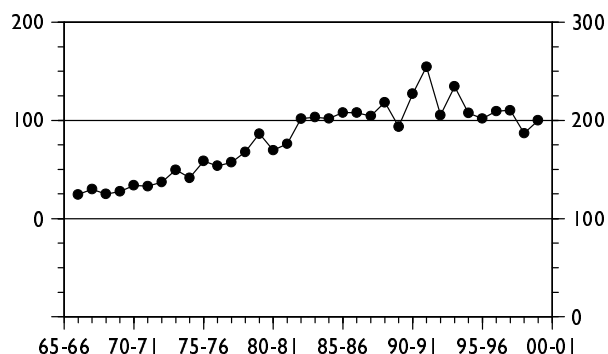


Figure 27. Annual indices for Dark-bellied Brent Goose in GB

After last year's slump in the peak national count, the number of Dark-bellied Brent Geese recovered somewhat during 1999-2000, although the total remained lower than in any year between 1990-91 and 1997-98. Productivity during

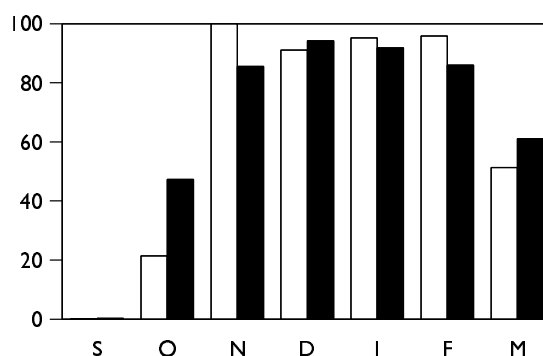


Figure 28. Monthly indices for Dark-bellied Brent Goose in GB (white bars 1999-2000; black bars 1994-95 to 1998-99)

1999 was high, with 23.5% young in wintering flocks and a mean brood size 2.44 goslings per successful pair (Hearn 2000b). This was the most successful breeding season since 1991 and the first time that productivity has exceeded the

estimated annual rate of 15% mortality (Summers & Underhill 1991) since 1993.

The nine sites of international importance in the UK remained unchanged from 1998-99, with the Wash supporting almost one third of the population. Counts on the Thames Estuary were well down on the previous four years and numbers at Hamford Water remained low. The sites of national importance were joined by the Burry Inlet, but otherwise remained unchanged. Numbers of geese were lower than average at nine of these sites and higher at seven. There were no counts available from the Exe Estuary.

The arrival into the UK occurred later than average, with around 20% of the peak national count present during October. However, by November, all birds had reached the UK. This is in accordance with established phenological patterns, with later arrival in years of successful breeding and early arrival in years of breeding failure (Ebbinge *et al.* 1999). For the remainder of 1999-2000, numbers were very typical for the time of year.

Research in the Dutch spring staging areas has shown how Brent Geese are excluded from saltmarshes by succession (van der Wal *et al.* 2000). On the island of Schiermonnikoog the number of Brent Geese has remained stable for the past 20 years, despite an increase in both the total population size and the extent of the saltmarsh habitats there. The distribution of the geese over this period showed that they selected younger areas of saltmarsh where their preferred forage species were found. In older saltmarshes,

geese face a greater proportion of non-preferred forage species and spend less time foraging. These results emphasise the importance to Brent Geese of areas where new saltmarshes can develop. The tendency in eastern England, however, is to saltmarsh loss (though rising sea levels and sinking land levels) and this highlights the need to enable saltmarsh (re)creation through a policy of managed coastal retreat in relevant areas. This was further highlighted by Pettifor *et al.* (2000) who have shown, by developing an individual-based behavioural model for this population, that it is vulnerable to losses of wintering and spring-staging habitats. Studies of the forage preferences of Brent Geese feeding on agricultural land have recently suggested that the geese prefer white clover to three common grass species. These results have been used to develop a better scientific basis for the creation and management of grassland alternative feeding areas to help reduce damage levels due to goose grazing (McKay *et al.* 2001).

A draft International Action Plan for this population of Brent Geese was discussed by the first Meeting of Parties to the African-Eurasian Migratory Waterbird Agreement in November 1999. This plan builds upon and seeks to implement (at government level) the Flyway Management Plan developed several years ago (van Nutgeren 1997). It is to be hoped that the Action Plan, which focuses relevant conservation issues operating at a range of scales, will shortly be implemented.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Wash	21,023	23,001	23,797	17,736	28,811	Nov	22,874
Thames Estuary	10,714	15,393	17,014	14,100	7,346	Feb	12,913
North Norfolk Coast	8,110	8,793	14,088	²⁴ 10,100	²⁴ 12,969	Jan	10,812
Chichester Harbour	10,769	8,997	8,427	8,142	9,267	Jan	9,120
Blackwater Estuary	8,525	10,641	10,290	5,160	9,838	Feb	8,891
Hamford Water	14,466	9,286	4,194	2,320	3,879	Nov	6,829
Langstone Harbour	6,215	5,520	6,344	³⁷ 6,230	6,928	Feb	6,247
Crouch-Roach Estuary	3,820	5,292	5,644	2,452	5,488	Jan	4,539
Colne Estuary	3,529	3,493	4,263	(2,685)	(3,614)	Jan	3,762
Sites of national importance in Great Britain							
Fleet/Wey	2,630	3,529	3,048	2,290	1,404	Nov	2,580
Portsmouth Harbour	2,773	2,785	³⁷ 2,505	2,169	2,661	Feb	2,579
North West Solent	2,643	2,279	(2,810)	2,659	2,114	Jan	2,501
Medway Estuary	2,733	2,526	2,725	2,580	1,845	Feb	2,482
Deben Estuary	2,536	3,306	2,094	1,268	2,139	Jan	2,269
Southampton Water	3,007	1,821	2,160	³⁷ 1,533	³⁷ 2,480	Feb	2,200
Humber Estuary	2,078	(2,366)	1,532	2,540	2,404	Jan	2,184
Dengie Flats	2,440	2,000	2,290	2,600	1,550	Nov	2,176
Swale Estuary	1,903	3,141	1,803	2,215	1,800	Nov	2,172
Pagham Harbour	3,016	2,879	1,071	1,260	³⁷ 2,438	Nov	2,133

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Stour Estuary	1,801	1,757	2,173	2,367	1,769	Dec	1,973
Beaulieu Estuary	1,360	2,480	2,283	1,682	1,458	Jan	1,853
Exe Estuary	1,587	1,832	1,768	1,647	-		1,709
Newtown Estuary	(1,475)	1,676	1,472	1,180	(1,727)	Jan	1,514
Poole Harbour	1,460	1,644	1,449	1,297	1,354	Dec	1,441
Orwell Estuary	1,290	³⁷ 1,000	³⁷ 878	³⁷ 1,129	³⁷ 1,799	Jan	1,219
Burry Inlet	928	1,014	1,165	1,043	1,195	Jan	1,069 ▲

Other sites surpassing table qualifying levels in 1999-2000

Thanet Coast 1,420 Jan

BLACK BRANT

Branta bernicla nigricans

Vagrant

Native range: North America and east Asia

Singles were seen at Lough Foyle in October, Chichester Harbour in October, then presumably the same at Langstone Harbour in December and

January, and at Dengie Flats in December and the Crouch-Roach Estuary in December and March.

LIGHT-BELLIED BRENT GOOSE

Branta bernicla hrota

CANADIAN POPULATION

GB max: 85 Feb
NI max: 15,356 Nov

International threshold: 200
Great Britain threshold: +†*
All-Ireland threshold: 200

* 50 is normally used as a minimum threshold

% young: 15 brood size: 2.6

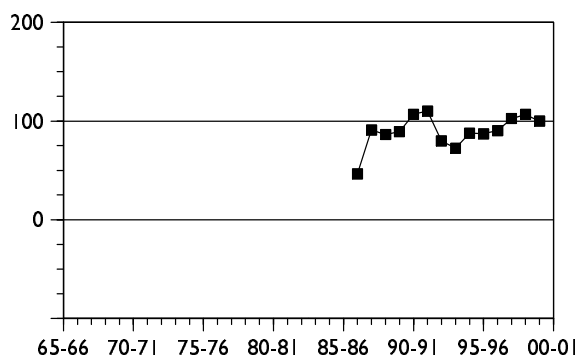


Figure 29. Annual indices for Light-bellied Brent Goose in NI

The fourth annual all-Ireland census recorded a peak of 19,183 geese during October 1999, 83% of which were at Strangford Lough and 10% at Lough Foyle. Productivity improved for the second consecutive year, explaining the recent increase in the numbers of birds present in Ireland.

Strangford Lough and Lough Foyle continue to hold the largest concentrations in Northern Ireland during the early autumn, acting as landfall sites. Vast swards of *Zostera* attract geese to

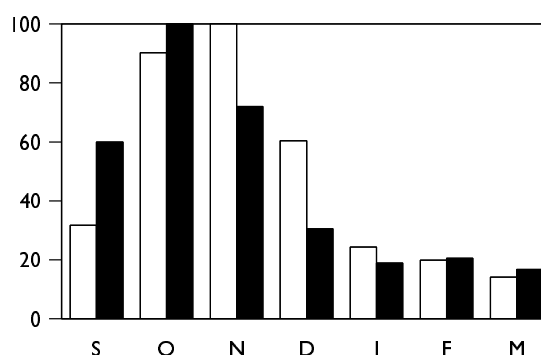


Figure 30. Monthly indices for Light-bellied Brent Goose in NI (white bars 1999-2000; black bars 1994-95 to 1998-99)

these estuaries at this time (Ó Briain & Healy 1991). Monthly indices demonstrate that numbers peaked in the province during October and November 1999 and then fell as the winter progressed. In late winter, the majority of Light-bellied Brent Geese redistribute throughout the rest of Ireland, the Channel Islands and northern France (Colhoun 2001). Interestingly, increasing numbers of birds are recorded at resorts in the southwest of England, often in mixed flocks with Dark-bellied Brent Geese.

Sites of international importance in the UK

Strangford Lough	11,337	11,614	11,184	13,196	13,376	Nov	12,141
Lough Foyle	5,550	4,757	3,820	2,766	1,934	Nov	3,765
Carlingford Lough	189	242	317	642	358	Feb	350
Killough Harbour	122	254	-	¹⁵ 557	-		311
Larne Lough	209	177	232	218	253	Jan	218
Outer Ards	196	326	54	221	215	Feb	202

Sites of national importance in Great Britain †

Inland Sea	³⁷ 46	63	17	23	51	Feb	40
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Other sites surpassing table qualifying levels in 1999-2000

Guernsey Shore	31	Feb
Foryd Bay	27	Jan
Camel Estuary	26	Sep/Oct

† as no British threshold has been set, a qualifying level of 25 has been chosen to select sites for presentation in this report

SVALBARD POPULATION

GB max: 1,784 Nov

Lindisfarne remains the key site for this population in Great Britain although numbers in 1999-2000 were 36% lower than the five year mean. Consequently, the British maximum in November was also much lower than normal. In contrast, the international population estimate has remained relatively stable in recent years, peaking at 5,900 in 1999-2000 (P. Clausen, M.J.H. Denny & S.M. Percival pers. comm.). This suggests that only 30% of this population

International threshold: 50

Great Britain threshold: 25*

* 50 is normally used as a minimum threshold

% young: 5.2 brood size: n/a

wintered in Great Britain during 1999-2000, the majority of which had departed by March. This is no surprise since much lower numbers of birds move from the continent during mild winters. Overall, reproductive success, measured throughout northwest Europe, was relatively low.

Away from northeast England, notable numbers were recorded on the Inner Moray Firth and at Langstone Harbour, although the latter may have been of Canadian origin.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Lindisfarne	2,470	4,092	2,567	2,812	1,767	Nov	2,742
Sites of national importance in Great Britain							
Seahouses to Budle Point	0	107	0	22	0		26

Sites no longer meeting table qualifying levels

Eden Estuary

RED-BREASTED GOOSE

Branta ruficollis

Vagrant and escape

Native range: SE Europe and Asia

Two on the Ouse Washes in February and one on the Deben Estuary in March may have been genuine vagrants. Singles present at Harewood

Lake during the summer and at Llyn Alaw in January, February and again in November were more likely to be escaped birds.

EGYPTIAN GOOSE

Alopochen aegyptiacus

Naturalised introduction[†]

Native range: Africa

GB max: 421 Sep

NI max: 0

The peak national count showed a sharp increase over the previous year, rising to a new all-time high and increasing by 13% over the previous highest peak count in 1997-98.

Numbers at several sites showed a dramatic increase during 1999-2000, notably Cranwich Gravel Pits, Trinity Broads, Snetterton Gravel Pits

and Stanford Training Area. Away from the East Anglian stronghold, only two sites supported 10 or more birds. The number at Rutland Water continued to increase and double figures were also noted at Etherow Country Park, Greater Manchester, a noteworthy concentration for a site so far west.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites with mean peak counts of 10 or more birds in Great Britain [†]							
North Norfolk Coast	97	113	198	170	197	Aug	155
St Benet's Levels	58	85	56	66	0		53
Cranwich Gravel Pits	-	-	8	26	92	Sep	42
Rutland Water	31	35	46	40	52	Dec	41
Lynford Gravel Pit	-	0	76	52	32	Jun	40
Trinity Broads	8	-	13	15	(58)	Jul	24
Middle Yare Marshes	6	4	52	16	44	Sep	24
Didlington Lakes	(28)	4	41	6	6	Feb	17
Nunnery Lakes	24	11	19	13	-		17
Snetterton Gravel Pits	-	-	-	2	29	Aug	16 ▲
Stanford Training Area	8	8	15	16	³¹ 30	Dec	15
Livermere	12	13	14	15	9	Jul	13

Sites no longer meeting table qualifying levels

Ampton Water

Sites not counted in last five years

Blickling Lake

Gunton Park Lake

Pentney Gravel Pits

R. Wensum: Fakenham to Great Ryburgh

Sennowe Park Lakes

Other sites surpassing table qualifying levels in 1999-2000

Breydon Water & Berney Marshes 15 Jun

Etherow Country Park 10 Jan/Feb

[†] as site designation does not occur and the 1% criterion is not applied, a qualifying level of 10 has been chosen to select sites for presentation in this report

RUDDY SHELDUCK

Tadorna ferruginea

Escape and possible vagrant

Native range: Asia, N Africa and S Europe

Summed maxima of 34 birds for the 21 sites where this species was recorded was higher than the previous year and similar to values in the mid 1990s.

The majority of sites held single birds but

four were at Hamford Water and the Humber Estuary, three were at the Ouse Washes and two were at both Chew Valley Lake and the Mersey Estuary.

CAPE SHELDUCK
Tadorna cana

Escape
Native range: S Africa

One was at Cropston Reservoir in September

PARADISE SHELDUCK
Tadorna variegata

Escape
Native range: New Zealand

A single was at Blithfield Reservoir in September.

SHELDUCK
Tadorna tadorna

International threshold: 3,000
Great Britain threshold: 750
All-Ireland threshold: 70

GB max: 57,421 Jan
NI max: 4,404 Jan

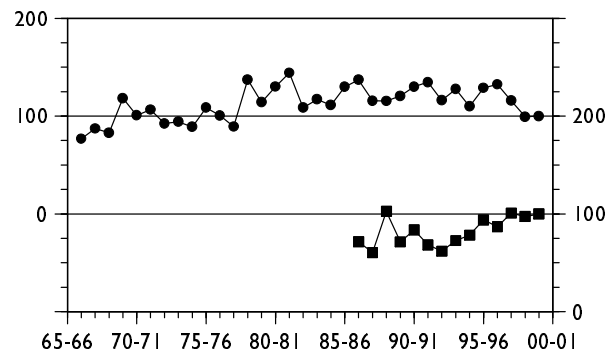


Figure 31. Annual indices for Shelduck in GB (circles, left axis) and NI (squares, right axis)

Peak counts in Great Britain fell for the third consecutive winter and were the lowest since the 1970s. Numbers were depressed in all months between September and March, though counts in the during December to February, when the peak typically occurs, seem to have been affected to a greater degree. Monthly indices support this, with the overall pattern suggesting a less pronounced peak than normal. The annual index value was almost unchanged from the previous year's low.

In Northern Ireland, the peak was very similar to those in recent winters. Annual indices have remained relatively stable since the mid 1990s following a rise in the early part of the

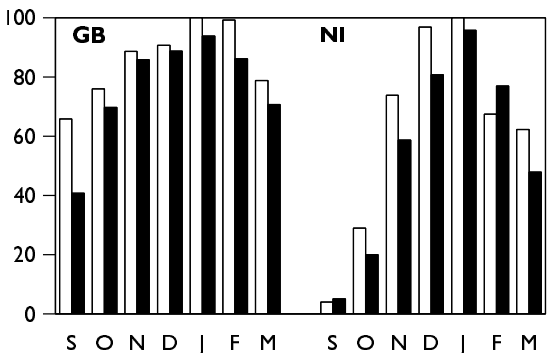


Figure 32. Monthly indices for Shelduck in GB and NI (white bars 1999-2000; black bars 1994-95 to 1998-99).

decade. Monthly indices suggest an above average proportion of birds present in the early winter months.

Not surprisingly, many key sites (over 70% of those featured in the table) held below average counts in 1999-2000. Most significant was a slump on the Wash, the peak being the lowest at the site since the mid 1970s. Sizeable decreases were also noted on the Severn Estuary, Poole Harbour and Hamford Water, whilst numbers at Langstone Harbour have fallen in each of the last four winters. Only the Mersey Estuary held notably high numbers, a result of the continuing growth of the recently established moulting flock in late summer (Wells & Friswell 2000).

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Wash	14,238	10,352	12,368	11,430	7,608	Nov	11,199
Mersey Estuary	4,507	7,025	14,516	10,600	15,070	Aug	10,344
Dee Estuary (Eng/Wal)	5,786	8,047	10,418	5,634	8,814	Oct	7,740
Morecambe Bay	6,098	5,632	8,426	8,030	6,225	Oct	6,882
Humber Estuary	5,240	(3,900)	(4,843)	5,262	4,020	Oct	4,841
Forth Estuary	5,077	5,065	5,507	4,684	3,775	Sep	4,822
Strangford Lough	³⁷ 4,673	³⁷ 3,493	³⁷ 4,142	3,574	3,193	Dec	3,815
Medway Estuary	3,853	³⁷ 5,618	4,160	1,951	2,629	Jan	3,642
Ribble Estuary	4,523	3,788	4,106	2,644	2,908	Oct	3,594

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Solway Estuary	3,293	3,450	3,370	4,049	³⁷ 3,270	Nov	3,486
Blackwater Estuary	4,356	4,129	2,123	(1,777)	3,093	Feb	3,425
Severn Estuary	3,508	4,117	2,371	³⁷ 3,730	2,098	Nov	3,165
Poole Harbour	3,575	4,650	2,662	2,318	2,192	Dec	3,079

Sites of national importance in Great Britain

Swale Estuary	2,782	2,760	3,027	3,015	2,929	Jan	2,903
Thames Estuary	2,472	3,094	2,089	2,121	1,804	Jan	2,316
Hamford Water	2,146	3,006	2,781	1,791	1,369	Feb	2,219
Stour Estuary	2,297	³⁷ 2,247	(2,029)	1,956	³⁷ 2,351	Feb	2,213
Alde Complex	1,074	765	1,935	2,129	1,664	Feb	1,513
Chichester Harbour	1,980	³⁷ 1,800	³⁷ 1,063	³⁷ 836	1,040	Jan	1,344
North Norfolk Coast	710	1,335	³⁷ 1,876	1,310	955	Jan	1,237
Colne Estuary	2,017	1,338	977	799	963	Nov	1,219
Burry Inlet	695	1,282	883	1,327	1,557	Dec	1,149
Orwell Estuary	1,989	1,039	³⁷ 939	³⁷ 645	846	Mar	1,092
Lindisfarne	855	1,295	927	973	1,224	Dec	1,055
Montrose Basin	1,039	596	³⁷ 1,174	973	1,071	Dec	971
Eden Estuary	930	(942)	1,088	(717)	768	Oct	932
Cleddau Estuary	1,008	1,023	939	921	696	Dec	917
Tees Estuary	1,267	893	837	755	784	Dec	907
Deben Estuary	950	824	875	895	952	Feb	899
Duddon Estuary	974	853	900	821	814	Nov	872
Crouch-Roach Estuary	³⁷ 1567	932	563	376	836	Feb	855
Langstone Harbour	1,477	889	826	³⁷ 700	368	Jan	852

Sites of all-Ireland importance in Northern Ireland

Belfast Lough	1,062	³⁷ 775	497	³⁷ 184	250	Mar	554
Larne Lough	371	440	505	711	414	Mar	488
Lough Foyle	508	527	439	446	419	Mar	468
Carlingford Lough	172	165	198	213	321	Feb	214
Loughs Neagh & Beg	146	188	240	211	157	Mar	188
Dundrum Bay	76	³⁷ 131	64	98	104	Dec	95

Other sites surpassing table qualifying levels in 1999-2000

WWT Martin Mere	913	Jan
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MAGELLAN GOOSE

Chloephaga picta

Escape
Native range: South America

The bird present at Merryton Ponds in 1998-99 remained until at least March 2000.

MUSCOVY DUCK

Cairina moschata

Escape
Native range: South America

GB max: 70 Nov
NI max: 0

For the second year running the peak national total and summed maxima were well below

previous years despite birds being recorded at 37 sites, a similar number to previous years.

Sites with more than five birds in 1998-99

Nafferton Mere	12	Nov	R. Devon: Kersiepow Ponds	7	Dec/Mar
Blairdrummond Safari Park Loch	10	Mar	Par Sands Pools/St Andrews Road	6	Oct/Nov/Dec
Redwell Fishery	7	Sept/Oct/Dec	Dart Estuary	5	Nov
Derwent Water	7	Nov	Margam Park Ponds	5	Nov

WOOD DUCK

Aix sponsa

Escape

Native range: North America

A similar number of birds were recorded in 1999-2000 but at fewer sites than in recent years. A maximum of three were at Thrapston Gravel Pits

and two at Middle Pool. Single birds were recorded at a further six sites, four of which were long staying birds.

MANDARIN

Aix galericulata

Naturalised introduction[†]

Native range: Eastern Asia

GB max: 268 Jan
NI max: 5 Aug/Sep

Peak national totals vary widely dependent on coverage of the small wooded or parkland lakes which are this species preferred habitat, sites which are seldom of importance for other wildfowl, and are often irregularly monitored. Counts in 1999-2000 were typical of recent years. There has been a welcome increase in coverage of key sites, with few data missing from sites featured in the table.

Additional information provided for ponds in the Forest of Dean illustrates that many sites holding significant numbers are still not covered by the scheme. Counts at many sites are prone to wide variation, partly a result of the suitability of WeBS methods (see Epsom Common in particular) and, with the exception of a relatively high count at Osterley Park Lakes, few sites held numbers significantly different from normal.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites with mean peak counts of 10 or more birds in Great Britain[†]							
Forest of Dean Ponds	-	-	²⁰ 146	²⁰ 221	²⁰ 195	Jan	187 ▲
Severn Estuary	40	113	40	102	32	Sep	65
Cuttmil Ponds	51	106	44	41	65	Jan	61
Arun Valley	51	48	59	45	46	Jun	50
Passfield Lake	-	48	15	66	(10)	Oct	43
Stockgrove Country Park	-	-	-	34	46	Jan	40
Epsom Common Ponds	²⁵ 133	4	6	8	-		38
Dee Flood Meadows	34	34	³¹ 38	38	36	Sep	36
Connaught Water	-	28	39	51	27	Oct	36
Osterley Park Lakes	19	24	27	20	41	Jun	26
Bradley Pools	-	-	-	-	26	Oct	26 ▲
Panshanger Flash	18	51	-	22	6	Sep	24
Overstone Park Lakes	20	18	32	-	-		23
Bramshill Park Lake	16	7	60	5	19	Oct	21
Norbury Pond	-	-	-	-	20	Jan	20 ▲
Fonthill Lake	10	18	(12)	5	23	Mar	14
Headley Mill Pond	-	4	16	12	18	Dec	13
Thursley Lake	35	8	6	4	-		13
Woburn Park Lakes	7	16	9	13	9	Nov	11 ▲

Important sites not counted in last five years

Frenchess Road Pond
Hammer Wood Pond
Paultons Bird Park
Virginia Water

Sites no longer meeting table qualifying levels

Fleet Pond

Other sites surpassing table qualifying levels in 1999-2000

Elfordleigh Golf & Country Club 11 Sep
Radnor Mere 11 Nov

[†] as site designation does not occur and the 1% criterion is not applied, a qualifying level of 10 has been chosen to select sites for presentation in this report

CRESTED DUCK

Lophonetta specularioides

Escape
Native range: South America

The bird first recorded in 1998-99 at Hindley Golf Course was present from September to November.

WIGEON

Anas penelope

GB max: 325,803 Jan
NI max: 13,686 Oct

International threshold: 12,500
Great Britain threshold: 2,800
All-Ireland threshold: 1,250

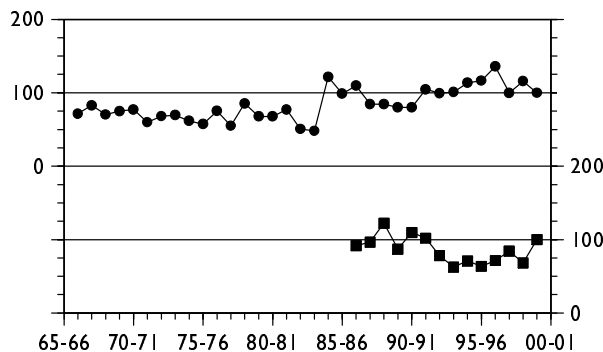


Figure 33. Annual indices for Wigeon in GB (circles, left axis) and NI (squares, right axis)

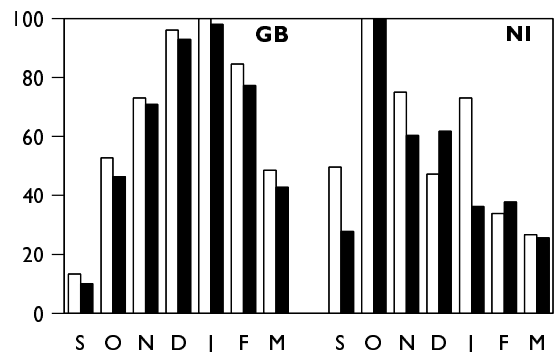


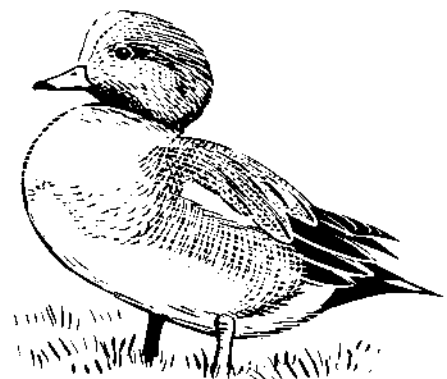
Figure 34. Monthly indices for Wigeon in GB and NI (white bars 1999-2000; black bars 1994-95 to 1998-99)

The peak British count was the lowest for six years though still well within the typical range for the last decade. Annual indices, which are based solely on January counts, dropped accordingly (down 13%) and monthly indices, slightly above average in all winter months, also suggest lower than normal midwinter counts. The Northern Ireland peak, predictably occurring in October, was the highest since 1991-92, and this, coupled with above average counts in several other months, saw indices for the province rise by almost 50%.

Counts on the Ribble Estuary, which have exceeded 100,000 in the past, barely surpassed half this value, those on the Severn Estuary and at Hamford Water were also well down on recent years, while the peak on Walland Marsh has fallen for three years in succession. In total, two-thirds of the key sites in Great Britain held below average numbers in 1999-2000. By contrast, counts at Breydon Water & Berney Marshes and the Blackwater Estuary have risen consistently during the last five years, numbers trebling and doubling respectively during this period. Reflecting the rise in Northern Ireland totals, all important sites in the province supported above average counts.

Studies of Wigeon and Light-bellied Brent

Geese on Strangford Lough suggest that lower tolerance to disturbance of the former may have been a contributory factor to the decline in numbers at the site since the 1970s (Mathers *et al.* 2000). Wigeon were more likely to fly greater distances once disturbed, and less likely to return to their former activities at the disturbed area. Energy requirement models which assessed the suitability of areas within Strangford Lough based on current disturbance activities correctly predicted the presence or absence of Wigeon. Such research into disturbance effects has important implications for the design and management of refuge areas, which need to be large enough to accommodate the most sensitive species.



	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Ribble Estuary	83,922	74,068	66,197	96,855	50,678	Nov	74,344
Ouse Washes	30,545	³¹ 31,980	26,922	³¹ 16,999	24,540	Dec	26,197
Swale Estuary	15,906	40,090	13,292	13,837	11,725	Jan	18,970
Somerset Levels	24,302	11,000	16,010	14,522	³¹ (21,965)	Jan	17,560
North Norfolk Coast	14,377	14,247	12,423	16,398	18,950	Jan	15,279
Dornoch Firth	12,540	11,615	17,240	13,282	9,305	Oct	12,796
Sites of national importance in Great Britain							
Cromarty Firth	11,973	8,516	11,199	9,338	³⁷ 14,956	Nov	11,196
Mersey Estuary	11,254	³⁷ 12,133	10,520	12,013	³⁷ 8,731	Jan	10,930 ▼
Nene Washes	11,526	8,090	12,699	13,533	6,994	Jan	10,568
Lower Derwent Valley	13,060	10,600	7,900	8,100	8,600	Dec	9,652
Breydon Wtr & Berney Marshes	4,300	6,500	10,200	11,200	14,130	Jan	9,266
Inner Moray Firth	8,200	10,097	7,964	8,208	9,746	Dec	8,843
Alde Complex	5,827	8,181	6,810	7,247	6,676	Jan	6,948
Middle Yare Marshes	6,223	7,189	6,306	5,460	5,387	Jan	6,113
Severn Estuary	6,267	11,548	5,304	4,011	3,276	Jan	6,081
Morecambe Bay	7,045	6,432	6,002	4,783	5,289	Nov	5,910
WWT Martin Mere	9,280	2,460	3,620	6,000	5,430	Feb	5,358
Humber Estuary	(3,000)	(5,802)	7,667	4,416	3,315	Oct	5,300
Walland Marsh	-	8,600	5,400	3,900	3,200	Jan	5,275
Arun Valley	5,138	4,411	5,155	4,421	4,173	Dec	4,660
Lindisfarne	3,662	4,368	5,600	4,612	5,006	Oct	4,650
Hamford Water	³¹ 6,040	9,511	2,668	2,825	1,959	Dec	4,601
Rutland Water	5,014	4,968	4,669	3,611	3,630	Jan	4,378
Loch of Harray	3,222	2,384	5,070	5,263	5,092	Mar	4,206
Montrose Basin	4,856	2,735	3,170	3,503	4,402	Jan	3,733
Medway Estuary	5,131	2,951	3,736	4,592	1,751	Jan	3,632
Exe Estuary	2,263	3,184	4,344	4,231	-		3,506
Cleddau Estuary	3,455	3,351	3,058	4,009	3,532	Dec	3,481
Dyfi Estuary	4,363	4,681	2,911	2,489	2,900	Dec	3,469
Dee Estuary (Eng/Wal)	2,191	3,682	5,366	3,302	2,751	Dec	3,458
Southampton Water	3,804	3,233	2,790	2,830	3,924	Jan	3,316
Thames Estuary	3,690	5,146	1,260	3,407	2,775	Jan	3,256
Foryd Bay	3,740	2,330	1,980	4,140	3,350	Oct	3,108
Blackwater Estuary	2,080	2,534	3,031	3,401	4,296	Feb	3068 ▲
Burry Inlet	2,252	4,436	3,144	2,514	2,821	Jan	3,033
Fleet/Wey	2,957	3,021	2,637	4,262	1,889	Jan	2,953
Dungeness Gravel Pits	3,919	4,011	1,770	2,274	2,291	Dec	2853 ▲
Stour Estuary	1,958	³⁷ 3,847	3,628	2,277	³⁷ 2,518	Dec	2,846
Sites of all-Ireland importance in Northern Ireland							
Lough Foyle	8,438	6,850	9,440	8,829	11,496	Oct	9,011
Loughs Neagh & Beg	3,229	2,398	3,052	2,333	5,743	Jan	3,351
Strangford Lough	2,457	1,900	1,937	2,153	2,469	Nov	2,183
Sites no longer meeting table qualifying levels							
Fen Drayton Gravel Pits							
Upper Lough Erne							
Other sites surpassing table qualifying levels in 1999-2000							
Ashleworth Ham	5,662	Jan					
R. Avon: R'wood to Christchurch	3,051	Jan					

AMERICAN WIGEON

Anas americana

During 1999-2000 seven singles were recorded at Hayle Estuary, Dorchester Gravel Pits, Cors Caron, Irvine/Garnock Estuary, Moray Coast, Lossie Estuary and Loch of Tankerness. As in the

Vagrant

Native range: North and Central America

previous year the Dorchester bird was present during the summer months and is considered unlikely to be a genuine vagrant.

CHILOE WIGEON

Anas sibilatrix

Singles were present at Ramsbury Lake, Alexandra Park, Hastings, Ouse Washes and Gibraltar Point Mere.

Escape

Native range: South America

GADWALL

Anas strepera

GB max: 15,542 Jan
NI max: 251 Feb

International threshold: 300
Great Britain threshold: 80
All-Ireland threshold: +†

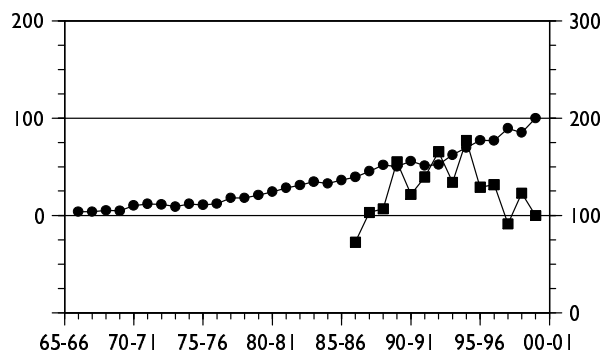


Figure 36. Annual indices for Gadwall in GB (circles, left axis) and NI (squares, right axis)

The prolific growth in British numbers continued in 1999-2000, national totals again reaching a record high. Indices suggest a doubling of the winter population in the last decade, a rate surpassed only by the re-established population of Greylag Geese. The January peak was slightly later than the usual month of November or December. The species remains relatively scarce in Northern Ireland where totals seldom surpass 300 birds and fluctuate considerably between months and years. Numbers in the Republic of Ireland have, however, shown a considerable increase since I-WeBS counts began in 1994-95 (Colhoun 2001), and analysis of the whole Irish dataset may cast some light on the unusual monthly index pattern observed in Northern

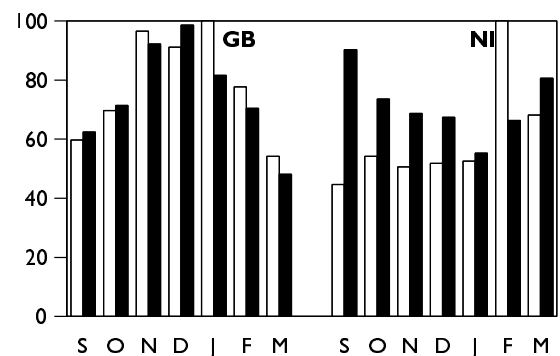


Figure 37. Monthly indices for Gadwall in GB and NI (white bars 1999-2000; black bars 1994-95 to 1998-99)

Ireland, where numbers are typically lowest in mid winter.

The important sites listed in the table reflect the strong southerly and easterly bias in distribution, with only a handful of sites lying north of a line from the Humber to Liverpool Bay. Numbers at many sites fluctuate considerably between years, though counts at Loch Leven, Hampton & Kempton Reservoirs and Thorpe Water Park are noteworthy following successive increases over the last five years. Other high counts of particular note include those at Lee Valley Gravel Pits, Grafham Water, Hollowell Gravel Pits and Clifford Hill Gravel Pits, whilst unusually low numbers were recorded at Stanford Reservoir.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Rutland Water	1,306	733	2,181	961	1,529	Sep	1,342
Ouse Washes	³¹ 840	942	³¹ 1,250	³¹ 337	³¹ 808	Feb	835
Wraysbury Gravel Pits	389	528	734	1,397	612	Jan	732
R. Avon: F'bridge to Ringwood	491	³¹ 516	580	611	612	Jan	562
Lee Valley Gravel Pits	218	576	609	448	764	Jan	523
Thrapston Gravel Pits	139	(895)	(567)	195	668	Oct	493
Abberton Reservoir	829	338	120	(460)	549	Sep	459
Somerset Levels	293	342	³¹ 433	348	527	Nov	389 ▲
Hornsea Mere	-	-	(17)	(315)	(380)	Sep	(380)
Loch Leven	230	235	248	526	544	Aug	357 ▲
Pitsford Reservoir	471	362	355	(169)	204	Oct	348
Sites of national importance in Great Britain							
Fen Drayton Gravel Pits	194	251	388	393	186	Nov	282 ▼
Colne Valley Gravel Pits	³¹ 400	434	150	270	155	Sep	282
Fairburn Ings	239	202	191	358	342	Nov	266
Lower Derwent Valley	³¹ 167	271	283	317	255	Mar	259
Severn Estuary	265	281	250	208	279	Jan	257
Eversley Cross & Yateley GP	184	376	236	183	248	Dec	245
Buckden & Stirtloe Gravel Pits	236	163	277	277	257	Jan	242
Burghfield Gravel Pits	393	209	178	236	175	Dec	238
Thames Estuary	252	190	198	367	175	Jan	236
Hoveton Great Broad	-	-	-	-	230	Dec	230
North Norfolk Coast	193	163	232	258	294	Oct	228
Cotswold Water Park (West)	170	217	147	272	282	Jan	218
Earls Barton Gravel Pits	154	121	264	266	279	Sep	217
Hampton & Kempton Reservoirs	145	153	198	250	273	Jan	204
Chew Valley Lake	180	175	200	305	145	Sep	201
Chichester Gravel Pits	161	284	188	69	(289)	Feb	198
Stodmarsh NNR & Collards Lagoon	71	274	122	240	276	Nov	197
Sutton/Lound Gravel Pits	191	96	150	-	274	Feb	178
Alton Water	197	80	312	108	168	Sep	173
Ditchford Gravel Pits	187	115	118	184	230	Dec	167
Little Paxton Gravel Pits	69	287	132	193	132	Sep	163
Hanningfield Reservoir	157	156	216	105	159	Aug	159
Dungeness Gravel Pits	260	76	85	169	174	Nov	153
Grafham Water	114	82	223	192	153	Mar	153
Hollowell Reservoir	245	45	12	124	330	Nov	151
Dinton Pastures	101	191	64	193	204	Jan	151
Whitlingham Country Park	-	-	(9)	115	187	Nov	151
North Warren & Thorpeness Mere	130	141	200	³¹ 123	³¹ 131	Mar	145
Minsmere Levels	³¹ 110	240	130	92	-		143
Breydon Water & Berney Marshes	46	129	161	258	109	Mar	141
Hickling Broad	0	-	-	82	198	Nov	140
Nene Washes	250	63	151	100	138	Mar	140
Thorpe Water Park	60	96	102	178	249	Jan	137
Middle Tame Valley Gravel Pits	(135)	(196)	108	99	121	Dec	132
Twyford Gravel Pits	110	156	89	134	166	Dec	131
Meadow Lane Gravel Pits	149	157	111	178	59	Nov	131
Bowl Water	³¹ 183	³¹ 121	72	122	150	Dec	130
Cotswold Water Park (East)	235	³¹ 129	92	63	(41)	Dec	130
Sonning Gravel Pit	101	127	143	132	137	Jan	128
Brent Reservoir	143	54	121	115	180	Oct	123
Tophill Low Reservoirs	160	40	190	86	141	Mar	123
Stanford Reservoir	(120)	(267)	(100)	94	4	Sep	122
Broomfleet Brick Ponds	-	-	-	-	121	Dec	121 ▲
Longside Lake	168	5	123	178	-		119
Holme Pierrepont Gravel Pits	108	152	110	140	72	Dec	116
Fort Henry Ponds & Exton Pk Lake	106	179	85	119	82	Nov	114

	95-96	96-97	97-98	98-99	99-00	Mon	Mean	
Allington Gravel Pit	(50)	(40)	-	74	152	Dec	113	
Blunham Gravel Pit	-	-	-	(15)	111	Dec	111	▲
Swale Estuary	50	52	106	251	94	Feb	111	
Swanholme Lakes	79	105	99	135	126	Jan	109	
Langtoft West End Gravel Pits	152	166	87	66	74	Feb	109	
Wellington Country Park	174	154	152	26	34	Dec	108	
Orwell Estuary	33	³⁷ 147	59	120	³⁷ 165	Nov	105	
Crichel Lake	78	(47)	100	91	149	Jan	105	▲
Clifford Hill Gravel Pits	83	115	69	52	201	Jan	104	▲
Rye Harbour & Pett Level	143	113	69	108	73	Jan	101	
Blagdon Lake	36	164	53	46	175	Aug	95	▲
North West Solent	89	63	(26)	133	95	Jan	95	▲
Walland Marsh	-	27	111	125	110	Jan	93	
Tring Reservoirs	(74)	79	146	77	68	Nov	93	
Marsh Lane Gravel Pits	125	100	55	130	54	Nov	93	
Seaton Gravel Pits	12	(201)	109	80	³¹ 58	Jan	92	
Middle Yare Marshes	62	85	129	37	143	Sep	91	
Bainton Pits	9	71	48	232	96	Nov	91	
Stanford Training Area	135	32	126	80	81	Sep	91	
Woolston Eyes	47	87	79	92	147	Mar	90	
Swillington Ings	54	113	54	116	111	Sep	90	
Belvide Reservoir	42	43	79	202	86	Jan	90	
Dingle Marshes & Walberswick NNR	-	-	-	-	88	Nov	88	▲
Barons Haugh	-	63	166	83	41	Aug	88	
Thanet Coast	-	52	78	117	101	Jan	87	▲
Wash	94	53	100	135	36	Mar	84	
Fleet/Wey	96	24	(70)	140	72	Feb	83	
Rostherne Mere	156	134	49	28	46	Oct	83	
Deeping St James	83	-	-	-	-		83	▲
Swithland Reservoir	63	66	61	161	59	Oct	82	
Lower Windrush Valley Gravel Pits	63	82	130	74	55	Nov	81	
Linford Gravel Pits	102	134	48	78	42	Nov	81	
Fordwich & Westbere Gravel Pits	199	13	57	100	34	Dec	81	

Sites of all-Ireland importance in Northern Ireland [†]

Loughs Neagh & Beg	120	124	108	182	138	Feb	134	
Strangford Lough	82	118	63	83	62	Jan	82	
Upper Quoile River	19	58	4	0	6	Nov	17	
Hillsborough Forest Lake	0	4	3	0	53	Feb	12	▲

Internationally or nationally important sites not counted in last five years

Lackford Gravel Pits	Shrigley Lakes
Clea Lakes	Sennowe Park Lakes
South Iver Gravel Pits	Gunton Park Lake

Sites no longer meeting table qualifying levels

Eyebrook Reservoir	Ampton Water
Kirkby-on-Bain Gravel Pits	

Other sites surpassing table qualifying levels in 1999-2000

Blatherwyke Lake	236	Feb	Old Moor Wetlands	98	Oct/Nov
Dunstable Sewage Farm	212	Dec	Livermere	97	Mar
Horrock's Flash	171	Sep	Knight & Bessborough Reservoirs	94	Nov
Ravensthorpe Reservoir	144	Feb	Ranworth & Cockshoot Broads	92	Jan
Pen Ponds	141	Dec	Landbeach & Waterbeach GP	92	Jan
Slapton Ley	138	Nov	Lynford Gravel Pit	88	Dec
Tees Estuary	136	Oct	Didlington Lakes	87	Jan
Stanwick Gravel Pits	128	Nov	Godmanchester Gravel Pit	85	Dec
Wicken Fen	113	Oct	Rother Valley Country Park	81	Nov
Kinnordy Loch	109	Oct	Benacre Broad	80	Jan
Attenborough Gravel Pits	107	Jan	Castle Island Lake	10	Jan
Culford Lake	100	Jan			

[†] as no all-Ireland threshold has been set, a qualifying level of 10 has been chosen to select sites for presentation in this report

TEAL

Anas crecca

GB max: 140,225 **Dec**
NI max: 5,871 **Jan**

International threshold: 4,000
Great Britain threshold: 1,400
All-Ireland threshold: 650

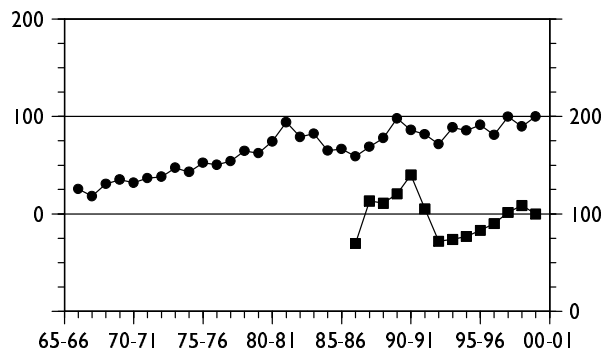


Figure 38. Annual indices for Eurasian Teal in GB (circles, left axis) and NI (squares, right axis)

Despite below average numbers at all but one of the internationally important sites, Great Britain totals reached their highest published level to date, though inclusion of late data for previous winters sees the count approximately 500 below the December total in 1997-98. The annual index correspondingly rose to equal the highest ever value. In Northern Ireland the peak count occurred unusually in January and was slightly lower than the previous winter. This resulted in a slight fall in the annual index, the first for six years.

Teal counts at key sites are typically more

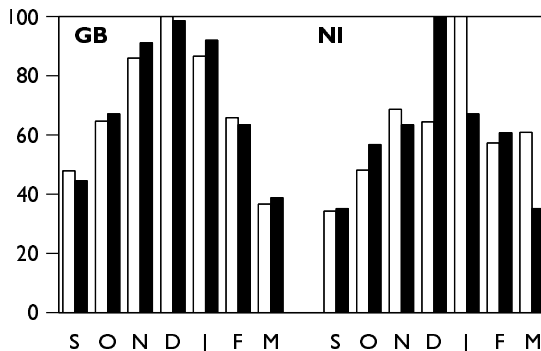


Figure 39. Monthly indices for Eurasian Teal in GB and NI (white bars 1999-2000; black bars 1994-95 to 1998-99)

stable than for many other wildfowl species resulting in relatively few changes in the table each year; only four sites in the table below were not listed in the 1993-94 report and the internationally important sites remain the same. Numbers at Upper Lough Erne were the highest at the site for a decade, and elevated autumn counts on the Humber Estuary saw the site return to the table, these being two of four newly qualifying sites. Hamford Water and the Medway Estuary held fewer birds than normal, the former in particular well down on counts in the mid 1990s.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Somerset Levels	24,792	3,305	16,156	16,036	13,641	Jan	14,786
Mersey Estuary	7,734	14,120	12,065	9,393	11,700	Nov	11,002
Abberton Reservoir	5,816	6,756	9,381	(3,593)	5,450	Sep	6,851
Ribble Estuary	7,343	7,833	6,209	5,114	5,748	Nov	6,449
Dee Estuary (Eng/Wal)	4,867	6,545	6,254	4,544	5,185	Nov	5,479
Lower Derwent Valley	³¹ 5,650	3,875	5,900	4,300	4,100	Dec	4,765
Hamford Water	³¹ 9,765	6,563	2,633	3,266	1,514	Dec	4,748
Sites of national importance in Great Britain							
Loch Leven	3,884	3,250	3,288	5,055	4,320	Oct	3,959
WWT Martin Mere	4,020	2,560	5,750	3,170	3,710	Oct	3,842
Ouse Washes	³¹ 4,767	3,661	³¹ 3,830	³¹ 2,970	3,212	Dec	3,688
Severn Estuary	3,806	2,665	2,880	3,772	4,363	Dec	3,497
North Norfolk Coast	2,665	2,668	3,992	3,721	3,133	Dec	3,236
Inner Moray Firth	2,873	3,407	3,428	³⁷ 3,028	2,921	Dec	3,131
Thames Estuary	2,393	2,575	1,971	2,930	2,801	Nov	2,534
Swale Estuary	2,174	2,868	2,457	2,672	2,388	Nov	2,512
Cleddau Estuary	2,948	2,220	2,637	2,138	2,438	Dec	2,476
Horsely Mere	-	-	2,400	(2,500)	-		2,450
Blackwater Estuary	1,825	2,593	2,522	(2,131)	2,598	Jan	2,385
Southampton Water	2,700	2,356	2,492	³⁷ 2,058	³⁷ 1,727	Dec	2,267
Nene Washes	2,602	1,648	2,054	2,129	1,548	Jan	1,996
Alde Complex	2,306	1,793	2,078	1,863	1,837	Jan	1,975
Dornoch Firth	1,759	1,476	(2,073)	2,272	2,039	Dec	1,924

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Morecambe Bay	2,127	1,439	2,114	1,528	1,719	Jan	1,785
Rutland Water	2,491	1,954	1,402	980	1,876	Sep	1,741
Humber Estuary	1,376	(782)	1,497	1,438	2,628	Sep	1,735 ▲
Arun Valley	1,277	655	1,385	2,695	2,438	Dec	1,690
Chichester Harbour	1,172	2,037	1,649	2,141	1,444	Jan	1,689
Mere Sands Wood NR	1,075	2,525	1,025	1,350	2,245	Dec	1,644 ▲
Burry Inlet	315	2,734	759	2,566	1,471	Dec	1,569 ▲
Medway Estuary	1,901	³⁷ 1,968	1,466	1,804	672	Jan	1,562
Poole Harbour	1,661	2,297	972	1,623	1,059	Feb	1,522
Woolston Eyes	1,150	900	1,500	2,000	1,800	Feb	1,470
Pagham Harbour	1,870	³⁷ 1,660	969	1,716	812	Jan	1,405

Sites of all-Ireland importance in Northern Ireland

Strangford Lough	1,681	2,302	1,978	2,519	1,627	Jan	2,021
Loughs Neagh & Beg	1,227	1,076	2,270	2,388	1,487	Nov	1,690
Lough Foyle	852	837	575	³¹ 1,500	577	Oct	868
Upper Lough Erne	697	368	405	631	1,379	Jan	696 ▲

Other sites surpassing table qualifying levels in 1999-2000

Breydon Water & Berney Marshes	3,150	Dec
Newtown Estuary	1,431	Dec
Wash	1,418	Sep
Walland Marsh	1,400	Dec

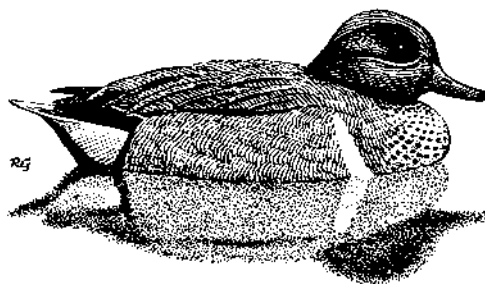
GREEN-WINGED TEAL

Anas carolinensis

Vagrant
Native range: North America

Apart from two at Traeth Lafan in March the remaining six sites all held single birds. All records were between November and March from the Loe Pool, Poole Harbour, Fleet/Wey, WWT Caerlaverock and the Inner Moray Firth.

Until recently regarded as a race of Teal *Anas crecca*, Green-winged Teal was recently given full species status (BOURC 2001).



SPECKLED TEAL

Anas flavirostris

Escape
Native range: South America

A maximum of seven were at Bramshill Park Lake in November and one was at Whittlesford Gravel Pits in December and January.

MALLARD

Anas platyrhynchos

GB max: 145,590 Dec

NI max: 8,249 Sep

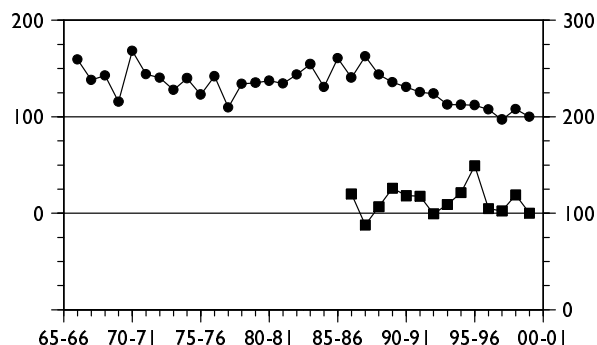


Figure 41. Annual indices for Mallard in GB (circles, left axis) and NI (squares, right axis)

Following the suggestion in 1998-99 of a break in the long term decline in British Mallard numbers, counts dipped once again in 1999-2000. The annual index value fell by 7%, the tenth fall in the last 12 years, and remains only fractionally above the lowest ever level. No clear trend is evident in Northern Ireland, where the peak count, highly dependent on numbers on Loughs Neagh & Beg, was in the lower range of recent fluctuations. A similarly fluctuating pattern with no obvious trend

International threshold: 20,000**

Great Britain threshold: 5,000[†]

All-Ireland threshold: 500

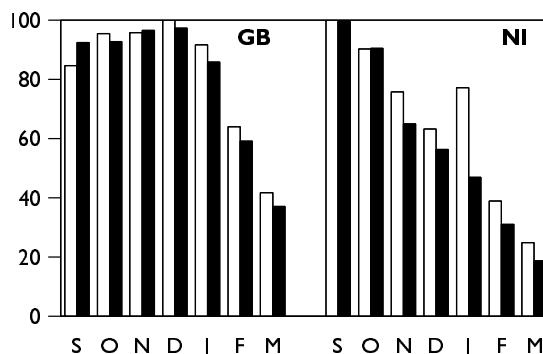


Figure 42. Monthly indices for Mallard in GB and NI (white bars 1999-2000; black bars 1994-95 to 1998-99)

is evident from the I-WeBS counts in the Republic of Ireland (Colhoun 2001).

The December count in the Lower Derwent Valley was the highest at any British site in the last five years; apparently gone are the counts of 5,000 or more on many of the major estuaries. The Ouse Washes held above average counts, whilst counts at WWT Martin Mere fell for the fifth consecutive year.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain [†]							
Lower Derwent Valley	³¹ 4,120	3,655	2,400	3,450	4,250	Dec	3,575
Morecambe Bay	3,798	3,116	3,615	3,045	3,334	Oct	3,382
Tring Reservoirs	4,000	2,956	2,200	(2,040)	(1,500)	Sep/Oct	3,052
Ouse Washes	³¹ 3,859	2,149	2,582	2,402	³¹ 4,168	Nov	3,032
Wash	3,512	2,636	2,771	1,956	2,350	Oct	2,645
WWT Martin Mere	3,100	2,885	2,520	2,440	2,230	Oct	2,635
Severn Estuary	2,383	3,088	2,101	2,465	2,767	Sep	2,561
Humber Estuary	2,621	(2,112)	2,210	2,044	1,991	Dec	2,217
Solway Estuary	2,637	2,011	1,419	2,170	³⁷ 2,176	Nov	2,083
Inner Moray Firth	1,472	1,582	2,044	3,325	1,819	Dec	2,048
Abberton Reservoir	1,502	2,866	1,135	(1,022)	2,512	Sep	2,004 ▲
Sites of all-Ireland importance in Northern Ireland							
Loughs Neagh & Beg	8,791	5,399	5,463	6,176	3,828	Sep	5,931
Lough Foyle	1,755	1,795	1,592	1,696	1,336	Dec	1,635
Strangford Lough	1,503	1,238	1,753	1,198	1,514	Sep	1,441
Upper Lough Erne	679	619	175	444	603	Jan	504 ▲

Sites no longer meeting table qualifying levels

Ampton Water

Internationally or nationally important sites not counted in last five years

Ballysaggart Lough

Other sites surpassing table qualifying levels in 1999-2000

Belfast Lough 668 Sep

[†] as no sites exceed the British threshold, a qualifying level of 2,000 has been chosen to select sites for presentation in this report

BLACK DUCK

Anas rubripes

Vagrant

Native range: North America

Two birds were present in Cornwall during 1999-2000, on the Looe Estuary in June and at

Stithian's Reservoir in November. More unusually was one in Scotland at Loch Fleet in February.

PINTAIL

Anas acuta

GB max: 17,333 Nov

NI max: 306 Dec

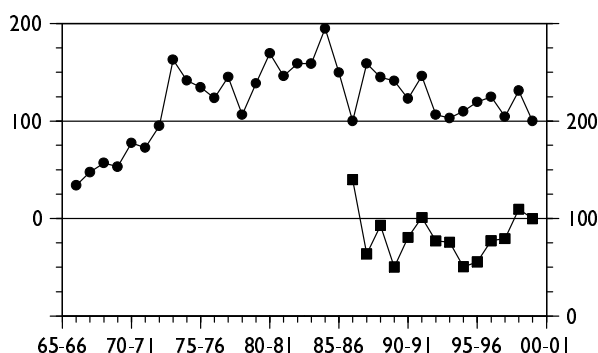


Figure 43. Annual indices for Pintail in GB (circles, left axis) and NI (squares, right axis)

The Great Britain maximum was the lowest since the late 1970s and was over 8,000 birds fewer than in any of the previous three years. Numbers were low throughout the year. Those from November to January, typically the period of peak numbers, were significantly below the average of previous years. As a result the annual index fell to its lowest level since the winter of 1972-73 and continues the gradual decline since the highs of the 1980s. Whilst, numbers have fluctuated to low levels in previous years and then recovered, most notably in 1978-79 and 1986-87, annual indices point to consistently low numbers in the last decade.

In Northern Ireland the maximum was slightly above average for the last five years and was the fifth highest recorded by WeBS. The

International threshold: 600

Great Britain threshold: 280

All-Ireland threshold: 60

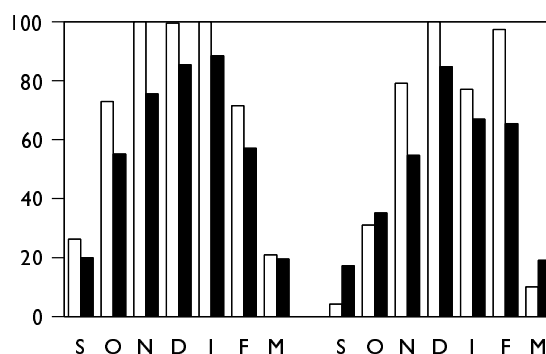


Figure 44. Monthly indices for Pintail in GB and NI (white bars 1999-2000; black bars 1994-95 to 1998-99)

annual index, although slightly down on the previous year, remained at the higher end of values for the past fourteen years.

As would be expected with such low counts, several sites held numbers well below their five year mean. The most notable of these were the Dee Estuary (England/Wales), Ribble Estuary, Nene Washes, Medway Estuary, Pagham Harbour and Hamford Water.

As a result of the record count in 1999-2000, the Severn Estuary returned to the table as a site of international importance after failing to meet qualifying levels in the previous year. A series of low counts in recent years resulted in the Swale Estuary failing to qualify as a site of international importance.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Dee Estuary (Eng/Wal)	5,425	5,749	5,954	5,018	2,356	Nov	4,900
Morecambe Bay	2,575	3,207	4,411	4,795	4,161	Oct	3,830
Solway Estuary	4,016	3,852	2,677	4,436	3,067	Dec	3,610
Ribble Estuary	4,926	4,073	1,271	3,894	747	Nov	2,982
Burby Inlet	3,541	2,889	1,093	2,782	3,609	Nov	2,783
Ouse Washes	³¹ 2,386	2,055	3,271	2,082	3,804	Feb	2,720
North Norfolk Coast	1,036	1,177	1,668	1,075	1,235	Nov	1,238
Nene Washes	1,342	264	1,668	1,487	353	Feb	1,023
Medway Estuary	1,214	2,047	489	807	463	Nov	1,004
Duddon Estuary	1,275	1,349	464	918	810	Nov	963
Mersey Estuary	873	904	813	882	1,100	Nov	914
Pagham Harbour	990	1,210	1,087	683	³⁷ 434	Dec	881
Severn Estuary	539	698	709	510	749	Jan	641 ▲

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain							
Stour Estuary	397	³⁷ 718	638	569	³⁷ 629	Dec	590
Swale Estuary	1,029	277	570	556	395	Feb	565 ▼
Hamford Water	³¹ 973	1,117	54	315	103	Nov	512
Tottenham Gravel Pits	486	415	397	203	410	Oct	382
Alde Complex	203	147	340	673	494	Feb	371
Poole Harbour	301	375	451	285	227	Feb	328
Abberton Reservoir	316	283	430	(170)	243	Sep	318
Orwell Estuary	821	³⁷ 228	³⁷ 331	³⁷ 90	³⁷ 115	Nov	317
WWT Martin Mere	499	231	239	294	313	Feb	315
Dee Flood Meadows	500	122	328	94	472	Dec	303 ▲
Cromarty Firth	367	370	130	290	³⁷ 340	Dec	299
Lower Derwent Valley	³¹ 361	178	337	242	347	Jan	293 ▲
Fleet/Wey	245	414	276	270	233	Dec	288
Blackwater Estuary	362	280	139	333	295	Jan	282 ▲
Inner Moray Firth	350	266	274	286	227	Feb	281
Sites of all-Ireland importance in Northern Ireland							
Strangford Lough	³⁷ 170	242	304	313	303	Dec	266
Sites no longer meeting table qualifying levels							
Arun Valley							
Somerset Levels							
Other sites surpassing table qualifying levels in 1999-2000							
Somerset Levels	570	Jan					
Rutland Water	311	Sep					

BAHAMA PINTAIL

Anas bahamensis

Escape

Native range: South America

Single birds were recorded on the Avon Estuary, Harrow Lodge Park and Leisure Lakes.

RED-BILLED TEAL

Anas erythrorhyncha

Escape

Native range: Africa

One was at Connaught Water in November and again in January.

CAPE TEAL

Anas capensis

Escape

Native range: Africa

As in 1997-98, one was present at Beddington Sewage Farm.

GARGANEY

Anas querquedula

International threshold: 20,000**

Great Britain threshold: ?[†]

All-Ireland threshold: ?[†]

GB max: 97 Aug

NI max: 0

The peak total for Great Britain was the highest ever recorded by WeBS and, as usual, occurred during the late summer. Over 60 birds were also recorded in May, prior to the breeding season and, unusually, singles were present through the

winter months. Records were generally restricted to sites in the south and east of England with peak counts at individual sites occurring during the late summer.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain[†]							
Fairburn Ings	³¹ 14	11	3	4	10	Aug	8
Wraysbury Gravel Pits	3	6	3	7	10	Aug	6 ▲
Rutland Water	6	8	3	3	7	Aug	5
Chew Valley Lake	8	3	4	9	3	Aug/Sep	5
Ouse Washes	9	³¹ 3	³¹ 6	7	2	Sep	5
Breydon Water & Berney Marshes	1	0	6	7	8	Aug	4
North Norfolk Coast	7	1	2	4	7	Aug	4
Walland Marsh	-	2	7	5	3	Jun/Aug	4

Other sites surpassing table qualifying levels in 1999-2000

Thames Estuary	6	Aug
Blithfield Reservoir	6	Sep
Earls Barton Gravel Pits	5	Aug
Old Moor Wetlands	5	Aug
Tees Estuary	4	Jun
Alde Complex	4	Sep
Kirkby-on-Bain Gravel Pits	4	Sep

[†] as no British or all-Ireland threshold has been set, a qualifying level of four has been chosen to select sites for presentation in this report

BLUE-WINGED TEAL

Anas discors

Vagrant and escape
Native range: Americas

Singles were at Stodmarsh NNR & Collards Lagoon, Hanningfield Reservoir (Essex), Blithfield

Reservoir, Doxey Marshes and Burry Inlet, all records occurring between July and March.

CINNAMON TEAL

Anas cyanoptera

Escape
Native range: Americas

One was recorded at Chew Valley Lake in September.

RED SHOVELER

Anas platalea

Escape
Native range: South America

A single was found at King George VI Reservoir in October.

SHOVELER
Anas clypeata

GB max: 10,682 Oct
NI max: 209 Oct

International threshold: 400
Great Britain threshold: 100
All-Ireland threshold: 65

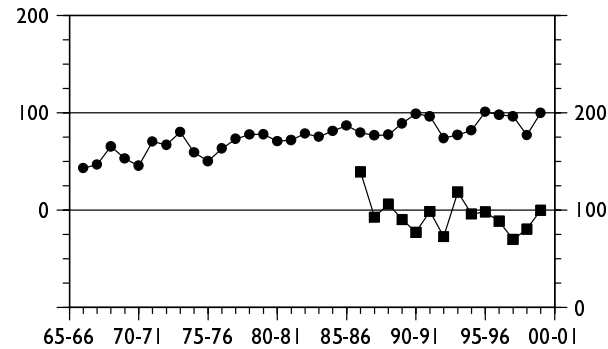


Figure 45. Annual indices for Shoveler in GB (circles, left axis) and NI (squares, right axis)

The peak count in Great Britain was the highest since 1995-96 and as is usual occurred during the autumn when numbers of this species are moving through the UK to winter in France and Spain. The lack of any obvious secondary peak in spring perhaps suggests that some birds returning to breeding grounds use a different route and avoid passing through the UK. The peak count in Northern Ireland was about average for the past five years.

Following a particularly low value in 1998-99, annual indices for Great Britain jumped to their second highest level, whilst those in Northern Ireland rose to levels of the mid 1990s after several notably low values in recent years.

Peak numbers for both Great Britain and Northern Ireland in mid winter were slightly

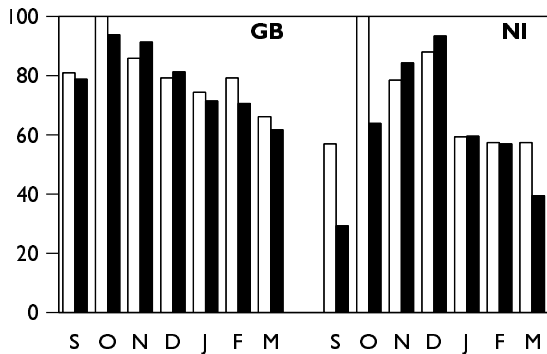


Figure 46. Monthly indices for Shoveler in GB and NI (white bars 1999-2000; black bars 1994-95 to 1998-99)

above the previous year, but both were at the lower end of values for the previous five years and monthly indices show below average numbers in November and December.

Peak counts at most key sites were slightly below their respective five year means. An exceptionally high count at Rutland Water in September was 58% above average. Numbers at Breydon Water & Berney Marshes and Malltraeth Marsh RSPB rose for the fifth consecutive year, whilst at Abberton Reservoir numbers fell for the fifth consecutive year, with the peak count almost half the five year mean. Numbers at Wraysbury Gravel Pits and Grafham Water rose to levels of the mid 1990s after low counts in the previous few years.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Ouse Washes	31 614	663	31 925	31 574	31 980	Mar	751
Rutland Water	562	704	531	430	1,154	Sep	676
Abberton Reservoir	937	628	541	(488)	375	Sep	620
Burby Inlet	745	490	363	826	573	Nov	599
Somerset Levels	839	435	504	485	635	Jan	580
Swale Estuary	357	411	551	468	498	Mar	457
Loch Leven	550	541	426	318	420	Sep	451
Chew Valley Lake	875	225	405	235	425	Oct	433 ▲
Nene Washes	347	143	689	482	406	Mar	413
Sites of national importance in Great Britain							
King George VI Reservoir	1,134	310	248	119	114	Mar	385 ▼
Walland Marsh	-	359	325	360	320	Jan	341
Dungeness Gravel Pits	252	421	260	197	269	Nov	280
Stodmarsh NNR & Collards Lagoon	240	265	328	230	280	Mar	269
Staines Reservoirs	74	210	490	251	312	Jan	267
Fairburn Ings	303	352	272	200	144	Nov	254
Lower Derwent Valley	257	221	310	341	122	Mar	250
Blithfield Reservoir	11	77	436	266	443	Sep	247
Lee Valley Gravel Pits	178	288	275	228	241	Oct	242

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Wraysbury Gravel Pits	341	157	169	84	399	Oct	230
Grafham Water	240	290	160	171	265	Nov	225
Breydon Water & Berney Marshes	46	172	183	319	356	Feb	215
Severn Estuary	270	169	150	259	198	Nov	209
Hanningfield Reservoir	254	211	304	51	184	Sep	201
Stanford Reservoir	(500)	145	276	19	54	Nov	199
Thames Estuary	202	197	173	335	72	Aug	196
Arun Valley	268	146	176	203	163	Dec	191
Tees Estuary	232	202	201	107	131	Sep	175
Aqualate Mere	225	358	50	47	(3)	Oct	170
Leighton Moss	205	188	95	185	146	Sep	164
Rye Harbour & Pett Level	164	238	135	126	130	Sep	159
Pitsford Reservoir	196	236	157	(32)	47	Sep	159
Knight & Bessborough Reservoirs	245	185	160	73	110	Oct	155
Rostherne Mere	103	103	157	121	278	Oct	152
Brent Reservoir	130	100	103	185	241	Oct	152
Fleet/Wey	183	133	107	217	118	Dec	152
Alde Complex	214	120	119	141	161	Jan	151
North Norfolk Coast	206	135	121	138	153	Sep/Nov	151
Medway Estuary	59	³⁷ 264	(80)	156	122	Jan	150
Woolston Eyes	152	152	152	104	176	Sep	147
Blagdon Lake	115	404	64	52	95	Mar	146
Middle Tame Valley Gravel Pits	(97)	(186)	116	127	141	Feb	143
North West Solent	134	138	(110)	178	110	Feb	140
Hampton & Kempton Reservoirs	123	234	88	105	147	Dec	139
Wraysbury Reservoir	238	325	69	41	18	Dec	138
Walthamstow Reservoirs	118	144	143	78	143	Dec	125
Swithland Reservoir	104	98	116	51	203	Oct	114
Hornsea Mere	-	-	(29)	(165)	61	Aug	113
R. Avon: F'bridge to Ringwood	123	³¹ 238	52	67	81	Feb	112 ▲
Thrapston Gravel Pits	173	108	88	91	95	Oct	111
Beddington Sewage Farm	85	170	95	85	115	Oct	110
Llynau Y Fali	10	57	205	178	92	Jan	108
Humber Estuary	94	(13)	(78)	82	146	Oct	107 ▲
Poole Harbour	156	64	103	159	51	Jan	107
Colne Valley Gravel Pits	142	123	96	96	75	Mar	106
Malltraeth Marsh RSPB	69	89	92	125	145	Oct	104 ▲
North Warren & Thorpeness Mere	110	108	138	³¹ 75	78	Dec	102
Minsmere Levels	³¹ 108	69	128	98	-		101
Blackwater Estuary	101	122	60	140	75	Feb	100

Sites of all-Ireland importance in Northern Ireland

Strangford Lough	213	108	101	126	168	Dec	143
Loughs Neagh & Beg	150	89	84	103	72	Oct	100

Internationally or nationally important sites not counted in last five years

Lackford Gravel Pits

Ashford Common Waterworks

Sites no longer meeting table qualifying levels

Coombe Country Park

Other sites surpassing table qualifying levels in 1999-2000

Milldam & Balfour Mains Pools	234	Oct	Hope Carr Reserve	128	Sep
Little Paxton Gravel Pits	217	Dec	Middle Yare Marshes	123	Oct
Orwell Estuary	³⁷ 175	Jan	Chichester Gravel Pits	(112)	Feb
Ribble Estuary	173	Oct	Coombe Country Park	(111)	Jul
Ranworth & Cockshoot Broads	170	Nov	Skelton Lake	106	Sep
Beaulieu Estuary	146	Dec	Southampton Water	105	Feb
Fiddlers Ferry PS Lagoons	140	Sep	Ravensthorpe Reservoir	103	Oct
Willen Lake	128	Nov	Upton Warren LNR	100	Oct

RINGED TEAL

Callonetta leucophrys

Escape

Native range: South America

A maximum of three were present at Belfast Lough during March and singles were also

recorded at Beddington Sewage Farm and Port Meadow.

MANED DUCK

Chenonetta jubata

Escape

Native range: Australia

The bird from 1998-99 remained at Acre Nook Sand Quarry until at least September.

RED-CRESTED POCHARD

Netta rufina

Vagrant and escape[†]

Native range: Europe and Asia

GB max: 75 **Nov/Dec**
NI max: 0

Although the peak count in Great Britain was in the lower end of the range for recent years, counts at the key site, the Cotswold Water Park, remained remarkably consistent. The peak of 63

in the western section is the highest count recorded at any site by WeBS. Birds were noted at 53 sites, slightly higher than in previous years, though just 17 held more than one bird.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites with mean peak counts of 10 or more birds in Great Britain[†]							
Cotswold Water Park (West)	59	54	62	60	63	Dec	60
Cotswold Water Park (East)	26	15	12	25	22	Feb	20

Important sites not counted in last five years

Paultons Bird Park

R. Wensum: Fakenham to Great Ryburgh

[†] as site designation does not occur and the 1% criterion is not applied, a qualifying level of 10 has been chosen to select sites for presentation in this report

ROSYBILL

Netta peposaca

Escape

Native range: South America

One on the Forth Estuary in August was followed by another at Cotswold Water Park in February and March.

POCHARD

Aythya ferina

GB max: 36,324 Jan
NI max: 22,894 Dec

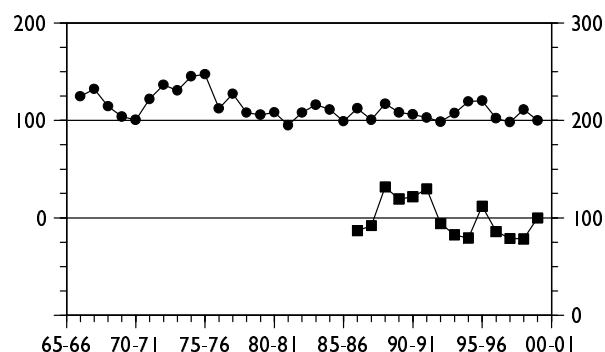


Figure 47. Annual indices for Pochard in GB (circles, left axis) and NI (squares, right axis)

Peak counts for both Great Britain and Northern Ireland were about average, occurring, as usual, during the midwinter months. Although annual indices for Great Britain continue to fluctuate between years, the overall trend remains one of stability. Annual indices for Northern Ireland fluctuate more markedly between years. Although the peak count at Loughs Neagh & Beg (the key site in the province) was over 2,300 lower than the five-year mean, annual indices were much higher than those for the previous three years. Monthly indices suggest that arrival of birds in Northern Ireland was earlier than expected in 1999-2000.

The maximum count at the Ouse Washes was 18% higher than that recorded in the previous year, highlighting the increased importance of this site for Pochard. High water levels over recent winters may be responsible for improving the attractiveness of this site to Pochard. Interestingly, numbers at the nearby Nene Washes were very low in 1999-2000. Of those sites which qualify as nationally important

International threshold: 3,500
Great Britain threshold: 440
All-Ireland threshold: 400

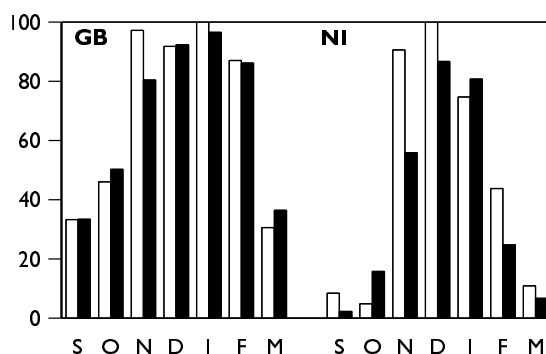


Figure 48. Monthly indices for Pochard in GB and NI (white bars 1999-2000; black bars 1994-95 to 1998-99)

for this species, particularly high numbers were recorded at Abberton Reservoir, Hornsea Mere, Lower Windrush Valley Gravel Pits and Hickling Broad during 1999-2000.

Large between-year variations in the numbers of Pochard at many sites may be a consequence of corresponding changes in water levels, the attractiveness of alternative sites, disturbance or food availability. A recent study, conducted at the highly polluted Manchester Ship Canal, suggests that Pochard and Tufted Duck prefer to feed in areas of high benthic organic carbon where large amounts of sewage matter are deposited and oligochaetes are abundant (Marsden & Bellamy 2000). The authors suggest that plans to improve sewage treatment in the canal may have a serious impact on the number of diving ducks wintering by reducing the densities of their invertebrate prey. The potential implications for similar clean-up schemes at important sites elsewhere is clear.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Loughs Neagh & Beg	28,601	25,230	19,205	29,683	22,681	Dec	25,080
Ouse Washes	3,929	1,413	5,737	5,383	³¹ 6,345	Feb	4,561
Sites of national importance in Great Britain							
Abberton Reservoir	3,247	3,079	2,518	(2,569)	4,744	Aug	3,397
Severn Estuary	1,676	1,576	1,248	1,154	1,473	Jan	1,425
Walton Lock	⁴ 1,400	-	-	-	-		1,400
Middle Tame Valley Gravel Pits	1,036	(1,899)	1,236	(1,447)	1,164	Feb	1,356
Loch Leven	1,000	1,692	1,125	1,544	1,320	Oct	1,336
Cotswold Water Park (East)	1,394	1,235	1,151	1,444	(1,266)	Dec	1,306
Lower Derwent Valley	³¹ 2,540	750	2,350	311	113	Dec	1,213
Rostherne Mere	⁴ 2,200	2,616	152	133	129	Jan	1,046
Fleet/Wey	913	853	848	1,320	850	Nov	957

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Rutland Water	1,776	855	680	784	620	Aug	943
Loch of Harray	2,070	1,119	506	473	416	Dec	917
Lower Windrush Valley GP	1,331	622	780	655	1,150	Nov	908
Humber Estuary	1,000	(2,503)	183	316	317	Jan	864
WWT Martin Mere	786	1,111	747	767	905	Jan	863
Cotswold Water Park (West)	1,163	562	922	814	636	Nov	819
Loch of Boardhouse	789	913	613	123	1,156	Oct	719
Dungeness Gravel Pits	456	633	836	659	889	Aug	695
Chew Valley Lake	1,130	865	440	400	520	Nov	671
Poole Harbour	946	1,386	298	244	363	Jan	647
Hornsea Mere	-	-	(64)	806	1,065	Nov	936 ▲
Loch Gelly	475	1,518	490	-	18	Mar	625
Nene Washes	528	185	435	1,943	27	Feb	624
Wraysbury Gravel Pits	488	513	697	759	596	Oct	611
Hickling Broad	(8)	-	-	250	945	Dec	598 ▲
Hanningfield Reservoir	1,084	467	377	617	430	Jul	595
R. Irwell	2,042	816	3	1	36	Nov	580
Pitsford Reservoir	283	410	254	1,134	654	Oct	547
Woolston Eyes	582	365	362	710	630	Feb	530
St Johns Loch	-	(470)	-	(200)	-		470 ▲
Cheddar Reservoir	632	428	140	365	724	Nov	458

Sites no longer meeting table qualifying levels

Little Paxton Gravel Pits
Fen Drayton Gravel Pits
Kilconquhar Loch
Loch Watten
Staines Reservoirs
Alton Water
Loch of Hundland

Other sites surpassing table qualifying levels in 1999-2000

Carsington Water 846 Nov
Farmoor Reservoirs 520 Jan
Rookery Gravel Pits (North) 473 Dec

RING-NECKED DUCK

Aythya collaris

Vagrant

Native range: North America

Singles were present at Burrator Reservoir, Chew Valley Lake, Barrow Gurney Reservoir, South Muskham and North Newark Gravel Pits, Altofts Ings, Winterset & Cold Hiendley Reservoirs and Elrig Loch Port William.

Species that associate with mobile flocks of

wintering wildfowl are prone to being double-counted. The bird at Chew Valley Lake and Barrow Gurney Reservoir were known to be the same bird and it is possible the Yorkshire and maybe even the Nottinghamshire records may relate to one individual.

FERRUGINOUS DUCK

Aythya nyroca

Vagrant and escape

Native range: Europe, N Africa and Asia

One returned to the Somerset Levels and was present all winter and other singles birds were recorded at Cotswold Water Park, Timsbury

Gravel Pits & River Test, Allington Gravel Pit, Thorpe Water Park, Ouse Washes, Wanlip Gravel Pits and Carsington Water.

NEW ZEALAND SCAUP

Aythya novaeseelandiae

Escape

Native range: New Zealand

A single was on Connaught Water in November and again in February.

TUFTED DUCK

Aythya fuligula

GB max: 56,875 Nov

NI max: 20,340 Dec

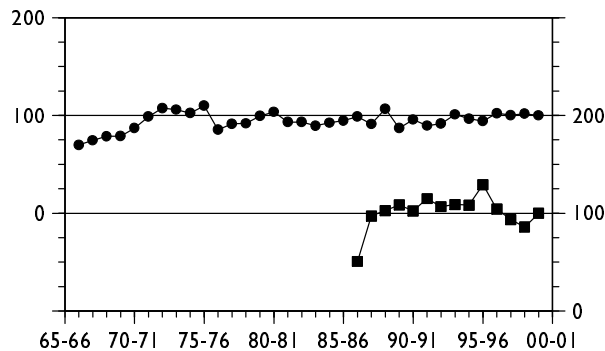


Figure 49. Annual indices for Tufted Duck in GB (circles, left axis) and NI (squares, right axis)

Annual maxima and indices in Great Britain continue to remain stable and the 1999-2000 peak count was only marginally higher than those in previous years. The peak count in Northern Ireland was also around average although annual indices recovered somewhat following a decline over the previous three years. Monthly indices for Northern Ireland and Great Britain highlight the similarity between the phenology of Tufted Duck abundance in 1999-2000 and the previous five years.

Loughs Neagh & Beg consistently remain the most numerically important site for this species in the UK, hosting almost 28% of the combined Great Britain and Northern Ireland totals in December. The high degree of stability in counts both within and between sites for this species was illustrated by peak counts at most nationally

International threshold: 10,000

Great Britain threshold: 600

All-Ireland threshold: 400

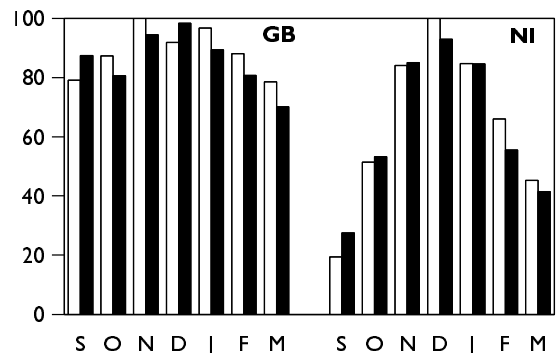


Figure 50. Monthly indices for Tufted Duck in GB and NI (white bars 1999-2000; black bars 1994-95 to 1998-99)

important sites remaining very similar to those recorded in previous years. A peak count of 4,654 at Abberton Reservoir in September, 62% higher than the five-year mean for that site, was notable. Above average counts at Tophill Low Reservoirs and Chew Valley Lake in September 1999 were largely responsible for these sites attaining national importance status.

Marsden (2000) showed that the disturbance caused by building and development along the Manchester Ship Canal and docks often causes Tufted Duck and Pochard to abandon this site. He suggests that the impacts of these disturbance effects are greatest during cold weather when both species need to feed for a large proportion of the day and night to meet increased energy demands and suggests disturbance should be minimised at these times.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Loughs Neagh & Beg	25,340	27,368	18,697	20,324	20,039	Dec	22,354
Sites of national importance in Great Britain							
Rutland Water	3,775	3,159	3,557	4,692	3,325	Sep	3,702
Loch Leven	3,000	4,589	3,310	3,434	3,550	Sep	3,577
Abberton Reservoir	1,356	3,218	2,268	(2,602)	4,654	Sep	2,874
Middle Tame Valley Gravel Pits	2,018	(2,384)	2,422	1,645	2,370	Oct	2,168
Wraysbury Gravel Pits	844	1,709	2,868	1,667	1,812	Nov	1,780
Staines Reservoirs	3,332	1,405	1,283	1,251	1,250	Aug	1,704
Pitsford Reservoir	854	2,034	1,129	(2,585)	1,312	Sep	1,583
Hanningfield Reservoir	1,594	1,600	1,747	851	1,534	Aug	1,465
Walthamstow Reservoirs	722	1,083	1,368	1,217	1,194	Aug	1,117
Besthorpe & Girton Gravel Pits	913	1,414	637	1,499	983	Jan	1,089
Ouse Washes	811	391	1,165	1,662	1,361	Mar	1,078
Alton Water	1,331	1,536	783	922	736	Dec	1,062
Lee Valley Gravel Pits	726	1,163	930	1,053	1,065	Feb	987
Loch of Harray	1,625	524	713	946	534	Mar	868
William Girling Reservoir	1,300	738	807	617	859	Aug	864

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Draycote Water	925	475	645	1,010	1,007	Dec	812
Chasewater	723	809	744	702	-		745
Hickling Broad	(16)	-	-	592	890	Nov	741
Fen Drayton Gravel Pits	764	646	679	863	755	Aug	741
Lower Windrush Valley Gravel Pits	709	544	624	771	1,020	Nov	734
Severn Estuary	1,004	610	382	662	906	Dec	713
Cotswold Water Park (East)	711	647	707	755	548	Nov	674
King George V Reservoirs	678	1,020	700	740	230	Oct	674
Tophill Low Reservoirs	³¹ 690	554	395	514	1,208	Sep	672 ▲
Chew Valley Lake	355	520	750	735	965	Sep	665 ▲
Windermere	727	565	637	-	-		643
Little Paxton Gravel Pits	696	852	489	475	650	Nov	632 ▲
Cotswold Water Park (West)	580	483	521	823	742	Mar	630
Loch Watten	463	497	941	630	573	Nov	621
Dungeness Gravel Pits	493	558	760	641	645	Aug	619

Sites of all-Ireland importance in Northern Ireland

Upper Lough Erne	349	644	542	255	546	Mar	467
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Other sites surpassing table qualifying levels in 1999-2000

Millbrook Clay Pit	842	Dec
Thorpe Water Park	798	Feb
Grafham Water	663	Dec
Blithfield Reservoir	657	Aug
Hornsea Mere	625	Nov

SCAUP

Aythya marila

GB max: 5,588 Dec

NI max: 4,742 Jan

International threshold: 3,100

Great Britain threshold: 110

All-Ireland threshold: 30*

* 50 is normally used as a minimum threshold

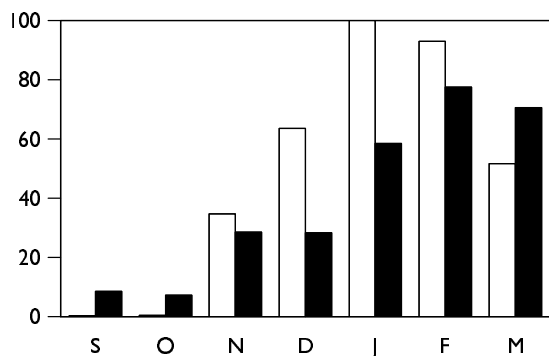


Figure 51. Monthly indices for Scaup in NI (white bars 1999-2000; black bars 1994-95 to 1998-99)

Peak counts of Scaup during the 1990s have fluctuated between 3,500 and 7,500 in Great Britain and between 1,800 and 5,000 in Northern Ireland. Whilst the 1999-2000 peak in Britain was therefore around average, that in Northern Ireland approached record levels. It is notable that large numbers in the province were present earlier than normal, with the peak on Loughs Neagh & Beg occurring in mid winter, rather than early spring as in recent years. The pattern of abundance matched that of other diving ducks, remaining high into February but declining

sharply in March.

Peak counts at most locations which form the 'core area' for Scaup in the UK, primarily those in a band through southern Scotland and Northern Ireland, were around average. Numbers were notably lower than their respective five-year means at three sites, namely the Forth Estuary, the North Norfolk Coast and Humber Estuary. However, at each of these, the average is bolstered by high counts in 1995-96 and 1996-97, and subsequent totals have been similar to those in preceding years. It seems likely that the apparent influx to these east coast sites resulted from cold weather, particularly in the first of these two winters, and in the absence of a similar occurrence in the next few years, these sites will cease to be of national importance for Scaup. The peak on the Inner Moray Firth is notable as the highest for several years, particularly given that it was obtained during a WeBS Core Count rather than the dedicated counts of seaducks in the Moray area, and is encouraging in view of the development and landclaim of some key areas for waterbirds at this site in the 1990s.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Loughs Neagh & Beg	4,022	4,222	3,671	4,426	3,874	Jan	4,043
Sites of national importance in Great Britain							
Solway Estuary	(484)	2,341	4,533	2,006	3,001	Dec	2,970
Loch Ryan	¹⁹ 916	³¹ 1,320	1,249	400	(637)	Dec	971
Loch Indaal	661	732	1,110	1,120	900	Dec	905
Forth Estuary	³⁵ 753	1,031	145	342	157	Dec	486
Inner Moray Firth	120	332	²³ 416	²³ 392	480	Feb	348
Loch of Stenness	361	318	258	268	250	Mar	291
North Norfolk Coast	517	482	1	3	17	Mar	204
Humber Estuary	(353)	(594)	21	12	2	Nov	196
Loch of Harray	191	³¹ 20	208	198	201	Dec	164
Cromarty Firth	279	115	45	132	²³ 117	Nov	138
Rough Firth	188	1	0	170	204	Dec	113 ▲
Sites of all-Ireland importance in Northern Ireland							
Carlingford Lough	800	404	572	700	700	Jan	635
Belfast Lough	247	³⁷ 254	95	³⁷ 78	244	Feb	184
Sites no longer meeting table qualifying							
Irvine to Saltcoats							

LESSER SCAUP

Aythya affinis

Vagrant

Native range: North America

One was present at Drift Reservoir from November to March, and another was recorded at Meadow Land Gravel Pits in March. The latter may have been one of a pair that visited this site

in February 1999. A single was also present on the Tees Estuary during June and July, an unusual date for this species.

EIDER

Somateria mollissima

International threshold: 20,000**

Great Britain threshold: 750

All-Ireland threshold: 20*

GB max: 23,862 Oct

NI max: 1,292 Feb

* 50 is normally used as a minimum threshold

The peak count in Britain in 1999-2000, although the lowest since 1988-89, was only marginally below that of recent years, having varied between 24,500 and 28,500 for much of the 1990s. That for Northern Ireland was relatively high, totals only having twice exceeded 1,300 birds.

Counts at many sites were lower than normal, notably the Forth Estuary, Ayr to North Troon, Girvan to Turnberry, the Farn Islands, Isle of Cumbrae, the Wash, Irvine/Garnock Estuary, Dee Estuary (Scotland) and Lough Foyle. Indeed, at only a handful of key sites was the WeBS count in 1999-2000 higher than the five year mean, though the count was the highest of the last five winters on the Ythan Estuary, Belfast Lough and Strangford Lough.

Regular counts between Rhu and Coalport in the Firth of Clyde by one observer since 1985 showed a consistent and very marked autumn

peak. This inspired more extensive counts of the area in September 1995 which, in 1997, were extended to include the whole 80 km coastline of the Firth of Clyde from Loch Ryan to the north side of the Clyde Estuary using a team of 35 counters (Waltho 2000). The 1997 survey recorded 19,450 birds, with totals of 14,539 and 16,546 in the following two autumns. The difference in numbers between years was due largely to changes along the central and south Ayrshire coastline, although the reason for such variation is unclear.

Eiders were first recorded breeding in the Firth of Clyde in the 1920s and these latest count totals suggest an average growth of around 8.5% per annum over the period. Counting is planned to continue to monitor the growth of this population and the key count stretches within the survey area (Gare Loch, Long Loch/Loch Goil,

Loch Fyne, and Bute) have been included in the table below. Whilst there is a degree of overlap between some of the WeBS count sites, notably the 'Clyde Estuary' and some count sections used

by Waltho (2000), it is noteworthy that half of the nationally important sites listed fall within the Firth of Clyde area.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain							
Tay Estuary	³⁵ 12,250	³⁷ 12,255	³¹ 9,500	6,028	-		10,008
Forth Estuary	³⁵ 9,764	9,166	6,937	7,171	6,283	Sep	7,864
Morecambe Bay	4,882	6,073	8,200	8,131	6,713	Nov	6,800
Clyde Estuary	4,238	5,779	3,299	3,944	4,454	Oct	4,343
Ayr to North Troon	8,000	³⁶ 1,359	3,767	4,355	³⁶ 775	Sep	4,251
Ythan Estuary	3,700	3,216	3,366	3,116	3,944	Jun	3,468
Gare Loch	-	³⁶ 3,037	³⁶ 2,419	³⁶ 2,156	³⁶ 2,261	Sep	2,468
Montrose Basin	(2,100)	2,100	2,163	3,365	2,214	Nov	2,461
Scapa Flow	-	-	-	³⁸ 2,308	-		2,308
Girvan to Turnberry	1,846	2,835	2,645	1,589	1,083	Nov	2,000
Loch Long/Loch Goil	-	³⁶ 1,285	³⁶ 1,331	³⁶ 2,960	³⁶ 2,164	Sep	1,935
Lindisfarne	2,474	1,255	1,209	2,106	1,258	Oct	1,660
Loch Fyne	-	-	³⁶ 1,499	³⁶ 1,558	³⁶ 1,510	Sep	1,522
Farne Islands	-	-	-	2,500	200	Oct	1,350
Irvine to Saltcoats	(600)	³⁶ (1,400)	(1,550)	-	³⁶ 789	Sep	1,170
Loch Ryan	¹⁹ 1,606	³¹ 1,161	228	1,202	1,400	Sep	1,119
Ardrossan-West Kilbride	-	-	-	-	937	Sep	937 ▲
Bute	-	³⁶ 571	³⁶ 763	³⁶ 949	³⁶ 1,367	Sep	913
Don Mouth to Ythan Mouth	107	1,215	2,159	360	634	Aug	895
Isle of Cumbrae	1,077	941	833	909	577	Nov	867
Seahouses to Budle Point	1,221	903	671	(800)	655	Dec	863
Wash	1,639	1,569	638	266	199	Jan	862
Irvine/Garnock Estuary	(1,200)	(500)	(1,200)	(400)	74	Jan	825
Dee Estuary (Scotland)	639	1,492	677	805	421	Aug	807
Sites of all-Ireland importance in Northern Ireland							
Belfast Lough	1,020	448	922	³⁷ 913	1,076	Sep	876
Outer Ards	255	709	470	716	382	Feb	506
Lough Foyle	83	452	161	³¹ 130	11	Mar	167
Larne Lough	157	96	39	100	157	Sep	110
Strangford Lough	³⁷ 43	61	52	95	122	Jan	75

KING EIDER

Somateria spectabilis

Vagrant

Native range: circumpolar Arctic

One was present during the summer on the Forth Estuary and it or another was on the Tay Estuary in January.

LONG-TAILED DUCK

Clangula hyemalis

International threshold: 20,000**

Great Britain threshold: 230[†]

All-Ireland threshold: +[†]

GB max: 1,931 Jan
NI max: 29 Mar

Long-tailed Duck is, and is likely to remain, one of the most poorly monitored wildfowl by WeBS. Our knowledge of their international numbers and distribution improved markedly in the 1990s, as a result of extensive boat-based surveys in the

Baltic. Most birds, however, were found in the open sea, many tens of kilometres from land. They were relatively thinly dispersed and relatively few birds were actually counted. The new estimates were based on extrapolation of

the boat-based surveys to the large areas over which this species occurred. Whilst extensive boat-based surveys have been conducted throughout the North Sea and off the west coast of Britain, very few Long-tailed Ducks were recorded (Tasker *et al.* 1987, Webb *et al.* 1990). Away from the Moray Firth, most birds are thought to occur within sheltered waters around the Hebrides, Shetland and, in particular, Orkney. However, the estimate of 6,000 Long-tailed Ducks for Orkney used for producing the national estimate for this species, was made in the late

1970s. Contemporary, dedicated surveys of these areas are required, particularly in light of the apparent decline in the Moray, to determine the current wintering numbers in Britain.

Peak WeBS total counts in 1999-2000 were about average for recent years, having ranged between 1,000 and 3,000 in Great Britain and between 20 and 90 in Northern Ireland during the 1990s. Notably large counts were made in South Yell Sound, Shetland, by ongoing seaduck surveys there, and at Loch of Stenness. Conversely, very few were found in St Andrews Bay.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain[†]							
Moray Firth	(660)	(734)	²³ 2,006	²³ 2,482	²³ 1,389	Dec	1,959
Scapa Flow	-	-	-	³⁸ 1,582	-		1,582
Forth Estuary	461	975	660	772	655	Mar	705
Hacosay, Bluemull & Colgrave Sounds	-	²⁹ 421	²⁹ 383	-	-		402
South Yell Sound	²⁹ 157	²⁹ 157	²⁹ 270	²⁹ 191	²⁹ 317	Feb	218
Grutness to Quendale	-	-	-	²⁹ 142	-		142
Water Sound	(137)	88	(96)	135	120	Mar	120
Loch of Stenness	80	108	48	88	173	Feb	99
St Andrews Bay	³⁵ 265	106	29	72	15	Mar	97
Traigh Luskentyre	13	146	152	(75)	49	Jan	90
Whiteness to Scarvister	-	-	-	²⁹ 66	-		66
Dee Mouth to Don Mouth	-	-	-	12	88	Nov	50 ▲
Thurso Bay	0	-	-	-	60	Jan	30 ▲
Seahouses to Budle Point	8	150	20	0	19	Dec	39
Loch of Harray	26	22	21	85	20	Oct	35
North Norfolk Coast	65	3	34	13	49	Mar	33

Internationally or nationally important sites not counted in last five years

Sound of Taransay

Sites no longer meeting table qualifying levels

Lindisfarne

[†] as few sites exceed the British threshold, a qualifying level of 30 has been chosen to select sites for presentation in this report

COMMON SCOTER

Melanitta nigra

GB max: 6,651 Feb

NI max: 53 Dec

International threshold: 16,000

Great Britain threshold: 275

All-Ireland threshold: 40*

* 50 is normally used as a minimum threshold

Peak counts by WeBS in 1999-2000 were around normal for the last five years, albeit that numbers of this species can vary markedly in individual years, particularly if large counts at individual sites, usually a result of favourable viewing conditions, coincide in the same month.

The peak count in Carmarthen Bay in 1999-2000 is exceeded only by the highest ever made at the site (25,000 in 1973-74). Clearly, numbers have recovered at this site following the *Sea Empress* oil spill in February 1996, though it is yet

unclear whether this reflects a recovery of the shellfish stocks in the bay also. CCW-funded studies of the benthic fauna are ongoing and it is hoped that these will shed some light on the link between birds and their food and any changes following the oil spill. The numbers recorded at this site exceeded international importance for the second winter in succession reaffirming its long-standing status as a proposed SPA. Lower than normal numbers were recorded at St Andrews Bay, the Wash and Don Mouth to Ythan

Mouth in 1999-2000.

An error in the published figure for the British wintering estimate has come to light recently. The figure of 35,000 has been quoted following Kirby *et al.* (1993) but re-examination of the data presented therein show that the figure should be 27,350. This produces a 1% threshold for national importance of 275 birds, and this figure has been used in preparing the table below. However, it is

clear from recent counts at Carmarthen Bay alone, but also due to the availability of better quality data from many of the key sites, that this estimate, based on data from the late 1980s, is a considerable underestimate. This 'population' size for this species, along with those for all other wintering waterbirds in Britain, is currently being re-evaluated and the new estimates will be used in the next *Wildfowl and Wader Counts*.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain							
Carmarthen Bay	³⁰ 10,631	³⁰ 4,323	⁶ 6,240	¹¹ 17,831	21,395	Jan	12,084
Solway Firth	(6)	(43)	(5,000)	(1,450)	(1)	Aug	(5,000)
Cardigan Bay	⁹ 6,720	(636)	⁹ 5,220	(477)	(126)	Feb	5,970
North Norfolk Coast	5,549	2,070	1,860	1,552	2,182	Nov	2,643
Moray Firth	(2,764)	(609)	²³ 2,061	²³ 3,543	²³ 2,281	Jan	2,622
St Andrews Bay	³¹ 4,000	1,704	2,771	1,105	880	Nov	2,092
Rough Firth & Auchencairn Bay	-	-	2,000	-	-		2,000
Forth Estuary	1,740	2,320	1,205	1,663	1,428	Dec	1,671
Clwyd Estuary	7,000	0	7	0	0		1,401
Colwyn Bay	5,480	11	386	363	735	Mar	1,395
Earlsferry Links to Anstruther	860	-	-	-	-		860
Wash	2,002	351	200	468	166	Nov	637
Alt Estuary	851	12	811	454	572	Dec	540
Don Mouth to Ythan Mouth	¹ 1,500	500	525	16	120	Jul	532
Lindisfarne	84	300	192	1,512	220	Feb	462 ▲
Sites of all-Ireland importance in Northern Ireland							
Craigalea to Newcastle	430	-	-	-	-		430
Dundrum Bay	150	0	0	755	0		181
Tyrella Shore	135	-	-	-	-		135
Sites surpassing table qualifying levels in 1999-2000							
Belfast Lough	53	Dec					

SURF SCOTER

Melanitta perspicillata

Vagrant

Native range: North America

In Scotland five were recorded on the Forth Estuary in March and four were at Traigh Luskentyre in October. Single birds were also

recorded in England and Wales during the year, at Cresswell to Chevington Burn in September and Colwyn Bay in February.

VELVET SCOTER

Melanitta fusca

International threshold: 10,000

Great Britain threshold: 30*

All-Ireland threshold: +*

GB max: 1,043 Nov

NI max: 1 Feb

* 50 is normally used as a minimum threshold

The peak total for Great Britain was average for recent years, having just surpassed 1,000 in four of the five most recent winters. However, counts at two of the three main resorts for this species in the UK were rather lower than normal. Continuing high counts at St Andrews saw this

site regain top position in the table and are perhaps somewhat surprising in view of the relatively low counts of other seaducks, notably Common Scoter and Long-tailed Duck, at this site in 1999-2000.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain							
St Andrews Bay	1,000	942	520	840	845	Nov	829
Moray Firth	(183)	(81)	²³ 804	²³ 1,090	²³ 401	Dec	765
Forth Estuary	³⁵ 1,051	868	528	433	486	Mar	673
North Norfolk Coast	108	2	18	19	6	Feb	31

GOLDENEYE

Bucephala clangula

International threshold: 3,000
Great Britain threshold: 170
All-Ireland threshold: 110

GB max: 16,174 Feb
NI max: 8,002 Jan

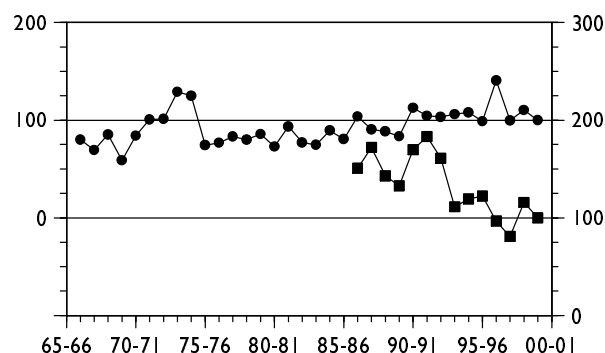


Figure 52. Annual indices for Goldeneye in GB (circles, left axis) and NI (squares, right axis)

The peak British count in 1999-2000 was fractionally below the norm in recent winters while the figure in Northern Ireland was also around average. It is notable, however, that the latter remains well below totals in the late 1980s. In every year from 1987-88 and 1993-94, the peak count on Loughs Neagh & Beg exceeded 10,000, often markedly so. However, since that time, the figure has been consistently under 10,000, averaging little over half the previous numbers. Whilst annual indices show a general increase in numbers in Britain since the mid 1970s, this does not account for the change in numbers in Northern Ireland; indeed, the sharp fall in the province in the early 1990s occurred during a period of stability in Britain. Monthly indices for Britain show a consistently high numbers for a prolonged period in mid winter, whilst those for Northern Ireland suggest a mid winter departure, followed by an influx in February, perhaps

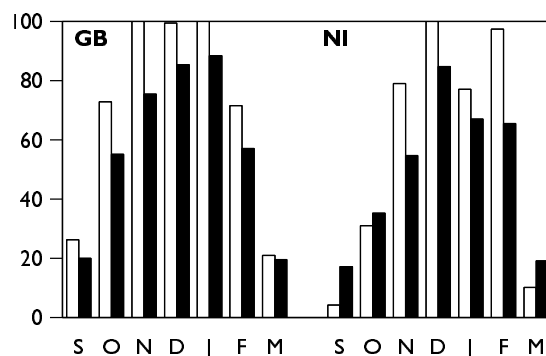


Figure 53. Monthly indices for Goldeneye in GB and NI (white bars 1999-2000; black bars 1994-95 to 1998-99)

indicative of birds moving on to the Republic of Ireland. Annual indices for the Republic, based solely on January counts, show a general decline in numbers from 1995 to 1998, followed by a jump to their highest values in 1999, although this index is based on relatively small numbers (Colhoun 2001).

Following several years with high counts, numbers on the Forth Estuary dropped again, and the site no longer qualifies as internationally important for Goldeneye. Lower than normal counts were also recorded on the Tweed Estuary and there has been a dramatic and steady decline over the last five winters at Girvan to Turnberry. In Northern Ireland, there has been a similar pattern in numbers at Belfast Lough. Counts on the Clyde Estuary and Kilconquhar Loch were the most obvious high counts among the top sites for this species.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Loughs Neagh & Beg	9,793	8,081	5,587	7,611	7,026	Feb	7,620
Sites of national importance in Great Britain							
Forth Estuary	1,564	2,892	4,864	2,445	1,650	Dec	2,683 ▼
Inner Moray Firth	579	921	²³ 895	³⁷ 964	894	Dec	851
Abberton Reservoir	488	839	426	631	651	Feb	607
Clyde Estuary	584	562	509	496	858	Mar	602
Tweed Estuary	617	804	570	585	302	Dec	576

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Girvan to Turnberry	854	672	315	241	131	Jan	443
Humber Estuary	331	(558)	287	581	410	Jan	433
Rutland Water	366	427	424	366	354	Mar	387
Morecambe Bay	504	329	310	314	288	Feb	349
Doon Estuary	607	505	118	171	300	Feb	340
Loch Leven	300	314	301	382	256	Feb	311
Blackwater Estuary	289	353	(242)	279	265	Jan	297
Kilconquhar Loch	167	322	253	305	424	Mar	294
Scapa Flow	-	-	-	³⁸ 282	-		282
R. Tweed: Kelso to Coldstream	314	268	334	198	220	Dec	267
Windermere	223	296	269	-	-		263
Poole Harbour	220	232	405	182	273	Feb	262
Loch of Stenness	191	259	222	215	310	Feb	239
Loch of Skene	160	202	(356)	231	244	Mar	239
Irvine to Saltcoats	(340)	(140)	110	-	-		225
Fleet/Wey	175	254	248	183	202	Feb	212
North Norfolk Coast	182	218	³⁷ 193	199	231	Feb	205
Hornsea Mere	-	-	117	185	265	Mar	189
Solway Estuary	135	162	150	206	222	Mar	175 ▲

Sites of all-Ireland importance in Northern Ireland

Belfast Lough	549	400	259	³⁷ 337	161	Dec	341
Strangford Lough	216	192	302	298	238	Dec	249
Larne Lough	297	284	238	173	247	Mar	248
Carlingford Lough	150	257	227	154	139	Dec	185
Upper Lough Erne	149	161	91	77	118	Jan	119
Outer Ards	122	131	71	141	104	Feb	114 ▲
Lough Money	116	136	85	99	128	Jan	113

Sites no longer meeting table qualifying levels

Traeth Lafan

Other sites surpassing table qualifying levels in 1999-2000

Loch Ryan 271 Dec

SMEW

Mergellus albellus

GB max: 254 Jan
NI max: 1 Dec/Jan

International threshold: 250

Great Britain threshold: 2*†

All-Ireland threshold: +*

* 50 is normally used as a minimum threshold

The peak British total in 1999-2000 was the smallest and the first under 300 birds since 1994-95, no doubt a consequence of the relatively mild winter, particularly from January onwards. Nevertheless, numbers have remained high or even increased at some of the key sites in the last few years and it seems probable that the mean at Wraybury Gravel Pits may exceed the threshold of 50 birds for national importance next winter. Counts at many of the key sites fluctuate, partly a consequence of the relatively small numbers involved. Whilst, therefore, identifying counts in

individual years which buck the trend is somewhat questionable, there were lower than average counts at six sites, generally those furthest west such as Chew Valley Lake and Eglwys Nunydd Reservoir, as would be expected with a lower national total. The higher than normal count at Cotswold Water Park (West) is thus all the more noteworthy. Smew remain a rarity in Northern Ireland and one was recorded at Ballymurry Bog in December and Lough Money in January.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain [†]							
Wraysbury Gravel Pits	30	43	61	53	56	Jan	49
Dungeness Gravel Pits	31	16	18	38	29	Feb	26
Lee Valley Gravel Pits	3	31	23	30	22	Dec	22
Fen Drayton Gravel Pits	11	22	15	17	14	Feb	16
Thorpe Water Park	20	11	13	26	9	Feb	16
Cotswold Water Park (West)	10	10	8	19	28	Jan	15
Rutland Water	12	14	18	19	8	Feb	14
Twyford Gravel Pits	10	13	11	9	17	Feb	12
Earls Barton Gravel Pits	7	13	15	15	3	Dec/Jan	11
Chew Valley Lake	7	14	7	15	5	Jan	10
Middle Tame Valley Gravel Pits	(5)	(6)	5	21	5	Dec	10
Hornsea Mere	-	-	0	19	(1)	Nov/Dec	10
Seaton Gravel Pits	0	(3)	9	16	9	Feb	9
Rye Harbour & Pett Level	4	14	4	11	7	Dec	8
Eyebrook Reservoir	3	12	5	12	-		8
Loch of Strathbeg	(7)	9	5	8	(3)	Dec/Jan	7
Hoveringham Gravel Pits	-	-	-	0	6	Dec/Jan	6 ▲
Little Paxton Gravel Pits	5	9	5	4	5	Jan	6
Croxall Pits	11	14	0	2	4	Feb	6
Colne Valley Gravel Pits	10	7	3	7	2	Feb	6
Pitsford Reservoir	11	9	2	(8)	2	Dec/Jan	6
Eglwys Nunydd Reservoir	6	12	7	³¹ 4	0		6
Leybourne/New Hythe Gravel Pits	6	-	-	-	-		6
Bedfont & Ashford Gravel Pits	4	16	5	1	1	Feb	5

Internationally or nationally important sites not counted in last five years

Staines Moor Gravel Pits

Other sites surpassing table qualifying levels in 1999-2000

R. Avon: R'wood to Christchurch	7	Dec
Thrapston Gravel Pits	7	Jan/Feb
Fairburn Ings	6	Dec/Jan

[†] as the British threshold for national importance is so small, a qualifying level of five has been chosen to select sites for presentation in this report

RED-BREASTED MERGANSER

Mergus serrator

GB max: 4,216 Feb

NI max: 537 Sep

International threshold: 1,250

Great Britain threshold: 100

All-Ireland threshold: 20*

* 50 is normally used as a minimum threshold

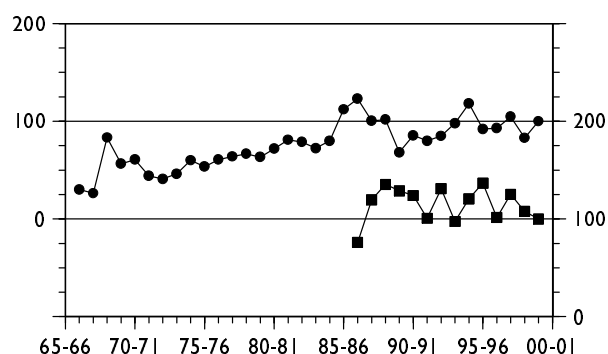


Figure 54. Annual indices for Red-breasted Merganser in GB (circles, left axis) and NI (squares, right axis)

Recorded totals of Red-breasted Merganser in Britain increased somewhat in the early 1990s, reaching peak of just over 5,000 at that time. For the previous four winters, however, peak totals

have remained amazingly consistent, varying between just 4,130 and 4,330, and this stability continued in 1999-2000. Annual indices have varied to a greater degree, calculated using counts from all months from October to March inclusive. Consequently, a high degree of consistency for combined numbers in these months is required to produce the same pattern of stability in index values. Though peak numbers in Northern Ireland were the lowest since 1991-92, they too were little different from the average in recent winters.

The consistency in national totals is perhaps surprising given the variation between years at individual sites. Notably lower than average counts were recorded on the Duddon Estuary, Inner Moray Firth, Langstone Harbour and Lough

Foyle. The count on the Wash was the lowest of the last five winters but was still sufficient for the site to qualify as nationally important for Red-breasted Merganser. Higher than normal counts were made at Fleet/Wey, Morecambe Bay, and Chichester Harbour. Curiously, two of these are directly adjacent to sites listed above with

markedly low counts. A series of dedicated counts of divers, grebes and seaducks in the South Cornwall IBA recorded a peak of 123 Red-breasted Merganser, surpassing the 1% threshold, with all birds found exclusively in Carrick Roads, the outer part of the Fal Estuary (Geary & Lock 2001).

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain							
Forth Estuary	665	715	675	622	525	Feb	640
Scapa Flow	-	-	-	³⁸ 628	-		628
Poole Harbour	448	333	502	385	466	Dec	427
Fleet/Wey	329	344	440	269	530	Mar	382
Duddon Estuary	424	382	394	378	240	Feb	364
Inner Moray Firth	163	746	²³ 239	²³ 431	224	Oct	361
Morecambe Bay	297	323	312	309	475	Dec	343
Traeth Lafan	¹⁴ 288	¹⁴ 330	234	¹⁴ 453	¹⁴ 255	Aug	312
Cromarty Firth	116	193	²³ 508	²³ 135	³⁷ 168	Jan	224
Clyde Estuary	292	230	186	230	159	Jan	219
Langstone Harbour	419	182	199	185	90	Mar	215
Loch Indaal	172	159	157	191	185	Aug	173
Chichester Harbour	120	³⁷ 124	184	³⁷ 141	212	Nov	156
Irvine to Saltcoats	(150)	(135)	148	-	-		149
Montrose Basin	220	52	204	113	100	Jun	138
North Norfolk Coast	141	166	³⁷ 121	100	128	Nov	131
Irvine/Garnock Estuary	176	118	94	³⁷ 120	44	Mar	110
Solway Estuary	44	130	181	66	122	Feb	109 ▲
Loch Lomond	101	75	143	113	92	Jul	105 ▲
Wash	104	132	109	104	62	Dec	102 ▲
Exe Estuary	114	67	133	93	-		102
Sites of all-Ireland importance in Northern Ireland							
Strangford Lough	486	276	191	285	211	Nov	290
Larne Lough	331	201	171	195	243	Sep	228
Belfast Lough	180	³⁷ 123	270	³⁷ 123	166	Sep	172
Lough Foyle	197	130	296	³¹ 99	27	Dec	150
Craigalea to Newcastle	62	-	-	-	-		62
Outer Ards	34	65	50	41	52	Feb	48
Carlingford Lough	29	36	44	46	41	Mar	39
Loughs Neagh & Beg	32	27	23	42	9	Sep/Mar	27
Dundrum Bay	49	³⁷ 16	14	42	10	Dec	26
Tyrella Shore	21	-	-	-	-		21
Bann Estuary	15	23	24	22	18	Jan	20 ▲
Other sites surpassing table qualifying levels in 1999-2000							
Stour Estuary	³⁷ 107	Dec					
Portsmouth Harbour	104	Dec					
Loch of Stenness	104	Feb					

GOOSANDER

Mergus merganser

GB max: 3,576 Jan
NI max: 2 Nov

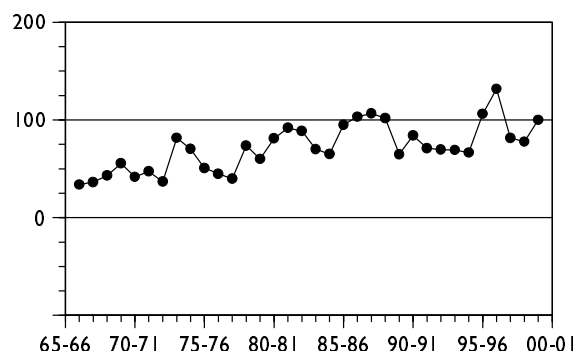


Figure 55. Annual indices for Goosander in GB

The peak count in 1999-2000 in Britain was similar to that of the previous two winters, consistent with the generally mild weather during this period. Interestingly, the annual index rose quite sharply, suggesting higher than normal numbers during the period December to February, the months on which the index is based. Whilst the cold snap in December might have been expected to result in higher numbers, this is not reflected in the monthly indices; indeed, they suggest an earlier 'arrival' of birds (or rather, earlier movement onto waters that are counted by WeBS and included in the index) with a much higher number than normal counted in November.

International threshold: 2,000
Great Britain threshold: 90
All-Ireland threshold: +*

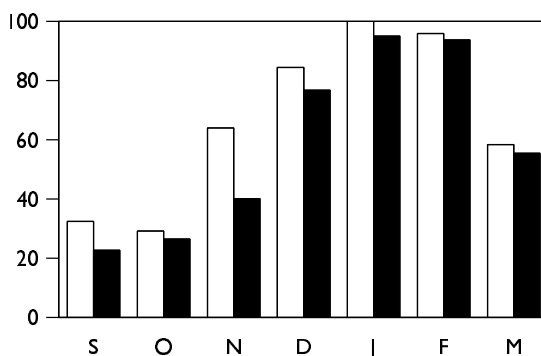


Figure 56. Monthly indices for Goosander in GB (white bars 1999-2000; black bars 1994-95 to 1998-99)

A fair proportion of key sites held lower than normal peak numbers during 1999-2000, including Hirsell Lake, Lower Derwent Valley and Montrose Basin. Low numbers at Hamilton Low Parks and Eversley Cross & Yateley Gravel Pits represented continuing declines at these sites over the last five winters, and Chew Valley Lake dropped below the threshold for national importance for Goosander as a result of another low count at the site. Only at Tynninghame Estuary was the count higher than average.

In addition to the regular bird at Belfast Lough, another was recorded in Northern Ireland, at Ballymurry Bog in November.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain							
Tay Estuary	277	225	240	160	268	Aug	234
Hirsell Lake	³¹ 180	210	13	³¹ 490	³¹ 87	Oct	196
Loch Lomond	198	184	226	129	176	Sep	183
Eccup Reservoir	³¹ 276	163	163	131	154	Nov	177
Lower Derwent Valley	173	298	182	111	51	Feb	163
Inner Moray Firth	559	65	8	³⁷ 87	4	Oct	145
R. Tweed: Kelso to Coldstream	149	158	84	129	158	Dec	136
Hay-a-Park Gravel Pits	120	209	-	-	²⁴ 58	Nov	129
Hamilton Low and Strathclyde Parks	-	-	170	140	73	Dec	128
Montrose Basin	(156)	89	136	129	67	Aug	115
Eversley Cross & Yateley GP	165	135	74	71	63	Dec	102
Tynninghame Estuary	93	98	107	62	130	Aug	98
Blithfield Reservoir	36	165	74	102	(35)	Jan/Mar	94
Castle Loch (Lochmaben)	73	³¹ 132	77	97	76	Feb	91 ▲

Internationally or nationally important sites not counted in last five years

Lochs Garten & Mallachie
Spey Mouth
Castle Howard Lake

Sites no longer meeting table qualifying levels

Chew Valley Lake

Other sites surpassing table qualifying levels in 1999-2000

Old Moor Wetlands

RUDDY DUCK
Oxyura jamaicensis

Naturalised introduction[†]
Native range: North and South America

GB max: 4,565 Jan
NI max: 17 Oct

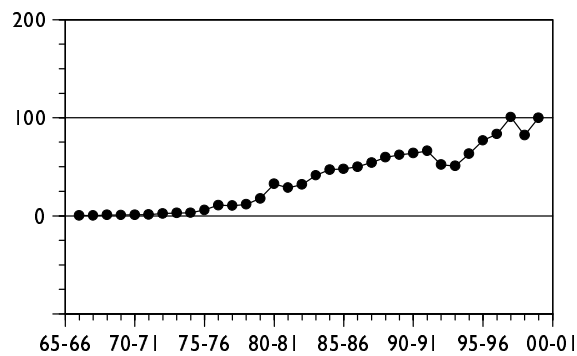


Figure 57. Annual indices for Ruddy Duck in GB

British totals reached an all time high in January 2000. Moreover, these totals do not include counts from Chew Valley Lake. Additional surveys at that site recorded 390 in late December, suggesting a revised national total nearing 5,000 birds. Annual index values correspondingly rose by 22%. In Northern Ireland counts were unusually low, with birds recorded from only two sites in September and October.

The issues surrounding the growth of the British Ruddy Duck population have been debated widely in the birdwatching press, not

least the current trials being conducted by the Department of the Environment, Transport and the Regions (DETR) to investigate the feasibility of control of the population. The first year of trials, which began during the 1999-2000 count year, saw c.1,000 individuals culled, making the sharp increase in counted numbers all the more surprising. It is speculated that increased disturbance of Ruddy Ducks on the control sites caused concentration of birds onto sites outside the control areas, giving rise to the apparent high national totals. Record counts were made at Rutland Water, which saw the largest concentration of birds yet recorded at a UK site, whilst many sites in southeast England (Hilfield Park, Abberton and Staines Reservoirs) and the Midlands (Colwick Country Park, Belvide, Stanford Reservoir) also showed notably high peaks. Those registering a fall in numbers included several in and around the trial regions of Anglesey and the West Midlands, though defining a clear overall pattern is difficult due to the characteristic fluctuations which occur at many sites from one year to the next.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites with mean peak counts of 30 or more birds in Great Britain							
Rutland Water	231	1,078	727	1,170	1,345	Jan	910
Chew Valley Lake	851	789	700	(255)	390	Dec	683
Blithfield Reservoir	380	566	327	462	449	Dec	437
Middle Tame Valley Gravel Pits	225	(501)	457	260	120	Oct	313
Blagdon Lake	145	296	213	426	360	Jan	288
Hilfield Park Reservoir	190	306	186	216	298	Jan	239
Abberton Reservoir	135	88	99	(217)	443	Oct	196
Stanford Reservoir	107	221	(181)	147	212	Nov	174
Eyebrook Reservoir	151	239	275	14	-		170
Fairburn Ings	³¹ 178	83	243	116	45	Jul	133
Pitsford Reservoir	154	87	98	(70)	167	Jan	127
Llyn Alaw	58	³¹ 62	133	³¹ 221	159	Jan	127
Llyn Traffwll	89	156	122	³¹ 153	92	Oct	122
Holme Pierrepont Gravel Pits	101	134	99	64	102	Feb	100
Hanningfield Reservoir	174	76	162	44	22	Jul	96
Clumber Park Lake	100	111	60	116	66	Mar	91
Colwick Country Park	88	68	41	41	³¹ 181	Feb	84
Attenborough Gravel Pits	49	265	18	14	23	Jan	74
Farmwood Pool	133	99	61	41	23	Nov	71
Tophill Low Reservoirs	35	51	56	85	113	Dec	68
Llynnau Y Fali	³¹ 79	92	99	71	29	Aug	74
Staines Reservoirs	67	112	3	22	127	Feb	66
Kilconquhar Loch	62	85	62	58	56	Aug	65
Rostherne Mere	38	152	24	18	88	Oct	64

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Pugneys Country Park Lakes	50	65	94	51	35	Nov	59
Cropston Reservoir	33	156	16	1	47	Feb	51
Great Pool (Westwood Park)	(11)	29	51	77	47	Nov	51
Swillington Ings	130	82	7	18	9	Mar	49
Dungeness Gravel Pits	27	29	33	39	110	Jan	48
Church Wilne Reservoir	63	76	2	-	-		47
Worsborough Reservoir	90	29	-	21	-		47
Capheaton Reservoir	47	-	-	-	-		47
Knight & Bessborough Reservoirs	28	126	32	32	10	Nov	46
Thoresby Lake	-	20	63	19	74	Feb	44 ▲
Aqualate Mere	60	73	27	(20)	7	Aug/Mar	42
Bolton-on-Swale Gravel Pits	17	29	34	57	66	Jan	41
Belvide Reservoir	7	31	2	59	100	Mar	40
Blackwater Estuary	20	32	29	38	80	Nov	40 ▲
Angler's Country Park Lake	19	3	39	54	69	Feb	37 ▲
Hule Moss	³¹ 13	³¹ 14	³¹ 41	³¹ 73	39	Sep	36 ▲
Sutton/Lound Gravel Pits	45	25	36	-	38	Mar	36
Woolston Eyes	44	40	34	40	22	Sep	36
Swithland Reservoir	73	12	67	20	10	Mar	36
Old Moor Wetlands	56	25	42	32	21	Mar	35
Brent Reservoir	34	24	16	46	44	Sep	33 ▲
Cotswold Water Park (West)	38	16	42	33	34	Jan/Mar	33 ▲
Rufford Lake	14	51	28	48	22	Sep	33
King George VI Reservoir	92	20	50	2	0		33
Ellesmere Lakes	77	22	11	22	30	Sep/Oct	32
Houghton Green Pool	14	36	42	38	28	Sep	32

Sites with mean peak counts of 30 or more birds in Northern Ireland

Loughs Neagh & Beg	73	89	28	84	14	Oct	58
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Sites no longer meeting table qualifying levels

Hollowell Reservoir

Other sites surpassing table qualifying levels in 1999-2000

Carsington Water	96	Mar	Hogganfield Lough	44	Sep
Hollowell Reservoir	60	Mar	Winterset & Cold Hiendley Rsrs	41	Dec
Ravensthorpe Reservoir	58	Feb	Hampton & Kempton Reservoirs	40	Feb
Tees Estuary	56	Sep	Mickletown Ings	36	Sep
Humber Estuary	54	Sep	Walthamstow Reservoirs	32	Dec
Catchpenny Pool	52	Jan			

† as site designation does not occur and the 1% criterion is not applied, a qualifying level of 30 has been chosen to select sites for presentation in this report

ARGENTINE BLUE-BILL

Oxyura vittata

Escape
Native range: South America

One was at Colwick Country Park in March.

WATER RAIL

Rallus aquaticus

International threshold: ?
Great Britain threshold: ?†
All-Ireland threshold: ?†

GB max: 452 Dec
NI max: 4 Jan

The peak count in 1999-2000 was the second highest recorded by WeBS, following the record total in the previous year. The higher counts in recent years are most probably due to an

increase in observer coverage rather than a true increase in the wintering population and remain considerable undercounts due to the secretive nature of this species.

For the second year running the Lower Derwent Valley held very few birds although numbers at Chew Valley Lake returned to normal after a

remarkably high count in 1998-99. Positions in the table remained relatively unchanged although three more sites were added to the table.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain[†]							
Grouville Marsh	(40)	(20)	(20)	(10)	(40)	Nov	(40)
Somerset Levels	46	42	29	38	34	Jan	38
Rye Harbour & Pett Level	5	40	2	61	31	Aug	28
Stodmarsh NNR & Collards Lagoon	30	9	14	23	28	Oct/Mar	21
Leighton Moss	15	18	25	28	15	Aug	20
Longueville Marsh	(20)	(10)	(5)	(10)	(10)	Various	(20)
Lower Derwent Valley	29	26	27	7	8	Jan	19
Fleet Pond	15	20	20	15	20	Nov-Jan	18
Chew Valley Lake	0	9	19	42	4	Mar	15
Colwick Country Park	2	68	0	2	4	Dec-Feb	15
North Norfolk Coast	23	6	11	16	10	Nov	13
Severn Estuary	22	9	4	26	5	Nov/Jan	13
Rutland Water	(10)	10	6	10	20	Jan/Feb	12 ▲
Marston Sewage Treatment Works	-	-	-	5	18	Jan	12 ▲
Lee Valley Gravel Pits	5	10	6	10	22	Nov	11 ▲
Doxey Marshes	6	15	11	10	11	Sep	11
Knockshinnoch Lagoons	28	4	9	5	3	Dec	10

Internationally or nationally important sites not counted in last five years

Pannel Valley

Sites no longer meeting table qualifying levels

Kilconquhar Loch

Other sites surpassing table qualifying levels in 1999-2000

Colne Estuary	23	Dec
Brent Reservoir	22	Jan
Southampton Water	16	Jan
Poole Harbour	16	Nov
Kilconquhar Loch	14	Dec
Walland Marsh	11	Oct
Bosherston Lakes	11	Oct
R. Lune: Caton to Hornby	10	Jul
Middle Tame Valley Gravel Pits	10	Nov
Fordwich & Westbere Gravel Pits	10	Nov

[†] as no British or all-Ireland threshold has been set, a qualifying level of 10 has been chosen to select sites for presentation in this report

SPOTTED CRAKE

Porzana porzana

GB max:

NI max:

International threshold: ?

Great Britain threshold: ?[†]

All-Ireland threshold: ?[†]

Single birds were recorded at Stodmarsh NNR & Collards Lagoon in August and at Old Moor Wetlands and Filey Dams in September.

BAILLON'S CRAKE

Porzana pusilla

Vagrant

Native range: Europe, S Africa, Asia and Australasia

A male was present at Stodmarsh NNR & Collards Lagoon in July.

MOORHEN
Gallinula chloropus

International threshold: ?
Great Britain threshold: ?†
All-Ireland threshold: ?†

GB max: 14,375 Jan
NI max: 258 Jan

In 1999-2000 wintering Moorhen numbers in Great Britain increased to the highest ever levels recorded by WeBS, though the peak count in Northern Ireland was the lowest of the last five years. These numbers, however, are only a fraction of the true wintering population, and it is likely that WeBS records little over 1% of the total.

The top five British sites have remained the same for the previous three years, although

numbers fluctuate widely at each. Only the Severn Estuary and the North Norfolk Coast held peak numbers noticeably above their five year means and, due to annually increasing peak counts, Swanbourne Lake qualified for inclusion in the table. For the second year running the Lower Derwent Valley supported numbers well below the five year mean.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain †							
WWT Martin Mere	665	739	710	640	570	Nov	665
Lower Derwent Valley	³¹ 516	816	680	371	419	Feb	560
Severn Estuary	23	829	20	860	679	Jan	482
Somerset Levels	356	253	250	370	407	Oct	327
North Norfolk Coast	332	179	334	291	441	Feb	315
Durham Coast	176	175	256	269	307	Nov	237
Lee Valley Gravel Pits	194	234	191	215	278	Jan	222
Burry Inlet	121	220	281	198	213	Jan	207
Arun Valley	161	234	190	197	240	Dec	204
Ouse Washes	241	124	201	287	126	Mar	196
Thames Estuary	234	219	144	137	161	Feb	179
Chichester Gravel Pits	179	167	176	138	(138)	Feb	165
Rutland Water	178	71	119	160	229	Sep	151
Blackwater Estuary	113	181	165	126	138	Dec	145
Grouville Marsh	(130)	(100)	(70)	(80)	(140)	Nov	140 ▲
Chew Valley Lake	180	125	120	145	130	Sep	140
Bewl Water	196	119	60	170	122	Jul	133
Rye Harbour & Pett Level	90	67	111	222	162	Dec	130
R. Wye: Bakewell to Haddon	153	118	160	101	114	Nov	129
Lancaster Canal	147	106	207	88	85	Dec	127
Pitsford Reservoir	163	116	21	(123)	172	Sep	119
Marston Sewage Treatment Works	-	-	-	(110)	118	Jan	118
Tring Reservoirs	65	78	148	207	90	Dec	118
Sutton/Lound Gravel Pits	104	120	106	-	136	Feb	117
Leighton Moss	160	170	95	90	65	Jun	116
Fairburn Ings	³¹ 112	104	112	120	113	Jul	112
Swanbourne Lake	-	42	(60)	130	140	Jan	104 ▲
Thanet Coast	-	135	76	122	83	Jan	104
Sites of all-Ireland importance in Northern Ireland †							
Loughs Neagh & Beg	265	132	137	201	124	Sep	172
Upper Lough Erne	70	164	52	100	67	Mar	91
Broadwater Canal	-	83	71	69	-		74
Portavo Lake	43	-	-	-	-		43
Upper Quoile River	18	24	31	43	38	Feb	31
Important sites not counted in last five years							
Wantsum Marshes							
Ash Levels							
Little Stour Valley							

Sites no longer meeting table qualifying levels

Chilham & Chartham Gravel Pits

Alde Complex

Other sites surpassing table qualifying levels in 1999-2000

Orwell Estuary	³⁷ 157	Jan
Ribble Estuary	141	Dec
Brent Reservoir	141	Dec
Hope Carr Reserve	124	Sep
Dee Estuary (Eng/Wal)	120	Nov
R. Avon: R'wood to Christchurch	113	Dec
Dungeness Gravel Pits	110	Aug
Alton Water	110	Oct
Woolston Eyes	110	Sep
Stodmarsh NNR & Collards Lagoon	108	Oct
Ravensthorpe Reservoir	108	Sep
Belfast Lough	³⁷ 46	Nov

† as no British or all-Ireland thresholds have been set, qualifying levels of 100 and 30 have been chosen to select sites in Great Britain and Northern Ireland, respectively, for presentation in this report

COOT

Fulica atra

GB max: 112,089 Nov

NI max: 8,436 Nov

International threshold: 15,000

Great Britain threshold: 1,100

All-Ireland threshold: 250

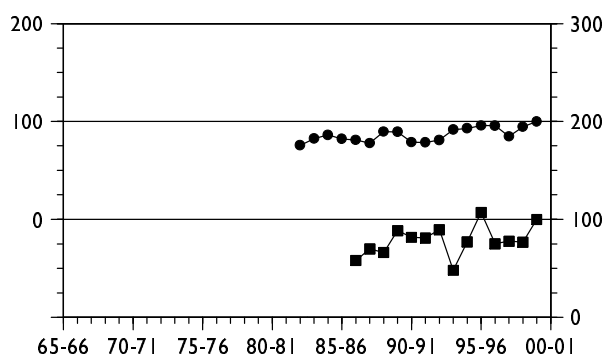


Figure 58. Annual indices for Coot in GB (circles, left axis) and NI (squares, right axis)

The annual indices in Great Britain and Northern Ireland rose to their highest and second highest ever levels, respectively. The former was 4% higher than the previous highest, while the latter was up by 20% on values for the previous three winters.

The peak British total was the highest recorded by WeBS, numbers typically building to a peak in October and November before a rapid decline after mid winter.

As expected, most departures from five year means in 1999-2000 involved higher counts. Counts at Abberton Reservoir, a site where

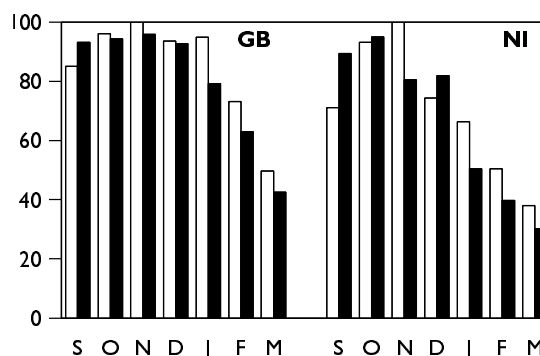


Figure 59. Monthly indices for Coot in GB and NI (white bars 1999-2000; black bars 1994-95 to 1998-99)

numbers appear to cycle over a short period of years, suggest another term of high counts is beginning following the very low numbers in the late 1990s. Peak counts at Loch Leven, Pitsford Reservoir and Dungeness Gravel Pits increased for the fifth consecutive year and large counts were also made at Alton Water, Hickling Broad (the second highest count at any site in 1999-2000) and at the Ouse Washes, the last coinciding with high counts of other waterbirds at this site in 1999-2000. Notably low counts were recorded at Rutland Water and Hanningfield and Stanford Reservoirs.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain							
Abberton Reservoir	11,319	6,897	4,784	6,493	9,673	Sep	7,833
Rutland Water	6,184	3,935	4,663	3,971	3,759	Oct	4,502
Hanningfield Reservoir	4,540	4,986	3,181	3,337	2,809	Aug	3,771
Cotswold Water Park (West)	3,946	3,110	3,560	3,714	3,976	Nov	3,661
Hickling Broad	(294)	-	-	2,136	4,993	Oct	3,565
Cotswold Water Park (East)	5,199	2,268	2,094	3,612	2,948	Nov	3,224
Lee Valley Gravel Pits	1,812	3,023	2,913	2,708	3,559	Nov	2,803
Ouse Washes	³¹ 1,858	³¹ 1,661	3,082	2,611	3,565	Feb	2,555
Cheddar Reservoir	2,381	3,100	2,300	2,400	2,500	Nov	2,536
Lower Windrush Valley GP	1,802	2,068	2,629	2,619	2,188	Nov	2,261
Chew Valley Lake	1,880	2,500	2,260	2,650	1,980	Aug	2,254
Windermere	2,077	2,310	2,029	-	-		2,139
Alton Water	2,845	1,142	2,135	1,465	3,090	Nov	2,135
Fleet/Wey	2,417	2,501	1,562	1,777	1,862	Oct	2,024
Middle Tame Valley Gravel Pits	1,781	(2,804)	1,196	(1,348)	1,362	Jan	1,786
Loch Leven	1,020	1,546	1,551	2,285	2,340	Oct	1,748
Fen Drayton Gravel Pits	1,528	1,675	1,709	1,948	1,719	Dec	1,716
Pitsford Reservoir	1,177	1,222	1,310	2,281	2,415	Oct	1,681
R. Avon: F'bridge to Ringwood	1,445	1,529	1,749	1,354	1,495	Nov	1,514
Blithfield Reservoir	101	1,109	1,717	2,305	1,946	Sep	1,436
Sutton/Lound Gravel Pits	1,360	1,716	1,072	-	1,325	Jan	1,368
Dungeness Gravel Pits	977	997	1,166	1,350	2,085	Aug	1,315
Fairburn Ings	1,784	1,572	959	1,100	1,106	Nov	1,304
Little Paxton Gravel Pits	1,314	2,173	485	853	1,235	Dec	1,212
Baston/Langtoft Gravel Pits	1,210	1,328	900	1,204	1,249	Jan	1,178
Stanford Reservoir	(1,200)	1,270	(1,865)	1,358	157	Jul	1,170
Wraysbury Gravel Pits	1,126	1,382	1,385	1,022	869	Dec	1,157
Sites of all-Ireland importance in Northern Ireland							
Loughs Neagh & Beg	8,788	8,262	5,890	5,568	7,307	Nov	7,163
Upper Lough Erne	166	441	414	562	646	Mar	446
Strangford Lough	254	378	407	328	703	Nov	414
Internationally or nationally important sites not counted in last five years							
Ballysaggart Lough							
Other sites surpassing table qualifying levels in 1999-2000							
Tophill Low Reservoirs	1,789	Nov					
Thrapston Gravel Pits	1,429	Dec					
Hornsea Mere	1,350	Nov					
Grafham Water	1,344	Oct					
Blagdon Lake	1,229	Aug					
Slapton Ley	1,173	Nov					
Chichester Gravel Pits	(1,133)	Jan					

CRANE

Grus grus

Scarce

Two were found on the Ouse Washes in March and remained until April. A single bird was at Loch of Strathbeg in September.

OYSTERCATCHER

Haematopus ostralegus

GB max: 252,412 Oct

NI max: 15,062 Jan

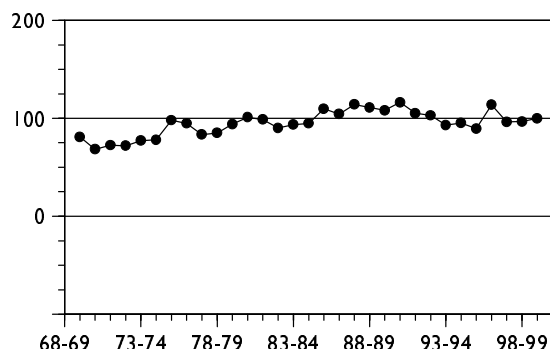


Figure 60. Annual indices for Oystercatcher in UK

International threshold: 9,000

Great Britain threshold: 3,600

All-Ireland threshold: 500

During 1999-2000 there was little change to the UK annual index. The Northern Ireland maximum fell compared to 1998-99, partly as a consequence of lower than normal numbers at Dundrum Bay following the high in the previous winter, although numbers at other key sites in the province remained around average.

In Great Britain, counts at most sites were remarkably similar to their five year means, and only that Traeth Lafan was marginally higher than normal. The Dee Estuary (Eng/Wal) and Inner Moray Firth were the only sites to witness relatively low counts.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Morecambe Bay	34,811	57,670	56,511	52,780	50,990	Nov	50,552
Solway Estuary	31,031	(47,729)	34,446	42,038	36,752	Jan	38,399
Dee Estuary (Eng/Wal)	21,800	³⁷ 28,800	25,142	18,932	12,506	Jan	21,436
Ribble Estuary	12,048	20,846	28,701	15,491	19,535	Feb	19,324
Burry Inlet	20,461	19,067	9,423	13,344	(17,867)	Dec	16,032
Wash	(14,233)	(16,363)	17,126	12,068	15,701	Nov	15,315
Thames Estuary	12,251	14,681	14,615	(12,162)	12,755	Nov	13,576
Sites of national importance in Great Britain							
Forth Estuary	6,956	6,826	8,045	6,726	7,462	Jan	7,203
Duddon Estuary	6,046	5,630	9,314	6,499	6,890	Dec	6,876
Inner Moray Firth	(5,178)	5,261	8,334	5,550	4,785	Feb	5,983
Clyde Estuary	5,303	5,414	4,781	4,197	4,878	Dec	4,915
Carmarthen Bay	(2,202)	3,474	3,926	6,423	³⁷ (4,851)	Nov	4,686
Swale Estuary	3,122	5,780	3,349	5,042	5,539	Jan	4,566
Traeth Lafan	³⁷ 4,520	5,780	(3,163)	2,062	(5,781)	Jan	4,536
Medway Estuary	(3,704)	3,162	(5,521)	(4,152)	(4,452)	Feb	4,378
Exe Estuary	4,733	4,215	3,078	3,349	-		3,844
Sites of all-Ireland importance in Northern Ireland							
Strangford Lough	³⁷ 6,597	7,276	6,904	6,661	6,175	Jan	6,723
Belfast Lough	³⁷ 6,883	³⁷ 6,153	³⁷ 6,974	³⁷ 6,653	³⁷ 6,216	Nov	6,576
Lough Foyle	2,590	(3,352)	(2,865)	3,609	3,087	Dec	3,160
Dundrum Bay	1,553	1,660	1,763	3,328	1,103	Jan	1,881
Outer Ards	1,390	1,523	(1,385)	1,761	1,872	Nov	1,637
Carlingford Lough	938	(812)	902	(1,184)	1,289	Feb	1,078
Dundrum Outer Bay	505	-	-	-	-		505
Carlingford to Newcastle	510	-	-	-	-		510

Sites no longer meeting table qualifying levels

Cromarty Firth

Sites surpassing table qualifying levels in 1999-2000

North Norfolk Coast 3,980 Jan

BLACK-WINGED STILT

Himantopus himantopus

Vagrant

Native range: worldwide distribution

The resident bird remained on the North Norfolk Coast throughout the year.

AVOCET

Recurvirostra avosetta

GB max: 4,121 Jan

NI max: 0

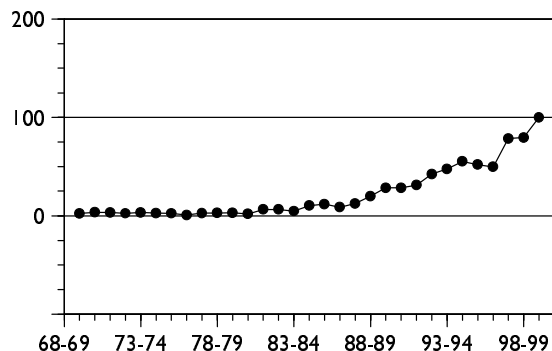


Figure 61. Annual indices for Avocet in UK

The continuing upward trend of the annual index illustrates that 1999-2000 was another good year for Avocets in Britain. Numbers remained high at

International threshold: 700

Great Britain threshold: 10*

All-Ireland threshold: +*

* 50 is normally used as a minimum threshold

the majority of key resorts and the British maximum was the highest winter peak ever recorded.

The absence of counts from the Alde Complex for the previous year's report held the site at the national importance level. However, the addition of late data for 1998-99 means the site regained international importance status following a number of years of relatively low counts.

Poole Harbour and the Thames and Colne Estuaries again held numbers significantly higher than their respective five year averages and a notable high count was also recorded at the Humber Estuary.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Alde Complex	744	437	884	1,336	1,330	Jan	946 ▲
Sites of national importance in Great Britain							
Poole Harbour	505	520	585	832	823	Nov	653
Thames Estuary	367	450	488	668	766	Jan	548
Medway Estuary	(256)	(368)	(200)	500	(374)	Feb	500
Hamford Water	(249)	299	587	276	532	Dec	424
Blyth Estuary (Suffolk)	489	242	422	-	-		384
Exe Estuary	303	339	369	400	-		353
Tamar Complex	272	301	595	220	(207)	Jan	347
Swale Estuary	285	(208)	340	306	402	Mar	333
North Norfolk Coast	(41)	(51)	(318)	301	321	Mar	313
Colne Estuary	203	150	214	266	417	Jan	250
Wash	(106)	(83)	196	23	183	Mar	134
Deben Estuary	106	100	102	135	172	Dec	123
Breydon Water & Berney Marshes	97	77	157	94	177	Feb	120
Minsmere Levels	(2)	0	70	120	-		95
Humber Estuary	3	0	28	(49)	82	Mar	32
Blackwater Estuary	0	14	24	(38)	44	Mar	24
Pagham Harbour	14	10	³⁷ 14	19	27	Jan	17
Abberton Reservoir	9	0	64	0	0	Nov	15
Horse Mere	-	-	0	20	-		10

Sites no longer meeting table qualifying levels

North West Solent

Other sites surpassing table qualifying levels in 1999-2000

Ouse Washes 11 Mar

LITTLE RINGED PLOVER

Charadrius dubius

GB max: 217 Jun

NI max: 0

International threshold: ?

Great Britain threshold: ?

All-Ireland threshold: ?

Numbers peaked slightly later than normal, in June. After this numbers declined steadily and there were no records after September. Birds

were recorded at 120 sites, the lowest number in the last five years.

Sites with 10 or more birds in 1999-2000

Old Moor Wetlands	27	May/Jun
Cranwich Gravel Pits	12	May
Acre Nook Square	12	Jun
Upton Warren	12	May
Marden Gravel Pit	10	Jun
Willington	10	Jun
Rutland Water	10	Jun

RINGED PLOVER

Charadrius hiaticula

GB max: 17,816 Sep

NI max: 740 Oct

International threshold: 500

Great Britain winter threshold: 290

Great Britain passage threshold: 300

All-Ireland threshold: 125

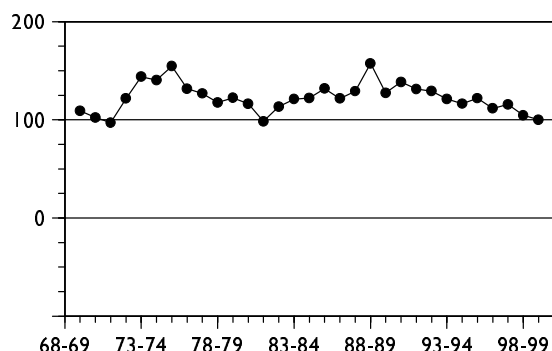


Figure 62. Annual indices for Ringed Plover in UK

The UK annual index continued to decline in 1999-2000. The British and Irish maxima were down on the previous year and whilst the British winter peak remained average, though at the lower end of the range, the Northern Ireland peak winter count was the lowest since 1984-85.

Numbers at many sites were below average, most notably at Jersey Shore and the Wash which were the lowest complete counts of the last ten years, while three further sites dropped below the threshold for international importance. Positions within the all-Ireland table remained the same, though the peak count at the Outer Ards was notably lower than average.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Colne Estuary	707	(306)	(568)	(468)	(208)	Feb	707
Thames Estuary	755	535	792	620	726	Dec	686
Langstone Harbour	519	660	739	383	605	Jan	581
Tiree	-	-	¹⁶ 534	-	516	Jan	548
Sites of national importance in Great Britain							
Medway Estuary	682	³⁷ 442	313	(540)	(351)	Feb	494 ▼
North Norfolk Coast	(371)	775	³⁷ 503	318	373	Feb	492
Morecambe Bay	401	528	515	367	522	Nov	467
Hamford Water	(546)	482	281	570	365	Nov	449 ▼
Solway Estuary	321	223	214	906	276	Nov	388
Humber Estuary	316	249	382	³⁷ 504	466	Nov	383
South Uist (West Coast)	-	-	¹⁶ 376	-	-		376 ▼
Thanet	-	197	297	386	558	Dec	360
Stour Estuary	306	597	(87)	257	³⁷ 230	Dec	348

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Forth Estuary	413	259	317	415	309	Nov	343
Chichester Harbour	435	204	483	170	292	Nov	317
Jersey Shore	446	(253)	264	376	143	Jan	307
Wash	390	(147)	311	355	169	Nov	306
Swale Estuary	225	203	301	430	347	Feb	301

Sites of all-Ireland importance in Northern Ireland

Outer Ards	(317)	575	350	485	223	Nov	408
Carlingford to Newcastle	286	-	-	-	-		286
Strangford Lough	³⁷ 316	³⁷ 346	³⁷ 171	279	216	Jan	266
Belfast Lough	(135)	133	108	167	192	Dec	150
Kilkeel to Lee Stone Point	132	-	-	-	-		132

Sites no longer meeting table qualifying levels

Blackwater Estuary

Internationally or nationally important sites not counted in last five years

South Ford
Traighear
East Sanday Coast

Other sites surpassing table qualifying levels in 1999-2000

Carlingford Lough 125 Dec

Sites surpassing passage threshold in Great Britain in 1999-2000

Ribble Estuary	4,784	May	Stour Estuary	497	Oct
North Norfolk Coast	2,700	Aug	Tay Estuary	495	May
Thames Estuary	1,697	Sep	Langstone Harbour	471	Aug
Humber Estuary	1,536	Sep	Medway Estuary	449	Oct
The Wash	1,489	Sep	Thanet Coast	396	Oct
Solway Estuary	1,162	May	Blackwater Estuary	389	Oct
Severn Estuary	1,050	Aug	Pagham Harbour	335	Aug
Morecambe Bay	1,041	Sep	Moray Firth	330	Oct
Hamford Water	752	Sep	Dee Estuary	317	Aug
Swale Estuary	716	Sep	Tees Estuary	309	May
Chichester Harbour	508	Aug			

KENTISH PLOVER

Scarce

Charadrius alexandrinus

Two spring birds were seen in 1999-2000, one at Breydon Water and another at the Dee Estuary (England/ Wales), both in May.

DOTTEREL

Scarce

Charadrius morinellus

A small trip of three birds was present on Dengie Flats in May and a single was on the Duddon Estuary in the same month. This species'

tendency to stop off at remote upland sites or in large tracts of arable land means they are rarely recorded by WeBS.

AMERICAN GOLDEN PLOVER

Vagrant

Pluvialis dominica

Native range: Americas

Single birds were recorded at Old Moor Wetlands in October and on the North West Solent in November. These are typical dates for this

species, coinciding with the species' migration in America and strong westerly airflows across the Atlantic.

GOLDEN PLOVER

Pluvialis apricaria

International threshold: 18,000

Great Britain threshold: 2,500

All-Ireland threshold: 2,000

GB max: 193,113 Nov

NI max: 15,669 Nov

Both the British and Northern Ireland maxima reflected the continuing fluctuation in Golden Plover numbers. Whilst the winter peak in Northern Ireland fell compared with the previous year, the winter peak in Great Britain was the highest ever recorded by WeBS.

Following a third successive high count at the Wash the site became the second resort to qualify as internationally important, the peak

count being more than double that of the previous year. In contrast, numbers at both Carmarthen Bay and Fairburn Ings fell dramatically.

Amongst the top sites, numbers at the Blackwater Estuary, Breydon & Berney Marshes and Walland Marsh continue to increase steadily, whilst the Forth Estuary witnessed a drop of more than 70% on 1998-99.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Humber Estuary	(32,532)	8,741	34,444	(42,848)	42,381	Nov	32,189
Wash	12,919	6,879	26,461	20,467	42,761	Nov	21,897 ▲
Sites of national importance in Great Britain							
Blackwater Estuary	2,055	6,631	8,295	(9,150)	14,902	Feb	8,207
Breydon Wtr & Berney Marshes	5,300	7,550	7,200	10,300	10,600	Jan	8,190
Lower Derwent Valley	8,900	3,000	7,950	6,200	3,400	Jan	5,890
Solway Estuary	7,049	4,617	7,572	5,374	³⁷ 3,984	Dec	5,719
Swale Estuary	1,393	2,227	9,535	(7,722)	7,010	Jan	5,577
Carmarthen Bay	11,000	10,003	(3,300)	500	9	Dec	5,378
Hamford Water	5,073	4,611	8,275	3,847	2,245	Feb	4,810
Ribble Estuary	2,347	6,530	5,325	4,397	3,546	Dec	4,429
Somerset Levels	3,027	683	8,909	3,366	5,401	Feb	4,277
Morecambe Bay	3,616	4,310	4,745	3,618	3,628	Jan	3,983
Lindisfarne	4,580	2,604	2,580	(4,990)	4,830	Nov	3,917
Thames Estuary	2,515	3,875	4,925	3,318	3,826	Nov	3,692
Colne Estuary	1,034	(1,500)	4,350	(3,795)	5,000	Nov	3,545
North Norfolk Coast	3,258	2,040	4,772	4,165	3,442	Feb	3,535
Clifford Hill Gravel Pits	2,400	2,000	4,000	3,620	5,500	Feb	3,504
Criddling Stubbs Quarry Pools	-	2,000	5,000	-	-		3,500
Walland Marsh	-	1,800	2,500	4,500	5,000	Jan	3,450
R Idle: Bawtry To Misterton	1,000	5,000	-	-	-		3,000
Mersey Estuary	3,850	4,000	2,750	³⁷ 1,938	2,440	Jan	2,996
Fairburn Ings	7,000	3,700	2,700	500	0	Nov	2,780
St Mary's Island Seaton Sluice	600	(3,000)	6,500	1,500	2,000	Jan	2,720
Nene Washes	1,086	700	6,109	3,223	2,260	Feb	2,676 ▲
Crouch-Roach Estuary	2,844	(890)	1,218	4,455	1,730	Dec	2,562
Forth Estuary	5,260	2,363	2,147	2,227	594	Dec	2,518
Dagenham Chase GP	-	-	-	-	(2,500)	Jan	(2,500) ▲
Sites of all-Ireland importance in Northern Ireland							
Strangford Lough	³⁷ 7,735	³⁷ 14,375	³⁷ 12,100	6,872	7,076	Nov	9,632
Loughs Neagh & Beg	4,470	3,902	4,300	8,974	6,675	Feb	5,664
Lough Foyle	2,050	(5,207)	5,456	6,585	2,600	Jan	4,380
Outer Ards	(3,517)	5,869	(735)	2,420	2,095	Nov	3,475
Dundrum Outer Bay	2,500	-	-	-	-		(2,500)

Sites no longer meeting table qualifying levels

Abberton Reservoir

Internationally or nationally important sites not counted in last five years

New Road Pits

Other sites surpassing table qualifying levels in 1999-2000

Medway Estuary	4,500	Jan
Ouse Washes	4,201	Nov
Priory Water	4,100	Dec
Old Moor Wetlands	4,100	Mar
Pegwell Bay	3,800	Nov
Camel Estuary	3,500	Dec
Taw-Torridge Estuary	3,440	Nov

GREY PLOVER

Pluvialis squatarola

GB max: 42,447 Sep
NI max: 413 Feb

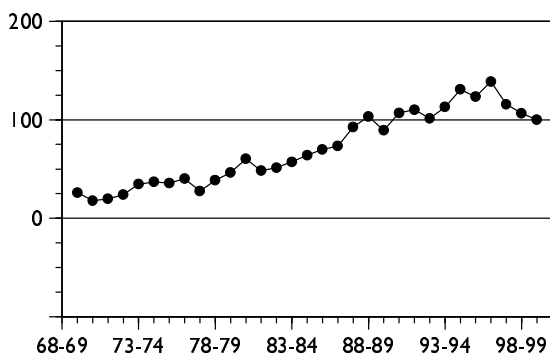


Figure 63. Annual indices for Grey Plover in UK

In 1999-2000, Grey Plover numbers at many UK resorts were below their respective five year averages also reflected in the continuing downward trend of the UK index.

In previous years, the British maximum has occurred during the winter months. In 1999-2000

International threshold: 1,500

Great Britain threshold: 430

All-Ireland threshold: 40*

* 50 is normally used as a minimum threshold

the peak total occurred during the autumn passage and the winter peak of 37,902 was the lowest since 1992-93.

A number of sites, including Hamford Water, the Solway Estuary and Carlingford Lough, have witnessed a steady decline in Grey Plover numbers, a trend that continued in 1999-2000. Such a decline at Morecambe Bay has resulted in the site no longer qualifying as internationally important.

Dundrum Bay was a new addition to the table of all Ireland importance even though the peak count at the site was relatively low. The Orwell Estuary held more than double the number of Grey Plover present in 1998-99 and as a result qualified as nationally important, whilst numbers at the Dee Estuary (Eng/Wal) fell by more than 30% on the previous year.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Wash	(7,396)	8,952	9,790	5,767	7,432	Jan	7,985
Ribble Estuary	(3,211)	12,856	³⁷ 5,408	8,435	3,234	Dec	7,483
Thames Estuary	(7,515)	9,698	3,708	(5,173)	5,854	Dec	6,694
Blackwater Estuary	(4,230)	(2,383)	(3,549)	(4,874)	4,649	Nov	4,762
Hamford Water	(8,186)	(7,033)	3,270	3,020	1,672	Feb	4,636
Stour Estuary	3,249	³⁷ 3,502	(1,705)	2,414	3,739	Nov	3,226
Dengie Flats	(1,560)	2,160	4,156	(1,966)	3,252	Feb	3,189
Dee Estuary (Eng/Wal)	(2,567)	³⁷ 6,332	³⁷ 3,143	1,204	742	Nov	2,855
Swale Estuary	1,543	(2,822)	5,313	2,614	1,858	Mar	2,832
Medway Estuary	1,899	1,979	4,612	2,631	(2,631)	Feb	2,780
Lindisfarne	(1,728)	2,118	2,950	1,106	(1,165)	Mar	2,058
Alt Estuary	1,456	1,702	2,316	³⁷ 2,314	1,877	Dec	1,933
Chichester Harbour	2,060	2,117	1,434	1,849	(2,145)	Feb	1,921
Humber Estuary	1,533	539	(3,368)	1,849	1,446	Nov	1,747
Langstone Harbour	1,266	(1,480)	2,157	(1,150)	1,454	Nov	1,626
North Norfolk Coast	850	1,867	2,273	1,270	1,637	Jan	1,579
Sites of national importance in Great Britain							
Mersey Estuary	417	³⁷ 753	³⁷ 3,843	1,623	³⁷ 630	Dec	1,453
Morecambe Bay	1,557	1,695	1,243	1,172	1,072	Nov	1,348 ▼
Pagham Harbour	1,120	³⁷ 1,436	2,452	488	³⁷ 1,139	Feb	1,327
Solway Estuary	1,429	1,276	990	³⁷ 903	³⁷ 678	Dec	1,055

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Colne Estuary	1,050	888	1,462	910	898	Feb	1,042
Beaulieu Estuary	1,021	463	782	756	547	Jan	714
Forth Estuary	730	658	724	608	426	Nov	629
Orwell Estuary	³⁷ 728	294	(585)	417	1,034	Mar	618 ▲
Eden Estuary	510	604	491	580	514	Mar	540
Exe Estuary	513	513	573	429	-		507
Severn Estuary	368	519	(436)	³⁷ 196	707	Dec	448

Sites of all-Ireland importance in Northern Ireland

Strangford Lough	170	407	189	326	320	Feb	282
Carlingford Lough	57	(93)	93	65	35	Dec	69
Dundrum Bay	(18)	42	38	68	14	Nov	41 ▲

Sites no longer meeting table qualifying levels

Jersey Shore

Sites surpassing table qualifying levels in 1999-2000

Duddon Estuary 468 Jan

LAPWING

Vanellus vanellus

GB max: 471,564 Nov

NI max: 21,920 Jan

International threshold: 20,000**

Great Britain threshold: 20,000†**

All-Ireland threshold: 2,500

As in previous years the maxima for Lapwing occurred during the winter months. The British peak total was up on 1998-99 and may be accounted for by the notable high counts recorded at key sites during the same month. The weather during November was relatively mild and may have allowed birds to remain further east than normal. This may have been a factor in the number of Lapwing recorded at the

Nene Washes, the Ouse Washes and the Wash, the last site witnessing a three-fold increase on the previous year.

In Northern Ireland peak counts at the majority of key sites were below average. Whilst numbers at Strangford Lough continue to decline, the count at Loughs Neagh & Beg was the highest for the site since 1991-92.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Somerset Levels	47,081	16,743	62,886	(55,654)	28,895	Feb	42,252
Wash	24,773	9,132	41,538	27,585	86,129	Nov	37,831
Breydon Wtr & Berney Marshes	24,000	31,000	19,400	27,300	20,500	Nov	24,440
Humber Estuary	23,827	9,222	21,884	(32,731)	30,915	Nov	23,716
Morecambe Bay	24,293	(15,526)	26,190	(17,501)	18,796	Jan	23,093
Sites of national importance in Great Britain †							
Ribble Estuary	28,270	18,108	24,932	15,360	11,022	Jan	19,538 ▼
Walland Marsh	-	4,800	18,500	19,000	17,500	Feb	14,950
Ouse Washes	8,155	(4,675)	15,170	4,435	29,913	Nov	14,418
Swale Estuary	2,995	(6,271)	(15,430)	(16,421)	18,641	Feb	13,372
Mersey Estuary	(11,137)	³⁷ 10,793	³⁷ 13,599	³⁷ 14,129	13,620	Nov	13,035
Blackwater Estuary	(5,280)	4,827	19,377	(11,752)	14,154	Nov	12,786
Severn Estuary	10,956	10,441	(14,843)	8,029	19,001	Dec	12,654
Medway Estuary	(5,991)	(3,366)	(11,435)	(4,715)	(6,728)	Jan	(11,435)
Thames Estuary	8,347	8,574	(18,237)	10,373	8,261	Nov	10,758
Solway Estuary	13,609	6,150	12,004	³⁷ 7,970	8,345	Dec	9,616
Colne Estuary	8,222	(1,900)	12,440	8,725	7,500	Jan	9,222
Lower Derwent Valley	14,543	11,941	8,487	5,430	3,770	Jan	8,834
Dee Estuary (Eng/Wal)	9,590	6,916	8,828	8,828	8,278	Dec	8,488
Nene Washes	7,190	1,800	8,100	5,500	13,080	Nov	7,134
Arun Valley	9,402	6,005	(7,188)	5,667	4,495	Dec	6,551

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Crouch-Roach Estuary	5,964	(2,220)	7,440	5,696	5,962	Jan	6,266
Tees Estuary	10,505	(5,277)	4,500	5,164	3,468	Jan	5,909
Abberton Reservoir	12,425	3,092	10,620	1,850	1,350	Dec	5,867
North Norfolk Coast	4,139	2,339	³⁷ 9,400	4,682	8,744	Feb	5,861 ▲
Hamford Water	(6,335)	3,220	6,968	8,091	4,305	Dec	5,784
Stour Estuary	4,228	³⁷ 6,228	7,466	3,569	6,192	Nov	5,537
Alde Complex	4,577	3,591	6,048	7,558	4,331	Nov	5,221 ▲

Sites of all-Ireland importance in Northern Ireland

Strangford Lough	11,086	13,547	³⁷ 12,691	7,497	5,736	Feb	10,111
Loughs Neagh & Beg	6,758	7,857	6,777	6,154	10,968	Jan	7,703
Lough Foyle	7,370	(2,665)	2,315	4,781	2,990	Nov	4,364
Outer Ards	3,776	6,104	3,059	3,650	3,624	Nov	4,043

Sites no longer meeting table qualifying levels

Rye Harbour & Pett Level

Sites surpassing table qualifying levels in 1999-2000

Stodmarsh & Collards Lagoon	8,000	Dec
Fiddlers Ferry PS Lagoons	6,000	Nov
Taw-Torridge Estuary	5,895	Jan
Belfast Lough	3,112	Nov

† as few sites in Great Britain are of national importance, a qualifying level of 5,000 has been chosen to select sites for presentation in this report.

KNOT

Calidris canutus

International threshold: 3,500

Great Britain threshold: 2,900

All-Ireland threshold: 375

GB max: 223,200 Jan

NI max: 4,861 Jan

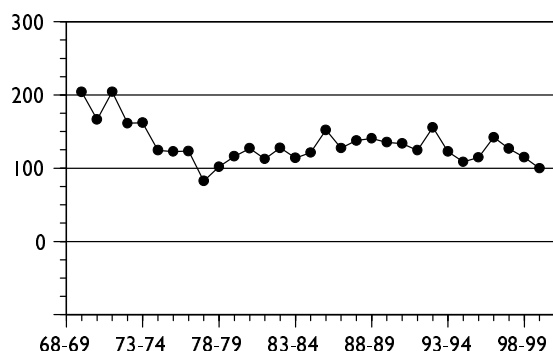


Figure 64. Annual indices for Knot in UK

For the third consecutive year the annual index declined and in 1999-2000 was at its second ever lowest level, only that for 1977-78 being lower. Peak numbers in Great Britain were the lowest

for over a decade and in Northern Ireland they were at the lower end of values for the same period.

Only four sites in the table supported numbers above their five year mean, and only that on the Stour markedly so. Among low counts, those on the Thames Estuary, Ribble Estuary, Dee Estuary (England/ Wales), Strangford Lough, North Norfolk Coast, Cromarty Firth, Montrose Basin and Tees Estuary were all noticeably lower than their five year mean. Numbers at the last two sites declined for the fifth consecutive year.

In light of such counts, the particularly high count on the Medway Estuary is all the more noteworthy.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Wash	(47,775)	(72,173)	81,950	62,211	60,711	Jan	69,261
Morecambe Bay	37,808	44,134	77,344	71,238	59,530	Jan	58,011
Thames Estuary	47,191	39,121	55,663	(31,090)	21,942	Nov	40,979
Ribble Estuary	(35,321)	55,752	(36,880)	36,595	22,010	Mar	38,119
Humber Estuary	28,076	22,579	30,283	27,355	25,719	Feb	26,802
Alt Estuary	18,002	25,350	35,881	19,009	20,000	Feb	23,648
Dee Estuary (Eng/Wal)	18,520	³⁷ 57,032	14,000	³⁷ 17,041	8,683	Nov	23,055
Dengie Flats	6,050	6,600	10,490	14,560	(5,800)	Dec	9,425
Strangford Lough	13,444	³⁷ 12,688	9,456	7,070	3,685	Jan	9,269

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Solway Estuary	10,516	9,086	5,472	8,986	8,544	Jan	8,521
Forth Estuary	8,950	11,299	7,866	7,381	5,520	Feb	8,203
North Norfolk Coast	5,930	15,236	9,006	6,136	3,356	Feb	7,933
Stour Estuary	4,748	³⁷ 5,893	(3,565)	4,800	9,677	Nov	6,280
Burry Inlet	6,353	8,200	2,080	3,870	(3,562)	Feb	5,126
Swale Estuary	2,517	7,131	5,420	4,020	3,400	Jan	4,498
Cromarty Firth	(6,600)	(6,829)	1,733	4,299	³⁷ 1,685	Dec	4,229
Lindisfarne	3,810	4,625	3,218	(4,040)	(1,954)	Jan	3,923
Hamford Water	1,906	3,162	4,234	5,924	3,533	Dec	3,752 ▲
Inner Moray Firth	2,491	(7,773)	3,097	2,021	3,251	Feb	3,727
Montrose Basin	(6,500)	3,800	3,800	2,483	1,824	Dec	3,681

Sites of national importance in Great Britain

Tees Estuary	5,122	3,520	2,783	2,501	1,671	Jan	3,119
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Sites of all-Ireland importance in Northern Ireland

Belfast Lough	560	580	(430)	901	600	Nov	660
Dundrum Bay	(546)	123	0	1,500	1,000	Nov	656
Dundrum Outer Bay	600	-	-	-	-		600 ▲
Lough Foyle	1,145	400	270	502	180	Nov	499

Other sites surpassing table qualifying levels in 1999-2000

Medway Estuary	5,055	Jan
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SANDERLING

Calidris alba

GB max: 15,196 **May**
NI max: 155 **Jan**

International threshold: 1,000
Great Britain winter threshold: 230
Great Britain passage threshold: 300
All-Ireland threshold: 35*

* 50 is normally used as a minimum threshold

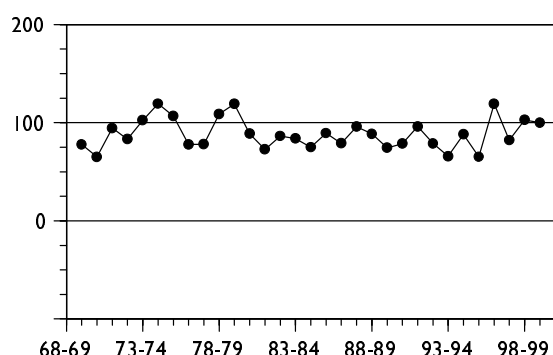


Figure 65. Annual indices for Sanderling in UK.

Following several years of marked fluctuations in the mid to late 1990s the annual index remained stable, at slightly above average levels for the second year running. Peak winter counts in Northern Ireland were the second highest ever recorded under WeBS. Midwinter numbers in Great Britain were about average for the past

decade, though peaking later than in previous years. Typically, the highest British total occurred during spring passage and in 1999-2000 was one of the highest spring counts recorded by WeBS.

The Ribble Estuary was the only site with a notably high count but sustained high numbers on the Alt Estuary saw the site qualify as internationally important for the first time. Numbers along the North Norfolk Coast rose after the previous year's already high count whereas numbers at Carmarthen Bay, Jersey Shore, Thames Estuary and Solway Estuary decreased after record counts in 1998-99.

Four sites surpassed the qualifying level for sites of international importance during passage. For the second year running several sites held much higher than normal numbers, namely Alt Estuary, the Wash and North Norfolk Coast.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Ribble Estuary	750	3,085	1,134	1,223	2,501	Feb	1,739
Alt Estuary	607	971	1,352	³⁷ 1,355	1,320	Nov	1,121 ▲

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain							
North Norfolk Coast	476	636	594	720	881	Dec	661
Thanet	-	457	776	603	610	Dec	612
Duddon Estuary	965	404	547	627	485	Nov	606
South Uist (West Coast)	-	-	¹⁶ 528	-	-		528
Carmarthen Bay	323	386	470	797	592	Mar	514
Tiree	-	-	¹⁶ 371	-	589	Jan	480
The Wash	(539)	484	576	348	441	Dec	478
Tees Estuary	465	³⁷ 577	470	346	456	Feb	463
Humber Estuary	413	635	345	406	496	Feb	459
Lade Sands	475	706	460	240	330	Mar	442
Dee Estuary (Eng/Wal)	208	598	429	463	246	Dec	389
Jersey Shore	130	(371)	304	611	443	Jan	372
Thames Estuary	246	(142)	132	687	127	Mar	298
Durham Coast	255	372	(380)	154	250	Nov	282
Solway Estuary	(220)	384	134	(303)	125	Dec	237
Sites of all-Ireland importance in Northern Ireland							
Strangford Lough	0	³⁷ 324	23	0	0		69 ▲
Dundrum Outer Bay	60	-	-	-	-		60
Sites no longer meeting table qualifying levels							
Ryde Pier to Puckpool Point							
Hamford Water							
Internationally or nationally important sites not counted in last five years							
South Ford (Outer Hebrides)							
Other sites surpassing table qualifying levels in 1999-2000							
Swansea Bay	235	Feb					
Morecambe Bay	235	Nov					
Bann Estuary	90	Jan					
Sites surpassing passage threshold in Great Britain in 1999-2000							
Ribble Estuary	5,500	May	Carmarthen Bay		506	Apr	
Wash	4,867	May	Morecambe Bay		480	Apr	
Alt Estuary	3,319	Aug	Tees Estuary		459	May	
North Norfolk Coast	1,786	Sep	Humber Estuary		457	Sep	
Thames Estuary	812	Sep	Solway Estuary		395	May	

LITTLE STINT

Calidris minuta

International threshold: 2,100

Great Britain threshold: ?

All-Ireland threshold: ?

GB max: 166 Sep

NI max: 3 Oct

After the exceptionally high numbers recorded by WeBS in the previous autumn, 1999-2000 proved to be an unremarkable year. The peak September count and the 59 sites at which this species were recorded were both well below the five year means and the second lowest values in

the last five years.

The number of sites at which this species has been recorded in winter has remained high for the past three years. In recent winters the number of sites has been around twenty compared to 11 in 1995-96 and just six in 1994-95.

Sites with ten or more birds in 1999-2000

North Norfolk Coast	24	Sep	Swale Estuary	12	Sep
Severn Estuary	16	Sep	Chichester Harbour	11	Sep
Humber Estuary	17	Sep	Pool Of Virkie	10	Sep
Breydon Water & Berney Marshes	15	Sep			

TEMMINCK'S STINT

Scarce

Calidris temminckii

One was present at Priory Water during August and another was on the Tees Estuary in September.

PECTORAL SANDPIPER

Vagrant

Calidris melanotos

Native range: Americas, N Siberia and Australia

Nationally, the autumn of 1999 produced more than 130 records of this species and this was reflected in the above average numbers recorded by WeBS. A total of fourteen birds was recorded

from twelve well scattered locations. Two birds were present at Siblyback Reservoir and the Humber Estuary in September.

SHARP-TAILED SANDPIPER

Vagrant

Calidris acuminata

Native range: E Asia and Australia

One was present on the Thames Estuary in September, the first record of this species on a WeBS count.

CURLEW SANDPIPER

International threshold: 4,500

Calidris ferruginea

Great Britain threshold: ?

All-Ireland threshold: ?

GB max: 1,042 Sep
NI max: 13 Oct

As in several of recent years, WeBS totals of Curlew Sandpipers in autumn 1999 were high, only just below the record numbers of the previous year. This species was recorded at 79 sites in total, around average for 'good' years. The number of sites with 10 or more birds was also similar to 1998-99, and the same east coast sites feature at the top of the table below. Noteworthy is the large count from the Irvine/Garnock Estuary.

In previous years, large numbers of Curlew

Sandpipers have always coincided with large numbers of Little Stints, though this was not the case in 1999-2000. Arctic-breeding waders can have markedly different breeding success between years, linked, as with some goose species, to cycles in lemming numbers. The numbers recorded by WeBS suggest conditions in the breeding areas of these two species were rather different in 1999.

Sites with ten or more birds in 1999-2000

North Norfolk Coast	142	Sep	Eden Estuary	32	Sep
Humber Estuary	87	Sep	Montrose Basin	27	Sep
Swale Estuary	81	Sep	Chichester Harbour	26	Sep
Breydon Water & Berney Marshes	79	Sep	Burry Inlet	22	Sep
Irvine/Garnock Estuary	69	Sep	Pagham Harbour	14	Sep
The Wash	57	Sep	Dungeness	14	Sep
Severn Estuary	54	Sep	Thames Estuary	14	Sep
Forth Estuary	50	Sep	Ribble Estuary	14	Sep
Alde Complex	24	Sep	Bann Estuary	13	Oct
Dee Estuary	42	Sep	Solway Estuary	12	Sep
Alnmouth to Boulmer	35	Sep	Tees Estuary	10	Sep
Morecambe Bay	32	Sep			

PURPLE SANDPIPER

Calidris maritima

GB max: 1,499 Feb
NI max: 106 Nov

International threshold: 500

Great Britain threshold: 210[†]

All-Ireland threshold: 10*

* 50 is normally used as a minimum threshold

Despite the top five sites in Great Britain not being covered during 1999-2000, the peak British total rose for the fourth consecutive year to the highest recorded under WeBS since 1994-95. However, these maxima do not take into account the European Non-estuarine Waterfowl Survey (NEWS) which was carried out in 1997-98. The much greater numbers recorded in that year illustrate the inadequacies of normal WeBS

coverage for assessing the distribution and abundance of this particular species. The Northern Ireland maximum was average for the last decade.

Of the sites that were covered, numbers were at their lowest for the previous five years with the exception of Seahouses to Budle Point. The peak count in November was the highest ever recorded by WeBS at this site.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain[†]							
North Ronaldsay	-	-	¹⁶ 400	-	-		400
Farne Islands	-	-	-	360	-		360
South Uist (West Coast)	-	-	¹⁶ 313	-	-		313
East Sanday Coast	-	-	¹⁶ 275	-	-		275
Tiree	-	-	¹⁶ 262	-	263	Jan	263
Seahouses to Budle Point	252	144	207	274	310	Nov	237
Moray Coast	268	223	219	178	129	Jan	203
Tees Estuary	177	155	166	202	137	Dec	167
South Westray	-	-	¹⁶ 159	-	-		159
Durham Coast	163	153	(161)	(132)	85	Feb	141
Cambus to Newbiggin	(46)	²⁴ 142	²⁴ 165	²⁴ 67	35	Jan	125
North Mainland (Orkney)	-	-	¹⁶ 117	-	-		117

Sites of all-Ireland importance in Northern Ireland

Outer Ards	(48)	89	49	147	100	Nov	96
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Internationally or nationally important sites not counted in last five years

Fraserburgh to Rosehearty

SE Stronsay

SE Deerness

Sites no longer meeting table qualifying levels

Deveron Estuary

Other sites surpassing table qualifying levels in 1999-2000

Egilsay	136	Nov
Thurso Bay	120	Feb
Howick to Beadnell	104	Dec
Belfast Lough	19	Dec

[†] as so few British sites are of national importance for Purple Sandpiper, a qualifying level of 100 has been chosen to select sites for presentation in this report.

DUNLIN

Calidris alpina

GB max: 371,085 Jan

NI max: 12,959 Jan

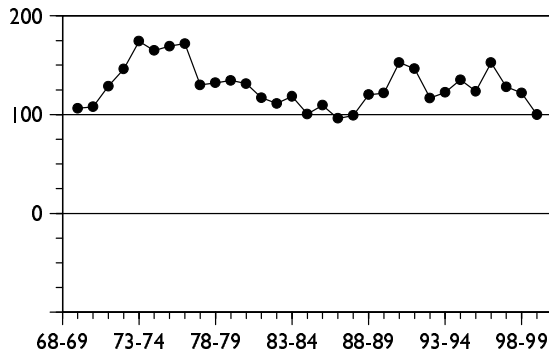


Figure 66. Annual indices for Dunlin in UK

Great Britain and Northern Ireland maxima in 1999-2000 were their lowest for eleven and five years respectively. These low numbers were reflected in the UK annual index which dropped sharply to its lowest level since 1987-88.

The majority of sites held average or below average numbers, with only the peak winter count at Dengie Flats significantly higher than

International threshold: 14,000

Great Britain winter threshold: 5,300

Great Britain passage threshold: 2,000

All-Ireland threshold: 1,250

normal. Numbers at Morecambe Bay, Ribble Estuary, Southampton Water, Portsmouth Harbour, Outer Ards and Belfast Lough all continued recent declines, although positions in the tables remained relatively stable.

Although the peak count at the Wash was only just above average, it marks a steep increase following several years of successive decline. However, the date of the count may suggest that these were passage rather than true wintering birds. The Bann Estuary also held above average numbers, following very low numbers in 1998-99.

An average number of sites exceeded the thresholds for national importance during passage in 1999-2000. However, only three of these held internationally important numbers, as opposed to five in 1998-99 and eight in 1997-98. Peak counts were remarkably low on the Stour, Thames, Blackwater and Mersey Estuaries and also at Morecambe Bay.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Mersey Estuary	40,501	55,430	52,015	³⁷ 70,837	42,120	Jan	52,181
Morecambe Bay	41,831	57,617	71,731	38,865	28,411	Jan	47,691
Wash	(41,487)	38,741	36,054	32,556	41,503	Mar	38,068
Ribble Estuary	34,215	45,973	³⁷ 45,039	32,160	18,040	Dec	35,085
Thames Estuary	26,933	34,145	37,979	(46,450)	26,676	Feb	34,437
Severn Estuary	(26,150)	29,420	(26,851)	37,172	(19,785)	Dec	33,296
Dee Estuary (Eng/Wal)	24,695	³⁷ 38,416	30,318	31,619	21,627	Nov	29,335
Blackwater Estuary	27,345	33,512	22,304	(22,890)	16,792	Feb	24,988
Humber Estuary	27,600	10,210	20,695	40,121	21,236	Nov	23,972
Langstone Harbour	21,144	(14,240)	(15,000)	25,185	24,090	Feb	23,473
Medway Estuary	17,232	33,313	17,200	11,689	(8,591)	Jan	19,859
Chichester Harbour	22,590	19,567	15,629	16,421	16,680	Nov	18,177
Solway Estuary	11,688	20,042	11,982	17,873	³⁷ 14,746	Jan	15,266
Stour Estuary	15,343	³⁷ 16,676	14,712	13,080	15,168	Nov	14,996
Sites of national importance in Great Britain							
Swale Estuary	10,971	14,243	15,529	7,661	8,587	Jan	11,398
Forth Estuary	13,830	9,118	9,937	10,887	10,726	Jan	10,900
Duddon Estuary	10,370	14,416	7,232	9,765	7,500	Jan	9,857
Colne Estuary	13,000	8,805	10,510	6,925	8,950	Dec	9,638
Orwell Estuary	³⁷ 17,634	9,576	³⁷ 6,977	³⁷ 4,774	³⁷ 4,976	Dec	8,787
Lindisfarne	(7,031)	10,364	6,039	9,880	(8,148)	Feb	8,761
Burry Inlet	6,966	14,548	4,539	8,040	(9,271)	Nov	8,673
Dengie Flats	4,200	(7,850)	8,100	8,900	10,800	Feb	8,000
Hamford Water	(10,113)	9,146	11,970	4,238	3,967	Nov	7,887
Inner Moray Firth	7,226	8,567	5,417	³⁷ 6,259	7,059	Jan	6,906
Poole Harbour	6,424	6,347	6,355	6,816	6,693	Feb	6,527
Southampton Water	³⁷ 7,796	³⁷ 5,617	³⁷ 7,088	³⁷ 6,454	³⁷ 4,557	Dec	6,302
Portsmouth Harbour	11,151	(4,392)	³⁷ 8,889	3,411	1,737	Feb	6,297 ▲
Cleddau Estuary	4,431	8,561	5,318	5,973	(4,381)	Dec	6,071

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of all-Ireland importance in Northern Ireland							
Strangford Lough	³⁷ 12,059	³⁷ 16,629	³⁷ 8,325	6,881	4,103	Jan	9,599
Lough Foyle	7,025	(3,666)	4,106	6,600	3,560	Jan	5,323
Outer Ards	1,709	2,689	1,890	2,175	1,023	Feb	1,897
Belfast Lough	³⁷ 2,106	1,943	³⁷ 1,906	³⁷ 2,055	³⁷ 1,242	Feb	1,850
Carlingford Lough	1,244	(860)	2,002	2,127	1,861	Nov	1,809
Bann Estuary	1,085	2,910	1,075	865	1,650	Jan	1,517

Sites no longer meeting table qualifying levels

Dundrum Bay

Other sites surpassing table qualifying levels in 1999-2000

Dornoch Firth 5,793 Jan

Other sites surpassing passage threshold in Great Britain in 1999-2000

The Wash	32,740	Oct	Solway Estuary	4,406	Oct
Ribble Estuary	32,570	May	Stour Estuary	3,934	Oct
Humber Estuary	14,038	Oct	Swale Estuary	3,470	Oct
Blackwater Estuary	8,713	Oct	Dengie Flats	3,350	Oct
Forth Estuary	6,484	Oct	Alt Estuary	2,972	May
Morecambe Bay	5,905	Apr	Hamford Water	2,626	Oct
Thames Estuary	5,190	Sep	North Norfolk Coast	2,583	Oct
Dee Estuary	4,774	Aug	Tay Estuary	2,515	Oct
Medway Estuary	4,625	Oct	Colne Estuary	2,350	Oct
Mersey Estuary	4,550	Aug	Lindisfarne	2,171	Apr

RUFF

Philomachus pugnax

GB max: 963 Feb
NI max: 15 Sep

International threshold: ?

Great Britain threshold: 7*

All-Ireland threshold: +*

* 50 is normally used as a minimum threshold

A total of seven sites held 50 or more birds during the winter, two more than in 1998-99. Unusually, the peak count for Great Britain occurred during winter rather than passage, due to the exceptionally high numbers in January and February at the Ouse Washes (for the second year running), Martin Mere, Breydon Water & Berney Marshes, Ribble Estuary and Holland Marshes.

Numbers at Hamford Water, Arun Valley and the Somerset Levels were well below their five

year means which may account for the increase at other sites. Numbers of Ruff wintering in Great Britain have increased dramatically since the early 1990s and the higher numbers in 1999-2000 continue this trend.

As is usual, most peak counts during passage came from the autumn, with eight sites exceeding the minimum threshold in 1999-2000. Most notable was an exceptionally high count of 257 at the Ouse Washes in April.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain							
Ouse Washes	139	(113)	60	(292)	288	Feb	195
Lower Derwent Valley	189	81	133	118	111	Jan	126
Martin Mere	45	67	90	96	140	Jan	88
North Norfolk Coast	58	118	³⁷ 81	51	72	Feb	76
Nene Washes	71	19	60	98	50	Mar	60
Breydon Water & Berney Marshes	1	24	28	11	144	Feb	42
Hamford Water	81	(23)	32	38	7	Jan	40
Swale Estuary	76	4	27	20	43	Feb	34
Blackwater Estuary	(12)	19	33	29	41	Jan	31
Arun Valley	43	16	(34)	50	7	Mar	30
Abberton Reservoir	53	18	30	0	37	Feb	28
Rutland Water	19	21	17	31	36	Jan	25
Somerset Levels	37	42	21	18	2	Feb	24
Middle Yare Marshes	0	20	22	15	57	Nov/Mar	23

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Ribble Estuary	17	21	25	5	41	Jan	22
Wash	17	(4)	3	69	0	Nov	22
Thames Estuary	11	52	15	1	25	Jan	21
Dungeness Gravel Pits	7	40	4	15	21	Dec	17
Humber Estuary	15	2	14	³⁷ 30	18	Mar	16
Walland Marsh	-	36	9	2	15	Mar	16
Holland Marshes	-	-	1	0	45	Feb	15 ▲
Sandbach Flashes	21	-	10	11	13	Dec	14
Dee Estuary (Eng/Wal)	17	12	8	10	2	Dec	10
Stodmarsh NNR & Collards Lagoon	0	0	0	7	(37)	Mar	9 ▲
Tees Estuary	16	7	2	17	4	Feb	9
Colne Estuary	30	0	0	(4)	0	Nov	8
Lakenheath Fen	-	-	(13)	0	-		(7)
Druridge Pool	7	-	-	-	-		7

Sites of all-Ireland importance in Northern Ireland

Strangford Lough	0	0	³⁷ 40	0	0		8
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Sites no longer meeting table qualifying levels

Stour Estuary

Other sites surpassing table qualifying levels in 1999-2000

Glynde Levels	18	Feb
Romney Marsh	11	Jan
Pulfin Bog	8	Mar
Loch of Mey	7	Dec/Jan
Eden Estuary	7	Nov

Sites holding 50 or more birds on passage in 1999

Ouse Washes	257	Apr	Abberton Reservoir	87	Aug
Humber Estuary	151	Sep	Ribble Estuary	80	Oct
North Norfolk Coast	144	Sep	Martin Mere	60	Apr/Sep
Breydon Water & Berney Marshes	90	Sep	Lower Derwent Ings	51	Oct

JACK SNIBE

Limnocryptes minimus

International threshold: ?

Great Britain threshold: ?[†]

All-Ireland threshold: 250

GB max: 113 Jan

NI max: 5 Jan

Numbers of wintering Jack Snipe were similar to those of the previous year. Both the peak count and summed site maxima of 336 were slightly below average but still at the higher end of values for the past five years.

Numbers of Jack Snipe peaked in November and then in January, perhaps indicating a period of movement, maybe in response to cold weather on the Continent.

As for other species, there is a fair degree of overlap in the sites listed each year in the table below. However, this may partly reflect the familiarity of observers with the key locations for Jack Snipe within these sites and the ease of visiting these particular locations whilst undertaking a count of all other species in their count areas.

Sites with five or more birds in 1999-2000

Lower Derwent Ings	24	Oct	Hill Ridware Lake	6	Nov
Chichester Harbour	23	Jan	Fiddlers Ferry Power	6	Mar
Doxey Marshes SSSI	18	Mar	Llangorse Lake	5	Nov
Severn Estuary	15	Jan	Loch O' Th' Lowes (New Cumnock)	5	Oct
Meadow Lane Gravel Pits	12	Mar	Forth Estuary	5	Nov/Dec
Upton Warren	9	Jan	Bramshill Plantation	5	Feb
Somerset Levels	7	Nov	Larne Lough	5	Jan
Shipton on Cherwell Quarry	7	Feb	Walmore Common	5	Feb
Houghton Regis	6	Mar			

[†] as no British or all-Ireland thresholds have been set, a qualifying level of five has been chosen to select sites for presentation in this report

SNIFE

Gallinago gallinago

International threshold: 20,000**

Great Britain threshold: ?[†]

All-Ireland threshold: ?[†]

GB max: 7,641 Nov

NI max: 262 Jan

The peak count in Great Britain was at similar to those of the previous two years. Peaks have generally occurred in December, and counts in 1999-2000 were noticeably lower at this time. The peak in Northern Ireland rose to its highest level since the exceptionally high numbers in 1995-96.

Peak counts for all sites in the table were below their five year mean except for the Lower

Derwent Valley. The Somerset Levels remains by far the most important wintering site for this species. The Exe Estuary returned to the table after not meeting qualifying levels in 1998-99 and the North Norfolk Coast entered the table for the first time. Exceptionally high numbers on the Severn Estuary in February produced the fourth highest count in 1999-2000.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain[†]							
Somerset Levels	(1,929)	1,041	1,975	2,196	1,578	Dec	1,744
Maer Marsh	650	480	550	610	490	Jan	556
Lower Derwent Valley	472	409	500	300	621	Nov	460
Newgale Beach	-	-	230	400	-		315
Morecambe Bay	198	188	260	268	213	Dec	225
Swale Estuary	335	(46)	38	333	171	Dec	219
North Norfolk Coast	69	55	³⁷ 611	135	188	Feb	212
Exe Estuary	315	42	(245)	232	-		209 ▲
Arun Valley	206	135	272	237	185	Feb	207

Other sites surpassing table qualifying levels in 1999-2000

Severn Estuary	396	Feb	Breydon Water & Berney Marshes	210	Dec
Ouse Washes	218	Feb	Marston Sewage Treatment Works	205	Feb
Southampton Water	215	Mar			

[†] as no British or all-Ireland thresholds have been set, a qualifying level of 200 has been chosen to select sites for presentation in this report

LONG-BILLED DOWITCHER

Limnodromus scolopaceus

Vagrant

Native range: NE Siberia and N America

Four sites held single birds during the year. The returning bird to the Swale Estuary was recorded in April, July, August and January. Elsewhere,

one at Belfast Lagoon was seen in September and February and singles were at Stodmarsh NNR & Collards Lagoon and Morecambe Bay in April.

WOODCOCK

Scolopax rusticola

International threshold: 20,000**

Great Britain threshold: ?[†]

All-Ireland threshold: ?[†]

This species is very under recorded by WeBS due to its secretive behaviour and favoured habitat of woodlands. However, the data suggests that 1999-2000 was not a particularly good year for

this species. Summed site maxima gave a total of 108 birds, well below the five year mean of 161 and also the lowest value in the last five years.

Sites with 10 or more birds in 1999-2000

Grouville Marsh	10	Jan
Longueville Marsh	10	Dec
Mere Sands Wood Nature Reserve	7	Nov
Hamford Water	5	Nov

[†] as no British or all-Ireland thresholds have been set, a qualifying level of five has been chosen to select sites for presentation in this report

BLACK-TAILED GODWIT

Limosa limosa

GB max: 16,556 Oct

NI max: 412 Mar

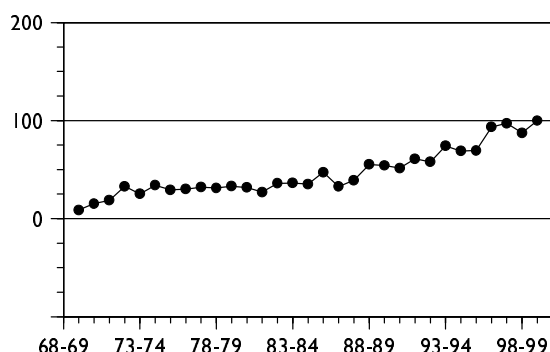


Figure 67. Annual indices for Black-tailed Godwit in UK

Numbers of wintering Black-tailed Godwits in Great Britain were slightly up on the previous year and were the third highest ever recorded under WeBS for both Great Britain and Northern Ireland. The annual index shows the continued good fortune of this species after a slightly poorer year in 1998-99, rising to its highest ever level.

Despite this increase, numbers at many sites in southern and eastern England continued to decline. In 1999-2000 the Medway Estuary, Thames Estuary, Chichester Harbour and Hamford Water all dropped from the list of sites

International threshold: 700

Great Britain threshold: 70

All-Ireland threshold: 90

of international importance for Black-tailed Godwit. None was recorded at Abberton Reservoir, a site which has previously held relatively high numbers. Other sites, notably the Dee Estuary (England/ Wales), Ribble Estuary, Ouse Washes, Swale Estuary, Humber Estuary and Breydon Water & Berney Marshes all supported numbers well above their five year means. Numbers at Belfast Lough returned to form after low counts in the two previous winters.

It is also worth noting that Southampton Water is of greater importance for this species than WeBS counts suggest. Titchfield Haven is the key area within the site, and held 1,030 birds in December 1999 (Hampshire Bird Report) but is not always counted for WeBS.

During passage periods, eleven sites exceeded the threshold for international importance, three of which, Medway and Thames Estuaries and North Killingholme Haven Pits, only qualify as sites of national importance based on winter counts.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Wash	(1,764)	5,738	3,104	1,104	1,844	Dec	2,948
Stour Estuary	3,848	³⁷ 2,514	1,724	2,105	1,862	Nov	2,411
Dee Estuary (Eng/Wal)	1,862	2,203	1,642	1,602	2,543	Nov	1,970
Poole Harbour	1,194	1,771	1,895	1,596	2,051	Jan	1,701
Ribble Estuary	180	2,319	911	(1,216)	2,596	Dec	1,502
Mersey Estuary	494	1,703	³⁷ 2,655	1,573	976	Nov	1,480
Ouse Washes	509	1,019	994	1,715	2,130	Feb	1,273
Swale Estuary	637	(1,409)	1,010	1,514	1,495	Feb	1,213
Blackwater Estuary	920	(1,088)	(608)	(680)	(697)	Mar	1,004
Southampton Water	(594)	(³⁷ 174)	982	(685)	522	Dec	752
Sites of national importance in Great Britain							
Humber Estuary	57	544	924	³⁷ 866	1,030	Nov	684
Medway Estuary	902	³⁷ 417	653	(551)	(389)	Feb	657 ▼
Exe Estuary	520	226	1,132	667	-		636
Thames Estuary	(109)	637	241	(1,180)	365	Nov	606 ▼
Chichester Harbour	551	³⁷ 498	464	³⁷ 738	(511)	Dec	563 ▼
Orwell Estuary	³⁷ 946	458	³⁷ 352	622	³⁷ 395	Dec	555
Nene Washes	398	80	509	1,520	64	Mar	514
Breydon Water & Berney Marshes	122	367	503	493	883	Dec	474
North Killingholme Haven Pits	-	1	190	830	655	Nov	419
Hamford Water	236	732	352	270	371	Dec	392 ▼
Alde Complex	201	254	701	168	308	Mar	326
North West Solent	200	265	³⁷ 378	251	(231)	Jan	274
Langstone Harbour	154	240	327	³⁷ 202	(304)	Nov	245
Abberton Reservoir	724	159	322	3	0	Nov	242

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Blyth Estuary (Suffolk)	266	200	215	-	-		227
Deben Estuary	267	354	154	112	209	Mar	219
Beaulieu Estuary	235	(246)	161	197	233	Feb	214
Colne Estuary	219	85	214	412	135	Feb	213
Crouch-Roach Estuary	68	87	416	236	252	Feb	212
Newtown Estuary	(365)	130	148	198	³⁷ 218	Nov	212
Portsmouth Harbour	62	204	³⁷ 358	(4)	(211)	Nov	209
Eden Estuary	128	176	183	233	182	Nov	180
Pagham Harbour	100	98	³⁷ 124	³⁷ 300	182	Feb	161
Tamar Complex	156	(127)	119	100	(44)	Jan	126
Fal Complex	77	131	146	135	112	Feb	120
Burry Inlet	87	³⁷ 116	233	45	99	Nov	116
Severn Estuary	49	97	230	166	35	Dec	115
Morecambe Bay	56	21	42	354	82	Nov	111
Solway Estuary	13	460	9	31	26	Dec	108
North Norfolk Coast	109	(21)	³⁷ 60	119	98	Dec	97
Forth Estuary	34	33	(87)	225	93	Dec	96

Sites of all-Ireland importance in Northern Ireland

Belfast Lough	235	418	178	266	³⁷ 401	Nov	300
Strangford Lough	³⁷ 134	486	³⁷ 445	191	214	Mar	294

Sites no longer meeting table qualifying levels

Dengie Flats

Internationally or nationally important sites not counted in last five years

Christchurch Harbour

Other sites surpassing table qualifying levels in 1999-2000

Holland Marshes 95 Feb

Sites surpassing the international threshold during passage periods in 1999-2000

Wash	4,433	Sep	Blackwater Estuary	1,078	Apr
Stour Estuary	2,571	Apr	Thames Estuary	936	Jul
Ouse Washes	2,509	Apr	North Killingholme Haven Pits	921	Sep
Mersey Estuary	2,370	Aug	Poole Harbour	744	Sep
Ribble Estuary	2,189	Aug	Medway Estuary	721	Oct
Dee Estuary	1,159	Apr			

BAR-TAILED GODWIT

Limosa lapponica

International threshold: 1,000

Great Britain threshold: 530

All-Ireland threshold: 175

GB max: 48,704 Jan

NI max: 1,554 Jan

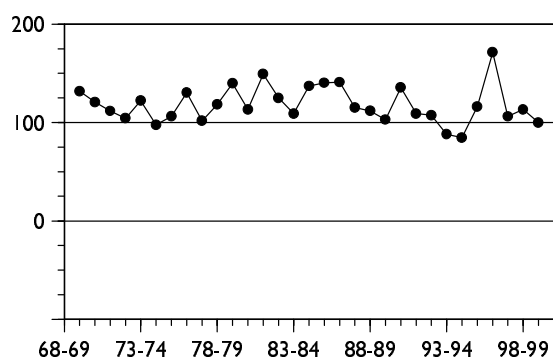


Figure 68. Annual indices for Bar-tailed Godwit in UK

In Britain the maximum count remained at a similar level to the previous two winters, whilst in Northern Ireland it was the lowest since 1991-92. After last year's slight increase, the annual index dropped to the lower end of the values.

All sites except for the Alt Estuary, Lindisfarne, Humber Estuary and Cromarty Firth held below average numbers. Counts were at least 50% lower than the sites' five year means at the Thames Estuary, Ribble Estuary, Dee Estuary (England/ Wales), Solway Estuary, Dengie Flats and Lough Foyle.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Wash	(15,227)	16,246	16,435	10,319	13,062	Jan	14,258
Thames Estuary	11,684	16,164	5,797	(4,416)	2,584	Dec	9,057
Ribble Estuary	(7,693)	15,885	³⁷ 10,431	4,093	4,346	Feb	8,689
Alt Estuary	5,488	9,015	9,424	6,883	8,001	Jan	7,762
Dee Estuary (Eng/Wal)	(2,012)	³⁷ 8,460	³⁷ 5,464	³⁷ 3,359	232	Dec	4,379
Morecambe Bay	(2,985)	3,658	1,818	5,540	5,374	Jan	4,098
Lindisfarne	(2,769)	2,770	3,225	(3,086)	(3,993)	Feb	3,329
Humber Estuary	2,199	1,505	(2,970)	³⁷ 3,787	3,433	Jan	2,779
Solway Estuary	2,331	4,273	2,495	2,592	931	Dec	2,524
North Norfolk Coast	1,338	3,360	3,108	2,400	1,842	Jan	2,410
Dengie Flats	1,300	5,500	1,402	(1,050)	900	Feb	2,276
Lough Foyle	2,140	(2,120)	1,535	3,820	678	Nov	2,059
Forth Estuary	1,988	1,869	2,157	2,076	1,046	Nov	1,827
Inner Moray Firth	(2,649)	2,792	1,301	³⁷ 1,344	1,015	Feb	1,820
Cromarty Firth	(1,193)	(1,225)	1,654	1,779	³⁷ 1,852	Jan	1,762
Strangford Lough	³⁷ 1,682	³⁷ 1,671	2,433	1,299	1,360	Jan	1,689
Tay Estuary	(1,520)	2,305	1,315	1,160	(1,250)	Jan	1,593
Dornoch Firth	1,520	(2,125)	847	1,216	837	Feb	1,309
Chichester Harbour	1,250	1,100	820	(1,175)	(462)	Feb	1,086

Sites of national importance in Great Britain

East Sanday Coast	-	-	¹⁶ 951	-	-		951
Hamford Water	657	1,380	548	381	506	Jan	694
North Uist (West Coast)	-	-	¹⁶ 662	-	-		662
Swale Estuary	696	824	597	366	407	Jan	578
Eden Estuary	672	603	610	484	331	Feb	540

Sites no longer meeting table qualifying levels

Belfast Lough

WHIMBREL

Numenius phaeopus

GB max: 1,337 **Mar**

NI max: 9 **Apr**

International threshold: 6,500

Great Britain threshold: +*

All-Ireland threshold: +*

* 50 is normally used as a minimum threshold

Following the previous year's record numbers, 1999-2000 was unremarkable for Whimbrel. Both the number of sites where birds were recorded

and the summed site maxima were slightly below average for the past five years, and only a few sites held 50 or more birds.

Sites with 50 or more birds in 1999-2000

Burry Inlet	334	May
Morecambe Bay	168	May
North Norfolk Coast	143	Aug
The Wash	137	Sep
Blackwater Estuary	121	Aug
Taw/Torridge Estuary	92	May
Chichester Harbour	86	Aug

CURLEW *Numenius arquata*

International threshold: 3,500
Great Britain threshold: 1,200
All-Ireland threshold: 875

GB max: 99,787 Feb
NI max: 7,369 Feb

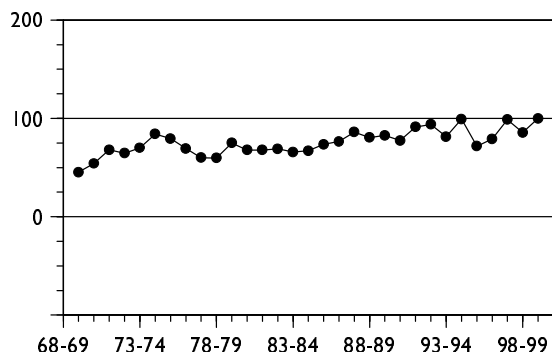


Figure 69. Annual indices for Curlew in UK

Following a marked fall in the previous winter, 1999-2000 saw the annual index rise to match the peak levels of 1994-95 and 1997-98. The

maximum count in Great Britain was the highest ever to be recorded by WeBS and, although not as high as in 1998-99, the Northern Ireland maximum was similar to those in recent years.

Numbers at individual sites were relatively similar to those in recent winters, with most sites supporting fractionally more birds than average, including, for the second year running Morecambe Bay, the most important site in the UK. Peak counts at the Solway Estuary, Wash, Ribble Estuary, Traeth Lafan and Outer Ards were also notable for above average numbers.

Peak counts at the Dee Estuary (England/Wales) and Thames Estuary were at their lowest in the last five years. The Hamford Water numbers were notably low but numbers have fluctuated to low levels in previous winters.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Morecambe Bay	14,905	12,357	14,858	16,778	16,586	Feb	15,097
Solway Estuary	3,348	4,062	5,716	5,935	7,230	Feb	5,258
Dee Estuary (Eng/Wal)	3,538	4,583	5,370	4,490	3,373	Dec	4,271
Wash	(3,945)	3,241	3,803	4,306	5,056	Feb	4,102
Sites of national importance in Great Britain							
Humber Estuary	(1,973)	1,406	(3,282)	(3,978)	3,532	Mar	3,050
Thames Estuary	3,016	3,873	2,590	2,343	2,151	Feb	2,795
Severn Estuary	2,682	2,001	(2,903)	1,784	2,086	Dec	2,291
Duddon Estuary	2,019	1,801	2,008	2,629	2,576	Nov	2,207
Forth Estuary	1,607	1,599	2,545	2,082	2,240	Jan	2,015
Inner Moray Firth	1,303	1,828	2,334	³⁷ 1,630	2,456	Feb	1,910
Ribble Estuary	1,020	1,593	2,507	880	2,631	Feb	1,726
Poole Harbour	1,428	1,652	1,783	1,508	1,712	Feb	1,617
Mersey Estuary	1,439	1,501	³⁷ 2,117	³⁷ 1,308	1,507	Jan	1,574
North Norfolk Coast	(592)	1,489	³⁷ 1,467	1,441	1,863	Jan	1,565
Blackwater Estuary	1,226	(1,533)	1,426	1,511	1,842	Feb	1,508
Medway Estuary	1,474	1,061	1,413	1,554	(1,648)	Feb	1,430
Lindisfarne	(601)	(577)	1,330	(1,420)	(1,483)	Jan	1,411 ▲
Clyde Estuary	1,135	(1,088)	1,543	1,423	1,497	Nov	1,400
Cleddau Estuary	1,436	1,283	1,330	1,448	(1,173)	Dec	1,374
Cromarty Firth	1,434	1,092	1,542	1,639	³⁷ 1,141	Feb	1,370
Chichester Harbour	1,296	1,135	1,433	1,452	(1,389)	Jan	1,341
Hamford Water	2,670	580	1,355	1,265	719	Jan	1,318
Swale Estuary	832	(1,124)	1,435	1,110	1,658	Feb	1,259
Traeth Lafan	(1,412)	1,446	1,044	522	(1,836)	Feb	1,252 ▲
Stour Estuary	912	(1,041)	(1,492)	1,316	1,174	Jan	1,224
Sites of all-Ireland importance in Northern Ireland							
Lough Foyle	2,231	(2,187)	1,879	2,686	2,129	Dec	2,231
Strangford Lough	2,107	³⁷ 2,021	2,102	1,560	1,625	Feb	1,883
Outer Ards	774	1,025	758	1,669	2,113	Feb	1,268

Sites no longer meeting table qualifying levels

Wigtown Bay

Other sites surpassing table qualifying levels in 1999-2000

The Ouse & Lairo Water	2,170	Jan
Wigtown Bay	1,417	Feb
Burry Inlet	1,283	Nov

SPOTTED REDSHANK

Tringa erythropus

GB max: 271 **Sep**
NI max: 1 **several**

Despite the peak count being higher and birds being recorded at more sites than the previous two years, summed site maxima were the lowest for the last five years, exhibiting a steady decline each year since the high numbers in 1995-96.

Sites with 10 or more birds in 1999-2000

Tamar Complex	36	Mar
Humber Estuary	35	Sep
Swale Estuary	33	Aug
The Wash	32	Sep
Abberton Reservoir	31	Sep
Benacre Broad	16	Oct

After two years of exceptionally high numbers during autumn passage on the Wash, counts returned to more normal levels in 1999-2000.

Crouch-Roach Estuary	15	Aug
Blackwater Estuary	15	Sep
Dee Estuary	11	Sep
Morecambe Bay	10	Sep
Caerlaverock WWT	10	Nov

International threshold: 1,200

Great Britain threshold: +*

All-Ireland threshold: +*

* 50 is normally used as a minimum threshold

REDSHANK

Tringa totanus

GB max: 98,007 **Oct**
NI max: 8,389 **Oct**

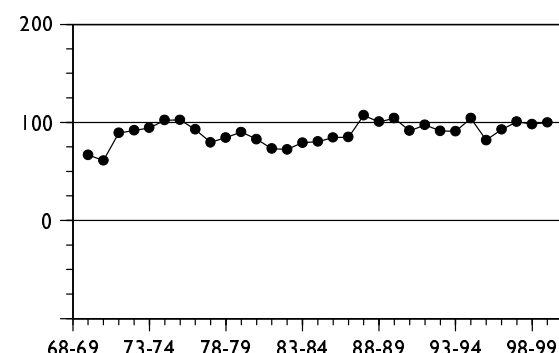


Figure 70. Annual indices for Redshank in UK

Maximum Redshank counts in 1999-2000 were slightly lower than the previous year but were still at the higher end of values for the 1990s. Conversely, annual indices increased marginally,

International threshold: 1,500

Great Britain winter threshold: 1,100

Great Britain passage threshold: 1,200

All-Ireland threshold: 245

bringing them back to the 1997-98 level.

In keeping with the past few years peak counts at individual sites were mostly unremarkable, with little change to the table. Counts at many sites were lower than normal, although, with the exception of the North Norfolk Coast and Severn Estuary, not markedly different from average.

After a continued increase over the past five years, high numbers on the Ythan Estuary qualified this site as one of international importance. Morecambe Bay, Solway Estuary, Blackwater Estuary, Ribble Estuary, Colne Estuary, Cromarty Firth, Carlingford Lough and Larne Lough all supported their highest wintering numbers in the last five years.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Morecambe Bay	6,847	6,350	6,968	7,082	7,262	Jan	6,902
Dee Estuary (Eng/Wal)	4,651	6,226	7,570	4,907	4,792	Mar	5,629
Mersey Estuary	4,710	5,212	³⁷ 6,973	³⁷ 5,087	4,476	Feb	5,292
Humber Estuary	4,085	1,919	4,575	(6,053)	5,272	Feb	4,381
Forth Estuary	5,205	3,602	4,768	4,450	3,532	Jan	4,311
Solway Estuary	(3,746)	2,512	3,196	3,958	4,135	Dec	3,509
Strangford Lough	3,281	2,832	2,713	4,157	2,827	Jan	3,162
Alde Complex	2,233	2,303	5,268	2,825	2,783	Nov	3,082
Wash	(2,726)	(3,056)	3,279	3,046	2,722	Mar	3,026
Medway Estuary	3,731	³⁷ 2,058	3,020	(1,599)	(1,896)	Feb	2,936
Thames Estuary	(2,560)	3,469	2,992	2,557	2,519	Feb	2,884
Stour Estuary	3,392	2,853	1,908	2,730	³⁷ 2,511	Nov	2,679
Clyde Estuary	2,532	(2,092)	1,768	2,538	³⁷ 2,956	Nov	2,449

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Inner Moray Firth	2,580	2,177	2,373	³⁷ 2,494	2,360	Jan	2,397
Duddon Estuary	3,888	1,344	1,856	2,356	2,367	Nov	2,362
Blackwater Estuary	1,651	(1,930)	2,523	(2,158)	2,541	Feb	2,238
Belfast Lough	³⁷ 2,283	³⁷ 2,068	³⁷ 2,148	³⁷ 2,463	³⁷ 2,108	Nov	2,214
Deben Estuary	1,558	2,632	2,704	1,729	1,996	Nov	2,124
Montrose Basin	1,766	2,508	2,440	2,093	1,800	Nov	2,121
Orwell Estuary	2,485	³⁷ 1,978	³⁷ 2,256	³⁷ 1,575	³⁷ 2,197	Nov	2,098
Hamford Water	1,413	2,322	2,486	2,373	1,796	Feb	2,078
Ribble Estuary	2,129	2,208	1,901	1,253	2,622	Mar	2,023
North Norfolk Coast	(1,088)	1,356	³⁷ 3,542	1,639	1,473	Jan	2,003
Severn Estuary	2,526	2,072	1,790	(2,134)	1,149	Dec	1,934
Ythan Estuary	660	1,344	1,380	1,976	2,990	Dec	1,670 ▲
Colne Estuary	1,537	1,157	1,485	1,640	1,823	Feb	1,528

Sites of national importance in Great Britain

Alt Estuary	1,600	1,790	(1,000)	979	1,627	Feb	1,499 ▼
Swale Estuary	1,325	1,268	1,364	2,116	1,359	Feb	1,486 ▼
Chichester Harbour	1,287	1,442	1,391	1,691	(1,342)	Dec	1,453 ▼
Tees Estuary	1,824	1,079	1,408	1,386	1,282	Feb	1,396
Blyth Estuary (Suffolk)	1,000	1,426	1,761	-	-		1,396
Cromarty Firth	701	701	1,385	1,404	³⁷ 1,842	Nov	1,207
Poole Harbour	1,111	1,028	1,239	1,100	1,124	Dec	1,120

Sites of all-Ireland importance in Northern Ireland

Outer Ards	773	1,035	(957)	1,428	1,308	Nov	1,136
Carlingford Lough	789	1,194	1,043	924	1,334	Feb	1,057
Lough Foyle	1,147	805	720	901	844	Jan	883
Dundrum Bay	608	831	853	826	494	Jan	722
Larne Lough	360	317	362	388	427	Mar	371
Bann Estuary	205	190	420	346	260	Jan	284

Sites no longer meeting table qualifying levels

Eden Estuary

Other sites surpassing table qualifying levels in 1999-2000

Dornoch Firth	1,191	Feb
Traeth Lafan	1,124	Dec

Sites surpassing passage threshold in Great Britain in 1999-2000

Humber Estuary	8,576	Sep	Alde Complex	2,474	Oct
Morecambe Bay	8,398	Oct	Deben Estuary	2,391	Oct
Dee Estuary (Eng/Wal)	7,248	Oct	Ythan Estuary	2,088	Oct
Ribble Estuary	6,411	Sep	Solway Estuary	1,868	Sep
The Wash	5,855	Sep	North Norfolk Coast	1,659	Aug
Mersey Estuary	5,415	Oct	North Killingholme Haven Pits	1,650	Sep
Strangford Lough	4,506	Sep	Alt Estuary	1,627	Feb
Thames Estuary	4,263	Sep	Tees Estuary	1,590	Sep
Forth Estuary	3,727	Oct	Swale Estuary	1,585	Sep
Medway Estuary	3,664	Oct	Cromarty Firth	1,575	Oct
Stour Estuary	3,073	Sep	Belfast Lough	1,456	Oct
Clyde Estuary	2,899	Oct	Chichester Harbour	1,422	Sep
Inner Moray Firth	2,852	Oct	Lough Foyle	1,366	Oct
Blackwater Estuary	2,688	Oct	Eden Estuary	1,308	Sep
Montrose Basin	2,577	Sep	Severn Estuary	1,306	Sep

MARSH SANDPIPER

Tringa stagnatilis

Vagrant

Native range: Africa, Asia and Australia

Singles on the Yar Estuary and Abberton Reservoir in August were the first and second records for WeBS of this species. July and August

1999 saw a record ten birds recorded in Great Britain (Nightingale & McGeehan 1999).

GREENSHANK

Tringa nebularia

GB max: 2,580 Sep
NI max: 127 Oct

International threshold: ?

Great Britain threshold: +[†]

All-Ireland threshold: 9*

* 50 is normally used as a minimum threshold

Peak numbers of Greenshank in the UK occur during autumn passage, particularly September. Counts in 1999-2000 increased yet further from the large numbers of the previous year, and were the highest ever recorded by WeBS. In Northern Ireland peak monthly totals were down slightly on last year.

Numbers dropped rapidly after autumn to typical wintering levels with most sites, in both Great Britain and Northern Ireland, holding numbers very similar to their five year means. A peak of 28 birds at Burry Inlet in February was the

second highest at an individual site in Great Britain during 1999-2000.

Thirteen sites held nine or more birds during passage with the peak counts at all sites occurring in the autumn. A remarkable count of 428 from the Wash in September was the highest ever recorded by WeBS, beating the 425 recorded there in September 1987. The peak count at Chichester Harbour was also notably high, being the fourth highest count recorded at any site by WeBS.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain[†]							
Kingsbridge Estuary	28	26	27	18	29	Nov	26
Tamar Complex	(39)	24	22	19	(25)	Mar	26
Exe Estuary	44	11	16	27	-		25
Chichester Harbour	15	10	36	20	(19)	Dec	20
Fal Complex	18	16	14	24	(23)	Feb	19
Taw-Torridge Estuary	16	11	28	(9)	16	Nov	18
Cleddau Estuary	17	12	11	22	(15)	Nov	16
Grouville Marsh	(2)	(6)	(15)	(2)	13	Mar	14
Foryd Bay	11	11	10	13	10	Nov	11
North West Solent	5	9	15	10	(10)	Dec	10
Yealm Estuary	15	8	7	13	7	Nov	10
Tynningham Estuary	8	10	17	10	7	Feb	10

Sites of all-Ireland importance in Northern Ireland

Strangford Lough	³⁷ 35	³⁷ 37	38	56	48	Jan	43
Lough Foyle	36	(17)	30	28	30	Dec	31
Dundrum Bay	22	³⁷ 10	10	16	12	Nov	14
Carlingford Lough	6	8	15	15	14	Nov	12
Larne Lough	17	8	10	11	8	Nov	11
Outer Ards	3	15	15	16	7	Nov	11

Sites no longer meeting table qualifying levels

Clyde Estuary
Traeth Lafan
Camel Estuary

Other sites surpassing table qualifying levels in 1999-2000

Burry Inlet	28	Feb
Helford Estuary	14	Nov
Auchendores Reservoir	10	Nov/Dec
Poole Harbour	10	Various

Sites holding 50 or more birds on passage in 1999

Wash	428	Sep	Stour Estuary	85	Sep
Chichester Harbour	337	Sep	Dee Estuary	85	Sep
North Norfolk Coast	203	Aug	Burry Inlet	59	Sep
Blackwater Estuary	163	Sep	Langstone Harbour	50	Sep
Humber Estuary	129	Sep	Hamford Water	50	Sep
Thames Estuary	111	Sep			
Morecambe Bay	94	Sep			
Taw-Torridge Estuary	91	Sep			

[†] as no British threshold has been set, a qualifying level of nine has been chosen to select sites for presentation in this report

LESSER YELLOWLEGS

Tringa flavipes

Vagrant

Native range: North and South America

A single bird was present at Lough Foyle in October.

GREEN SANDPIPER

Tringa ochropus

International threshold: ?

Great Britain threshold: ?

All-Ireland threshold: ?

GB max: 483 Aug

NI max: 2 Aug/Sep

The peak count was slightly below average for the last five years but the summed site maxima rose for the third consecutive year to its highest value. Whilst the number of sites where birds were recorded and peak counts during times of

passage remained similar to those of previous years, the number of birds recorded in winter has increased. In 1999-2000 numbers remained consistently high throughout the winter, with no decline noted until March

Sites with 15 or more birds in 1999-2000

Swale Estuary	32	Aug
North Norfolk Coast	31	Aug
Blackwater Estuary	26	Aug
Rye Harbour and Pett Levels	22	Aug
Humber Estuary	19	Sep

Tophill Low Reservoir	17	Aug
Bardney Sugar Factor	16	Aug
Rutland Water	15	Aug
Thames Estuary	15	Aug

WOOD SANDPIPER

Tringa glareola

Scarce

The British peak of 50 birds in August was around average for recent years. Birds were recorded at 32 sites, and the summed site maxima of 66 was

in the upper range of typical variations. The double-figure count at Dungeness was particularly noteworthy.

Sites with three or more birds in 1999-2000

Dungeness	10	Aug
Swale Estuary	6	Aug
Breydon Water & Berney Marshes	6	Sep
Morecambe Bay	6	Aug
Rutland Water	3	Aug
Tees Estuary	3	Aug
Maer Marsh	3	Sep

COMMON SANDPIPER

Actitis hypoleucos

International threshold: ?

Great Britain threshold: ?

All-Ireland threshold: ?

GB max: 1,603 Aug

NI max: 1 Oct

The British peak once again rose to record levels, continuing the steady rise in autumn passage numbers over the last decade. Birds were noted at 436 sites, slightly less than in 1998-99 though around average for recent years, whilst the summed site maxima of 2,443 showed a slight

increase. Winter numbers were typical, with around 30-40 birds present in most months. These came from 56 different sites, the highest count being of six birds on the Tamar Complex in February.

Sites with 40 or more birds in 1999-2000

Severn Estuary	138	Aug	Hornsea Mere	62	Aug
The Wash	126	Aug	Rye Harbour and Pett Levels	66	Aug
Abberton Reservoir	107	Aug	Swale Estuary	47	Aug
North Norfolk Coast	95	Aug	Tamar Complex	42	Aug
Morecambe Bay	71	Jul	Montrose Basin	41	Jul

TURNSTONE

Arenaria interpres

International threshold: 700

Great Britain threshold: 640

All-Ireland threshold: 225

GB max: 12,833 Oct

NI max: 1,789 Nov

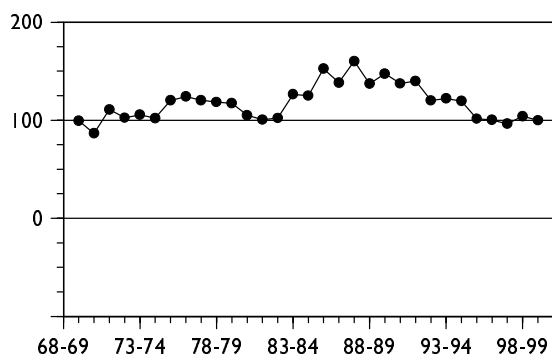


Figure 71. Annual indices for Turnstone in UK

Wintering Turnstone numbers in Great Britain were at their lowest since 1984-85, continuing the steady decline since the highs of the mid to late 1980s. In Northern Ireland, numbers were below average for the same period. The UK annual indices have remained stable in recent years, but at the low levels of the early 1980s.

Despite a lower than average count, the Mersey Estuary qualified as internationally important owing to the numbers recorded during WeBS Low Tide Counts. This case, however, highlights the problems of 'site' definition for mobile birds. The birds using the Mersey at low tide occur at Egremont, just inside the mouth of the estuary, and are thought to roost on the Alt and North Wirral, both just a few kilometres away. Egremont, however, is more than 10 km from the main mudflats (Stanlow, Ince and Dungeon Banks) which traditionally constitute the Mersey Estuary from a waterbird perspective.

Belfast Lough qualified for as a site of all-Ireland importance for the first time since 1992-93, despite a below average peak count. Numbers at the Dee Estuary (England/Wales) continued to decline and in 1999-2000 the peak count was less than half the five year mean.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Morecambe Bay	(1,020)	1,248	1,198	1,402	1,181	Dec	1,257
Outer Ards	(750)	1,040	(715)	1,136	1,102	Nov	1,093
Mersey Estuary	2	³⁷ 1,717	³⁷ 1,188	³⁷ 1,727	³⁷ 703	Dec	1,067 ▲
Dee Estuary (Eng/Wal)	1,243	1,193	978	771	453	Dec	928
Tiree	-	-	¹⁶ 905	-	858	Jan	882
Thanet	-	481	784	855	892	Dec	753
East Sanday Coast	-	-	¹⁶ 734	-	-		734
Forth Estuary	(918)	636	700	776	512	Feb	708
Wash	(637)	(766)	444	965	641	Jan	704
Sites of all-Ireland importance in Northern Ireland							
Belfast Lough	678	785	510	566	399	Mar	588 ▼
Strangford Lough	369	207	207	194	301	Jan	256

Sites no longer meeting table qualifying levels

South Uist (West Coast)

Thames Estuary

Others sites surpassing table qualifying levels in 1999-2000

Humber Estuary	785	Jan
Stour Estuary	716	Dec

WILSON'S PHALAROPE

Phalaropus tricolor

Vagrant
Native range: Americas

One was present on the Humber Estuary in October.

RED-NECKED PHALAROPE

Phalaropus lobatus

Scarce

One was present at Stodmarsh NNR & Collards Lagoon in August and another at Rutland Water in September.

GREY PHALAROPE

Phalaropus fulicarius

Scarce

Unusually for this species, the only record was of a spring bird on the Stour Estuary in April.

MEDITERRANEAN GULL

Larus melanocephalus

Scarce

GB max: 85 Sep
NI max: 0

Whilst the British total was the highest recorded to date, the peak was only marginally above that of previous years. It was notable that above average numbers were present throughout the summer months. Birds were recorded from 71

sites and summing site maxima produced a total of 259 birds, both figures being well above normal. The Isle of Wight remains a major UK stronghold for the species with four sites regularly holding counts in double figures.

Sites with five or more birds in 1999-2000

Brading Harbour and Marshes	51	Sep
Newtown Estuary	37	Apr
Tamar Complex	27	Jul
Ryde Pier To Puckpool Point	15	Sep
Foreland	10	Mar

Swansea Bay	6	Aug
North Norfolk Coast	5	May
Alt Estuary	5	Sep
Swan Pool (Falmouth)	5	Feb

LITTLE GULL

Larus minutus

Scarce

GB max: 174 Jul
NI max: 0

The coincidence of passage movements with WeBS priority count dates is the primary determinant of peak counts of this species. The July peak was around average for recent years, this figure predominantly accounted for by large

numbers at Monikie Reservoirs, the largest single count from any inland waterbody. A typical scattering of records were received from each of the winter months, the count of 10 birds on the North Norfolk Coast in March being noteworthy.

Sites with five or more birds in 1999-2000

Monikie Reservoirs	155	Jul
Alt Estuary	119	Apr
Hornsea Mere	46	Aug
North Norfolk Coast	41	Oct

Benacre Broad	15	Sep
Tees Estuary	12	Jun
Morecambe Bay	5	Feb

BONAPARTE'S GULL

Larus philadelphia

Vagrant

Native range: Americas

Singles were present at Drift Reservoir in November and March and another was on the Severn Estuary in July.

BLACK-HEADED GULL

Larus ridibundus

International threshold: 20,000**

Great Britain threshold: 19,000[†]

All-Ireland threshold: ?[†]

GB max: 268,098 Jan

NI max: 16,747 Nov

Peak totals in Great Britain were the highest yet recorded by WeBS, an increase of 6% on the previous highest peak in 1997-98. Given that this species uses many non-wetland habitats and that counting of gulls remains optional, it is not surprising that this peak represents only 14% of the provisional British population estimate. The Northern Ireland peak count was also the highest ever recorded by WeBS, although numbers throughout Ireland remain relatively stable (Colhoun 2001).

Five-year means for both Hurleston Reservoir and Tring Reservoirs dropped below the threshold for national importance. A particularly large peak count at Portsmouth Harbour meant that this site now surpasses the threshold for national importance. Peak numbers at the Wash were notable, over double the five-year mean for this site, although this may reflect greater effort afforded to counting gulls rather than a genuine increase in numbers.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Tophill Low Reservoirs	21,710	15,000	43,800	17,000	18,000	Oct	23,102
Morecambe Bay	18,998	18,653	25,294	26,624	17,670	Aug	21,448
Sites of national importance in Great Britain [†]							
Poole Harbour	24,887	(10,732)	15,842	8,813	10,629	Dec	15,043
Wash	12,380	(13,975)	5,780	8,191	31,332	Dec	14,421
Lower Derwent Valley	32,500	17,500	19,000	1,100	0	Oct	14,020
Chasewater	12,000	10,000	12,000	12,000	-		11,500
Portsmouth Harbour	8,403	(7,845)	12,642	9,388	(15,509)	Feb	11,486 ▲

Sites no longer meeting table qualifying levels

Hurleston Reservoir

Tring Reservoirs

[†] as no British sites are of national importance for Black-headed Gulls and as no all-Ireland threshold has been set, a qualifying level of 10,000 has been chosen to select sites for presentation in this report

RING-BILLED GULL

Larus delawarensis

Vagrant

Native range: North America

Nine sites held single birds during the year and as is usual with this species several were long staying birds. Birds were present throughout the winter at Par Sands Pools/ St Andrews Road and

the Hayle Estuary and the Taw-Torridge Estuary. One present at Loch Ryan was notable as Scottish records of this species are unusual.

COMMON GULL

Larus canus

International threshold: 16,000

Great Britain threshold: 9,000[†]

All-Ireland threshold: ?

GB max: 98,799 Feb

NI max: 4,609 Nov

Peak totals in Great Britain were the highest recorded under WeBS, an increase of 17% over the 1998-99 peak count. Although this increase is likely to be the product of increased effort at many important sites, there is some evidence to suggest that Mink control in the west of Scotland has increased breeding success at some large colonies which probably contribute significantly to winter numbers in southern Britain (Craik 2000). The peak count for Northern Ireland was similar to those recorded in previous years.

Tophill Low Reservoirs continues to be the

only regularly counted site that qualifies as internationally important for this species. The peak count at this site in 1999-2000 was 11% higher than that in the previous year highlighting the increasing importance of this site. The Tees Estuary, Alt Estuary and the Wash now qualify provisionally as nationally important due largely to high peak counts in 1999-2000. The Inner Moray Firth no longer meets table qualifying levels, primarily because this species is not regularly counted at this site (40,000 recorded in 1994-95).

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Tophill Low Reservoirs	18,000	14,000	22,000	38,000	42,000	Feb	26,800
Sites of national importance in Great Britain[†]							
Lower Derwent Valley	13,400	6,400	8,000	(320)	(0)	Oct	9,266
West Water Reservoir	-	4,500	12,500	(8,000)	(5,400)	Nov	8,500
Derwent Reservoir	8,769	9,465	9,590	10,800	968	Feb	7,918
Morecambe Bay	8,861	4,187	5,536	5,869	3,397	Aug	5,570
Pitsford Reservoir	4,000	2,500	4,000	5,500	6,000	Jan	4,400
Cromarty Firth	-	-	-	-	³⁷ 3,842	Dec	3,842 ▲
Thames Estuary	4,146	3,455	(828)	(3,086)	3,615	Feb	3,739
North Norfolk Coast	1,628	227	1,355	²⁴ 12,277	2,237	Dec	3,545
Rutland Water	1,000	6,000	8,000	2,000	500	Sep	3,500
Hule Moss	10,730	2,700	1,400	4	1,900	Sep	3,347
Eccup Reservoir	1,000	5,000	2,500	4,000	4,000	Nov	3,300
Alt Estuary	1,250	³⁷ 2,228	1,340	³⁷ 5,423	4,800	Jan	3,008 ▲
Tees Estuary	(1,971)	5,014	2,204	1,089	3,617	Nov	2,981
Wash	(2,636)	(1,321)	(887)	1,693	4,197	Dec	2,945 ▲

Sites no longer meeting qualifying level

Irvine to Saltcoats

Doon Estuary

[†] as few British sites are of national importance for Common Gull and as no all-Ireland threshold has been set, a qualifying level of 2,500 has been chosen to select sites for presentation in this report

LESSER BLACK-BACKED GULL

Larus fuscus

International threshold: 4,500

Great Britain threshold: 500

All-Ireland threshold: ?

GB max: 52,896 Jun

NI max: 94 Mar

The peak count for Great Britain was similar to the previous five years. The Severn Estuary and Alde Complex now join Morecambe Bay in qualifying provisionally as internationally important for this species. The 1999-2000 maximum count at the Alde Complex was

notable, almost three times as high as the five-year mean for the site, although the variation between years is presumably a consequence of whether WeBS counts are made of birds associated with the breeding colony. Improved importance of the Severn Estuary has been the

result of regularly high counts made over the past four years. Relatively stable late-summer numbers at Morecambe Bay over the past three years mirrors stability in the numbers of breeding pairs at nearby Walney, which probably contributes large numbers of dispersing adults and juveniles at this time (Upton *et al.* 1999).

Crowdy and Colliford Reservoirs rose above

the threshold for national importance due largely to high counts in 1999-2000. Peak counts at most other nationally important sites were similar to their respective five-year means.

Absence of data for Loughs Neagh & Beg makes comparison of Northern Ireland totals with previous years impossible.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Morecambe Bay	29,915	30,880	51,829	43,590	41,945	Jul	39,632
Severn Estuary	57	7,017	6,085	7,102	7,224	Jun	5,497 ▲
Alde Complex	162	542	9,633	1,529	15,000	Apr	5,373 ▲
Sites of national importance in Great Britain							
Llŷsyfran Reservoir	25	8,500	-	-	(12)	Feb	4,263
Chasewater	3,000	3,500	3,000	3,400	-		3,225
Great Pool (Westwood Park)	-	1,750	1,500	2,000	2,000	Nov	1,813
Alt Estuary	886	2,480	1,957	2,230	769	Oct	1,664
Rutland Water	1,000	(150)	3,000	1,000	1,500	Aug	1,625
Marden Gravel Pit	282	77	1,400	3,350	2,500	Oct	1,522
Chew Valley Lake	-	0	0	6,000	0	Jul	1,500
Hayle Estuary	1,800	735	1,095	690	1,750	Feb	1,214
Wash	331	(1,338)	239	1,506	2,206	May	1,124
Longnewton Reservoir	280	34	780	2,600	1,800	Sep	1,099
Portworthy Mica Dam	1,000	2,250	1,000	500	465	Aug	1,043
Llangorse Lake	850	820	860	1,280	1,060	Oct	974
Lower Windrush Valley Gravel Pits	57	589	1,714	865	1,339	Nov	913
Cleddau Estuary	336	2,073	458	414	(1,246)	Mar	905
Colliford Reservoir	206	296	600	43	3,040	Jan	837 ▲
Swindon Sewage Treatment Works	-	-	-	562	(1,100)	Dec	831
Heaton Park Reservoir	-	-	2,000	170	201	Oct	790
Pitsford Reservoir	300	550	1,200	(1,000)	700	Sep	750
Castron Quarry	730	-	-	-	-		730
Solway Estuary	837	517	1,143	262	725	Oct	697
Northeast Glamorgan Moorland	-	14	1,418	330	-		587
Crowdy Reservoir	400	400	650	410	1,000	Oct	572 ▲
Blackmoorfoot Reservoir	656	47	1,037	1,032	14	Aug	557
Camel Estuary	(1,252)	1,042	20	183	160	Mar	531
Sites of all-Ireland importance in Northern Ireland †							
Loughs Neagh & Beg	1,144	1,064	972	1,129	-		1,077
Sites no longer meeting qualifying levels							
R. Thames: Roding to Beam							
Sprotborough Flash							
Hurlestone Reservoir							

† as no all-Ireland threshold has been set, a qualifying level of 500 has been chosen to select sites for presentation in this report

HERRING GULL

Larus argentatus

GB max: 70,595 Jan
NI max: 4,342 Nov

Morecambe Bay continues to host by far the highest number of Herring Gulls in Great Britain and, as usual, the 1999-2000 peak count coincided with the timing of post-fledging dispersal from nearby breeding colonies. The

International threshold: 13,000

Great Britain threshold: 4,500†

All-Ireland threshold: ?

peak total at this site was 7% higher than that in the previous year, mirroring a similar increase in the national total. Peak numbers in Northern Ireland continue to fluctuate between years with no clear trend apparent. Belfast Lough remains

the key site for this species in the province.

Maxima at key sites in 1999-2000 were similar to their respective five-year means. Interestingly, low counts at three sites along the Ayrshire coast over the same period means that

they no longer qualify as nationally important. As the recording of gulls remains optional under WeBS, it remains unclear whether this trend represents a biological decline.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of international importance in the UK							
Morecambe Bay	19,144	17,260	18,165	19,168	20,553	Jul	18,858
Sites of national importance in Great Britain [†]							
Ribble Estuary	27,500	430	³⁷ 2,559	1,250	7,287	Dec	7,805
Wash	5,142	5,147	12,649	4,430	5,589	Jan	6,591
Alt Estuary	4,500	5,300	5,500	³⁷ 9,070	6,800	Jan	6,234 ▲
Alde Complex	4,347	312	8,569	4,253	7,186	Jan	4,933 ▲
Solway Estuary	(9,397)	4,269	2,884	4,759	2,962	Sep	4,854 ▲
Gaddon Loch	-	-	-	3,414	3,500	Jan	3,457
North Norfolk Coast	3,506	2,845	802	4,923	4,196	Apr	3,254
Forth Estuary	3,900	3,747	1,893	2,311	3,289	Feb	3,028
Guernsey Shore	2,471	3,073	-	(1,409)	(1,850)	Nov	2,772
Sites of all-Ireland importance in Northern Ireland							
Belfast Lough	³⁷ 6,935	³⁷ 9,381	2,378	5,291	3,637	Jan	5,524
Sites no longer meeting qualifying levels							
Irvine to Saltcoats							
Doon Estuary							

[†] as so few British sites are of national importance for Herring Gull, and as no all-Ireland threshold has been set, a qualifying level of 2,500 has been chosen to select sites for presentation in this report

YELLOW-LEGGED GULL

Scarce

Larus argentatus cachinnans

GB max: 128 Oct
NI max: 0

The majority of birds recorded by WeBS were not specifically identified as either Western Yellow-legged Gulls or Caspian Gulls, though given the rarity value of the latter, it is likely that most, if not all, relate to Western Yellow-legged Gulls, particularly at sites where more than one bird is involved.

Numbers increased from July to peak at 128 birds in October and then fell to ten or fewer during the winter. Eighteen out of 29 sites held more than one bird but the summed site maxima of 186 was well below the previous years value of 246.

Sites with five or more birds in 1999-2000

Poole Harbour	72	Oct
Southampton Water	41	Oct
Rutland Water	13	Jul
Portworthy Mica Dam	6	Aug
R. Avon: F'bridge to Ringwood	5	Nov

Single birds of the *cachinnans* race 'Caspian Gull' were recorded at Chew Valley Lake in December, River Thames: Lea to Roding & Royal Docks from November to January and Foremark Reservoir in February.

Birds identified as *michahellis* or 'Western

Yellow-legged Gulls' were recorded at twelve sites with peaks of six at Swindon Sewage Treatment Works, Pitsford Reservoir and Ditchford Gravel Pits, five on River Thames: Lea to Roding & Royal Docks and four at Barking Park.

ICELAND GULL

Larus glaucooides

Scarce

Mostly single birds were recorded at 29 sites, with a notable increase in numbers during January and peaking at sixteen in February. In Northern Ireland singles were seen at Lough Foyle in

January and Larne Lough in February.

Only four sites in Scotland held more than one bird. Two birds were at Hogganfield Loch, Loch Indaal, Loch Fleet and Uyea Sound.

GLAUCOUS GULL

Larus hyperboreus

Scarce

In Great Britain numbers peaked at thirteen in January whilst in Northern Ireland the peak was not until March when three were at Belfast Lough and one was at Larne Lough.

Most of the 27 sites in Great Britain at which

Glaucous Gulls were observed involved records of singles but three were on the Burra Firth in January and March and two were at each of St Mary's Island, Loch A'phuill and Uyea Sound.

GREAT BLACK-BACKED GULL

Larus marinus

International threshold: 4,800

Great Britain threshold: 400

All-Ireland threshold: ?†

GB max: 11,199 Oct

NI max: 588 Nov

The peak count in 1999-2000 was similar to that recorded in the previous year and the 15 sites which qualify as nationally important for this species remain unchanged. A notably high peak count at the Wash and consistently high counts at Tophill Low Reservoirs over the past five years continue to demonstrate the importance of these two sites for this species although maxima at all other key sites in 1999-2000 were lower than their respective five-year means.

In Northern Ireland, although Belfast Lough fell below the threshold of 400 birds, peak counts were similar to those recorded in the previous

five years.

The results of a study conducted on the River Tyne suggest that reductions in the amount of untreated sewage entering the river has been followed by a corresponding decline in the numbers of Great Black-backed Gulls using the river to feed (Raven & Coulson 2001). This decline is presumed to be related to a reduction in available food. Even in rough weather, when feeding conditions at sea were unfavourable, very few birds entered the river to feed after the introduction of improved sewage treatment.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain							
Tophill Low Reservoirs	1,000	835	1,040	2,600	2,200	Nov	1,535
Wash	1,150	(1,087)	630	745	3,025	Oct	1,388
Cresswell To Chevington Burn	500	685	2,000	1,700	612	Oct	1,099
Tees Estuary	1,313	1,068	1,152	482	463	Dec	896
Portsmouth Harbour	437	(216)	(420)	1,329	872	Dec	879
Dungeness Gravel Pits	2,070	1,600	90	18	0	Apr	756
Loch of Strathbeg	1,000	(1,200)	670	(153)	134	Sep	751
Lower Derwent Valley	617	1,750	1,105	271	0	Oct	749
Lossie Estuary	700	1,053	847	251	414	Oct	653
Morecambe Bay	554	621	668	907	451	Jan	640
Pegwell Bay	600	750	1,000	186	364	Oct	580
Thames Estuary	474	789	(492)	444	265	Oct	493
Chasewater	570	300	500	460	-		458
Fleet/Wey	136	234	307	1,195	312	Nov	437
Dee Estuary (Eng/Wal)	1,591	111	25	61	340	Sep	426

Sites no longer meeting table qualifying levels

Durham Coast
Fairburn Ings
Humber Estuary
Rutland Water
Belfast Lough

Other sites surpassing table qualifying levels in 1999-2000

North Norfolk Coast 548 Sep

† as no all-Ireland importance threshold has been set, a qualifying level of 400 has been chosen to select sites for presentation in this report

ROSS'S GULL

Rhodostethia rosea

Vagrant

Native range: Arctic

One was present at Lunda Wick in January.

KITTIWAKE

Rissa tridactyla

International threshold: ?

Great Britain threshold: ?

All-Ireland threshold: ?

GB max: 6,354 Sep

NI max: 38 Sep

Following a low count in 1998-99, the British peak returned to more normal levels in 1999-2000 with more than 3,000 birds recorded in August and October also. That the September peak includes counts from just 10 sites illustrates the importance of a few key concentrations, usually around breeding colonies, and two of these accounting for over 95% of the total. Counts

throughout the winter months were above average in Great Britain, though the maritime nature of the species at this time of year means counts at all sites fluctuate considerably. Belfast Lough and Dundrum Bay are the only sites in Northern Ireland regularly to record the species during WeBS counts.

Sites with 200 or more birds in 1999-2000

Dee Estuary (Scotland)	3,220	Sep
Arran	3,000	Sep/Oct
Tweed Estuary	1,500	Aug
Beadnell To Seahouses	550	May
Tees Estuary	401	Aug
Durham Coast	386	Aug
Forth Estuary	220	Feb
Don Mouth To Ythan Mouth	200	Aug

IVORY GULL

Pagophila eburnea

Vagrant

Native range: Arctic

A single at North Warren and Thorpeness Mere in December was noteworthy considering the southern location of this high Arctic species.

SANDWICH TERN

Sterna sandvicensis

International threshold: 1,500

Great Britain threshold: ?†

All-Ireland threshold: ?†

GB max: 8,484 Aug

NI max: 290 Sep

A large peak count at the Forth Estuary in 1999-2000 means that this site regains internationally important status for Sandwich Tern. Although WeBS data alone do not identify its qualification, inclusion of data from regular low water counts on the Tees Estuary indicates that an average of 1,835 Sandwich Terns occurred there on autumn passage during the period 1990-1997, surpassing

the threshold for international importance (Ward 2000).

Peak counts in Great Britain were notably high in 1999-2000 and, as usual, occurred during the late summer when substantial numbers of Baltic-bred birds join UK birds on southwards migration. The peak count in Northern Ireland was similar to that recorded in previous years.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain †							
Forth Estuary	1,774	1,352	(1,278)	831	3,606	Aug	1,891 ▲
Sites of all-Ireland importance in Northern Ireland †							
Tees Estuary	3,774	489	227	1,386	1,238	Aug	1,423
Dee Estuary (Eng/Wal)	446	2,090	636	1,256	629	Jul	1,011
North Norfolk Coast	266	472	311	1,165	1,574	Jul	758
Duddon Estuary	470	650	808	656	1,204	Jul	758
Loch of Strathbeg	220	(750)	710	(1,000)	0	Apr	536
Cemlyn Bay & Lagoon	-	1,450	-	0	0	Apr	483
Wash	178	186	586	674	420	Jul	409
Ythan Estuary	300	380	488	-	-		389
Lindisfarne	224	316	(160)	(355)	350	Aug	311
Pegwell Bay	31	140	45	750	432	Jul	280
Tay Estuary	361	401	25	225	300	Aug	262
Exe Estuary	255	134	224	286	-		225
Sites of all-Ireland importance in Northern Ireland†							
Dundrum Bay	202	212	592	353	219	Jul	316
Sites no longer meeting table qualifying levels							
Foryd Bay							
Eden Estuary							
Morecambe Bay							
Other sites surpassing table qualifying levels in 1999-2000							
Filey Bay	320	Aug					
Clyde Estuary	301	Sep					
North Berwick Shore	262	Aug					
Tynningham Estuary	226	Aug					

† as no British or all-Ireland thresholds have been set, a qualifying level of 200 has been chosen to select sites for presentation in this report

ROSEATE TERN

Sterna dougallii

Scarce

One was in Pegwell Bay in July and singles were seen at Langstone Harbour and the Tamar Complex during October, a late date for this species.

COMMON TERN

Sterna hirundo

International threshold: 6,000

Great Britain threshold: ?†

All-Ireland threshold: ?†

GB max: 5,975 Aug

NI max: 2 Sep

Maxima for Great Britain and Northern Ireland were broadly similar to those recorded in previous years and occurred, as expected, during the period of autumn migration. Counts at many of the key sites during the late summer were generally higher than their five year means.

There is some evidence from ringing recoveries that Common Terns undertake a

trans-Pennine migration between Teesmouth and Merseyside (Ward 2000). Furthermore, visible migration, retrap data, arrival dates of different populations and the progression of primary moult, suggest rapid turnover at this site during late summer and that much larger numbers stage at Teesmouth than are recorded by WeBS (Ward 2000).

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain†							
Alt Estuary	1,500	596	1,038	1,004	1,156	Aug	1,059
Tees Estuary	1,575	453	841	620	1,038	Aug	905
Dee Estuary (Eng/Wal)	315	641	225	567	348	Aug	419
North Norfolk Coast	226	344	107	620	599	Jun	379
Tay Estuary	450	320	230	150	600	Sep	350
Wash	262	310	215	300	370	Aug	291
Forth Estuary	276	390	(343)	98	195	Aug	260
Loch of Strathbeg	325	277	300	(210)	18	Aug	230
Ythan Estuary	200	150	270	-	-		207
R. Thames: Roding to Beam	-	-	-	410	0	Oct	205

Sites no longer meeting table qualifying levels

Langstone Harbour

Other sites surpassing table qualifying levels in 1999-2000

Tyne Estuary 211 Aug

† as no British or all-Ireland thresholds have been set, a qualifying level of 200 has been chosen to select sites for presentation in this report

ARCTIC TERN

Sterna paradisaea

International threshold: ?

Great Britain threshold: ?†

All-Ireland threshold: ?†

GB max: 846 Aug

NI max: 0

The maximum count for Great Britain in 1999-2000 occurred during the period of autumn passage; lower numbers were recorded earlier in the spring and summer. Peak counts of Arctic Terns at key sites fluctuate markedly between years at this time. It is probable that actual peak

numbers at these sites probably only rarely coincide with WeBS Core Count dates, primarily because autumn staging is brief. The majority of the 10 sites surpassing table qualifying levels are located in eastern Scotland.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain†							
Loch of Strathbeg	1,600	3	8	0	0	Apr	322
Tay Estuary	130	40	1,000	55	150	Aug	275
North Ronaldsay	563	(210)	0	138	-		234
Eden Estuary	129	90	190	115	361	Aug	177
Ythan Estuary	80	100	204	-	-		128
Morecambe Bay	44	105	124	144	80	May	99
Don Mouth to Ythan Mouth	0	0	66	18	207	Jul	97 ▲
Forth Estuary	76	15	(58)	137	92	Aug	80
Balranald RSPB Reserve	-	-	80	-	-		80
Loch Indaal	(202)	51	29	41	30	Jun	71

† as no British or all-Ireland thresholds have been set, a qualifying level of 50 has been chosen to select sites for presentation in this report

FORSTER'S TERN

Sterna forsteri

Vagrant

Native range: N America

A bird which spent most of the year off the Essex coast was recorded during WeBS counts at the

Blackwater Estuary in June, November, December and March.

LITTLE TERN

Sterna albifrons

International threshold: 340

Great Britain threshold: ?[†]

All-Ireland threshold: ?[†]

GB max: 963 Aug

NI max: 0

As with Arctic Tern, this species stages only briefly during the autumn resulting in highly fluctuating WeBS counts at key sites. The Great Britain total occurred during the late summer and was similar to those recorded in previous years, considering these fluctuations. The species was

not recorded by WeBS in Northern Ireland in 1999-2000. Notably high counts were recorded at the North Norfolk Coast and the Blackwater Estuary during the breeding season and at the Stour and Swale Estuaries during the late summer.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain[†]							
Dee Estuary (Eng/Wal)	700	145	160	150	200	Jul	271
Thames Estuary	71	467	5	(422)	296	Aug	252
Langstone Harbour	210	200	-	0	0	Sep	137
Wash	43	330	30	114	148	Aug	133
North Norfolk Coast	97	15	3	209	300	Jun	125
Fleet/Wey	1	27	50	203	154	May	87
Blackwater Estuary	43	42	(23)	(36)	(120)	May	68 ▲
Pagham Harbour	114	0	-	-	0	Sep	57
Hamford Water	17	6	10	142	102	Sep	55 ▲
Tees Estuary	107	47	27	8	75	Jul	53

Sites no longer meeting table qualifying levels

St Andrews Bay

Other sites surpassing table qualifying levels in 1999-2000

Stour Estuary	106	Aug
Swale Estuary	63	Jul
Duddon Estuary	56	Jun

[†] as no British or all-Ireland thresholds have been set, a qualifying level of 50 has been chosen to select sites for presentation in this report

BLACK TERN

Chlidonias niger

International threshold: 2,000

Great Britain threshold: ?

All-Ireland threshold: ?

GB max: 89 Sep

NI max: 0

Following the previous year's record peak number, WeBS counts of Black Terns in 1999-2000 were unremarkable. Both the number of

sites and the summed site maxima were below average for the last five years. Birds were recorded from July through to October.

Sites with more than three birds in 1999-2000

The Wash	22	Sep	Rostherne Mere	6	Sep
Swale Estuary	10	Sep	Forth Estuary	6	Sep
Boddington (Byfield)	7	Sep	Chew Valley Lake	5	Sep
Rutland Water	7	Sep	Tees Estuary	4	Sep
Blithfield Reservoir	7	Sep			

WHITE-WINGED BLACK TERN

Chlidonias leucopterus

Vagrant

Native range: E Europe, S Asia and Africa

One was present on the Severn Estuary in July.

KINGFISHER

Alcedo atthis

GB max: 418 Sep
NI max: 6 Oct

The peak British count was the highest recorded by WeBS to date, also reflected in the large number of sites (565) from which a count was received. As a result several new sites were added to the table of important sites, though, perhaps surprisingly, four others now cease to

qualify. Barring the exceptional count of 26 birds in the Lee Valley Gravel Pit complex in September 1996, the counts of 14 on the Somerset Levels and at Wraysbury Gravel Pits are the highest site counts recorded by WeBS.

	95-96	96-97	97-98	98-99	99-00	Mon	Mean
Sites of national importance in Great Britain[†]							
Lee Valley Gravel Pits	9	26	14	12	8	Nov	14
Somerset Levels	(12)	10	5	(12)	14	Oct	11
Wraysbury Gravel Pits	5	-	-	-	14	Aug	10
Colne Valley Gravel Pits	5	10	7	9	9	Sep	8 ▲
Middle Tame Valley Gravel Pits	8	4	7	8	11	Jul	8
River Irwell	-	-	-	8	6	Oct	7 ▲
Southampton Water	7	(4)	5	7	7	Oct	7
Tamar Complex	10	9	3	4	4	Sep/Oct/Dec	6
Colwick Country Park	4	-	-	7	6	Mar	6 ▲
Cleddau Estuary	7	5	6	6	4	Dec	6
Eversley Cross & Yateley Gravel Pits	4	6	9	5	3	Various	5
Old Moor Wetlands	6	6	4	3	6	Sep	5 ▲
Stodmarsh & Collards Lagoon	6	4	3	8	4	Oct	5
Holme Pierrepont Gravel Pits	4	8	6	3	4	Jul/Sep/Oct	5
Hoveringham Gravel Pits	-	-	-	-	5	Feb	5 ▲

Sites no longer meeting table qualifying levels

Thames Estuary
Deben Estuary
Ditchford Gravel Pits
R. Usk: Pencelli

Other sites surpassing table qualifying levels in 1999-2000

Poole Harbour	11	Sep	R. Usk: Pencelli	6	Sep
North Norfolk Coast	11	Sep	Avon Valley: Salisbury to F'bridge	5	Nov
Ditchford Gravel Pits	8	Aug	Ouse Washes	5	Nov
Fleet/Wey	7	Sep	Blackwater Estuary	5	Sep
Fairburn Ings	6	Jun	Chew Valley Lake	5	Aug
Stour Estuary	6	Dec	Chichester Gravel Pits	5	Sep
Earls Barton Gravel Pits	6	Sep			

[†] as no British or all-Ireland thresholds have been set, a qualifying level of 5 has been chosen to select sites for presentation in this report

PRINCIPAL SITES

Table 4 below lists the principal sites for non-breeding waterfowl in the UK as monitored by WeBS. All sites supporting more than 10,000 waterbirds are listed, as are all sites supporting internationally important numbers of one or more waterbird species. Naturalised species (e.g. Canada Goose and Ruddy Duck) or non-native species presumed to have escaped from captive collections have been excluded from the calculations, as have gulls and terns since recording of these species is optional (see *Analysis* for further details).

A total of 153 sites are listed. Of these, 132 supported one or more internationally important waterbird populations and 83 held five year peak means of 10,000 or more birds. The top 20 sites remain the same as last year with relatively few changes in order. High counts on the North Norfolk Coast and at Breydon Water & Berney Marshes saw both sites rise in the table, whilst the Severn Estuary fell as high counts in 1994-95 slipped from the calculations.

Of sites with 10,000 or more birds, 1999-2000 numbers at a third of these remained stable (within 10% of the previous five year mean), 55% recorded a drop in numbers (a fall of more than 10%) and only 12% increased (a rise of 10% or more). These figures are similar to those in 1998-99, and reflect the relatively mild winters in these years with few cold spells in continental Europe. Only three sites recorded counts 30% or more above the previous average. Increases on the Ouse Washes (+38%) were primarily accounted for by large flocks of Lapwing and Golden Plover and other wildfowl numbers returned to more normal levels following very

low counts in 1998-99. Although improvements in coverage may account for some of the Lavan Sands increase (+58%), genuine high counts of Dunlin, Oystercatcher, and to a lesser extent Wigeon and Shelduck, undoubtedly contributed. Figures for WWT Martin Mere (+53%) are influenced by the number of Pink-footed Geese recorded during WeBS counts, which was high in 1999-2000, as were counts of Lapwing. Of those showing a drop, fluctuations of roosting grey geese numbers accounted for changes at Dupplin Lochs (-46%), Dinnet Lochs (-63%) and Loch of Skene (-35%). On the Ribble Estuary (-33%), Wigeon, Knot and Dunlin numbers all dropped and on the Thames Estuary (-31%), low counts of Dark-bellied Brent, Knot and a continued fall in Bar-tailed Godwit numbers were the major factors. Numbers at Hamford Water (-43%) fell for the third consecutive year, and though Dark-bellied Brent numbers have dropped considerably over the five year period, declines in several other wildfowl and wader species (notably Teal, Wigeon, Dunlin, Grey Plover amongst others) are of some concern. Low Dunlin numbers affected counts on the Orwell Estuary (-30%), Southampton Water (-30%) and the Cromarty Firth (-33%), where there were also low counts of Knot. The absence of large flocks of Lapwing or Golden Plover, species whose numbers fluctuate widely at many sites, contributed to low counts at Carmarthen Bay (-49%) and the Lower Derwent Valley (-32%). Finally, the absence of an accurate assessment of the large and difficult to count Eider flock substantially lowered the total waterbird numbers on the Tay Estuary (-47%).

Table 4. Total number of waterfowl at principal waterfowl sites in the UK, 1995-96 to 1999-2000 (includes only Core Count data and roost counts of Pink-footed and Greylag Geese), and species occurring in internationally important numbers at each (based on all survey data). Species codes are listed at the end of the table.

Site	94-95	95-96	96-97	97-98	98-99	Average	Int. imp. species
Wash	330,724	279,907	345,431	291,113	367,647	322,964	DB SU OC GP GV L KN DN BW BA CU RK TT
Ribble Estuary	281,603	299,134	281,428	259,593	193,394	263,030	BS WS PG SU WN T. PT OC GV KN DN BW BA RK
Morecambe Bay	232,796	251,817	312,954	265,614	232,031	259,042	PG SU PT OC L KN DN BA CU RK TT BH LB HG
Thames Estuary	155,427	171,110	185,178	154,471	115,941	156,425	DB OC RP GV KN DN BA RK
Humber Estuary	150,327	81,553	159,764	192,472	170,927	151,009	SU GP GV L KN DN BA RK

Site	94-95	95-96	96-97	97-98	98-99	Average	Int. imp. species
Solway Estuary	145,358	157,686	146,733	152,586	141,513	148,775	WS PG YS SU PT OC KN DN BA CU RK
North Norfolk Coast	98,758	119,203	170,690	143,220	178,006	141,975	PG DB WN PT GV KN BA RK
Dee Estuary (Eng/Wal)	130,231	151,208	128,418	108,018	91,895	121,954	SU T. PT OC GV KN DN BW BA CU RK TT
Mersey Estuary	90,638	116,030	117,312	93,910	106,031	104,784	SU T. PT DN BA RK TT
Loughs Neagh & Beg	110,195	101,707	82,232	103,350	97,308	98,958	CA WS PO TU SP GN
Forth Estuary	101,765	87,508	85,469	89,583	69,199	86,705	SZ PG SU KN BA RK TT TE
Somerset Levels	110,050	38,394	111,431	96,862	76,624	86,672	BS WN GA T. SV L
Swale Estuary	63,258	100,444	88,975	80,037	76,290	81,801	WN SV GV KN BW
Blackwater Estuary	71,390	85,778	83,812	77,416	84,473	80,574	DB SU GV DN BW RK
Strangford Lough	80,598	90,390	73,205	69,731	61,268	75,038	QN SU KN BA RK
Severn Estuary	71,047	80,326	69,978	75,556	67,231	72,828	BS SU PT DN RK LB
Ouse Washes	62,840	57,076	72,265	44,900	85,082	64,433	BS WS WN GA PT SV PO BW
Breydon Water & Berney	46,447	58,537	54,951	67,207	65,645	58,557	BS PG L
Medway Estuary	60,627	64,539	60,098	45,720	50,876	56,372	SU PT GV DN RK
Hamford Water	69,916	70,068	56,295	48,099	32,706	55,417	DB T. GV KN RK
Alt Estuary	44,411	54,760	69,639	47,151	50,368	53,266	GV KN BA
Burry Inlet	53,085	64,395	35,233	52,063	52,527	51,461	PT SV OC KN
Chichester Harbour	58,871	49,308	45,868	45,134	47,091	49,254	DB GV DN BA
Montrose Basin	45,219	38,830	62,010	58,465	41,123	49,129	PG KN RK
Inner Moray Firth	46,587	54,706	47,120	45,936	46,909	48,252	JI KN BA RK
Stour Estuary	48,755	45,024	47,696	45,102	53,727	48,061	GV KN DN BW RK
Loch of Strathbeg	58,401	40,121	47,285	48,440	37,239	46,297	WS PG YS
Lindisfarne	39,281	42,568	38,657	48,771	40,285	41,912	QS GV KN BA
Lough Foyle	46,975	37,810	37,486	45,243	34,963	40,495	WS QN BA
Langstone Harbour	44,868	32,843	36,702	42,072	43,819	40,061	DB RP GV DN
Lower Derwent Valley	50,678	41,305	42,110	32,836	29,107	39,207	T.
Abberton Reservoir	48,293	34,801	42,264	24,514	33,681	36,711	GA T. SV
Colne Estuary	38,466	27,953	42,271	33,808	35,396	35,579	DB RP RK
Loch Leven	35,881	38,737	32,810	35,653	30,882	34,793	PG GA SV
Duddon Estuary	38,108	37,113	34,087	32,601	31,921	34,766	PT RK
Dengie Flats	23,595	39,339	39,374	36,539	33,361	34,442	GV KN BA
Dupplin Lochs	35,030	40,665	29,998	42,504	22,826	34,205	PG
Cromarty Firth	44,104	34,481	31,712	31,412	24,249	33,192	PG JI KN BA
Alde Complex	31,137	27,343	35,367	36,752	29,296	31,979	AV RK LB
Dornoch Firth	27,468	29,591	36,937	31,425	32,028	31,490	JI WN BA
West Water Reservoir	31,500	25,879	39,173	21,969	28,438	29,392	PG
Nene Washes	28,440	15,167	37,827	33,800	27,053	28,457	BS PT SV
Poole Harbour	30,672	32,849	28,479	26,250	23,897	28,429	SU BW
WWT Martin Mere	30,606	16,867	22,015	29,295	37,637	27,284	BS WS PG
Walland Marsh	-	18,103	29,771	30,710	28,975	26,890	BS
Rutland Water	31,604	22,890	28,300	23,252	24,066	26,022	GA SV
Tees Estuary	33,483	24,257	20,148	22,147	19,332	23,873	
Exe Estuary	26,967	19,925	23,847	23,286	-	23,506	
Crouch-Roach Estuary	21,270	19,484	24,419	22,173	25,103	22,490	DB
Clyde Estuary	22,643	23,035	21,728	20,084	23,012	22,100	RK
Lochs Davan & Kinord	41,513	27,095	25,656	4,996	10,000	21,852	JI
Belfast Lough	21,496	18,390	21,669	20,868	20,177	20,520	GG RK
Cleddau Estuary	19,479	21,636	19,916	20,372	19,013	20,083	
Orwell Estuary	30,158	23,939	13,813	17,136	15,206	20,050	RK
Ythan Estuary	32,390	12,952	18,789	15,622	18,461	19,643	PG RK

Site	94-95	95-96	96-97	97-98	98-99	Average	Int. imp. species
Carsebreck & Rhynd Lo.	18,649	16,089	19,456	23,809	20,199	19,640	PG
Southampton Water	23,415	18,807	22,786	17,255	14,153	19,283	
Tay Estuary	20,493	24,017	15,998	23,420	10,636	18,913	PG JI BA
Wigtown Bay	20,008	15,894	17,980	17,123	15,643	17,330	PG
Pagham Harbour	18,325	20,359	19,262	13,937	14,575	17,292	PT
Hule Moss	16,488	20,433	21,089	12,114	15,403	17,105	PG
Deben Estuary	15,805	18,557	16,857	14,634	18,128	16,796	RK
Arun Valley	20,238	14,971	17,803	16,264	14,284	16,712	
Carmarthen Bay	21,220	23,365	13,192	12,833	12,560	16,634	
Beaulieu Estuary	14,868	16,109	19,077	17,434	12,174	15,932	
Taw-Torridge Estuary	14,732	14,925	17,161	13,259	19,217	15,859	
Outer Ards	14,272	21,863	11,126	16,786	14,720	15,753	QN TT
Fleet/Wey	16,495	15,701	15,138	16,503	12,499	15,267	
Dungeness Gravel Pits	12,258	11,155	20,799	13,394	14,796	14,480	
Eden Estuary	16,205	13,519	15,856	13,923	12,227	14,346	
Blyth Estuary (Suffolk)	12,269	13,472	15,502	-	-	13,748	
Loch of Skene	15,113	14,722	15,026	13,497	9,065	13,485	JI
North West Solent	14,865	13,520	11,900	12,844	10,713	12,768	
Cotswold WP (West)	10,800	9,090	13,056	16,015	12,201	12,232	
Pitsford Reservoir	9,799	13,168	13,521	13,292	8,909	11,738	GA
Loch of Harray	13,078	8,139	13,238	11,996	11,710	11,632	
Dyfi Estuary	12,978	13,827	8,614	9,948	12,502	11,574	
Lavan Sands	9,858	15,311	8,907	5,152	18,394	11,524	
Rye Harbour & Pett Level	10,780	10,632	11,664	13,451	10,821	11,470	
Hanningfield Reservoir	12,903	13,138	13,860	8,569	8,699	11,434	
Portsmouth Harbour	18,528	11,722	8,880	8,924	8,200	11,251	
Caithness Lochs	16,292	5,489	7,551	12,743	10,066	10,428	JI
Middle Tame Valley GP	9,687	11,701	10,970	8,927	9,535	10,164	
Loch of Lintrathen	5,565	4,735	13,369	8,525	14,616	9,362	PG JI
Upper Lough Erne	9,295	9,245	10,818	7,151	10,117	9,325	WS
Thanet		6,256	7,094	11,543	11,034	8,982	TT
Cameron Reservoir	13,704	5,475	13,068	6,596	4,526	8,674	PG
Carlingford Lough	6,819	7,460	8,729	9,172	9,955	8,427	QN
Carse of Stirling	8,235	-	-	-	-	8,235	PG JI
Chew Valley Lake	9,905	8,203	7,319	7,248	7,115	7,958	SV
Loch Spynie	9,671	6,491	5,690	9,802	5,370	7,405	JI
Lee Valley Gravel Pits	4,791	7,686	7,291	6,812	8,719	7,060	GA
Tophill Low Reservoirs	6,959	4,070	8,641	5,664	9,532	6,973	BH CM
Loch Fleet Complex	7,036	7,306	5,271	7,401	5,328	6,468	JI
River Avon: F'bridge to Ringwood	7,292	6,033	6,680	5,369	5,838	6,242	GA
Wraysbury Gravel Pits	4,479	5,787	7,341	6,710	5,629	5,989	GA
Gladhouse Reservoir	4,770	8,063	7,350	2,022	6,720	5,785	PG
Thrapston Gravel Pits	4,225	6,967	5,132	3,402	5,621	5,069	GA
Drummond Pond	2,842	8,645	5,476	5,192	2,876	5,006	PG JI
Fala Flow	2,437	5,000	7,500	2,100	7,550	4,917	PG
Haddo House Lakes	6,328	9,056	1,468	4,310	2,870	4,806	JI
Loch Tullybelton	1,395	4,658	8,000	8,600	0	4,531	PG
St Benet's Levels	10,633	4,003	4,120	2,707	795	4,452	BS
Larne Lough	4,148	4,231	3,742	4,270	4,467	4,172	QN
Upper Cowgill Reservoir	4,560	6,060	6,000	1,000	2,900	4,104	PG
Holburn Moss	3,182	3,533	5,010	4,930	2,460	3,823	PG
Kilconquhar Loch	4,018	4,323	4,250	2,986	2,885	3,692	JI
R. Clyde: Carstairs to Thankerton Bridge	-	-	627	2,076	7,795	3,499	WS PG
Loch Long	1,722	159	318	8,000	6,356	3,311	PG
Threipmuir & Harlaw Rsrs	1,086	2,433	1,051	4,464	6,910	3,189	JI

Site	94-95	95-96	96-97	97-98	98-99	Average	Int. imp. species
Bridge of Earn	3,014	-	-	-	-	3,014	Jl
Strathearn (West sites)	2,665	2,730	-	-	-	2,698	Jl
Loch Mahaick	776	2,779	6,792	1,458	875	2,536	PG
Loch Ken	1,764	1,780	2,611	1,977	3,431	2,313	NW
Loch Mullion	1,020	0	3,000	2,000	5,500	2,304	PG
Loch of the Clans	-	1,942	2,300	-	-	2,121	Jl
Bute	4,286	1,797	1,202	1,056	1,780	2,024	Jl
Killough Harbour	3,592	318	-	-	-	1,955	QN
R. Eamont & Eden: Honeypot to Edenhall		753	2,080	1,985	1,548	1,592	Jl
Birgham Haugh	-	1,150	-	-	-	1,150	Jl
Loch Garten	1,987	589	735			1,104	Jl
Stranraer Lochs/W Freugh	794	-	-	-	-	794	NW Jl
Black Cart Water	313	237	508	837	661	511	WS
R. Foyle: Grange	287	387	150	-	-	275	WS
Machrihanish	737	41	172	266	28	249	NW
South Walls	-	-	97	390	-	244	YN
Rhunahaorine	-	-	-	165	-	165	NW
SW Lancashire							PG
Benbecula							JH
Colonsay/Oronsay							JH YN
East Sanday Coast							TT
North Sutherland							YN
North Uist							JH YN
Scapa Flow							ND SV
South Uist							JH
Tankerness							ND
Holkham Bay							PG
Scot Head							PG
Snettisham							PG
Keills Peninsular & Danna							NW YN
Islay							NW YN
Tiree							NW JH YN RP TT
Coll							NW JH YN
Aberlady Bay							PG
Tay-Isla Valley							PG Jl
Ythan Estuary/Slains Lochs							PG
Findhorn Bay							Jl
Munlochy Bay							Jl
Loch Eye/Cromarty Firth							PG Jl
Moray Firth							SZ
Monach Isles							YN
Sound of Harris							YN
Orkney Islands							Jl

Note that no count data are presented for the last 26 sites in Table 4. These areas are important for geese or swans, or are non-estuarine coastal sites surveyed by local surveys for which WeBS data are 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 within the Table. Other internationally important sites within these areas are not routinely monitored.

Note that not all species have thresholds for international importance, hence, they do not feature in this table.

Species codes

AV	Avocet	ND	Great Northern Diver
BA	Bar-tailed Godwit	NW	Greenland White-fronted Goose
BS	Bewick's Swan	OC	Oystercatcher
BW	Black-tailed Godwit	PG	Pink-footed Goose
CA	Cormorant	PO	Pochard
CO	Coot	PT	Pintail
CU	Curlew	QS	Light-bellied Brent Goose (Svalbard population)
DB	Dark-bellied Brent Goose	QN	Light-bellied Brent Goose (Greenland population)
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
GN	Goldeneye	SU	Shelduck
GP	Golden Plover	SV	Shoveler
GV	Grey Plover	SZ	Slavonian Grebe
HG	Herring Gull	T.	Teal
JI	Greylag Goose (Icelandic population)	TE	Sandwich Tern
JH	Greylag Goose (Northwest Scotland population)	TT	Turnstone
KN	Knot	TU	Tufted Duck
L.	Lapwing	WM	Whimbrel
LB	Lesser Black-backed Gull	WN	Wigeon
LN	Long-tailed Duck	WS	Whooper Swan
MA	Mallard	YN	Barnacle Goose (Greenland population)
MS	Mute Swan	YS	Barnacle Goose (Svalbard population)

WeBS Low Tide Counts

AIMS

Despite involving only a relatively small number of sites, estuaries collectively represent the most important habitat for wintering waterbirds in the UK. They are also inherently different from the thousands of inland sites counted for WeBS. The influence of the tide means that the birds have to be much more mobile, both within and between sites. WeBS Core Counts on estuaries have, in general, been based around high tide roosts. Although important in themselves, roost sites are usually secondary in importance to the manner in which waterbirds make use of a site for feeding. Therefore, information gathered about these sites at high tide will only provide part of the picture. The WeBS Low Tide Counts scheme, which was initiated in the winter of 1992-93, aims to monitor, assess and regularly update information on the relative importance of intertidal feeding areas of UK estuaries for wintering waterbirds and thus to complement the information gathered by WeBS Core Counts on estuaries.

WeBS Low Tide Counts provide the crucial

information needed to assess the potential effects on waterbird populations of a variety of human activities which affect the extent or value of intertidal habitats, such as proposals for dock developments, recreational activities, tidal power barrages, marinas and housing schemes. The data gathered contribute greatly to the conservation of waterbirds by providing supporting information for the establishment and management of the UK 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 waterbirds and provide the data that highlight regional variations in habitat use. In particular, WeBS Low Tide Counts should help us to understand, predict and possibly plan for compensation for the effects of sea-level rise on the UK's internationally important estuarine waterbird populations.

METHODS

The scheme provides information on the numbers of waterbirds feeding on subdivisions of the intertidal habitat within estuaries. Given the extra work that Low Tide Counts entail, often to the same counters that carry out the Core Counts, WeBS aims to cover most individual estuaries about once every six years, although on some

sites more frequent counts are made. Co-ordinated counts of feeding and roosting waterbirds 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.

DATA PRESENTATION

Tabulated Statistics

Table 5 presents three statistics for 18 of the more numerous waterbird species present on the estuaries covered during the 1999-2000 winter: the peak number of a species over the whole site counted in any one month; an estimate of the mean number present over the winter for the whole site (obtained by summing the mean counts of each species for each count section) and the mean density over the site (in birds per hectare), which is the mean number divided by the total area surveyed (in hectares). The area value used for these calculations is the sum of the inter-tidal and non-tidal components of each

count section but omits the sub-tidal areas (i.e. those parts of the count section which are under water on a mean low tide). Note that no densities are tabulated for Morecambe Bay, since the counts were made here at mid-tide and thus a standardised determination of the area of each count section could not be made.

Dot Density Maps

WeBS Low Tide Count data are presented as dot density maps, with subdivision of count sections into basic habitat elements, as was introduced in the report for 1998-99. The reason for such a subdivision is to overcome the situations

encountered in the past in which, for example, flocks of Great Crested Grebes are plotted on mudflats or flocks of Dunlin are plotted on open water. Both of these cases obviously look wrong but more importantly can give an unrealistic density value by using a nonsensical area for the calculations. To deal with this issue, each section for which a count has been made has been divided into up to three different habitat components:

- Inter-tidal: Counted areas which lie between mean high water and mean low water.
- Sub-tidal: Counted areas which lie below mean low water. In more "open-coast"-type situations, a subtidal zone reaching 500m out from the intertidal sections has been created arbitrarily.
- Non-tidal: Counted areas which lie above mean high water (usually saltmarsh although some grazing marshes are also counted).

The mean count for the sector is then divided amongst a varying number of the different components, dependent on the species involved. For example, Dunlin dots are plotted exclusively on inter-tidal sections whereas Wigeon dots are spread across inter-tidal, sub-tidal and non-tidal areas (in proportion with the relative areas of these three components).

Currently, throughout all WeBS Low Tide Count analyses, mean low tide and mean high tide are taken from the most recent Ordnance

Survey Pathfinder maps. It is recognised, unfortunately, that these maps represent the current real shape of the mudflats, water channels and saltmarshes to varying degrees of accuracy. However, in the interests of uniformity across the UK, the Ordnance Survey outlines are adhered to throughout the analyses.

The maps display the average number of birds in each count section as dots spread randomly across habitat components of count sections, thus providing an indication of both numbers and density. It is important to note that individual dots do not represent the precise position of individual birds; dots have been arbitrarily assigned to habitat components and are then randomly placed within those areas. No information about the distribution of birds at a finer scale than the count sector level should be inferred from the dot density maps. For all maps in the present report, one dot is equivalent to one bird. The size of individual dots has no relevance other than for clarity. Additionally, any count sections that were not counted during the 1999-2000 winter are marked with an asterisk. The dot density maps enable a clearer depiction of actual bird density, instead of the arbitrary grouping into bands of densities that was presented in previous years. It is hoped that dot density distributions and habitat components will lead to an easier and fuller appreciation of low tide estuarine waterbird distribution. More detailed information concerning analysis and presentation of WeBS Low Tide Counts can be obtained from the National Organiser (WeBS Low Tide Counts) at the BTO.

ESTUARY ACCOUNTS

WeBS Low Tide Counts were carried out at 16 sites during the 1999-2000 winter, namely Belfast Lough, Breydon Water, Carmarthen Bay (Gwendraeth and Pembrey only), Cromarty Firth, Firth of Clyde, Mersey Estuary (partial), Morecambe Bay (partial, mid-tide counts only), Newtown Harbour, Orwell Estuary, Pagham Harbour, Severn Estuary (partial counts of upper estuary), Solway Firth, Southampton Water, Stour Estuary, Strangford Lough (data unfortunately not submitted in time for incorporation into this report) and Thames Estuary (partial counts of Southend shore only). To allow more time to be allocated to a forthcoming "Atlas of Low Tide Counts", site accounts have been prepared only

for the counts at Carmarthen, Cromarty, Clyde, Newtown and Solway, describing findings from areas not previously covered by the scheme. The other datasets not presented here can be accessed via the WeBS National Organiser (Low Tide Counts) if required.

Data for each of the estuaries covers the period November to February inclusive. In each case, a list of species present in nationally and internationally important numbers, 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 presented for two species for which that site is of particular importance or interest.

Species	Belfast Lough			Breydon Water			Carmarthen Bay (partial)		
	Peak No.	Mean No.	Mean Dns.	Peak No.	Mean No.	Mean Dns.	Peak No.	Mean No.	Mean Dns.
Brent Goose	21	11	0.02	1	0	+	0	0	0
Shelduck	239	135	0.27	304	188	0.46	109	54	0.02
Wigeon	114	82	0.16	2,785	822	2.02	0	0	0
Teal	193	177	0.36	65	17	0.04	0	0	0
Mallard	262	212	0.43	137	84	0.21	87	46	0.02
Pintail	0	0	0	118	81	0.2	23	12	0.01
Oystercatcher	6,216	4,967	9.99	123	67	0.17	4,851	3,632	1.66
Ringed Plover	126	105	0.21	83	52	0.13	64	27	0.01
Golden Plover	11	7	0.01	1,590	535	1.32	0	0	0
Grey Plover	0	0	0	38	26	0.06	5	2	+
Lapwing	1,701	1,465	2.95	4,266	1,267	3.12	718	222	0.1
Knot	140	95	0.19	167	63	0.16	1,479	506	0.23
Dunlin	1,242	836	1.68	4,885	3,307	8.15	557	231	0.11
Black-tailed Godwit	401	259	0.52	355	161	0.4	0	0	0
Bar-tailed Godwit	79	49	0.1	4	1	+	1	0	+
Curlew	613	539	1.08	1,039	487	1.2	117	68	0.03
Redshank	2,108	2,079	4.18	1,474	717	1.77	180	81	0.04
Turnstone	181	175	0.35	6	2	+	0	0	0

Species	Cromarty Firth			Firth of Clyde			Mersey Estuary (partial)		
	Peak No.	Mean No.	Mean Dns.	Peak No.	Mean No.	Mean Dns.	Peak No.	Mean No.	Mean Dns.
Brent Goose	0	0	0	0	0	0	0	0	0
Shelduck	357	264	0.08	345	268	0.15	2,243	2,048	0.95
Wigeon	14,956	5,380	1.69	701	615	0.35	8,731	5,381	2.50
Teal	296	263	0.08	1,261	703	0.40	8,870	4,416	2.05
Mallard	873	736	0.23	522	394	0.22	231	220	0.10
Pintail	340	158	0.05	16	8	+	307	235	0.11
Oystercatcher	2,636	2,598	0.82	3,798	3,133	1.77	1,156	588	0.27
Ringed Plover	110	83	0.03	69	31	0.02	106	89	0.04
Golden Plover	92	35	0.01	0	0	0	1,000	513	0.24
Grey Plover	4	1	+	0	0	0	630	178	0.08
Lapwing	588	404	0.13	3,009	2,291	1.30	10,000	4,788	2.23
Knot	1,685	1,159	0.36	19	5	+	2,337	1,139	0.53
Dunlin	2,652	2,016	0.63	1,464	1,097	0.62	40,189	27,536	12.81
Black-tailed Godwit	6	2	+	0	0	0	525	380	0.18
Bar-tailed Godwit	1,852	1,063	0.33	6	2	+	5	2	+
Curlew	1,141	938	0.29	1,146	1,024	0.58	718	683	0.32
Redshank	1,842	1,714	0.54	2,956	2,456	1.39	2,953	2,973	1.38
Turnstone	46	33	0.01	3	1	+	703	541	0.25

Table 5i. Peak and mean counts, and mean density (birds per hectare), of 18 waterbird species present on estuaries covered by the 1999-2000 WeBS Low Tide Counts. "+" indicates non-zero densities of less than 0.01 birds per hectare.

Species	Morecambe Bay (partial)			Newtown Harbour			Orwell Estuary		
	Peak No.	Mean No.	Mean Dns.	Peak No.	Mean No.	Mean Dns.	Peak No.	Mean No.	Mean Dns.
Brent Goose	103	66	n/a	1,616	1,327	5.06	1,799	1,181	0.96
Shelduck	1,245	686	n/a	438	306	1.17	701	516	0.42
Wigeon	560	347	n/a	950	820	3.13	1,609	1,370	1.11
Teal	41	18	n/a	1,259	961	3.67	646	338	0.27
Mallard	142	152	n/a	89	52	0.20	661	479	0.39
Pintail	223	143	n/a	60	48	0.18	115	78	0.06
Oystercatcher	32,301	29,134	n/a	110	71	0.27	1,602	1,225	0.99
Ringed Plover	167	111	n/a	44	20	0.08	266	193	0.16
Golden Plover	800	458	n/a	1,449	941	3.59	834	320	0.26
Grey Plover	168	74	n/a	140	110	0.42	298	248	0.20
Lapwing	933	663	n/a	1,409	701	2.68	2,115	1,353	1.09
Knot	13,476	9,116	n/a	245	157	0.60	2,237	958	0.78
Dunlin	15,898	13,289	n/a	3,855	2,602	9.93	4,976	3,024	2.45
Black-tailed Godwit	1	1	n/a	218	114	0.44	395	295	0.24
Bar-tailed Godwit	107	90	n/a	2	2	0.01	4	2	+
Curlew	6,555	4,401	n/a	332	172	0.66	871	715	0.58
Redshank	1,274	946	n/a	113	93	0.35	2,197	1,621	1.31
Turnstone	98	62	n/a	22	13	0.05	206	148	0.12

Species	Pagham Harbour			Severn Estuary (partial)			Solway Firth		
	Peak No.	Mean No.	Mean Dns.	Peak No.	Mean No.	Mean Dns.	Peak No.	Mean No.	Mean Dns.
Brent Goose	2,438	1,266	3.19	0	0	0	0	0	0
Shelduck	269	132	0.33	20	12	0.01	3,270	2,596	0.14
Wigeon	968	698	1.76	123	75	0.07	1,933	1,289	0.07
Teal	541	394	0.99	107	54	0.05	169	111	0.01
Mallard	236	171	0.43	124	123	0.12	2,176	1,185	0.06
Pintail	434	189	0.48	0	0	0	1,197	559	0.03
Oystercatcher	159	77	0.19	1	0	+	15,161	14,586	0.77
Ringed Plover	63	23	0.06	0	0	0	210	159	0.01
Golden Plover	260	189	0.48	2	1	+	3,984	2,473	0.13
Grey Plover	1,139	411	1.04	0	0	0	678	417	0.02
Lapwing	2,120	1,049	2.64	1,669	737	0.70	3,788	3,330	0.18
Knot	92	25	0.06	39	20	0.02	7,240	5,166	0.27
Dunlin	2,934	1,959	4.93	460	274	0.26	14,746	9,608	0.51
Black-tailed Godwit	73	38	0.10	0	0	0	2	1	+
Bar-tailed Godwit	19	9	0.02	0	0	0	682	311	0.02
Curlew	559	343	0.86	8	7	0.01	4,627	4,172	0.22
Redshank	365	237	0.60	17	10	0.01	2,302	1,888	0.10
Turnstone	381	123	0.31	0	0	0	30	21	+

Table 5ii. Peak and mean counts, and mean density (birds per hectare), of 18 waterbird species present on estuaries covered by the 1999-2000 WeBS Low Tide Counts. "+" indicates non-zero densities of less than 0.01 birds per hectare.

Species	Southampton Water			Stour Estuary			Thames Estuary (partial)		
	Peak No.	Mean No.	Mean Dns.	Peak No.	Mean No.	Mean Dns.	Peak No.	Mean No.	Mean Dns.
Brent Goose	2,480	1,626	1.06	1,654	984	0.60	50	50	0.04
Shelduck	185	135	0.09	2,351	1,879	1.15	8	8	0.01
Wigeon	2,348	1,828	1.19	2,518	2,180	1.33	0	0	0
Teal	1,727	1,222	0.80	935	692	0.42	35	35	0.03
Mallard	110	101	0.07	408	307	0.19	0	0	0
Pintail	64	41	0.03	629	457	0.28	0	0	0
Oystercatcher	1,355	1,297	0.85	1,183	1,097	0.67	2,594	2,594	1.93
Ringed Plover	172	117	0.08	230	167	0.10	22	22	0.02
Golden Plover	793	473	0.31	2,160	1,239	0.76	0	0	0
Grey Plover	279	230	0.15	1,858	1,630	0.99	1,034	1,034	0.77
Lapwing	1,580	827	0.54	2,063	1,386	0.85	41	41	0.03
Knot	2	0	+	7,638	3,638	2.22	4,212	4,212	3.13
Dunlin	4,557	3,645	2.38	14,897	11,680	7.13	4,091	4,091	3.04
Black-tailed Godwit	187	119	0.08	1,409	767	0.47	95	95	0.07
Bar-tailed Godwit	2	1	+	45	37	0.02	1,194	1,194	0.89
Curlew	646	522	0.34	1,030	894	0.55	253	253	0.19
Redshank	478	434	0.28	2,511	2,020	1.23	572	572	0.42
Turnstone	281	194	0.13	432	311	0.19	91	91	0.07

Table 5iii. Peak and mean counts, and mean density (birds per hectare), of 18 waterbird species present on estuaries covered by the 1999-2000 WeBS Low Tide Counts. "+" indicates non-zero densities of less than 0.01 birds per hectare.

ACKNOWLEDGEMENTS

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CARMARTHEN BAY (GWENDRAETH & PEMBREY)

Carmarthenshire

Internationally important:

None

Nationally important:

Common Scoter, Oystercatcher, Golden Plover, Sanderling

Site description

Carmarthen Bay stretches from Pendine in the west to the Burry Inlet in the east. The inner part of the bay is a broad, shallow estuary fed by the Rivers Taf, Tywi and Gwendraeth. The coverage achieved during the WeBS Low Tide Counts in 1999-2000 was only partial, comprising the estuary of the Gwendraeth river and the open coast south of Pembrey Burrows known as Cefn Sidan Sands. However, the more distant parts of Cefn Sidan Sands off Tywyn Point were excluded, along with Laugharne and Pendine Sands on the western side of the Bay and the inner parts of the Taf and Tywi estuaries. Most of the intertidal habitat in the estuary is mainly sandy, although along the upper reaches of the three rivers the substrate is predominately muddy. There are several areas of saltmarsh along the tributaries, with the most extensive area developed along the southern shore of the Gwendraeth. A well-developed dune system runs from Tywyn Point to the Burry Inlet, much of which has been planted with conifers. The estuary is relatively rural, with no heavy industry present along its shoreline. Carmarthen Bay is an important estuary for wintering waterbirds, and there may be some interchange between birds at the site and those on the Burry Inlet. Several parts of the estuary, including most of the area counted during 1999-2000, are designated as SSSIs (Buck 1993a).

Bird distribution

Oystercatchers were noted throughout most of the counted parts of the estuary, with the greatest feeding concentrations along the north side of the River Gwendraeth, particularly off Pastoun Scar, and also on the more open shore habitat off Pembrey Burrows (Figure 72). The peak count was similar to recent Core Counts for the site, suggesting that most of the Carmarthen Bay population of this species feeds in this area. Most of the Lapwings recorded were concentrated on the mudflats off Kidwelly, in the north-eastern corner of the Gwendraeth estuary. Small numbers of Ringed Plover and Redshank also occurred solely along the northern side of the

Gwendraeth. The distribution of Curlew within the estuary was very similar to the previous two species, but with a few scattered individuals also along the southern side of the Gwendraeth; this species also avoided Cefn Sidan. Knot favoured the western parts of Cefn Sidan Sands, being only recorded during the early part of the winter. Low numbers of Dunlin frequented the Cefn Sidan shoreline, again showing a western bias, and were also present along the northern side of the Gwendraeth River. The bay as a whole is considered to support nationally important numbers of Sanderling and the peak low tide count of 437 compared well with recent peak Core Counts. The majority of the Sanderling were present along the Cefn Sidan Sands. Carmarthen Bay also nominally supports nationally important numbers of wintering Golden Plover, but the species was not recorded at all during the Low Tide Counts (and the peak Core Count was only nine), compared with counts of over 10,000 a few years ago.

The site is not important for large numbers of wildfowl with the single exception of Common Scoter, which are present in nationally important numbers. Recent counts have recorded over 20,000 Common Scoter offshore in the bay. Perhaps not surprisingly, however, this species was only recorded on a single occasion at low tide, when 1,000 were present off Cefn Sidan Sands. Shelduck, Pintail and Mallard all frequented the northern mudflats adjacent to the River Gwendraeth, with the first two species more concentrated towards Kidwelly. Cormorants were thinly distributed off Cefn Sidan Sands, somewhat more concentrated towards the eastern end. The most abundant species of gull was Common Gull, with nearly 3,000 birds present on the counted parts of the site in December. Herring, Great Black-backed, Black-headed and Lesser Black-backed Gulls were also present in decreasing order of abundance. In addition, Little and Great Crested Grebes, Little Egret, Grey Heron, Red-breasted Merganser, Grey Plover and Bar-tailed Godwit were all recorded in low numbers during the Low Tide Counts.

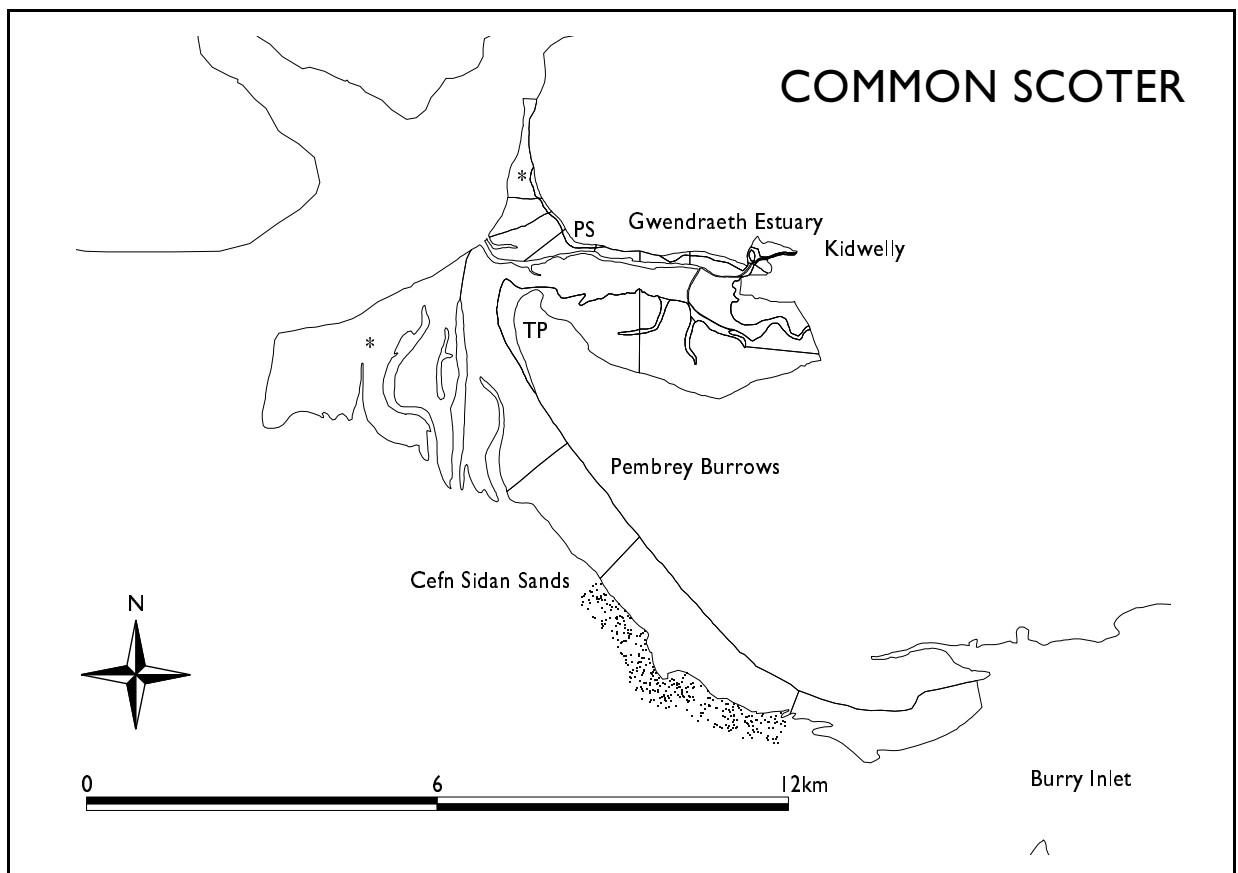
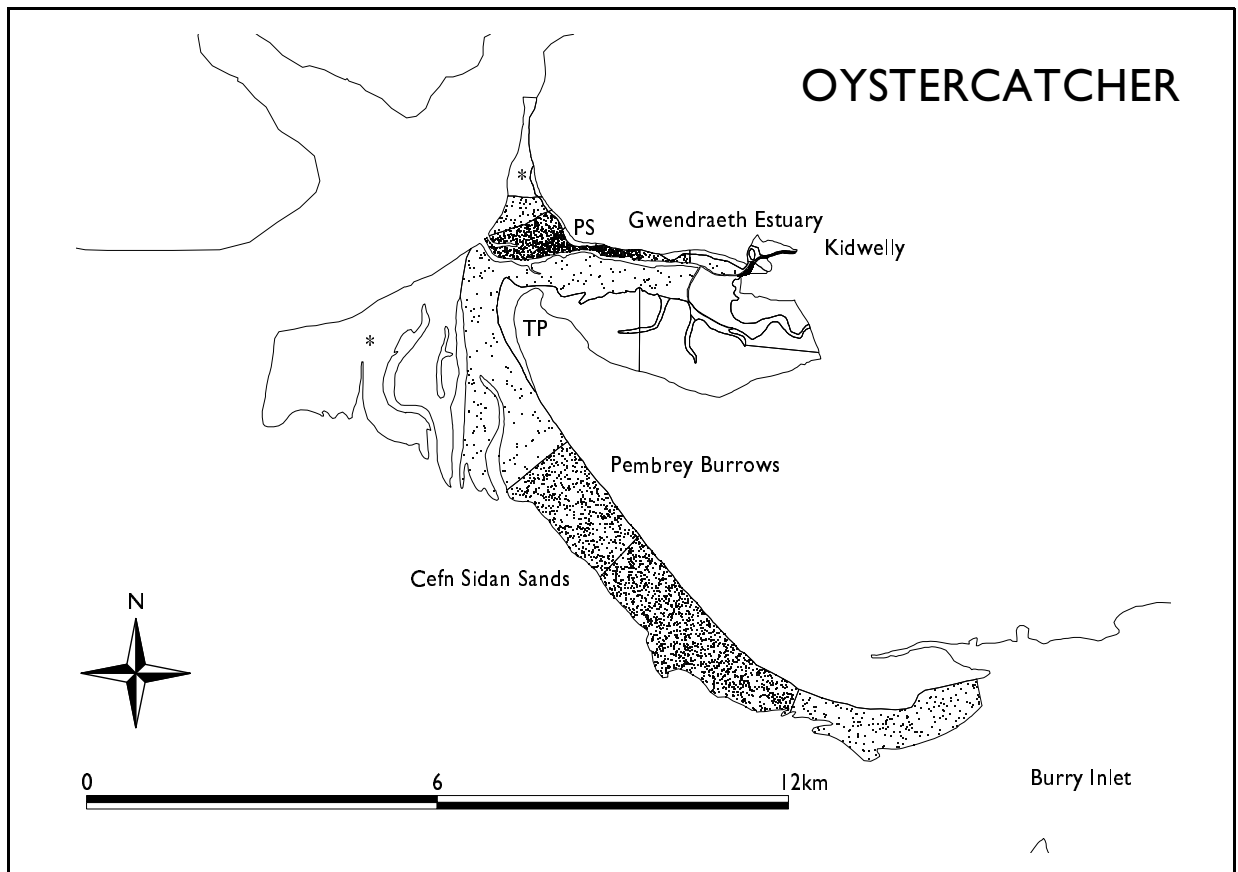


Figure 72. WeBS Low Tide Counts of Oystercatcher and Common Scoter at Carmarthen Bay (Gwendraeth/Pembrey), winter 1999-2000. (TP=Tywyn Point, PS=Pastoun Scar, * = not counted)

CROMARTY FIRTH

Highland

Internationally important:

Pink-footed Goose, Greylag Goose, Knot, Bar-tailed Godwit

Nationally important:

Whooper Swan, Wigeon, Pintail, Scaup, Red-breasted Merganser, Curlew, Redshank, Common Gull

Site description

The Cromarty Firth is part of the complex of estuaries forming the Moray Basin, and boasts the largest area of intertidal mudflats in the area. The firth itself is made up of three principal bays; Alness, Udale and Nigg. The sediments in the firth are predominately muddy in the uppermost parts becoming progressively sandier towards the mouth; both Nigg and Udale Bays are mostly sand. Several areas of saltmarsh have developed, mostly where rivers enter the estuary. Much of the firth has SPA, Ramsar and SSSI status, and the RSPB have two reserves on the estuary at Nigg Bay and Udale Bay. There is much industrial activity around the firth, including an oil terminal and a fabrication yard producing oil rigs at Nigg as well as a dock complex at Invergordon. Some small fishing craft still make use of the estuary, whilst leisure activities include sailing and wind-surfing (Buck 1993c, Davidson 1996a).

Bird distribution

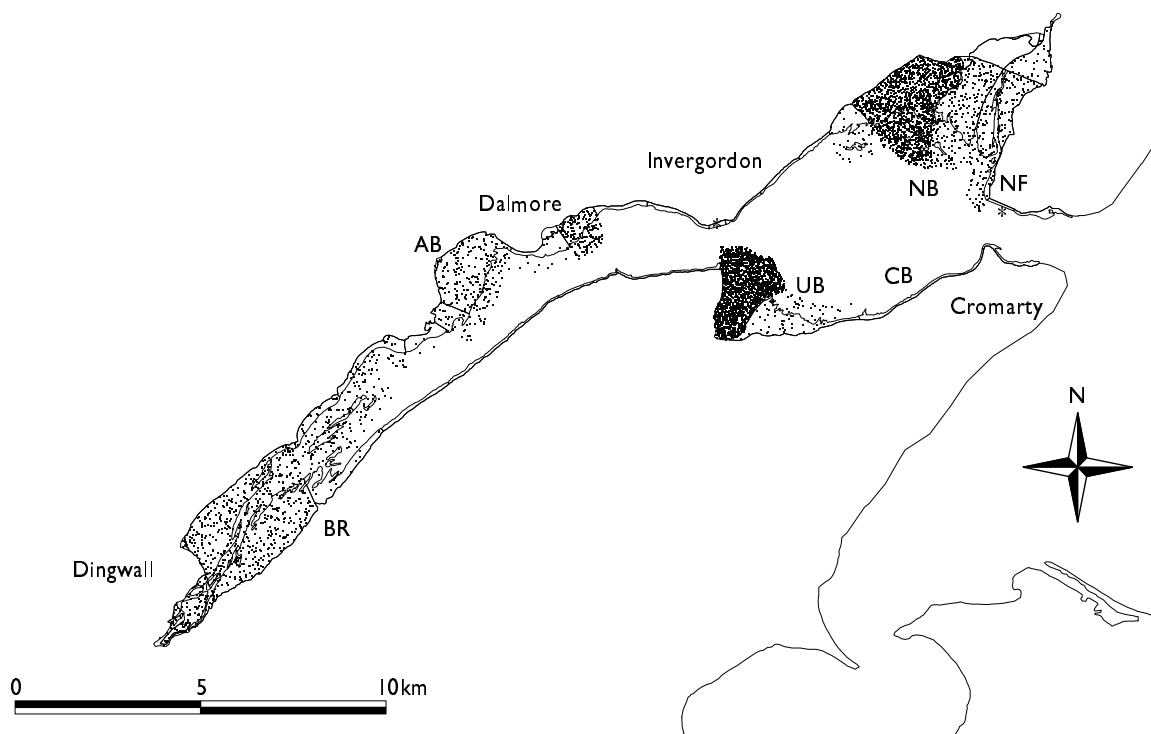
Most of the counts of Wigeon were below the national importance level but the exceptional November count of nearly 15,000 was in excess of any Core Count made at the site in recent winters. The greatest concentrations of Wigeon were in Nigg and Udale Bays (Figure 73), although birds were widespread in the inner estuary. Pintail were concentrated in the eastern half of Nigg Bay. Scaup favoured Cromarty Bay and the outer parts of Udale Bay, with numbers fairly comparable to peak Core Counts. Red-breasted Mergansers were mostly concentrated around Nigg, Udale and Cromarty Bays, with smaller numbers scattered in the inner parts of the estuary. Both Teal and Mallard frequented the inner half of the estuary, particularly upstream of Dalmore. Long-tailed Ducks frequented the outer firth, particularly off Nigg Ferry and parts of Nigg Bay. Conversely, Goldeneye were more scattered, with small concentrations off the Dalmore Distillery and around Nigg and Udale Bays. Shelduck and Mute Swans were virtually confined to the wider bays. Small numbers of Whooper Swans were also recorded around Nigg Bay. Over 700 Greylag and nearly 500 Pink-footed Geese were recorded in December, although the firth is principally of importance as an overnight

roost for these species. The former were mostly confined to the inner part of the estuary whilst the latter were virtually confined to Nigg Bay.

Internationally important numbers of Bar-tailed Godwit winter on the firth, with the peak of 1,852 birds in January exceeding the peak Core Count for the winter. At low tide the birds were concentrated in the eastern portion of Nigg Bay, the western portion of Udale Bay and on the flats to the east of Dalmore, with a scattering of birds also along the northern shoreline between Alness Bay and Dingwall (Figure 73). The greatest numbers of Oystercatcher were to be found in the eastern part of Nigg Bay, and the western side of Udale Bay. There were lesser concentrations from the Alness River westwards to beyond the Cromarty Bridge. The distribution of Knot was similar to Oystercatcher, with the greatest concentrations in eastern Nigg Bay and western Udale Bay, and in Alness Bay. However, it was absent from all other parts of the estuary. Curlew were found virtually throughout the Cromarty, with the greatest concentrations in Nigg and Udale Bays. Redshank are considered to occur in nationally important numbers based on Core Counts, but at low tide numbers exceeded the international importance threshold in three out of four months. Redshank were widely distributed within the firth, with the greatest concentrations in the western part of Udale Bay. Dunlin were only slightly less widespread, with the densest concentrations in western Udale Bay, eastern Nigg Bay and Alness Bay. Lapwing concentrations were centred on the flats below the Dalmore Distillery and the eastern half of Nigg Bay. Smaller numbers were scattered elsewhere along the northern shoreline, and upriver of the Cromarty Bridge. Small numbers of Ringed Plover were thinly scattered in the estuary, favouring the southern flats upriver from the Cromarty Bridge, whereas the few Golden Plover recorded were confined to the eastern flats in Nigg Bay.

Small numbers of Cormorant mostly occurred in the outer half of the estuary. Grey Herons were widely distributed but appeared to favour the eastern flats of Nigg Bay. Red-throated Diver, Slavonian and Little Grebe, Shag, Shoveler, Eider, Goosander, Snipe and Turnstone were also all recorded in small numbers.

WIGEON



BAR-TAILED GODWIT

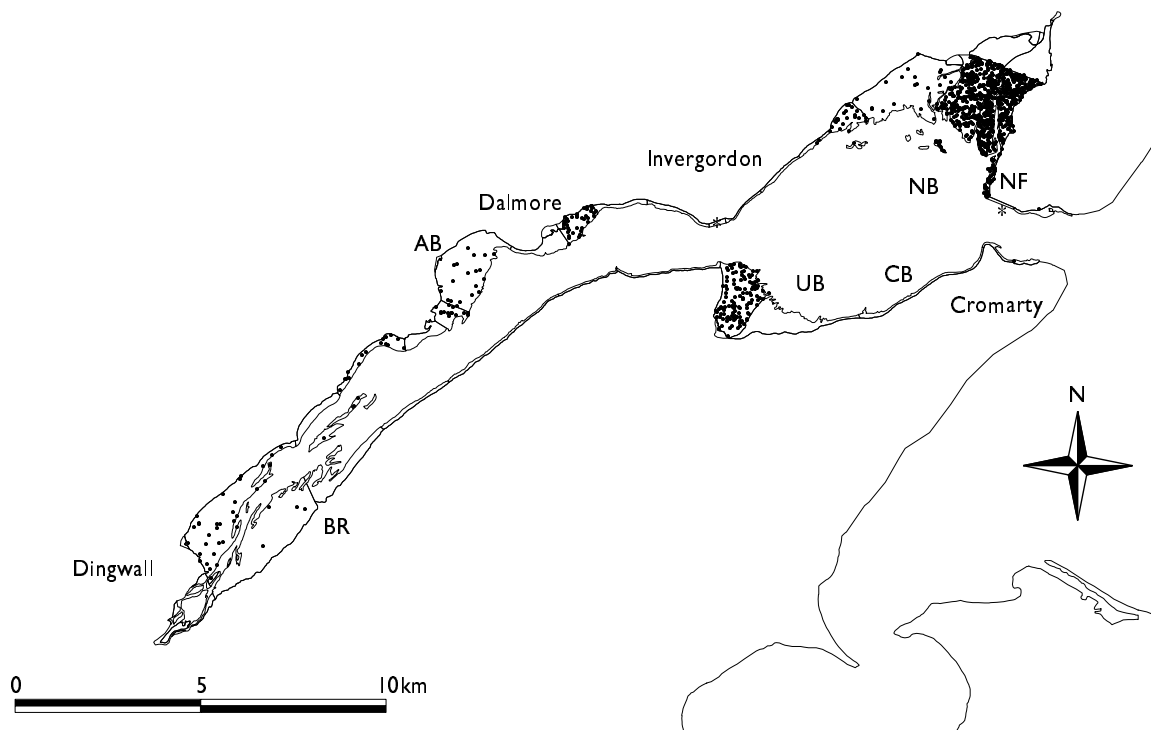


Figure 73. WeBS Low Tide Counts of Wigeon and Bar-tailed Godwit at the Cromarty Firth, winter 1999-2000. (NF=Nigg Ferry, NB=Nigg Bay, CB=Cromarty Bay, UB=Udale Bay, AB=Alness Bay, BR=Cromarty Bridge, * = not counted)

FIRTH OF CLYDE

Dunbartonshire / Renfrewshire

Internationally important:

Redshank

Nationally important:

Red-throated Diver, Cormorant, Eider, Goldeneye, Red-breasted Merganser, Oystercatcher, Curlew

Site description

The area covered for the low tide scheme is the inner Firth of Clyde, upstream of Greenock and Helensborough (although it should be noted that Core Counts on the Clyde refer to a larger area). The Clyde is narrow and canalised from its upper tidal reaches down to the Erskine Bridge, with very little sediment exposed at low tide. Below Erskine Bridge, the estuary begins to broaden, quite markedly so below Port Glasgow, with areas of sand and mud exposed on both north and south shores at low tide. There is a large mussel bed at Pillar Bank, and a scattering of *Zostera* beds. The small amount of saltmarsh present on the Clyde mostly occurs to the west of Dumbarton on the northern shore and to the east of Erskine on the southern shore. The estuary of the Clyde is heavily industrialised along much of its length, particularly at the eastern end from the Erskine Bridge to the City of Glasgow. Consequently, the river has suffered badly from high levels of industrial pollution over many years. Unsurprisingly, the worst affected stretches encompass Clydebank to Glasgow, reflecting the greatest concentration of heavy industries and population. However, the last decade or so has seen an improvement in pollution levels over the estuary as a whole, especially in downstream areas. The Inner Clyde (the same area as covered by these counts) is a designated SPA and Ramsar site (Buck 1993b).

Bird distribution

Redshank favoured the upper half of the estuary, with the greatest concentrations found either side of the confluence of the River Leven with the Clyde (adjacent to Dunbarton) and along on the mudflats to the west of the Erskine Bridge, with a smaller concentration frequenting the saltmarsh adjacent to Newshot Island (Figure 74). The peak Low Tide Count of 2,956 birds in November was higher than any recent Core Count at the site. Oystercatchers were found over virtually the entire firth from Erskine Bridge westwards, with the greatest concentrations around Cardross along the northern shore. Dunlin were concentrated on a relatively small area of the southern shore in the bay just east of Longhaugh Point, with a scattering of birds along the flats further to the west and on Pillar Bank along the north shore. Although Lapwing were scattered

over much of the firth, the greatest concentrations by far were recorded from the flats around Longhaugh Point. Curlew were distributed over virtually the entire estuary. Ringed Plover favoured the outer parts of the north shore. Up to 70 Snipe were noted, mostly from the saltmarsh by Newshot Island. Small numbers of Knot, Purple Sandpiper, Bar-tailed Godwit, Greenshank and Turnstone were also recorded.

The three species of duck supported by the Clyde in nationally important numbers were all noted in lower numbers at low tide than on recent Core Counts. Goldeneye favoured three main areas of the estuary; the confluence of the River Leven and the Clyde, the channel to the north of Pillar Bank and the shore to the north of Ardmore Point (Figure 74). Red-breasted Mergansers were distributed evenly around all parts of the site. Eiders frequented the outer half of the estuary, with particular concentrations around Helensburgh and Ardmore Point, and the peak count of 404 was only about 10% of the equivalent peak Core Count. However, these discrepancies would seem to be explained by the difference in the geographical extent of the Core and Low Tide Counts. Wigeon were generally distributed but Teal and Mallard favoured the central parts of the estuary, particularly the flats around Longhaugh Point and, in the case of Teal, the narrow inner channel off Clydebank. Shelduck congregated to the west of Longhaugh Point and off Ardmore Point. Up to 71 Scaup favoured the channels off Ardmore Point, Pillar Bank and near the confluence of the River Leven and Clyde. Small numbers of Gadwall, Pintail, Tufted Duck, Long-tailed Duck, Pink-footed Geese and Greylag Geese were also noted.

Cormorants were distributed generally throughout the estuary, with small concentrations off Ardmore Bank and around the confluence of the River Leven on both shores. The peak of 93 Grey Herons corresponded to a similarly high Core Count on the Clyde during this winter. Up to 11 Red-throated Divers and 57 Great Crested Grebes, along with the odd Little and Slavonian Grebe, were also recorded. Large numbers of gulls were also noted on the Clyde, with Black-headed the most abundant, followed by Common Gull and smaller numbers of Great Black-backed, Lesser Black-backed and Herring Gulls.

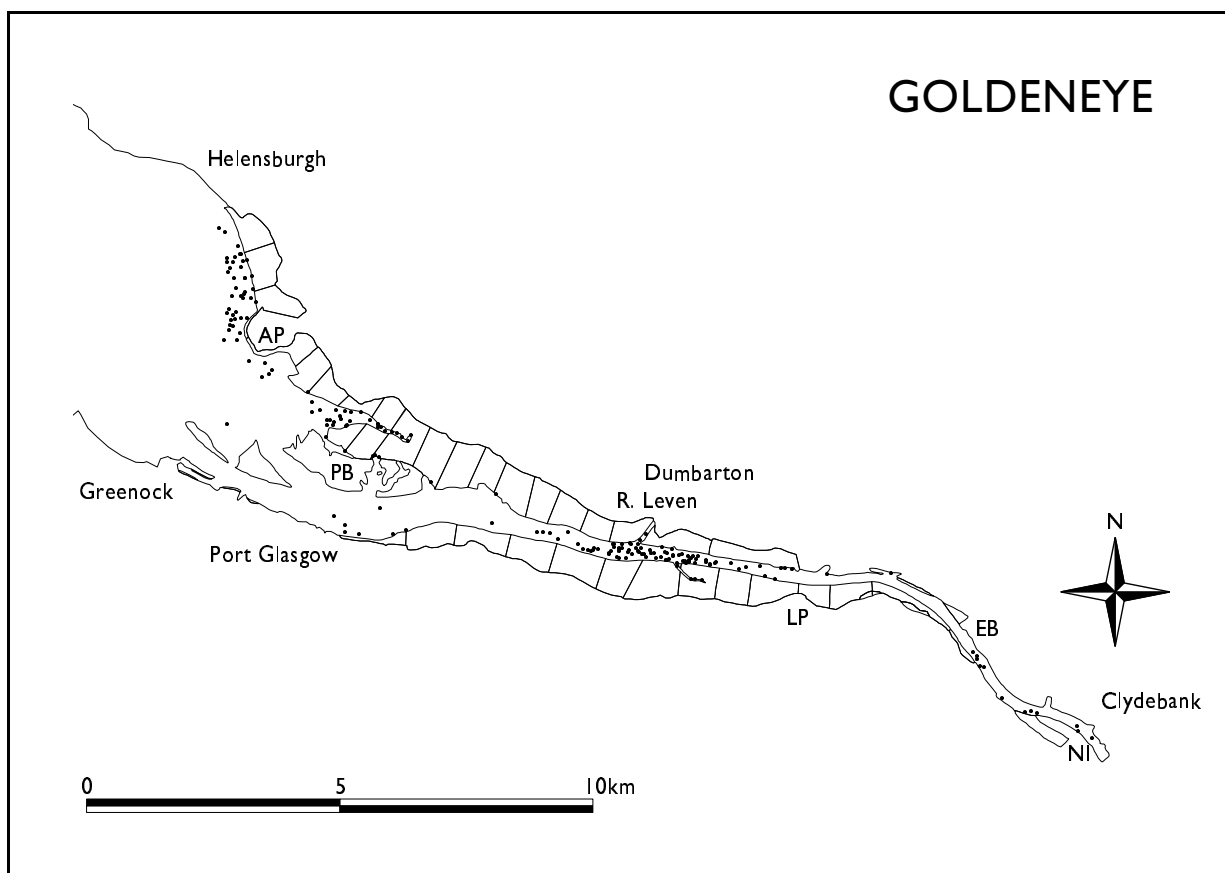
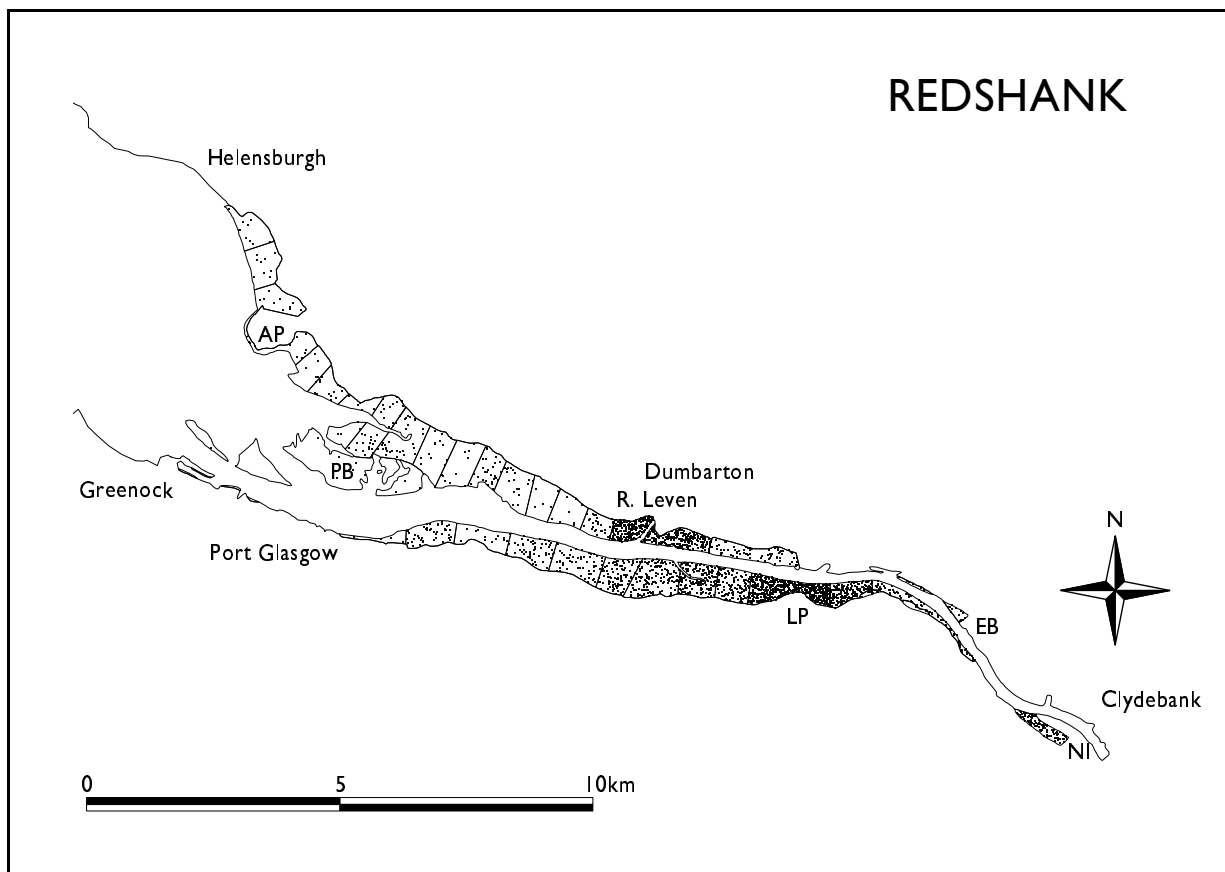


Figure 74. WeBS Low Tide Counts of Redshank and Goldeneye at the Firth of Clyde, winter 1999-2000. (AP=Ardmore Point, PB=Pillar Bank, EB=Erskine Bridge, NI=Newshot Island, LP=Longhaugh Point)

NEWTOWN HARBOUR

Isle of Wight

Internationally important:

None

Nationally important:

Dark-bellied Brent Goose, Black-tailed Godwit

Site description

Newtown Harbour is situated on the north-west coast of the Isle of Wight, between Yarmouth and Cowes. The River Newtown and several tributaries form the largest estuary on the island. The mouth is relatively narrow and bounded on either side by shingle spits. Within the estuary, the intertidal flats comprise of combinations of mud, sand and shingle. Almost half of the saltmarsh habitat on the Isle of Wight occurs within the estuary. The majority of the saltmarsh communities in the estuary occur along the banks of the creeks (many known locally as "lakes"), well inland from the mouth. However, over recent years, new saltmarsh has begun to develop in the central parts of the estuary, behind the breached sea wall. The estuary is a SSSI and forms part of the Solent and Southampton Water SPA and Ramsar Site. The area is popular with tourists, particularly during the summer months. The only light industry on the estuary is a boat repair yard at Shalfleet. Some bait-digging also takes place within the area (Buck 1997, Davidson 1996b).

Bird distribution

Brent Geese in the harbour peaked at 1,616 individuals during the February Low Tide Count, slightly lower than the comparable peak Core Count. The birds were widely distributed, but with some preference for the central parts of the estuary, the highest concentration being at Causeway Lake (Figure 75). Canada Geese frequented the flats adjacent to Clamerkin and Spur Lakes. Shelduck also favoured the nature reserve, with a few scattered elsewhere within the estuary. Wigeon and Teal were the two most abundant duck species, Teal approaching numbers of national importance with a maximum of 1,259 in December. Virtually all the Teal were confined to the creeks in the inner part of the estuary. The distribution of Wigeon was very similar to that of Teal, but the flats around Clamerkin Lake were also favoured. Small numbers of Mallard and Pintail frequented the lakes around Corf Camp and Causeway Lake respectively, with a very few individuals on the flats and saltmarsh enclosed by the sea wall. Goldeneye and Red-breasted Merganser frequented the main Newtown River and

tributaries such as Clamerkin Lake. Other wildfowl recorded included Mute Swan, Barnacle Goose and Shoveler.

The peak count of 218 Black-tailed Godwits was somewhat higher than recent Core Count maxima. Figure 75 shows that the godwits were confined to the flats adjacent to the main Newtown River channel and Causeway Lake. Oystercatcher were found from the middle flats of the estuary down to the river mouth. The majority of Ringed Plover were feeding on the reserve with virtually all the rest on the shoreline adjacent to the mouth of the estuary. Lapwing were widely distributed throughout the estuary, with the densest concentration within Causeway, Shalfleet and Corf Lakes and on the eastern flats of the enclosed nature reserve area. Golden Plover were concentrated on the enclosed flats and saltmarsh of the reserve, and the adjacent flats by the main Newtown River. The distribution of Grey Plover was similar. Both Knot and Dunlin favoured the central sections of the estuary, particularly the mudflats enclosed by the sea wall. Knot were only ever recorded from within the enclosed area, whereas Dunlin were also found on flats within Causeway Lake and at the junction with the main river Newtown channel, with a few around the mouth of the estuary. Both Curlew and Redshank appeared to favour the flats within the enclosed reserve area, whilst the former also congregated on the flats at the mouth of the estuary. The small numbers of Turnstone present avoided the inner part of the estuary, preferring the flats nearer the mouth. Other species of wader recorded in very low numbers were Jack Snipe, Woodcock, Bar-tailed Godwit, Spotted Redshank, Greenshank and Common Sandpiper.

Little, Great Crested and Slavonian Grebes were present, with six of the latter in February but Cormorants were relatively scarce, with only a maximum of ten birds noted. Little Egrets, peaking at 23, were considerably more numerous than Grey Heron. Of the four species of gull recorded, Black-headed was by far the most abundant and widespread, with smaller numbers of Herring and Great Black-backed Gulls nearer the estuary mouth. A couple of Mediterranean Gulls were present in February but Common and Lesser Black-backed Gulls were not recorded.

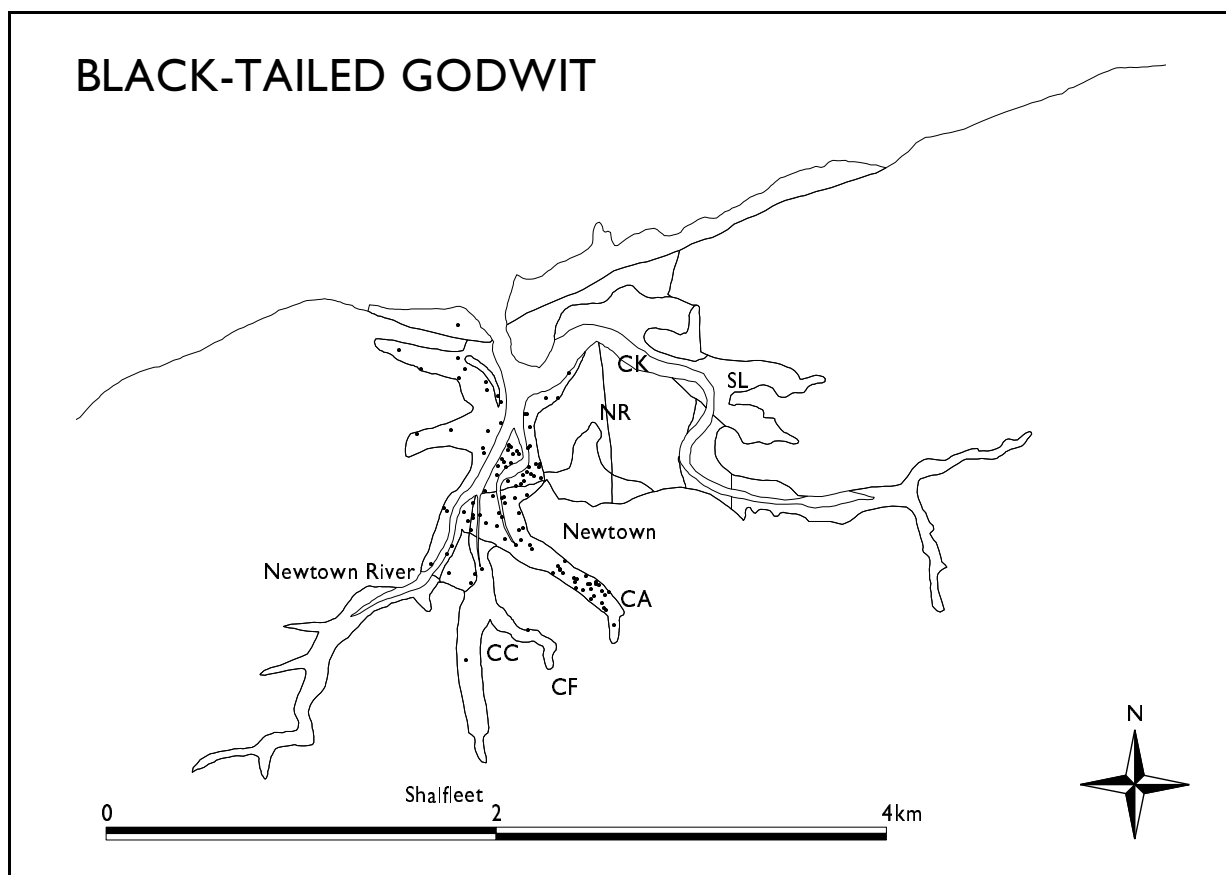
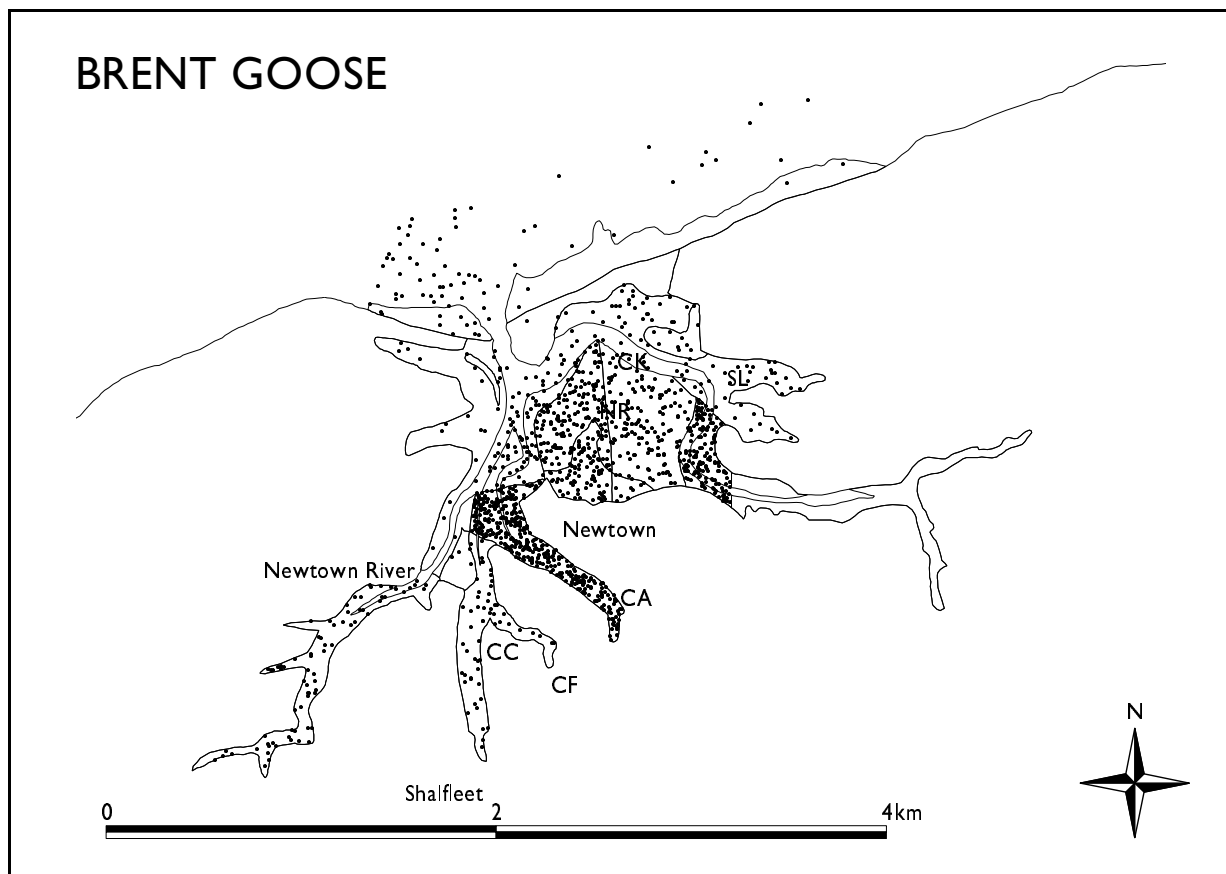


Figure 75. WeBS Low Tide Counts of Dark-bellied Brent Goose and Black-tailed Godwit at Newtown Harbour, winter 1999-2000. (CC=Corf Camp, CF=Corf Lake, CA=Causeway Lake, NR= nature reserve, CK=Clamerkin Lake, SL=Spur Lake)

SOLWAY FIRTH

Dumfries & Galloway / Cumbria

Internationally important:	Whooper Swan, Pink-footed Goose, Barnacle Goose, Shelduck, Pintail, Oystercatcher, Knot, Dunlin, Bar-tailed Godwit, Curlew, Redshank
Nationally important:	Red-throated Diver, Great Crested Grebe, Cormorant, Scaup, Common Scoter, Goldeneye, Red-breasted Merganser, Ringed Plover, Golden Plover, Grey Plover, Sanderling, Black-tailed Godwit, Lesser Black-backed Gull, Herring Gull

Site description

The Solway Firth, as considered by WeBS, comprises the coastline between Mersehead Sands on the Scottish coast to Workington in Cumbria. Building on the Low Tide Counts first carried out on the Solway during winter 1998-99, most of this area was covered during winter 1999-2000, the main exceptions being the south shore south of Grune Point and some of the more extensive central intertidal banks south of Caerlaverock. The principal inputs to the estuary are from the rivers Esk, Eden, Nith and Annan. The majority of the site is sandy in character with several isolated rocky scars, principally at the mouth of Moricambe Bay. Huge areas of saltmarsh are found along the south side of Moricambe, between Glasson and Burgh and along the Caerlaverock shoreline. However, Rockcliffe Marsh, the most extensive of the saltmarshes, was not covered by the survey. Most of the estuary is surrounded by low-lying farmland and there is little industry in the area. The main issues concerning waterbird conservation on the Solway concern exploitation of natural resources, such as shellfisheries (Davidson 1996c, C. Hartley pers. comm.)

Bird distribution

The peak count of Oystercatcher at low tide was less than half of the equivalent Core Count. The species was widely distributed around the site with the greatest concentrations between Powfoot and Torduff and between Southernness and Carsethorn (Figure 76). It would appear that some of the uncounted parts of the sites, notably the distant central areas and the outer south shore, are of importance for this species, although the discrepancy may also be linked to birds being difficult to count on distant mussel scars. The greatest concentrations of Knot were to be found off Carsethorn and Grune Point, and those of Dunlin off Bowness-on-Solway, Torduff Point and Powfoot. Curlew were widespread with concentrations at the northern end of Moricambe Bay and along with the channel of the Nith. Conversely, Bar-tailed Godwit were confined to a few mudflats in the inner estuary, particularly off Powfoot, Bowness-on-Solway and the outer flats of Moricambe Bay. The peak count of this species

was low compared to recent peak Core Counts. The main concentrations of Redshank were between Torduff Point and Seafield and also just north of Carsethorn. Lapwing were widely distributed with Moricambe Bay and the flats off Seafield recording the greatest concentrations. Conversely, Ringed, Golden and Grey Plovers were much more restricted to the northern flats off Powfoot, Torduff Point, Southernness Point and in Moricambe Bay. Grey Plover also favoured the flats around Bowness-on-Solway. Very small numbers of Sanderling, Purple Sandpiper, Ruff, Snipe, Black-tailed Godwit, Greenshank and Common Sandpiper were also noted.

The peak site count of 6,000 Barnacle Geese was by far the largest recorded by the Low Tide Counts to date. The geese were concentrated on the flats along the River Nith. However, some areas habitually frequented by Barnacle Geese were excluded from the counts, with over 25,000 known to be present this winter. Small numbers of Pink-footed, Greylag and Canada Geese were also recorded. The greatest concentrations of Shelduck occurred along the Nith, off Powfoot and particularly within Moricambe Bay (Figure 76). Wigeon favoured Moricambe Bay, particularly the flats off Skinburness and also around the Nith and off Bowness-on-Solway. Most of the Pintail were found in the western side of Moricambe Bay, along the Nith off Overton and on the flats between Ruthwell and Powfoot. Although over 1,000 Pintail were noted, this was considerably lower than recent peak Core Counts and many birds are presumably present on adjacent non-tidal habitats such as Rockcliffe and Caerlaverock. Mallard and Teal showed a similar low tide distribution, but with the flats off Bowness-on-Solway also frequented. Peaks of 2,317 Scaup and 251 Great Crested Grebes compared well with recent Core Counts; virtually all of both these species were found in the main channel between Carsethorn and Southernness Point. Goldeneye and Red-breasted Merganser were widely distributed. Whooper Swans were mostly concentrated around the River Eden in the inner firth and the River Wampool at the eastern end of Moricambe Bay. Cormorants were concentrated off Grune Point. Additionally, small numbers of Red-throated Diver, Mute Swan, Shoveler and Goosander were also recorded.

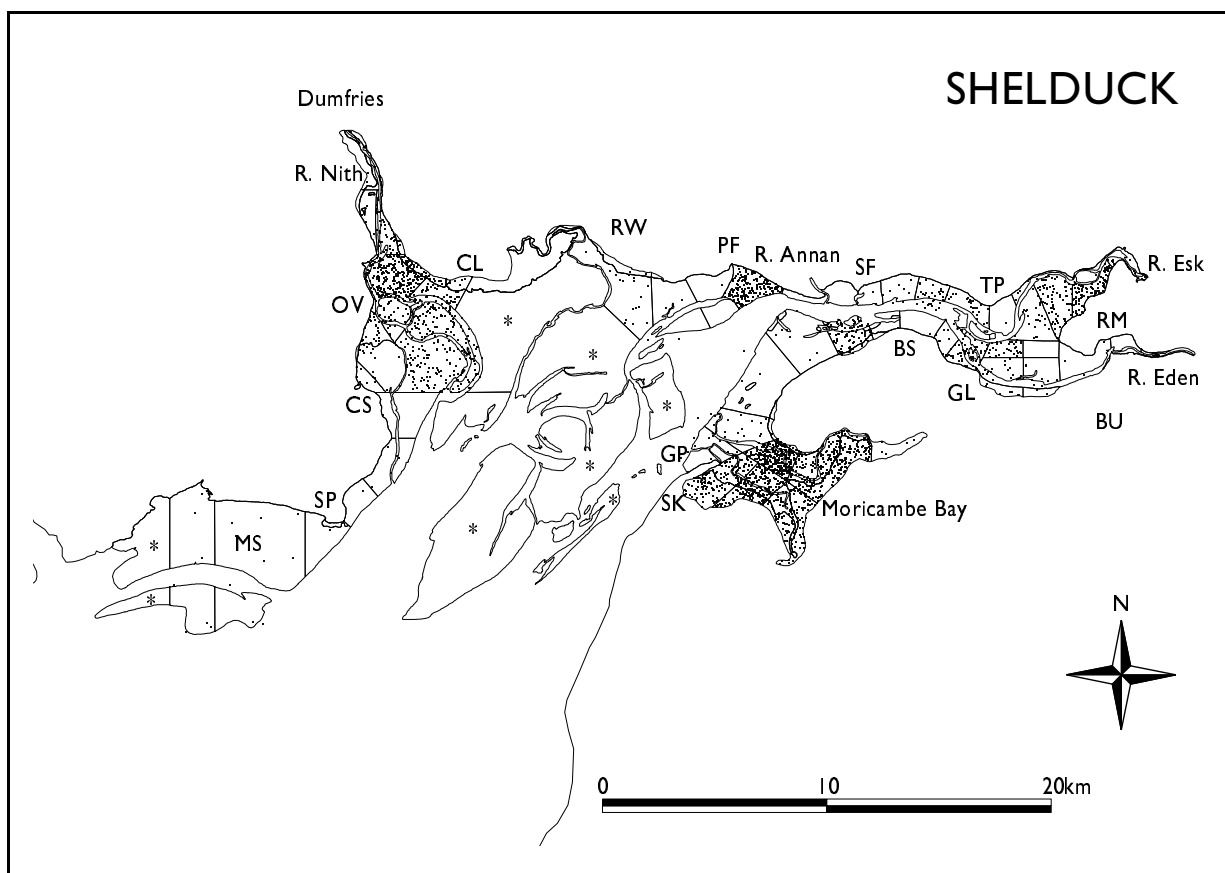
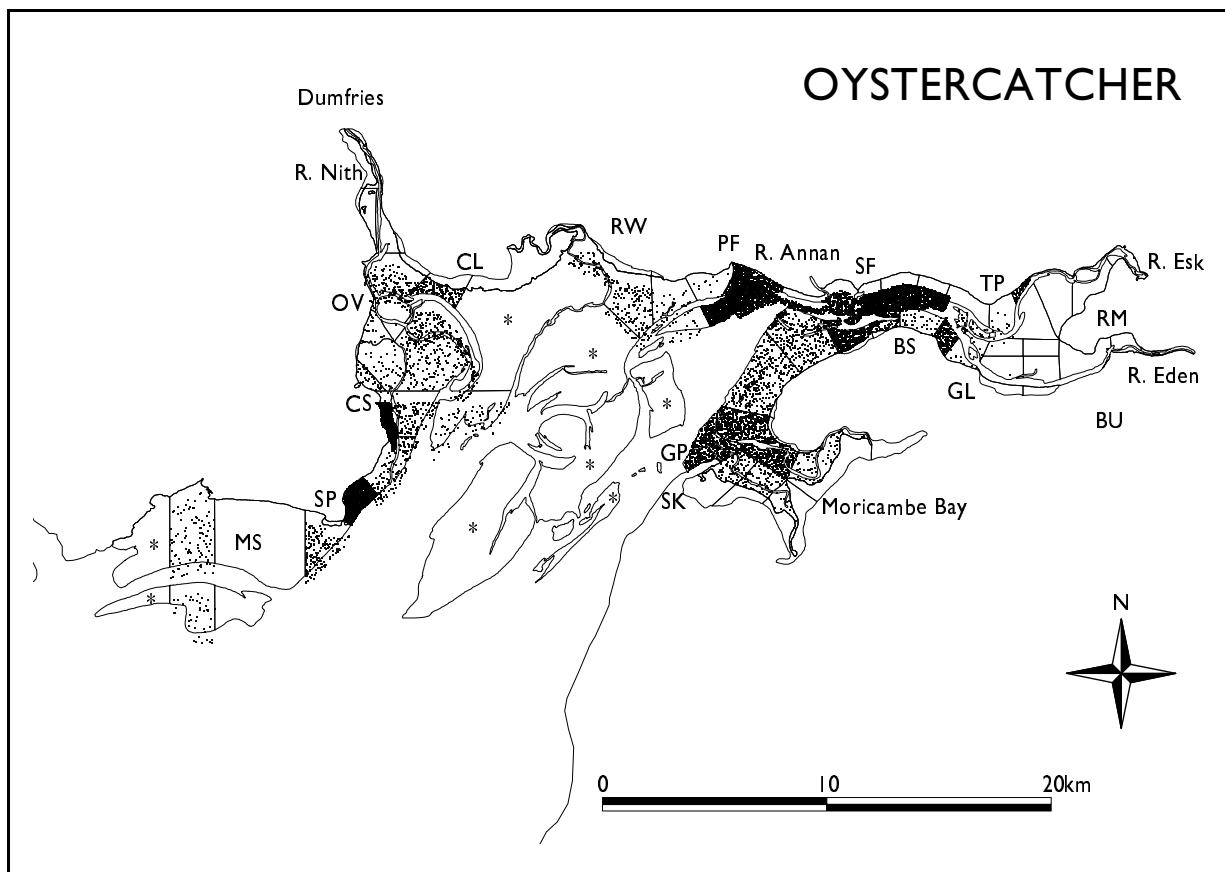


Figure 76. WeBS Low Tide Counts of Oystercatcher and Shelduck at the Solway Firth, winter 1999-2000. (MS=Mersehead Sands, SP=Southerness Point, CS=Carsethorn, OV=Overton, CL=Caerlaverock, RW=Ruthwell, PF=Powfoot, SF=Seafeld, TP=Torduff Point, RM=Rockcliffe Marsh, BU=Burgh by Sands, GL=Glasson, BS=Bowness-on-Solway, GP=Grune Point, SK=Skinburness, * = not counted)

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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 waterbirds, 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 waterbirds.

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.

Waterbirds 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.

Waterfowl Used as a collective term in this publication to refer to all *waterbirds* excluding gulls, terns and Kingfisher.

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 waterbirds 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 waterbird distribution.

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

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. Criterion 6 states that “. . . a

wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of waterbird”

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 DESIGNATIONS

The Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat requires each Contracting Party to designate suitable wetlands, selected on account of their international significance in terms of ecology, botany, zoology, limnology or hydrology, for inclusion in a List of Wetlands of International Importance (known as Ramsar sites) (Carp 1972). The Directive on the Conservation of Wild Birds (EC/79/409) lays emphasis on the need to conserve bird habitats as a means of maintaining populations and that this, in part, should be achieved by the establishment of a network of protected areas termed Special Protection Areas (SPAs) (Stroud *et al.* 1990). Ramsar Sites and SPAs may be identified using

a number of criteria, including a number of numeric selection criteria (see Appendix 2) which draw heavily upon waterbird counts, especially WeBS and the other data presented in this report.

Between 1 April 1999 and 31 March 2001, a total of 33 SPAs and 1 Ramsar site was designated by the UK, with extensions added to a further seven existing SPAs. New designations are indicated in Table A1 by 'N'.

As of March 2001, 138 Ramsar sites and 219 SPAs had been designated in the UK, with a further 11 UK Ramsar sites in Dependent Territories. The total UK area designated as Ramsar sites has reached 734,663 ha, and that as SPAs is 1,249,048 ha.

Table A1. Ramsar Sites and SPAs designated in the UK as of 31 March 2001. (R) = Ramsar site only; (S) = SPA only; the remainder have dual designation. Sites designated during the period 1 April 1999 to 31 March 2001 are denoted by 'N'.

Abberton Reservoir	Cape Wrath (S)	Eoligarry (S)
Abernethy Forest (S)	Carlingford Lough	Esthwaite Water (R)
Achanalt Marshes (S)	Castle Loch, Lochmaben	Exe Estuary
Ailsa Craig (S)	Castlemartin Coast (S)	Fair Isle (S)
N Aird & Borve, Benbecula (S)	Chesil Beach and The Fleet	N Fairy Water Bogs (R)
Alde-Ore Estuary	Chew Valley Lake (S)	Fala Flow
Alt Estuary	Chichester and Langstone Harbours	Farne Islands (S)
N Arun Valley	Chippenham Fen (R)	Fetlar (S)
Ashdown Forest (S)	Claish Moss (R)	Feur Lochain (part of Rinns of Islay)
N Assynt Lochs (S)	Coll	Firth of Forth Islands (S)
Auskerry (S)	N Coll (corncrake) (S)	N Firth of Tay & Eden Estuary (S)
Avon Valley	Colne Estuary (Mid-Essex Coast Phase 2)	Flamborough Head and Bampton Cliffs (S)
Ballochbuie (S)	N Copinsay (S)	Flannan Isles (S)
Ballynahone Bog (R)	Copinsay (S)	Foula (S)
Beinn Dearg (S)	Coquet Island (S)	Foulness (Mid-Essex Coast Phase 5)
Belfast Lough	Cors Caron (R)	Fowlsheugh (S)
N Ben Alder (S)	Cors Fochno and Dyfi (R)	Garron Plateau (R)
Ben Wyvis (S)	Corsydd Môn a Llyn /Anglesey and Llyn Fens (R)	N Garry Bog (R)
Benacre to Easton Bavents (S)	Creag Meagaidh (S)	Gibraltar Point
Benfleet and Southend Marshes	Cromarty Firth (Moray Basin Firths and Bays)	Glac na Criche (part of Rinns of Islay)
Berwyn (S)	Crouch and Roach Estuaries (Mid-Essex Coast Phase 3)	Gladhouse Reservoir
N Black Bog (R)	Crymlyn Bog (R)	Glannau Ynys Gybi /Holy Island Coast (S)
N Black Cart (S)	Cuilcagh Mountain (R)	Glannau Aberdaron and Ynys Enlli/Aberdaron Coast and Bardsey Island (S)
Blackwater Estuary (Mid-Essex Coast Phase 4)	Deben Estuary	Glas Eileanan (S)
Bowland Fells (S)	Dengie (Mid-Essex Coast Phase 1)	Glen Tanar (S)
Breydon Water	Dersingham Bog (R)	Grassholm (S)
Bridgend Flats, Islay	Derwent Ings (part of Lower Derwent Valley)	Great Yarmouth North Denes (S)
Bridgwater Bay (part of Severn Estuary) (R)	Din Moss - Hoselaw Loch	Greenlaw Moor
Broadland	Dornoch Firth and Loch Fleet	Gruinart Flats, Islay
Buchan Ness to Collieston Coast (S)	Dorset Heathlands	Hamford Water
Bure Marshes (part of Broadland) (R)	Drumochter Hills (S)	Handa (S)
Burry Inlet	Duddon Estuary	Hermaness and Saxa Vord (S)
Caenlochan (S)	N Dungeness to Pett Level	Hickling Broad and Horsey Mere (part of Broadland) (R)
Cairngorm Lochs (R)	East Caithness Cliffs (S)	Holburn Lake and Moss
N Cairngorms (S)	East Sanday Coast	Hornsea Mere (S)
Caithness Lochs	East Devon Heaths (S)	N Hoy (S)
Caithness and Sutherland Peatlands	Eilean na Muice Duibhe (Duich Moss) Islay	Humber Flats, Marshes and Coast (Phase 1)
Calf of Eday (S)	Elenydd-Mallaen (S)	Inner Moray Firth (Moray Basin Firths and Bays)
Cameron Reservoir		
Canna and Sanday (S)		

- N Inner Clyde Estuary
N Inverpoll, Loch Urigill and Nearby Lochs (S)
Irthinghead Mires (R)
Kilpheder to Smerclate, South
Kintyre Goose Roosts
N Kinveachy Forest (S)
Laggan, Islay (S)
N Lairg and Strathbrora Lochs (S)
Larne Lough
N Lee Valley
Leighton Moss
N Lewis Peatlands
Lindisfarne
Llyn Tegid (R)
Llyn Idwal (R)
Loch Spynie
Loch Ruthven
Loch of Strathbeg
Loch of Skene
Loch of Lintrathen
Loch of Kinnordy
Loch of Inch and Torrs Warren
Loch Maree
Loch Lomond
Loch Leven (R)
Loch Vaa (S)
Loch Knockie and Nearby Lochs (S)
Loch Ken and River Dee Marshes
Loch an Duin (R)
N Loch Leven
N Loch Shiel (S)
Loch Flemington (S)
Loch Eye
Loch Druidibeg, Loch a' Machair and Loch
Stilligarry (R)
Loch Ashie (S)
Lochnagar (S)
Lochs of Spiggie and Brow (S)
Lochs Druidibeg, a' Machair (S)
Lough Neagh and Lough Beg
Lough Foyle
Lower Derwent Valley
Malham Tarn (R)
Martin Mere
Marwick Head (S)
Medway Estuary and Marshes
Mersey Estuary
Midland Meres and Mosses Phase 1
Midland Meres and Mosses Phase 2 (R)
Mingulay and Berneray (S)
Minsmere - Walberswick
Mointeach Scadabhaigh (S)
Monach Isles (S)
Montrose Basin
Moor House (S)
Moray and Nairn Coast
Morecambe Bay
Mousa (S)
N Muir of Dinnet
Nene Washes
Ness & Barvas, Lewis (S)
New Forest
N North Pennine Moors (S)
N North York Moors (S)
North Uist Machair and Islands
North Inverness Lochs (S)
North Sutherland Coastal Islands (S)
North Norfolk Coast
North Caithness Cliffs (S)
North Colonsay and Western Cliffs (S)
North Harris Mountains (S)
N Northumbria Coast (S)
Noss (S)
Old Hall Marshes (part of Blackwater Estuary)
Orfordness-Havergate (part of Alde-Ore
Estuary) (S)
N Orkney Mainland Moors (S)
Ouse Washes
Pagham Harbour
N Papa Stour (S)
Papa Westray (North Hill and Holm) (S)
Pentland Firth Islands (S)
Pettigoe Plateau
Pevensey Levels (R)
Poole Harbour
Porton Down (S)
Portsmouth Harbour
Priest Island (Summer Isles) (S)
Ramna Stacks and Gruney (S)
Ramsey and St David's Peninsula Coast (S)
N Rannoch Lochs (S)
Rannoch Moor (R)
Rathlin Island (S)
Redgrave and South Lopham Fens (R)
Ribble and Alt Estuaries (Phase 2)
Ribble Estuary (S)
Rinns of Islay
River Spey - Insh Marshes
Rockcliffe Marsh (part of Upper Solway Flats
and Marshes)
Ronas Hill - North Roe and Tingon
Rostherne Mere (R)
N Rousay (S)
Roydon Common (R)
Rum (S)
Rutland Water
Salisbury Plain (S)
Severn Estuary
Sheep Island (S)
Shiant Isles (S)
Silver Flowe (R)
Skomer (S)
N Slieve Beagh (R)
Solent and Southampton Water
Somerset Levels and Moors
South Uist Machair and Lochs
N South West London Waterbodies
South Tayside Goose Roosts
South Pennine Moors Phase 2 (S)
South Pennine Moors Phase 1 (S)
St Abb's Head to Fast Castle (S)
St Kilda (S)
Stodmarsh
Stour and Orwell Estuaries
Strangford Lough
Sule Skerry and Sule Stack (S)
Sumburgh Head (S)
Swan Island (S)
N Switha (S)
Tamar Estuaries Complex (S)
Teesmouth and Cleveland Coast
N Thames Estuary and Marshes
Thanet Coast and Sandwich Bay
The Wash
The Dee Estuary
The Swale
N Thorne and Hatfield Moors (S)
Thursley and Ockley Bog (R)
Thursley, Hankley and Frensham Commons
(Wealden Heaths Phase 1) (S)
N Tips of Corsemaul and Tom Mor (S)
N Tiree (corncrake) (S)
Traeth Lafan/Lavan Sands, Conway Bay (S)
Treshnish Isles (S)
Troup, Pennan and Lion's Heads (S)
Uist (S)
Upper Lough Erne
Upper Severn Estuary (part of Severn Estuary)
Upper Solway Flats and Marshes
Walmore Common
Wealden Heaths Phase 2 (S)
West Westray (S)
N Wester Ross Lochs (S)
Westwater
Wicken Fen (R)
Woodwalton Fen (R)
Ynys Feurig, Cemlyn Bay and The Skerries (S)
Ythan Estuary and Meikle Loch (R)
Ythan Estuary, Sands of Forvie and Meikle
Loch (S)

APPENDIX 2. INTERNATIONAL AND NATIONAL IMPORTANCE

Any site recognised as being of international ornithological importance is considered for classification as a Special Protection Area (SPA) under the EC Directive on the Conservation of Wild Birds (EC/79/409), whilst a site recognised as an internationally important wetland qualifies for designation as a Ramsar site under the Convention on Wetlands of International Importance especially as Waterfowl Habitat. 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 criterion 6, 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 waterbird, while criterion 5 states that any site regularly supporting 20,000 or more waterbirds also qualifies. Britain and Ireland's wildfowl belong, in most cases, to the northwest European population (Pirot *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 waterbird, and in Northern Ireland important in an all-Ireland context if it holds 1% or more of the estimated all-Ireland population.

The 1% thresholds for British, all-Ireland and international waterbird populations, where known, are listed in Table A2. Thus, any site regularly supporting at least this number of birds potentially qualifies for designation under national legislation, or the EC Bird's

Directive or Ramsar Convention. 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 or international importance.

1% thresholds have not been derived for introduced species since, 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 waterbirds see Whilde (in prep.) cited in Way *et al.* (1993). International criteria follow Smit & Piersma (1989) or Rose & Scott (1997).

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; Ramsar Resolution VI.4).

The third edition of *Waterfowl Population Estimates*, presented to the Seventh Meeting of the Contracting Parties to the Ramsar Convention in Costa Rica in May 1999, includes revisions for a number of goose populations (following Madsen *et al.* 1999) and of a number of east Atlantic flyway wader populations (see Davidson 1998). The next revision of British population sizes will be undertaken in the year 2000.

Table A2. 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 *	?	150	NW Europe
Slavonian Grebe	4 *	?	50	NW Europe
Black-necked Grebe	1 *	?	1,000	W Palaearctic
Cormorant	130	?	1,200	NW Europe
Little Egret	?	?	1,250	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

	Great Britain	all-Ireland	International	Population
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>bernicle</i>
Light-bellied Brent Goose: Canada	+ *	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
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	275	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 (win)
Avocet	10 *	+ *	700	Europe/NW Africa (bre)
Little Ringed Plover	?	?	?	Europe/W Africa
Ringed Plover	290	125	500	Europe/NW Africa (win)
passage	300			
Golden Plover	2,500	2,000	18,000	NW Europe (bre)
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(win)
Purple Sandpiper	210	10 *	500	E Atlantic
Dunlin <i>C. a. arctica</i>			150	Greenland (bre)
<i>C. a. schinzii</i> (Icelandic)			8,000	Iceland/Greenland (bre)
<i>C. a. schinzii</i> (temperate)			200	UK/Ireland/Baltic
<i>C. a. alpina</i>	5,300	1,250	14,000	Europe (bre)
passage	2,000			
Ruff	7 *	+ *	10,000	W Africa (win)
Jack Snipe	?	250	?	Europe/W Africa (win)
Snipe	?	?	10,000	Europe/W Africa (bre)
Woodcock	?	?	20,000 **	Africa/Europe
Black-tailed Godwit	70	90	700	Iceland (bre)
Bar-tailed Godwit	530	175	1,000	W Europe (win)
Whimbrel	+ *	+ *	6,500	Europe/W Africa (win)
passage	50			

	Great Britain	all-Ireland	International	Population
Curlew	1,200	875	3,500	Europe/NW Africa
Spotted Redshank	+ *	+ *	1,500	Europe/W Africa
Redshank <i>T. t. totanus</i>	1,100	245	1,500	Europe/W Africa (win)
<i>T. t. robusta</i>	1,100		1,500	NW Europe (win)
passage	1,200			
Greenshank	+ *	9 *	3,000	Europe/W Africa
Green Sandpiper	?	?	?	Europe (bre)
Common Sandpiper	?	?	?	Europe (bre)
Turnstone	640	225	700	Europe (win)
Little Gull	?	?	750	Cent/E Europe (bre)
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 waterbirds qualifies as internationally important by virtue of absolute numbers

APPENDIX 3. ANALYSES

This appendix provides additional detail about the analyses used in this report to that presented in *Analyses* and lists the index values used to produce

the graphs of annual and monthly indices in the species accounts.

Data availability

The count scheme first begun in 1947 has developed considerably over time (see Cranswick *et al.* 1997). In particular, coverage of species and area has expanded

during this time. The first year for which data for certain species or areas are available for use in analyses are given below:

Table A3. First year of availability of WeBS Core Count data for different species and areas

Wildfowl in GB	1960 on computer (collected since 1947)
Waders in UK	1969-70
Great Crested Grebe	1982-83
Coot	1982-83
Little Grebe	1985-86
Cormorant	1986-87
Wildfowl in Northern Ireland	1986-87
All other species (rare grebes, divers, rarities, gulls, terns)	1993-94

National totals for goose populations

Figures presented in Tables 1 & 2 and in Appendices 4-9 for total counts of the various goose populations are derived initially from WeBS Core Counts, but are replaced by results of dedicated censuses (see *Survey Methods*, *Analyses* and *Coverage* for appropriate

references, methods and dates) where these provide better counts. Several goose populations are identified according to location (and totals derived by summing counts from particular WeBS regions) where they cannot be separated in the field by appearance.

Table A4. Use of WeBS Core Count and goose census data to compile national totals for goose populations in 1999-2000.

Bean Goose	WeBS Core Counts in all months
Pink-footed Goose	October and November counts replaced by summed counts from the co-ordinated national censuses
European White-fronted Goose	WeBS Core Counts in all months
Greenland White-fronted Goose	November and March counts replaced by summed counts from the co-ordinated late autumn and late spring international censuses, respectively
Greylag Goose:	
Iceland	WeBS Core Counts from all WeBS regions in Scotland except those on the west coast (see NW Scotland population) plus Northumberland and North Cumbria. October and November counts replaced by summed counts from the co-ordinated national censuses.
NW Scotland	WeBS Core Counts from WeBS regions Islay/Jura/Colonsay, Mull/Lismore/Coll/Tiree Skye, Highland Southwest and North and South Outer Hebrides. August and February counts replaced by summed counts from co-ordinated censuses of Outer Hebrides. August 1997 count replaced by total from full national survey
naturalised	WeBS Core Counts for all sites in Wales and England, except for Northumberland and North Cumbria

Note that Icelandic and NW Scotland populations overlap in WeBS regions Orkney and North Highland. NW Scotland birds counted by WeBS in these regions will be included Icelandic population totals. Note also that up to 2,340 naturalised birds occur in Scotland (Delany 1993) and others in Northumberland and North Cumbria which are therefore incorrectly included in totals of Icelandic birds in Appendices 4-9

Canada Goose	WeBS Core Counts in all months
Barnacle Goose:	
Greenland	WeBS Core Counts from all WeBS regions on Scottish west coast, plus Shetland and Orkney. November and March counts replaced by summed counts from the co-ordinated late autumn and late spring censuses in Argyll plus the monthly maximum count from Hoy, Orkney.

Barnacle Goose:	
Svalbard	WeBS Core Counts from WeBS regions Dumfries & Galloway, North Cumbria, Northumberland, Borders, Lothians, Central, Fife, Perth & Kinross, Angus, Grampian, Moray and SE Highland. Dumfries & Galloway and North Cumbria WeBS Core Counts replaced by Solway-wide counts and censuses between October and March.
naturalised	WeBS Core Counts for all WeBS regions in Wales and England, except for Northumberland and North Cumbria
Dark-bellied Brent Goose	WeBS Core Counts, plus additional counts of inland areas in January and February
Light-bellied Brent Goose:	
Canada	WeBS Core Counts for sites in Northern Ireland, Wales and WeBS regions Shetland, Orkney, Highland North, Western Isles, Skye, Highland Southwest, Islay/Jura/Colonsay, Argyll West Mainland, Mull/Lismore/Coll/Tiree, Dumbarton/SE Argyll, Renfrew, Lanarkshire/Strathkelvin, Ayrshire & Arran, Dumfries & Galloway West, Cornwall, Devon and the Channel Islands. October count in Northern Ireland replaced by counts in Northern Ireland made during all-Ireland census.
Svalbard	WeBS Core Counts from regions not used to compile Canada population totals (see above)

Annual indices

Underhill index values are derived from sites where at least 50% of the maximum possible number of counts, bearing in mind that different months are used for different species, were complete. Index values provided extend back to 1966-67 for wildfowl and 1971-72 for waders, representing the first years in which coverage was deemed sufficient for data to be included in the calculation of the index. A number of species were only first included in WeBS in the 1980s, whilst counts of wildfowl in Northern Ireland only began in earnest in 1985-86.

Underhill (1989) recommends that, where possible, the index is based on counts from more than one month. The months chosen for each species are given below. The most appropriate grouping of months on which to base the annual index for waders is December, January and February, the period when the wintering population in Britain and Northern Ireland is most stable (Prŷs-Jones *et al.* 1994). However, the peak abundance of different wildfowl occur in different months according to species, and thus different months and different numbers of months were selected for each (Kirby *et al.* 1995).

The selection of months for calculating indices for wildfowl and their allies was made by first calculating monthly index values for all months September to March, and selecting that with the highest index value and any adjacent months with overlapping consistency intervals. Data from all years from 1966-67 onwards were used for calculating the index for each of these species, as recommended in Kirby *et al.* (1995), or from the years in which data were first available for species added to the scheme subsequently (see above). Caution is urged in particular regarding the first few years' index values for these species only recently included in the scheme; missing counts may have been incorrectly recorded as nil counts, giving rise to anomalous index values. The parameters used for indexing each species follow Kirby *et al.* (1995).

Due to more stable populations of waders during the winter, the months December to February are chosen for calculation of index values for all waders for which there are suitable data. Due to the small number of sites in Northern Ireland, data are combined for analysis at the UK level.

Table A5. Months used in calculating indices for wildfowl species in Great Britain and Northern Ireland (indicated using the first letter of the months September to March)

Species	GB	NI	Species	GB	NI
Little Grebe	SO	SON	Shelduck	JF	DJFM
Great Crested Grebe	SON	SONDJFM	Wigeon	J	SONDJFM
Cormorant	SONDJFM	SOND	Gadwall	SONDJFM	SONDJ
Mute Swan	SONDJFM	SONDJ	Teal	D	DJ
Bewick's Swan	JF	NDJF	Mallard	D	SO
Whooper Swan	ND	ONDJFM	Pintail	ONDJ	ONDJFM
Pink-footed Goose	O or N	-	Shoveler	SO	SONDJFM
European Whitefront	JF	-	Pochard	NDJ	NDJF
Greenland Whitefront	N or M	N or M	Tufted Duck	NDJF	ONDJFM
Greylag Goose: Icelandic	O or N	-	Goldeneye	F	DJFM
naturalised	S	-	Red-breasted Merganser	ONDJFM	SONDJFM
Canada Goose	S	-	Goosander	DJF	-
Barnacle Goose: Svalbard	any month	-	Ruddy Duck	SONDJFM	-
Dark-bellied Brent	DJF	-	Coot	SONDJ	SONDJFM
Light-bellied Brent	-	SONDJFM			

Table A6. Great Britain annual index values for wildfowl

	LG	GG	CA	MS	BS	WS	PG	EW	NW	JI	JE	CG	YS	DB	SU	WN	GA	T.	MA	PT	SV	PO	TU	GN	RM	GD	RY	CO
1966-67				58	23	39	36	149		82	3	15	14	24	77	71	4	26	159	34	43	125	70	80	30	34	0	
1967-68				57	24	22	31	284		72	2	14	14	30	87	83	4	18	138	48	47	132	74	69	26	36	0	
1968-69				52	18	25	31	386		83	2	19	16	25	83	70	5	31	143	57	65	115	79	85	83	43	1	
1969-70				54	18	37	35	429		85	2	22	15	28	118	75	5	35	115	53	53	104	79	59	57	55	1	
1970-71				50	39	26	34	343		88	2	26	12	34	101	77	10	32	168	77	46	100	87	84	61	42	1	
1971-72				50	28	38	31	139		87	4	23	14	33	107	60	12	37	144	72	70	122	99	101	44	47	1	
1972-73				52	17	38	32	88		99	6	33	17	37	92	68	11	38	140	95	67	137	107	101	41	37	2	
1973-74				51	28	29	39	257		104	4	29	20	50	94	70	9	47	128	163	80	131	106	129	46	82	3	
1974-75				50	22	43	42	70		94	5	28	20	41	89	62	12	43	140	142	59	145	102	125	60	70	3	
1975-76				48	30	34	34	143		86	5	21	23	59	109	57	11	52	123	134	50	147	110	74	54	51	6	
1976-77				46	44	27	33	183		76	7	32	28	54	101	75	12	50	142	124	63	112	85	77	61	45	11	
1977-78				45	51	40	33	127		91	11	35	26	57	89	55	18	54	110	145	73	127	91	83	64	40	10	
1978-79				48	53	30	37	225		104	11	41	34	68	137	85	18	65	134	106	78	108	92	80	67	74	12	
1979-80				49	55	43	38	126		110	13	45	30	86	114	68	21	62	135	138	78	106	99	86	63	60	18	
1980-81				49	70	39	45	150		123	15	49	35	69	130	68	24	74	137	169	71	108	104	73	72	81	33	
1981-82				53	69	28	42	180		131	18	52	32	76	144	77	28	94	134	146	72	95	93	93	81	92	29	
1982-83		62		54	59	45	42	152	35	110	22	60	33	102	109	51	31	79	144	159	79	108	93	77	79	89	32	76
1983-84		70		48	71	34	48	133	40	111	26	57	32	103	117	48	35	82	154	159	75	116	89	75	72	70	41	82
1984-85		83		48	106	34	40	187	46	88	34	69	41	102	111	122	33	65	131	195	81	111	92	89	80	65	47	86
1985-86	14	71		50	91	48	60	173	54	145	35	75	40	108	130	99	36	67	161	150	87	99	95	81	112	95	48	82
1986-87	23	70	26	54	119	55	64	162	55	139	35	78	41	108	137	110	40	59	141	100	80	112	99	104	123	103	50	81
1987-88	20	72	57	62	54	50	81	200	58	143	42	89	44	104	116	85	45	69	163	159	77	101	91	91	100	107	54	78
1988-89	54	79	78	66	73	73	83	179	62	148	45	104	47	118	115	84	52	78	144	145	77	117	107	88	102	102	60	90
1989-90	59	94	80	71	99	69	86	156	70	114	48	80	45	94	121	80	50	98	136	141	89	108	87	83	68	65	62	89
1990-91	63	93	91	79	109	77	90	124	74	156	51	87	47	127	130	80	56	86	131	123	99	106	96	113	86	84	64	79
1991-92	58	91	84	75	117	53	110	173	79	120	50	100	51	155	135	105	51	82	125	146	96	103	90	104	80	71	66	79
1992-93	56	101	83	74	79	52	93	42	74	134	56	90	51	105	116	99	52	71	124	106	74	99	91	103	85	70	52	81
1993-94	70	98	97	79	69	46	106	147	82	135	58	93	56	135	128	101	62	89	113	103	77	107	101	106	98	69	51	92
1994-95	82	101	103	83	56	54	123	106	93	117	69	85	69	107	110	114	70	86	112	110	82	119	97	108	118	67	63	93
1995-96	101	99	105	85	109	48	94	113	104	113	76	96	79	102	129	117	77	91	112	120	101	120	94	99	92	106	77	96
1996-97	83	96	96	88	65	67	110	131	101	109	90	112	89	109	133	136	77	81	107	125	98	102	102	141	93	132	83	96
1997-98	82	100	91	90	35	53	111	127	99	108	86	87	92	110	116	100	90	100	97	105	96	98	100	100	105	81	101	85
1998-99	80	97	89	95	86	81	108	93	107	113	92	109	101	87	99	116	85	90	108	131	77	111	102	110	83	78	82	95
1999-00	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Wildfowl species codes

LG	Little Grebe	PG	Pink-footed Goose	YS	Svalbard	Barnacle	GA	Gadwall	TU	Tufted Duck
GG	Great Crested Grebe	EW	European Whitefront		Goose		T.	Teal	GN	Goldeneye
CA	Cormorant	NW	Greenland Whitefront	DB	Dark-bellied Brent		MA	Mallard	RM	Red-breasted Merganser
MS	Mute Swan	JI	Icelandic Greylag Goose	PB	Light-bellied Brent		PT	Pintail	GD	Goosander
BS	Bewick's Swan	JE	Naturalised Greylag	SU	Shelduck		SV	Shoveler	RY	Ruddy Duck
WS	Whooper Swan	CG	Canada Goose	WN	Wigeon		PO	Pochard	CO	Coot