The Wetland Bird Survey 1995-96:
Wildfowl and Wader Counts
The results of the Wetland Bird Survey in 1995-96

by

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This report is provided free to all WeBS counters, none of whom receive financial rewards for their invaluable work. Further feedback from BTO and WWT HQs is provided to counters in the form of the *WeBS Newsletter*. More detailed data than presented in this report can be obtained through the relevant organiser.

ACKNOWLEDGEMENTS

This book represents the seventeenth report of the Wetland Bird Survey (previously the National Waterfowl Counts and the Birds of Estuaries Enquiry). It provides a national overview of the count information, collected during 1995-96 and previous years, which is critical to the conservation of waterfowl populations both within the United Kingdom and internationally. It is entirely dependent on the many thousands of dedicated volunteer ornithologists who supply the data and to whom we are extremely grateful. The Local Organisers who co-ordinate these counts deserve special thanks.

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The maps of coverage and sites were produced using DMAP. The section on weather was summarised from monthly weather logs published in the journal *Weather*.

The cover painting of a Kingfisher is by Andy Wilson.

PREFACE

t is with some degree of embarrassment that we have to ıpologise for the late publication of this report. This was lue to the considerable staff time at BTO committed to leveloping a new WeBS database. As a consequence, and o reduce publication time, it was decided to omit *Species Accounts* for herons, gulls, terns and Kingfisher. These will ɔe re-instated in future reports.

Nevertheless, it remains our intention to publish future eports in the spring, i.e. within a year of the last count data ɔeing collected. We believe that rapid dissemination of the esults is important, not only for the conservation uses to vhich they will be put, but also so that the report is elevant. We intend to fulfil this promise next year.

ERRATA

Given the amount of data processed and presented, it is perhaps inevitable that some mistakes will occur when preparing this report. Where we are made aware of these, they will be corrected in future years' reports, whilst data received late may similarly alter figures in the tables from one year to the next. This section is used to highlight significant errors in previous reports, particularly where it is not possible to provide corrections in the main part of subsequent reports.

Corrections to the 1993-94 report

Wildfowl data for one count section of the Nene Washes, Cambridgeshire, were erroneously omitted from the site totals. Consequently, several of the species counts published were lower than the true value. Most significantly, the corrected count of Teal was sufficient for the five year average to exceed the threshold for national importance; the Nene Washes should have appeared in Table 38 (pg 73) with an average of 1,511. All 1993-94 figures have been corrected in this report.

Corrections to the 1994-95 report

Due to an error during the final stages of production at Slimbridge, the February and March totals of Grey Plover at estuarine sites in Great Britain were incorrect (pg 21); the correct totals are 47,741 and 53,721 respectively.

Our apologies to the counters involved and to all readers for any confusion caused.

The Wetland Bird Survey 1995-96:
Wildfowl and Wader Counts

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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 waterfowl 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 divers, grebes, Cormorant, herons, wildfowl, rails, waders, gulls, terns and Kingfisher. So called 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. Indices are provided, calculated using the 'Underhill' method, for more numerous species for which sufficient Core Count data exist. For certain wildfowl species, relative abundance during the winter months is also provided.

Species accounts provide yearly maxima for all sites supporting internationally and nationally important numbers. Significant counts at a national or site level are discussed, counts are placed in an international context where possible, and relevant research is summarised.

Waterfowl totals are provided for all sites meeting criteria for international importance and for all estuaries, and species occurring in internationally important numbers on each are identified.

A brief overview of research initiated by WeBS or using WeBS data and of conservation issues pertaining to UK waterfowl is 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.

A summary of data collected by the Irish Wetland Bird Survey, a similar scheme operating in the Republic of Ireland, is also included.

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

The 1995-96 year

This report summarises data collected during 1995-96 and previous years (to 1960 for wildfowl, to 1969 for waders, and to early 1980s or 1990s for most other species). Coverage was normal for recent years (Figure 2), with around 1,500 sites counted during most winter months. Cold weather affected the whole of Great Britain in December and in Scotland again in March.

Counts of Red-throated Diver, Little Grebe and Cormorant were the highest to date, totals for the last two surpassing the winter population estimates for Great Britain (Tables 1 & 2). Many species of swans and geese were also recorded in high numbers, continuing recent trends, though numbers of Icelandic Greylag Geese were the lowest since 1984 (Figures 4 & 5).

Index values for Gadwall and Shoveler continued to rise (Figures 5 & 6), and numbers of the latter were the highest yet recorded and greater than the current population estimate for Great Britain. Mallard indices stabilised after a period of steady decline, and those for Pochard increased following several years of low values (Figures 4 & 5). Cold weather on the continent was presumed responsible for an influx of Goosander in early 1996, resulting in a sharp increase in index values and the highest total counted by WeBS to date. There was a marked increased in the small numbers of Smew in the UK at this time also.

Numbers of Ruddy Duck increased noticeably following recent years when the large population increase appeared to have halted. Numbers of Coot counted also increased, exceeding all previous WeBS totals.

The overall UK total of waders was lower than in recent years (Tables 1 & 2), primarily due to lower numbers of Lapwing and Golden Plover during the cold period in mid-winter. Counts of these two species in Northern Ireland were, however, higher than normal. British numbers of Avocet, Purple Sandpiper and Turnstone were also lower than average, whilst indices for Curlew, Redshank and Sanderling were much lower than for the previous year (Table 5). Numbers of Snipe and Jack Snipe were higher than normal. Index values for Bar-tailed Godwit and Ringed Plover reached six and five year highs, respectively.

Passage totals of note were high spring counts of Sanderling and high autumn counts of Little Stint and Whimbrel.

WeBS Low Tide Count data are presented for the following estuaries counted in 1995-96: Belfast Lough, Crouch/Roach, Fal, Fowey, Inland Sea, Lavan Sands, Medina, Orwell, Pagham, Southampton Water, Strangford Lough and the Wear.

INTRODUCTION

The UK is of outstanding international importance for waterfowl, especially during winter when they are attracted by the relatively mild climate and extensive areas of wetland, notably estuaries. As such, the UK has an obligation to protect and conserve both these waterfowl and the wetlands upon which they depend.

The Wetland Bird Survey (WeBS) aims to monitor all non-breeding waterfowl 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 four main objectives:

- to assess the size of non-breeding waterfowl populations in the UK;
- to assess trends in their numbers and distribution;
- to assess the importance of individual sites for waterfowl; and
- to understand the ecology of waterfowl, including the effects of habitat change and anthropogenic impact.

This report presents syntheses of data collected in 1995-96 and previous years in line with these objectives.

The WeBS scheme, officially launched in October 1993, continues the traditions of two, long running count schemes which had formed the mainstay of waterfowl monitoring in the UK since 1947 (see Cranswick *et al.* 1997a). WeBS is funded by the British Trust for Ornithology (BTO), The Wildfowl & Wetlands Trust (WWT), Royal Society for the Protection of Birds (RSPB) and the Joint Nature Conservation Committee (JNCC), the last on behalf of English Nature (EN), Scottish Natural Heritage (SNH) and the Countryside Council for Wales (CCW), and the Environment and Heritage Service in Northern Ireland (EHS). All four WeBS partners take an active role in the planning of the scheme and the rolling programme of analyses that use WeBS data.

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, although some sites are counted year round.

In addition, 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 otherwise not noted for their importance by Core Counts which are normally conducted during high tide.

The success and growth of these count schemes reflects accurately the enthusiasm and dedication of the several thousands of volunteer ornithologists throughout the UK who participate. It is largely due to their efforts that waterfowl monitoring in the UK is held in international high regard.

The day-to-day running of the Core and Low Tide Count schemes is the responsibility of the National Organisers, listed inside the cover of this report, with assistance from a number of other staff. We recommend that these people are contacted in the first instance by anyone with queries regarding this report or requiring further information.

PROGRESS AND DEVELOPMENTS

Regional indexing of waders

A principal aim of WeBS is to monitor long-term trends in the populations of waterfowl in the UK. Inferences about long-term trends in populations are drawn from the use of index numbers which express the population at a given point in time relative to the population in a given base month and year. While national trends in waterfowl populations are informative, they may well mask changes occurring at a smaller scale such as within particular geographic regions or within particular habitats.

As part of the WeBS research programme, the Underhill indexing method has recently been implemented for waders at the regional level by the BTO. Count data from 103 British estuarine sites and eight non-estuarine sites have sufficiently long runs of counts to enable their data to be used. The indices for some regions had wide consistency intervals (indicating that the population indices were imprecise) for a range of species, especially for typically non-estuarine species such as Turnstone.

In a number of species, national increases in winter index numbers appear to be largely the result of increases in particular regions. For example, increases in the national winter index number of Avocet and Black-tailed Godwit appear to be driven by increases in the south east of England (Figure 1).

In some species, the national winter index numbers appear to mask changes occurring at the regional level. For example, while the national winter index of Turnstone has remained relatively stable, there have been increases in eastern Britain and decreases in south west Britain. Similarly for Dunlin, and particularly Grey Plover, winter index numbers for north east Scotland exhibit wide fluctuations from year to year which are not apparent in other regions and do not affect the national level.

The general conclusion of this analysis is that indices ought to be calculated at the regional scale as this can identify changes that are not apparent at the national level and may increase our understanding of national patterns of change which may have a regional basis. Once identified, an observed anomaly in the behaviour of a regional index should trigger off an exploration of the likely cause. These might include factors such as organic inputs and other forms of pollution or global climate change which could lead to species' redistribution, all elements that could influence the internationally important waterfowl populations in the UK.

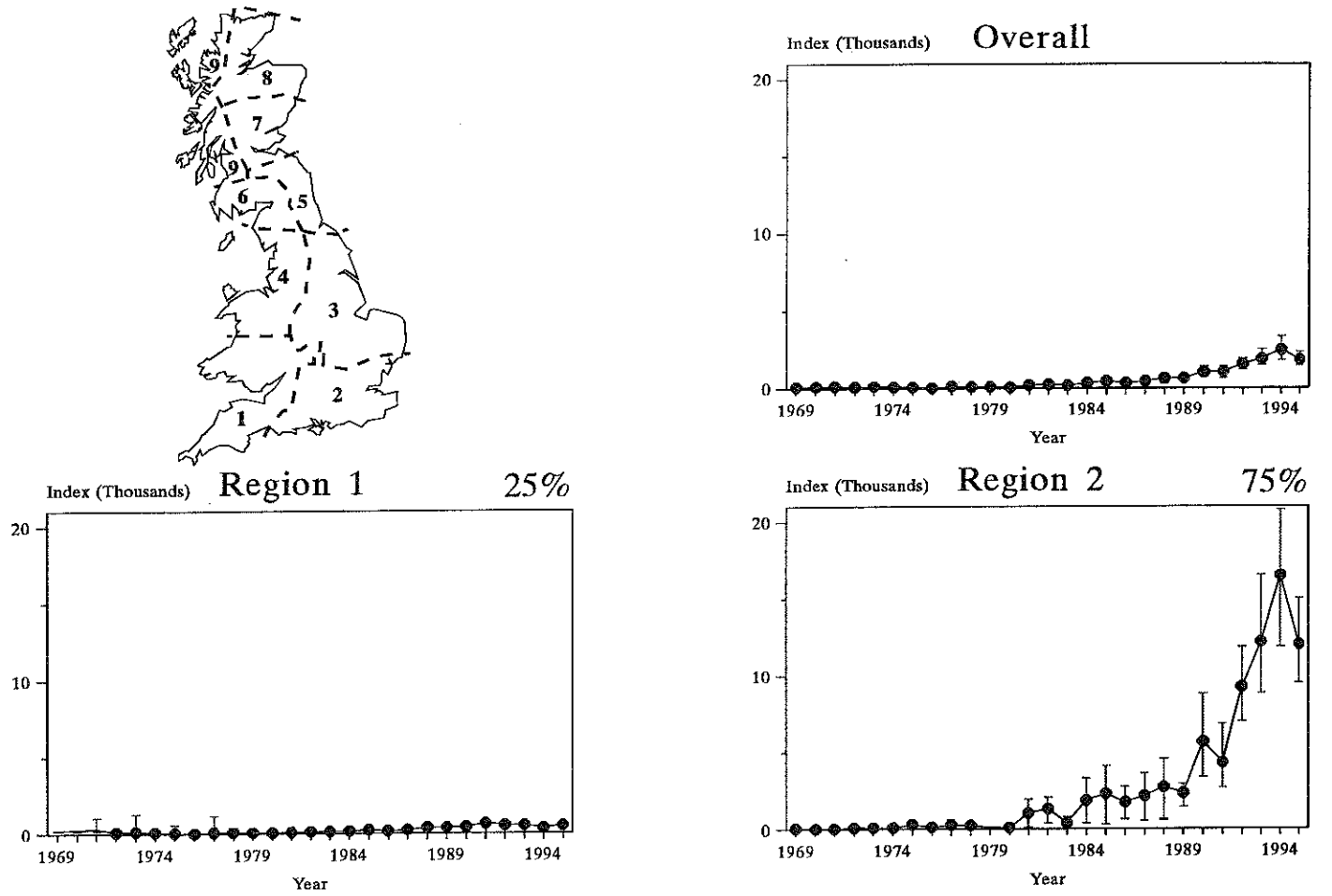


Figure 1. Regional index values for Avocet, 1969 to 1995.

Counting waterfowl on large estuaries at low tide

Although the WeBS Low Tide Counts have to date concentrated upon mostly medium-sized estuaries, it would be extremely valuable to undertake low tide counts of the very largest estuaries or "megasites" namely the Wash, Morecambe Bay, the Solway Firth, Lough Foyle, the Ribble, Thames, Humber and the Severn Estuaries. The size of these estuaries (or more precisely, the width of their mudflats) can cause considerable practical problems when attempting to establish the low tide distribution of feeding waterfowl.

In order to quantify the exact nature of the problems faced in counting such estuaries at low tide, field work was carried out on The Wash during the winter of 1996-97 by three members of BTO staff. Visits involved undertaking low tide counts of selected areas from the shore, and then walking out across the mudflats and counting again. As well as assessing the differences in counts, it was possible to investigate other factors such as the difficulty of long-distance identification, the lack of reference features, a greater risk of disruption by unfavourable weather conditions and, most significantly, observer safety. A report has been prepared which also discusses the results of a literature review of the low tide counting of large estuaries. Recommendations as to the best methods for counting these estuaries are made. A combination of volunteer counters, professional counters and aerial surveys would seem to be ideal.

SURVEYS AND PROJECTS

The behaviour and habits of many of the UK's waterfowl require surveys additional to the WeBS Core Counts to monitor adequately their populations, distribution and habitat requirements. Often, these involve different methods, such as dawn or dusk counts at roost sites, searching non-wetland areas by day, or breeding surveys. Many of these surveys have been drawn upon in this report to complement the WeBS Core Counts and, along with those adopting similar methodology or involving a large input from the WeBS counter network, are outlined below.

WWT and other Goose Censuses

In 1995-96, as in previous years, national surveys of Pink-footed and Icelandic Greylag Geese were undertaken in October and November (Mitchell 1996), involving counts of birds arriving at or leaving roosts. Censuses of the native Scottish population on the Uists were made in August and February (WWT unpubl. data). Full censuses of Greenland

White-fronted Geese, including birds in Ireland, were undertaken in autumn 1995 and spring 1996 by the Greenland White-fronted Goose Study and Irish National Parks and Wildlife Service (Fox & Francis 1996). Greenland Barnacle Geese were counted regularly by SNH and others on Islay (R. Lilley *in litt.*) and the Svalbard 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.

Other surveys

The long-term monitoring of sea-ducks in the Moray Firth by RSPB/BP ended in 1994-95, and consequently no dedicated counts of these species were made in the area in 1995-96. Boat-based counts of sea-ducks in Cardigan Bay were also discontinued. Since WeBS counts are likely to underestimate the number of birds present, caution should be urged regarding any apparent decrease in number of the relevant species as a result of the different count effort.

Breeding performance of swans and geese

Many goose surveys included age-counts of arctic nesting geese, made to assess the often dramatically varying breeding productivity of these birds. The results of these censuses for the last two years, and those of age counts of yellow-billed swans made at WWT Centres, are summarised below (see *Species Accounts* for the relevant references).

Species	1994-95		1995-96	
	% juv	brood	% juv	brood
Bewick's Swan	8-13.6	-	11-14.7	-
Whooper Swan	17-20.9	-	12.6-17.7	-
Pink-footed Goose	22.2	2.52	13.8	2.4
European Whitefront	23	2.9	20	1.8
Greenland Whitefront	13.7	3.6	18.8	3.96
Icelandic Greylag	23.2	2.34	11.5	2.4
Hebridean Greylag	19.3	4.21	22.5	2.5
Greenland Barnacle	9.3	2.24	7.2	2.0
Svalbard Barnacle	7.3	1.56	15.6	2.05
Dark-bellied Brent	5.8	2.05	0.3	1.63
Canadian Light-bellied Brent	0.5	n/a	3.9	n/a
Svalbard Light-bellied Brent	3.0	n/a	4.9	n/a

The proportion of young in Bewick's Swans was relatively low in both years. Whooper Swan and all migrant populations of grey geese, with the exception of Greenland Whitefronts, fared better in 1994 than in 1995. *Branta* populations generally recorded poor breeding success in both years, particularly Light-bellied Brents, although the proportion of young in Svalbard Barnacle was the highest for over 10 years.

Winter 1997-98 European Non-estuarine Coastal Waterfowl Survey

The 1984-85 Winter Shorebird Count (WSC) was a great success and remains the only comprehensive survey of the non-estuarine coastline of the UK to date. A new survey, the European Non-Estuarine Coastal Waterfowl Survey (NEWS) will be taking place between December 1997 and January 1998, and aims to estimate the population size of waders on the East Atlantic Flyway non-estuarine coastlines.

A UK pilot survey was carried out over the 1994-95 winter to assess the methods to be used for NEWS. A total of almost 1,000 kilometres of count sections which had been previously covered in the WSC were re-surveyed, allowing comparison between the two surveys. The analyses of the data collected during the pilot survey suggest significant decreases in the numbers of four "key" species since the WSC; Ringed Plover (-28%), Turnstone (-44%), Sanderling (-21%) and Purple Sandpiper (-53%) (Browne *et al.* 1996). Although some of the most important non-estuarine, non-cliff shoreline in Britain was not covered for the pilot survey, there must be concern that if these declines are repeated in many areas of the UK, then there would appear to have been a serious decline in the UK wintering populations of these species. Hopefully NEWS will reveal the true position. The data obtained from NEWS will also help to update the East Atlantic Flyway wader population estimates for some species.

CONSERVATION AND MANAGEMENT

Fish-eating birds

Pressure on Government has continued from fishermen to allow increased control and from conservation organisations to justify existing licensed killing of fish-eating birds. Cormorants and Goosanders are killed to prevent alleged serious damage to fisheries in Britain. In Scotland, Red-breasted Mergansers are also killed. Partly in response to this, in 1995, the Department of the Environment (DoE), Ministry of Agriculture Fisheries and Food and the Environment Agency launched a major research initiative to examine the interactions between fish and their avian predators. The bulk of this work will report in 1997 and 1998 and should shed new light on the perceived problems.

Concerns over control of fish-eating birds led to the 1981 Wildlife and Countryside Act being amended in 1995 to bring it more closely in line with the European Union Directive on the Conservation of Wild Birds. In practice, this change limited further the circumstances in which a fishery owner could kill a fish-eating bird without first applying for a licence and therefore allowing his or her reasons to be scrutinised.

The continuing expansion of the Cormorant population in Europe as a whole led to discussions in the European

arliament, with fisheries interests calling for whole opulations to be managed. Despite this, there remains no verall assessment of the scale of any 'problems' on which) base sensible decisions. During 1996, a workshop was eld in Holland which began the process of drafting a uropean Species Action Plan for Cormorants. Achieving greement on this plan is likely to take many years and will e dependent upon a positive international approach to nsure that decisions are based on sound science. Despite ıany years of study in many countries, fundamental spects of Cormorant ecology remain poorly understood. step forward was achieved at the Fourth International ormorant Workshop, held in Bologna in 1995, where ɜsearchers from the UK were at the forefront in achieving onsensus on techniques for measuring the daily food ɜquirements of Cormorants.

ead poisoning in waterfowl

he voluntary phase-out period for using lead shot in ɜetland areas began in September 1995. Since then, an ıcreasing number of non-lead alternatives for shooting ave become available, though shooters continue to xpress concerns about the safety, effectiveness and cost f some of the alternatives.

he DoE initiated research in 1996 into sales of alternative hot types, their lethality (i.e. whether alternatives can ıatch lead in terms of achieving clean kills and therefore ɜss suffering) and the uptake of lead and alternatives by ɜildfowl. There is a mass of evidence to show that lead is oisonous to wildfowl, so the research being undertaken n behalf of DoE is intended to monitor the use of lternatives to inform the decision on how successful the oluntary approach has been.

he voluntary phasing-out period for use in 12-bore guns of ɜad over wetlands ended in September 1997. Opinion on ıe approach to be taken after this has been split, with ome shooting organisations wanting the voluntary pproach to continue. On the other hand, some onservation organisations and shot manufacturers believe ıat legislation should be introduced rapidly to require the se of non-toxic shot in wetland areas. DoE carried out a onsultation exercise early in 1997 to establish the wishes f shooting, conservation and other organisations before eciding on a way forward. The annual meeting of ıterested organisations in June 1997 considered the ɜsults of the DoE consultation. It was agreed that the oluntary phase-out period would be extended for another ear (i.e. for shooting season 1997/8) during which time)oE (now Department of the Environment, Transport and ıe Regions) would review legislative options for the tatutory restriction of the use of lead gunshot over or near ɜetlands. These options are to be considered at a further ıeeting of interested parties in 1998.

African-Eurasian Migratory Waterbird Agreement

The African-Eurasian Waterbird Agreement (AEWA) is the largest Agreement of its kind concluded so far under the Bonn Convention on Migratory Species, encompassing about 120 Range States and covering 170 species. The Agreement aims to create a legal framework for a concerted conservation and management policy by Range States, thus securing a long-term future for migrant waterbirds. The AEWA consists of general conservation measures, including, for example, protection and management of sites, and an Action Plan.

The Action Plan includes sections which target threatened species conservation, requiring parties to prepare national or international species action plans for specified categories of species. It also promotes the collation of inventories of important habitat for waterbirds and the identification and protection of internationally important areas. The Action Plan so far relates only to migrant ducks, geese and swans together with storks and ibises. It is hoped that it will be extended to include waders in due course. Emphasis is placed also on research and monitoring of waterbirds and their habitats.

The UK was one of the countries who took a lead role in the final negotiations of AEWA in 1995. On 27 September 1996, the UK signed the Agreement and formal ratification is expected soon. The UK's contribution to the monitoring requirements of AEWA will, in large part, be undertaken by WeBS. We hope to link further the forward planning of WeBS special surveys to those of other European countries so as to contribute better to the AEWA objectives.

The Interim Secretariat of AEWA has been set up and produced its first AEWA newsletter in August 1996 to inform those in the countries concerned about the latest news on the agreement and its implementation. This can be obtained through Bert Lenten, c/o Interim Secretariat AEWA, Department of Nature Management, Room 3510, PO Box 20401, 2500 EK The Hague, The Netherlands.

Atlas of Anatidae Populations

Wetlands International, who moved from Slimbridge to the Netherlands in 1996, have published an atlas of wildfowl populations in Africa and Western Eurasia (Scott & Rose 1996), co-funded by JNCC and the Dutch Ministry of Agriculture, Nature Management and Fisheries. This defines the geographic limits of populations, lists and maps key sites for each population and attempts to assess the protection given to the species by the network of key sites. It will be an important source of data and information that will assist the practical implementation of the AEWA.

The atlas also contains a number of revised population estimates. New thresholds for international importance are provided for each distinct population, and for a number of populations not formally recognised previously. The new thresholds for existing populations have been adopted in

this WeBS report, whilst the implications for recognising the new populations are discussed in the relevant species accounts.

Populations occurring in the UK whose thresholds have changed are listed below, along with the change in the number of UK sites qualifying as internationally important based on counts presented in this report (most thresholds have increased and thus the number of internationally important sites has decreased).

Species	New threshold	Old threshold	Change in no. sites
Mute Swan	2,400	1,800	0
Whooper Swan	160	170	+1
Pink-footed Goose	2,250	1,900	-3
European White-fronted Goose	6,000	4,500	0
Greenland White-fronted Goose	300	260	-1
Dark-bellied Brent Goose	3,000	2,500	-4
Light-bellied Brent Goose (Svalbard)	50	40	0
Shelduck	3,000	2,500	-3
Wigeon	12,500	7,500	-9
Gadwall	300	250	-2
Pintail	600	700	+1
Red-crested Pochard	250	200	0
Tufted Duck	10,000	7,500	0
Common Scoter	16,000	8,000	-1
Velvet Scoter	10,000	2,500	0
Smew	250	150	0
Red-breasted Merganser	1,250	1,000	0
Goosander	2,000	1,500	0

Most revisions reflect genuine changes in population size. However, new sea-duck estimates result from better information collected during recent surveys in the Baltic. The change for Whooper Swan results from both better information and a real decline. Pintail is the only other population to have genuinely declined in number.

A review of international wader population sizes is underway. All current national and international thresholds relevant to the UK are listed in Appendix 1.

25th Anniversary of Ramsar Convention

The Ramsar Convention celebrated its 25th anniversary at the sixth Conference of the Contracting Parties in Brisbane during March 1996. The Conference was attended by 91 of the 93 Contracting Parties to the Convention together with 35 countries that are not yet signatories to the Convention. Over 90 national and international non-governmental organisations (including WWT and RSPB) were represented and made important contributions to the Conference.

The Conference produced a wide range of outputs that will direct national and international efforts to support the conservation and wise-use of wetlands and their waterfowl over the next three years. Most important was the adoption of the Convention's first Strategic Plan (which will cover the period 1996-2002). This sets out clearly the key steps to be undertaken at national and international levels to achieve wetland conservation and to halt and reverse current levels of wetland loss and degradation. Each Contracting Party is being asked to implement relevant actions of the Strategic Plan nationally and to report back progress to the next Conference of Parties in 1999.

The Conference also adopted a series of more specific Resolutions and Recommendations including several sponsored by the UK. One of these concerned the formal adoption by Ramsar of the suggested timetable for the revision of international population estimates for waterfowl (previously outlined on pages 12-13 of the 1993-94 WeBS Report). Other Ramsar decisions concerned the adoption of specific guidelines for the designation of Ramsar sites on the basis of their importance for fish; on the need for a review of other Ramsar site selection guidelines; on strategic planning in coastal zones; on the conservation of peatlands; as well as concerning a wide range of other issues. Further information on the outcome of the Conference is available from David Stroud at JNCC.

International management planning for geese

In response to recommendations from a Workshop of the Wadden Sea countries held in the Netherlands in 1994 (detailed in the 1993-94 WeBS Annual Report), progress continues to be made to develop a formal international management plan for Dark-bellied Brent Geese. During 1995 and 1996, initial discussions were held with farming, hunting and conservation organisations in all the Range States (Russia, Denmark, Germany, The Netherlands, France and the UK) in order to draft a Flyway Management Plan. A draft Plan was discussed at an international workshop held on Texel in The Netherlands in January 1997 and general consensus was reached as to the ideal objectives for the management of the population.

It is intended that the outputs of this meeting be discussed formally at inter-governmental level during 1997 with the aim of developing an international plan under the African-Eurasian Waterbird Agreement. The Range States were asked by Workshop participants to report back on progress in 1998.

The meeting noted that, further to recommendations made at the first IWRB Technical Meeting on Western Palaearctic Migratory Bird Management (1977, Paris), the Dark-bellied Brent Goose population should have fully recovered before contemplating the re-introduction of hunting. A further technical meeting of experts should also be convened in 1999 to test a simulation model for the population dynamics of Dark-bellied Brent Geese. This exercise will provide the technical scientific basis to complete the process of assessing the feasibility of opening some hunting on Dark-bellied Brent Geese, to be managed in accordance with the recommendations of the Management Plan. Workshop participants noted that this research and other important inputs (such as ethical, educational and other

considerations) will assist policy decisions yet to be undertaken. Copies of the workshop recommendations are available from JNCC.

In November 1995, international conservation measures for Svalbard Barnacle Geese were discussed in Dumfries. A workshop was held with representatives from governmental and non-governmental organisations (including WWT, JNCC and RSPB) from Scotland and Norway - including Svalbard itself. A draft plan prepared by Jeff Black of WWT was presented and is currently under active development.

In contrast to these positive developments for Brent and Barnacle Geese, DoE's report on the UK's implementation of the Birds Directive for the period 1993-1995 noted: "*No further progress has been made towards the finalisation of an inter-governmental Memorandum of Understanding nor the development and implementation of the international conservation plan* [for Greenland White-fronted Geese] *reported three years ago. There is a wide international misconception that this plan and MoU is finalised, but this is not the case*" (DoE 1996).

It is now over five years since an international Workshop in Wexford (see *Wildfowl and wader counts 1991-92*) agreed the outlines of a flyway conservation plan and the commitment of the four Range States (Ireland, Greenland, Iceland and the UK) to concluding formal agreement to co-operate must now be seriously questioned.

Site designations

Any site recognised as being of international ornithological importance is considered for classification as a Special Protection Area (SPA) under the EEC 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 recognising internationally important concentrations of waterfowl have been agreed by the Contracting Parties to the Ramsar Convention and require a site regularly to support either at least 1% of the international population of a particular species or sub-species, or a total of more than 20,000 waterfowl of all species (see Appendix 1 for further details). A list of proposed SPAs and Ramsar sites in the UK, including those identified for their importance for waterfowl, is maintained by JNCC (see Stroud *et al.* 1990). A further five Ramsar Sites and 10 SPAs were designated in the UK between 1 May and 1 December 1996 (see Appendix 1 for further details).

WEATHER

Following a wet end to winter 1994-95, spring 1995 began warm and relatively dry. **April** (16th[1]) and **May** (14th) were generally warmer than average, though clear days often led to night-time frosts. Many regions received lower than average rainfall in May. Summer 1995 was the third hottest on record, with temperatures averaging more than 2°C above the long term norm. In early **June** (18th), high pressure to the west of Britain and Ireland produced the unusual conditions of a warm and sunny west coast but cooler and cloudier weather in the east. Low rainfall saw water levels in many areas begin to fall, and temperatures soared to 34°C in the latter part of the month. The warm weather continued in **July** (16th), with low rainfall everywhere except the northwest. Water storage problems were by now becoming apparent in many areas, particularly those dependent on overground water sources. **August** (13th) 1995 was the hottest on record, with a national rainfall deficit of around 85%. Northern Ireland received only 10% of the average monthly rainfall.

A slight reprieve from the dry weather arrived in **September** (10th). As deep depressions tracked westwards across the UK, much of the country was subject to strong winds and heavy rain prior to the count date. Many areas in eastern, central and southern England were particularly wet, and there was serious flooding in parts of Grampian and the Moray Firth. A brief spell of high pressure during the third week was the only break from the predominating westerly cyclonic conditions.

Southwesterly weather saw high pressure dominate throughout **October** (8th), resulting in another exceptionally warm month. Counties in southern and eastern England received just 10-20% of their usual rainfall, though central and southwestern parts of Scotland received more than double their monthly norm.

November (12th) was again mild, particularly in the southwest. There was a preponderance of southerly and easterly winds and high pressure during the first week, though a low pressure area to the southwest of the UK brought wetter conditions by the priority count date. A cold northeasterly airflow followed, bringing snow and rain to Scotland and northern England on the 15th, spreading across the whole country over the following few days. Unsettled conditions brought the month to a close.

An intense anticyclone, centred over western Europe, brought cold, easterly winds across the UK in early **December** (10th). Dense, freezing fog in many areas of England and Wales caused severe disruption to many WeBS counts. Following a brief period of wetter weather, cold air spread across the country during Christmas Eve. Most of the UK was gripped by extremely cold conditions

[1] Priority dates for WeBS counts in each month are given in brackets. See *Coverage* for further details.

for the remainder of the month, with temperatures dropping as low as -27°C in the Scottish Highlands.

After several days of freezing conditions in Scotland over the Christmas period, the British Association for Shooting and Conservation (BASC) issued a general call for voluntary restraint[1] by shooters in Scotland. Preparations were made for the implementation of a statutory ban[2], although a mild spell at the beginning of January ensured that this was not required. Additional 'cold counts' were gratefully received for some WeBS sites during this period.

High pressure in central Europe created unusually frequent southerly and easterly airflows throughout **January** (21st). As a result, many eastern districts were very dry as westerly fronts failed to pass across the country. Conditions during this period were generally mild. The cold weather of late December returned towards the end of the month, and though night time temperatures were far less severe, several places in England and Waled stayed below freezing on the 26th and 27th.

Continuing cold weather in early **February** (18th), with average temperatures in most areas 1-2°C below average, prompted another cold weather alert. With no foreseeable let up and weather conditions meeting the established criteria, a statutory shooting ban was implemented in England and Wales on the 10th, remaining in force until the 20th. A number of 'cold counts' were again received during this prolonged cold spell prior to the count date. The series of low pressures passing westwards across the country after the 15th brought some respite for those worried about the continuing lack of rain. Northeasterly gales along the North Sea coast caused breaches of sea defences on the north Norfolk coast and the road to Spurn Point on the Yorkshire coast.

The winter closed with another easterly dominated month in **March** (10th). High pressure over Scandinavia saw daytime temperatures 3-3.5°C below average in eastern counties, though night-time temperatures were only marginally below average. This cold easterly airflow preceded the March count date bringing rain and snow over southern Britain. Most areas again received below average rainfall, with the exception of some parts of eastern and southwest Scotland.

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

	ice	S	O	N	D	J	F	M
Northern Ireland	>0%	0	0	0	3	0	0	0
	>74%	0	0	0	3	0	0	0
Scotland	>0%	0	0	4	21	5	18	1
	>74%	0	0	1	13	4	9	0
N England	>0%	0	0	0	22	2	4	0
	>74%	0	0	0	9	0	2	0
S England	>0%	0	0	0	31	5	3	0
	>74%	0	0	0	17	2	1	0
Wales	>0%	0	0	0	26	10	5	0
	>74%	0	0	0	13	4	2	0

Winter 1995-96 was similarly cold in most parts of Northwest Europe, with many countries receiving well below average rainfall throughout the whole winter. September saw generally mild conditions for the Baltic states and heavy rainfall in eastern Europe. A very warm and dry October followed. Only the westernmost fringes of Europe escaped colder than average conditions in November, with the fourth week producing the coldest temperatures across many central, eastern and Baltic countries. December, January and February were cold, December and February exceptionally so, with temperatures generally 2-4°C below the long term norm in almost all flyway countries during these months. The Wadden Sea experienced an 'ice-winter' with extensive intertidal freezing. Only Mediterranean regions enjoyed mild conditions. Rainfall was commonly well below normal. The cold, dry weather continued into March, particularly in eastern Europe, rounding off an unusually cold and dry winter.

[1] Voluntary restraints are called when more than half the selected 23 meteorological stations throughout the country have recorded frozen ground states for seven consecutive days.

[2] Statutory bans may be imposed after 14 days of continuous freezing conditions or 14 non-consecutive days of freezing conditions if interspersed with thaws of less than three days.

WeBS Core Counts

NTERPRETATION OF WATERFOWL COUNTS

Caution is always necessary in the interpretation and application of waterfowl counts given the limitations of these data. This is especially true of the summary form which, by necessity, is used in this report. The 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 organisations.

Explanation of the basis for the qualifying levels used for defining both the international and national importance of sites is provided in Appendix 1. It is necessary to bear in mind the distinction between sites that *regularly* hold wintering populations of national/international importance and those which may happen to exceed the appropriate qualifying levels only in occasional winters. This follows the recommendation of the Ramsar Convention, which states that key sites identified on the basis of numbers of birds should support such numbers on a regular basis 'calculated as the mean winter maxima from the last five seasons for most species in this report. Nevertheless, sites which irregularly support nationally/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 (e.g. *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 monthly 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 during 1995-96. 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 normal once-monthly WeBS visits are necessary to assess more accurately the rapid turnover of waterfowl populations that occurs during times of migration or cold weather movements.

It should also be noted that the majority of count data are collected between September and March, when most species of waterfowl are present in the UK in highest numbers. Data are collected during other months and have been presented (see *Data Presentation*) 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.

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.

METHODS

WeBS Core Counts are made using so-called "look-see" methodology (Bibby *et al.* 1992), whereby the observer is familiar with the species involved, and surveys the whole of a predefined area (a WeBS project is underway to map precisely all current recording units).

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

Numbers of the following species are recorded: divers, grebes, Cormorant, herons, Spoonbill, flamingoes, swans, geese, ducks, rail, cranes, waders and Kingfisher. Counts of gulls and terns are optional.

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 such counts.

'Priority dates' are recommended for the once monthly counts. 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 where a number of counters are required to

cover large sites due to the high possibility of local movements affecting count totals. Local Organisers ensure co-ordination in these cases.

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 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.

Numbers presented in this report are not rounded. Site totals calculated as the sum of counts from several sectors may imply a false sense of accuracy if different count methods have been used, e.g. 5,000 birds estimated on one sector and a count of seven individuals on another is presented as 5,007. It is safe to assume that any large count includes a proportion of estimated birds. Reproducing the submitted counts in this way is deemed the most appropriate means of presentation.

Most waterfowl 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 in the *Species Accounts.*

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, e.g. in calculating site importance (see *Species Accounts*).

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

Observers do not receive official training, but most are experienced ornithologists and/or counters. Any particularly unusual counts are checked by the National Organisers and are confirmed with the counters if necessary.

DATA PRESENTATION

The format of data presentation follows closely that of recent reports. The recording year adopted by WeBS is from April until March of the following calendar year. The period covered comprehensively by this report comprises the entire winter (September to March for wildfowl, November to March for waders), when most counts are made. Counts of wildfowl made outwith the September to March period have been used in calculating site totals where they represent the maxima for the count year.

Following the progressive inclusion of various species or species groups in the count scheme in recent years, the amount of data considered in this report will differ for each (see e.g. *Indices*). Site assessments for most wildfowl and waders, which have been monitored for many decades, are based on counts from five years. For some others, particularly waders at inland sites, site assessments are based only on fewer years' data and, consequently, should be viewed with more caution. Recording gulls and terns is optional, and thus these data do not exist for many sites. National totals, therefore, are incomplete for these species.

Several supplementary surveys of geese and other species using non-WeBS methodology were also conducted at WeBS and other sites in 1995-96 (see *Surveys and Projects*). Data derived from sources other than the WeBS Core Counts and grey goose censuses are clearly identified throughout.

Tables 1 & 2 present total counts for all species. This enables an assessment of the true scale of WeBS monitoring with regard to particular species. In order to save space, the following abbreviations for wetland types have been used for site names in all tables:

Br.	Broad	GP(s)	Gravel pit(s)
R.	River	Est.	Estuary
Hbr	Harbour	Rsr	Reservoir
Fth	Firth	Lo.	Loch or Lough
WP	Water Park		

The location of all sites mentioned in this report are given in Appendix 2, whilst the location of key sites, including all estuaries, are also shown in Figure 3.

COVERAGE

Co-ordinated, synchronous counts are advocated to prevent double-counting or birds being missed and consequently priority dates are recommended for the monthly WeBS Core Counts.

1995-96 priority count dates:

16 April	8 October
14 May	12 November
18 June	10 December
16 July	21 January
13 August	18 February
10 September	10 March

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.

Counts were received from 1,985 sites of all habitats for the count year April 1995 to March 1996, comprising 3,038 count units (the sub-divisions of large sites for which separate counts are provided). Both figures are slightly higher than in recent years.

The number of sectors counted in each country continued to rise in 1995-96, with the totals of 1,902 in England, 113 in Northern Ireland, 757 in Scotland and 235 in Wales, all up to 10% higher than the respective figures in recent years. County totals for Lancashire (113), Lincolnshire (94) and Devon (74) were notable in England, with counts from 50 or more sectors in Oxfordshire, Derbyshire, Hampshire, Suffolk, Gloucestershire, Kent, Cornwall, Warwickshire, Nottinghamshire, West Sussex, Norfolk and Essex. County Down (84) contributed the majority of the Northern Ireland total, with Dyfed (77), Gwynedd (73) and Clwyd (50) providing most of the Welsh records. Dumfries & Galloway (134), Central (126), Strathclyde (100) and Tayside (100) were the highest Scottish counts, the first benefitting from fieldwork by the Royal Air Force Ornithological Society (RAFOS) in early winter. Totals for the Channel Islands (29) and Isle of Man (2) were similar to 1994-95.

Counts were made at all estuarine sites at least once during the 1995-96 winter except at the Blyth (Suffolk) Estuary, Christchurch Harbour, Hunterston, Spey and Fowey Estuaries.

WeBS coverage in 1995-96 is shown by 10 km squares in Figure 2. 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 Marshes fall in four 10 km squares, broadly indicating the extent of the whole site. However, Lough Neagh is represented by just one dot indicating the centre of the count unit, even though the extent of the counted area stretches over several 10 km squares. In all, WeBS count units were visited in 1,084 different 10 km squares during 1995-96, a similar total to the 1,050 - 1,100 of recent years. As ever, areas with few wetlands or small human populations are apparent on the map as areas with little coverage. Notable differences from the picture of several years ago is the great increase in coverage in central Scotland and in Herefordshire also. The efforts of RAFOS in South-west Scotland in 1995-96 are reflected in the map also.

The location of many of the key sites mentioned in the report and all estuaries are shown in Figure 3. The county and grid reference of all sites mentioned by name in this report are given in Appendix 2.

Figure 2. COVERAGE BY 10 KM GRID SQUARES FOR WeBS IN THE UK, ISLE OF MAN AND THE CHANNEL ISLANDS AND FOR I-WeBS IN THE REPUBLIC OF IRELAND IN 1995-96.

Small dots represent 1-2 WeBS count unit per 10 km square, medium dots represent 3-4 units and large dots represent five or more units.

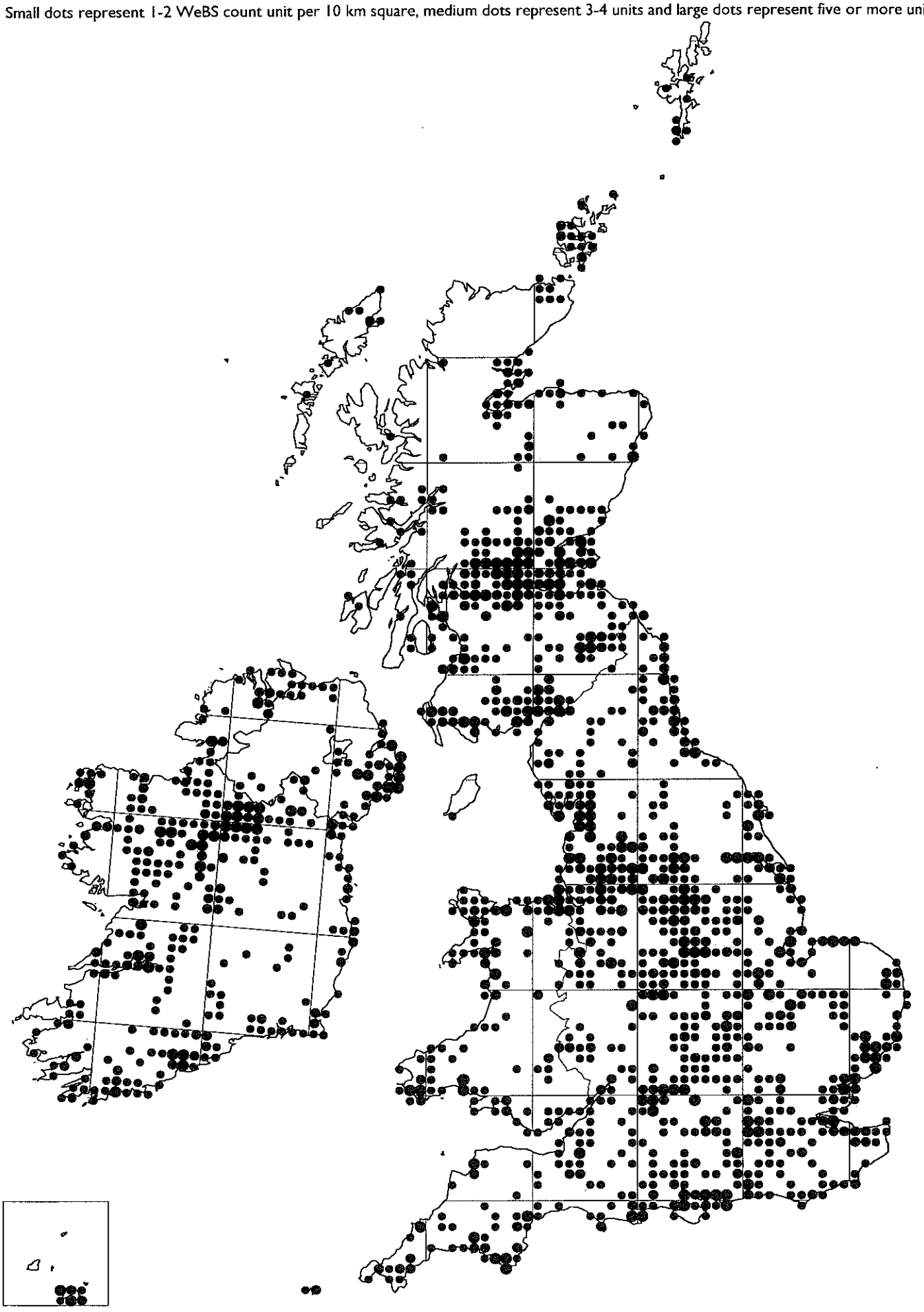
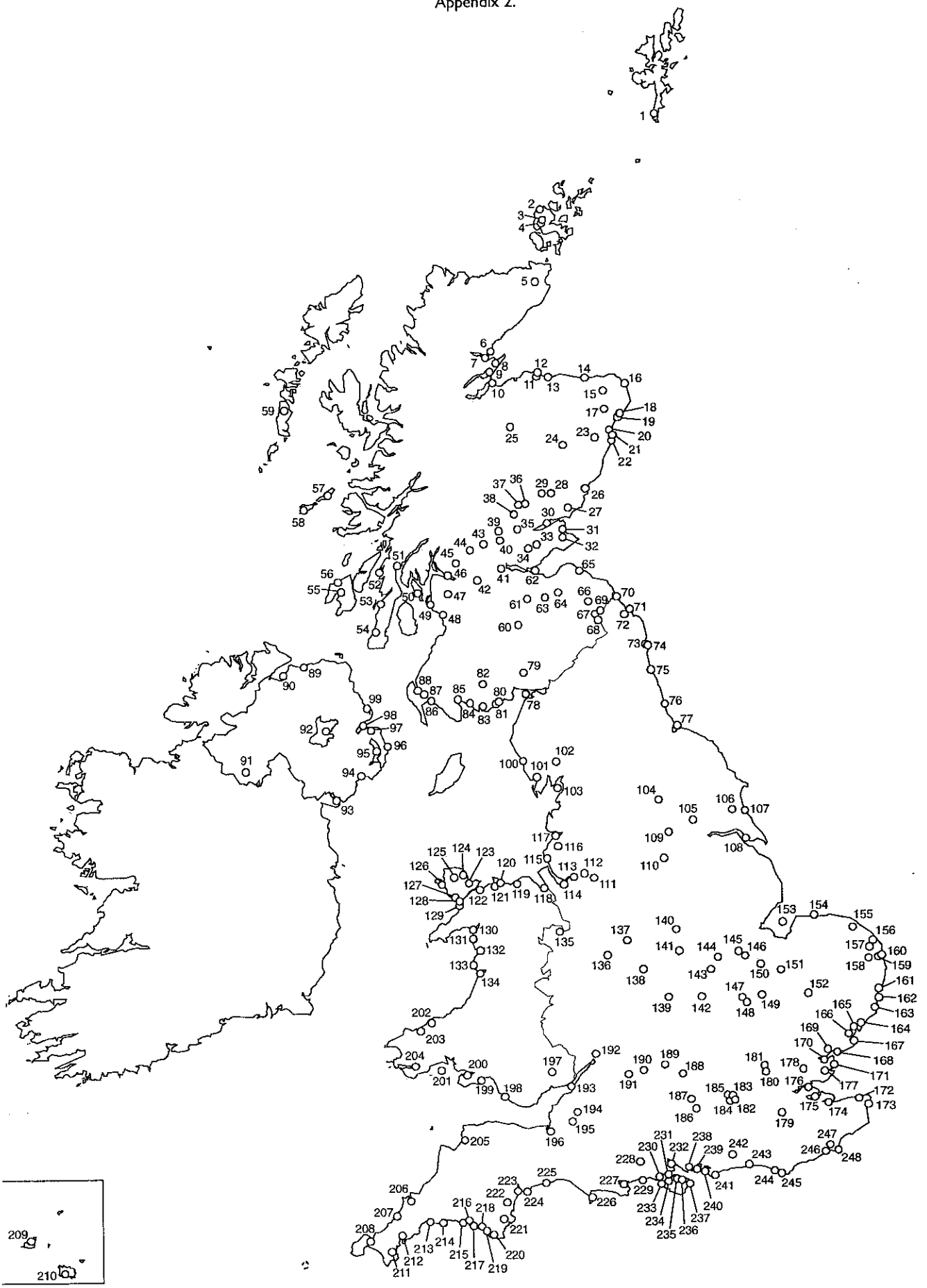


Figure 3. LOCATION OF IMPORTANT WeBS SITES

ircles show the central position of 248 important WeBS sites, including all estuaries, in the UK and the Channel Islands. Sites chosen include ost internationally important sites, but also sites of regional importance in areas with few wetlands or few sites counted by WeBS. Thus, the inclusion of a site does not imply any measure of relative conservation importance. The county and grid reference for each site are given in Appendix 2.



Key

1 Loch of Spiggie
2 Loch of Boardhouse
3 Loch of Harray
4 Loch of Stenness
5 Loch Watten
6 Loch Fleet
7 Dornoch Firth
8 Loch Eye
9 Cromarty Firth
10 Inner Moray Firth
11 Loch Spynie
12 Lossie Estuary
13 Spey Estuary
14 Deveron Estuary
15 Fedderate Reservoir
16 Loch of Strathbeg
17 Haddo House Lakes
18 Ythan Estuary
19 Meikle Loch Slains
20 Corby Loch
21 Don Estuary
22 Dee (Scotland) Estuary
23 Loch of Skene
24 Dinnet Lochs
25 Loch Garten
26 Montrose Basin
27 Crombie Reservoir
28 Kinnordy Loch
29 Loch of Lintrathen
30 Tay Estuary
31 Eden Estuary
32 Cameron Reservoir
33 Ballo Reservoir
34 Loch Leven
35 Dupplin Lochs
36 Loch Clunie
37 Loch of the Lowes
38 Loch Tullybelton
39 Drummond Pond
40 Carsebreck & Rhynd Lochs
41 Carron Valley Reservoir
42 Gadloch
43 Loch Mahaick Doune
44 Lake of Menteith
45 Loch Lomond: Endrick Mouth
46 Inner Clyde Estuary
47 Castle Semple & Barr Lochs
48 Irvine/Garnock Estuary
49 Hunterston Estuary
50 Loch Quien
51 Loch Gilp
52 Loch na Cille
53 Rhunahaorine
54 Machrihanish
55 Loch Indaal
56 Loch Gruinart
57 Coll
58 Tiree
59 Loch Druidibeg
60 Cowgill Reservoirs
61 West Water Reservoir
62 Forth Estuary
63 Gladhouse Reservoir
64 Fala Flow
65 Tyninghame Estuary
66 Hule Moss
67 River Tweed: Kelso to Coldstream
68 Hoselaw Loch
69 Hirsel Lake
70 Tweed Estuary
71 Lindisfarne
72 Holborn Moss
73 Alnmouth
74 Coquet Estuary
75 Blyth (Northumberland) Estuary
76 Durham Coast
77 Tees Estuary
78 Solway Estuary
79 Castle Loch (Lochmaben)
80 Rough Firth
81 Auchencairn Bay
82 Loch Ken
83 Kirkcudbright Bay
84 Fleet Bay
85 Wigtown Bay
86 Luce Bay
87 Black & White Lochs (Loch Inch)
88 Loch Ryan
89 Bann Estuary
90 Lough Foyle
91 Upper Lough Erne
92 Loughs Neagh & Beg
93 Carlingford Lough
94 Dundrum Bay
95 Strangford Lough
96 Outer Ards Shoreline
97 Clandeboye Lake
98 Belfast Lough
99 Larne Lough
100 Irt/Mite/Esk Estuary
101 Duddon Estuary
102 Windermere
103 Morecambe Bay
104 Hay-a-Park Gravel Pits
105 Lower Derwent Valley
106 Tophill Low Reservoirs
107 Hornsea Mere
108 Humber Estuary
109 Fairburn Ings
110 Wath & Broomhill Ings
111 Rostherne Mere
112 Woolston Eyes
113 Fiddlers Ferry Lagoons
114 Mersey Estuary
115 Alt Estuary
116 Martin Mere
117 Ribble Estuary
118 Dee (Eng/Wal) Estuary
119 Clwyd Estuary
120 Colwyn Bay
121 Conwy Estuary
122 Lavan Sands
123 Red Wharf Bay
124 Dulas Bay
125 Alaw Reservoir
126 Inland Sea
127 Cefni Estuary
128 Braint Estuary
129 Foryd Bay
130 Traeth Bach
131 Artro Estuary
132 Mawddach Estuary
133 Dysynni Estuary
134 Dyfi Estuary
135 Ellesmere Group
136 Belvide Reservoir
137 Blithfield Reservoir
138 Middle Tame Valley GPs[1]
139 Draycote Water
140 Attenborough GPs
141 Swithland Reservoir
142 Pitsford Reservoir
143 Eyebrook Reservoir
144 Rutland Water
145 Baston/Langtoft GPs
146 Deeping St James Gravel Pits
147 Grafham Water
148 Little Paxton GPs
149 Fen Drayton Gravel Pit
150 Nene Washes
151 Ouse Washes
152 Lackford Gravel Pits
153 The Wash
154 North Norfolk Marshes
155 Gunton Park
156 Hickling Broad
157 St Benets Levels
158 Middle Yare Marshes
159 Berney Marshes
160 Breydon Water
161 Blyth (Suffolk) Estuary
162 Minsmere
163 Alde Complex
164 Deben Estuary
165 Orwell Estuary
166 Stour Estuary
167 Hamford Water
168 Colne Estuary
169 Abberton Reservoir
170 Blackwater Estuary
171 Dengie Flats
172 Thanet Coast
173 Pegwell Bay
174 Swale Estuary
175 Medway Estuary
176 Thames Estuary
177 Crouch/Roach Estuary
178 Hanningfield Reservoir
179 Sevenoaks Wildfowl Reserve
180 King George V Reservoir
181 Cheshunt Gravel Pits
182 Queen Mary Reservoir
183 Staines Reservoir
184 Thorpe Water Park
185 Wraysbury Gravel Pits
186 Stratfield Saye
187 Theale Gravel Pits
188 Dorchester Gravel Pits
189 Lower Windrush Valley Gravel Pits
190 Cotswold Water Park East
191 Cotswold Water Park West
192 Walmore Common
193 Severn Estuary
194 Chew Valley Lake
195 Blagdon Lake
196 Somerset Levels
197 Llandegfedd Reservoir
198 Ogmore Estuary
199 Swansea Bay
200 Burry Inlet
201 Carmarthen Bay
202 Teifi Estuary
203 Nevern Estuary
204 Cleddau Estuary
205 Taw/Torridge Estuary
206 Camel Estuary
207 Gannel Estuary
208 Hayle Estuary
209 Guernsey Shore
210 Jersey Shore
211 Helford Estuary
212 Fal Complex
213 Fowey Estuary
214 Looe Estuary
215 Tamar Complex
216 Plym Estuary
217 Yealm Estuary
218 Erme Estuary
219 Avon Estuary
220 Kingsbridge Estuary
221 Dart Estuary
222 Teign Estuary
223 Exe Estuary
224 Otter Estuary
225 Axe Estuary
226 Fleet/Wey
227 Poole Harbour
228 Mid Avon Valley
229 Christchurch Harbour
230 North-West Solent
231 Beaulieu Estuary
232 Southampton Water
233 Yar Estuary
234 Newtown Estuary
235 Medina Estuary
236 Wootton Estuary
237 Brading Harbour
238 Portsmouth Harbour
239 Langstone Harbour
240 Chichester Harbour
241 Pagham Harbour
242 Pulborough/Amberley Brooks
243 Adur Estuary
244 Newhaven Estuary
245 Cuckmere Estuary
246 Rye Harbour/Pett Levels
247 Walland Marsh
248 Dungeness Gravel Pits

[1] Site previously known as Kingsbury/Coton Pools

TOTAL NUMBERS

The total numbers of waterfowl recorded by WeBS in winter 1995-96 are given in Tables 1 & 2 for Great Britain (including the Isle of Man but excluding the Channel Isles) and Northern Ireland, respectively. Figures in these tables are derived from the WeBS Core Counts and goose censuses only. Thus, totals for certain species, e.g. some sea-ducks, are considerably under-estimated. The totals for England, Scotland, Wales, the Isle of Man and the Channel Islands are each given separately in the Appendices.

For the first time, data have been provided for all months in these tables. Coverage is less good during the summer months, as shown by the number of count units visited, and comparison with the winter period should be made with caution.

Also, numbers of waders at sites of all wetland habitats have been summed. Totals are provided for estuarine/ coastal and inland sites separately in Appendix 3. This allows comparison of coastal figures with previous reports and also provides some indication of the proportion of each species that utilises inland wetlands.

Numbers of gulls and terns are also listed, but counts are not included in the total numbers of waterfowl to allow comparison with previous reports. Further, coverage of these species was optional and thus incomplete at a national level.

Wildfowl and allies

Notable counts in 1995-96 included that of Red-throated Diver, the highest total yet recorded by WeBS in Britain, though mainly the result of a particularly large count at just one site. Peak numbers of both Little Grebe and Cormorant were also the highest since these species were included in the count scheme, and both surpassed their respective British winter estimates by a considerable margin.

Most marked amongst the herons are the high totals of Little Egret, around double the values of 1994-95. Grey Heron totals were also above the values of recent years.

The February total of Bewick's Swans was the third highest of this species by WeBS, and undoubtedly influenced by cold weather on the continent; counts of other swans were about average. Geese numbers showed mixed fortunes: counts of Pink-footed Geese were low compared with the steady increase since 1980s, whilst Icelandic Greylags fell to their lowest level since 1984; European White-fronted Goose numbers were the highest since 1987-88 and Greenland Whitefronts the highest to date.

Notable counts of duck species included the largest ever total of Shoveler, considerably higher than the British winter estimate. Mallard numbers appear to have stabilised after the recent decline, whilst Pochard numbers showed a notable increase for the first time in many years. Although sea-duck counts are always variable, that of Common Scoter was much higher than normal, and represented around half the estimated population. Numbers of Smew and Goosander rose markedly in February, presumably forced across from the near continent by the particularly cold weather, and resulting in the highest WeBS total of Goosander to date. Following several years of relatively low totals, Ruddy Duck numbers increased markedly and also reached a record high in 1995-96. Coot numbers have risen progressively in recent years, and the largest count to date was made in November.

Although the number of birds in the UK may increase as a result of cold weather forcing birds from the near continent, it is possible that cold weather in the UK may result in lower count numbers. Still waters, such as reservoirs and gravel pits, may be covered in ice, causing birds to seek open water. Wildfowl are known to move south and west to Ireland and the continent, but may also move locally, particularly to coastal and riverine sites, less prone to freezing. Since rivers in particular are less well covered by WeBS, a larger proportion of birds may go unrecorded during especially cold periods.

Twenty species of escaped non-native wildfowl were recorded in 1995-96, compared with 17 in 1994-95. Including the five species not recorded in the first year, 13 were recorded in greater numbers (calculated by summing site maxima) in 1995-96.

Waders

Waders on estuaries and coastal wetlands

The peak total of just under 1.5 million waders recorded in January for all UK estuarine /coastal sites is lower than the average of recent years. Much of this is due to low numbers of Lapwing and Golden Plover during mid-winter. Both these species, that winter largely on non-wetland habitat, exhibited major peaks in November 1995, with steady declines as the winter progressed. British recorded totals of Avocet, Purple Sandpiper and Turnstone were also rather lower than the average in the 1995-96 winter. The first two of these species are not indexed so the national totals are one of the few published guides to population trends. Similarly Snipe and Jack Snipe are not included in the indexing programme. Both these species registered generally above average totals in 1995-96. Notable during passage periods is the very high yearly peak of 382 Little Stint in Britain in September. This is around double the average figure, although wide fluctuations in numbers seen in this country occur frequently due to variations in breeding success in N Europe. Spring totals of Little Stint were rather low but in contrast Sanderling numbers were above average. The particularly high August total of 2,005 Whimbrel is also notable.

The main item of note regarding the Northern Irish country totals was the above average numbers of Golden Plover and Lapwing for much of the winter.

Waders on inland wetlands

British totals of all waders recorded in the 1995-96 winter were similar to those of recent years. Typically just above 1,000 sites were counted each winter month. Lapwing and Golden Plover peaked at around 200,000 birds in November, also the peak month for coastal sites. The numbers of Black-tailed Godwit declined markedly in January, increasing to December levels again by February. Conversely, the numbers at coastal sites increased in January, and slightly decreased in February. The spell of very cold weather during December 1996, with the widespread freezing over of many inland wetland sites, is likely to have led to the movement of several wader species, such as Black-tailed Godwit, Snipe and Curlew, from inland sites to the coast.

The numbers of Oystercatchers returning to their breeding areas peaked at around 9,000 birds in March, with Black-tailed Godwit and Redshank peaking a month later in April.

The numbers of wintering Green Sandpiper remained relatively constant at between 50 and 60, lower than the passage peak of 332 in July.

Gulls and terns

Gulls were counted at rather more sites than in previous years, with numbers of several species recorded in substantially higher numbers, in particular Herring and Lesser Black-backed Gull. In Northern Ireland a similar increase was noted but with all the commoner species recorded in above average numbers.

Most notably the number of Arctic and Little Terns recorded in Great Britain in 1995-96 was well above the values noted in recent years. As with gulls, counting of terns is optional so that national totals are prone to fluctuate widely according to the actual sites which are counted in any one month.

Kingfisher

Totals were above the values of recent years.

Table 1. TOTAL NUMBERS OF WATERFOWL RECORDED BY WeBS AT ALL WETLAND HABITATS IN GREAT BRITAIN DURING 1995-96.

Wader totals for coastal and inland sites are given in Appendix 3

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Number of sites visited	*793*	*753*	*703*	*724*	*765*	*1,240*	*1,477*	*1,598*	*1,481*	*1,560*	*1,509*	*1,460*
Number of count units visited	*1,209*	*1,102*	*1,015*	*1,048*	*1,188*	*1,861*	*2,195*	*2,364*	*2,150*	*2,326*	*2,270*	*2,134*
Red-throated Diver	71	38	4	9	12	53	158	386	1,361	278	345	434
Black-throated Diver	9	4	2	1	5	11	5	23	43	27	7	17
Great Northern Diver	6	24	2	1	3	2	11	40	47	41	34	45
Unidentified diver	1	0	0	0	1	0	0	0	0	2	1	2
Little Grebe	867	756	630	1,124	2,201	4,060	4,061	4,128	3,744	2,780	2,255	2,151
Great Crested Grebe	4,213	3,875	3,416	5,189	6,269	8,571	8,701	8,858	7,570	6,273	5,860	6,859
Red-necked Grebe	23	8	3	4	11	32	20	25	54	29	40	80
Slavonian Grebe	26	17	2	2	1	42	50	86	255	137	157	258
Black-necked Grebe	12	7	9	14	13	26	25	38	48	42	62	32
Bittern	0	0	0	0	0	1	0	4	14	12	14	12
Cattle Egret	0	0	0	0	0	0	0	0	1	0	0	0
Little Egret	118	21	25	113	411	661	733	665	370	277	184	211
Great White Egret	0	0	0	0	1	0	0	0	0	0	1	1
Grey Heron	1,839	2,013	1,743	2,049	3,020	3,923	4,047	3,564	3,040	2,598	2,487	2,646
Spoonbill	0	4	2	1	2	6	3	4	5	3	2	3
Cormorant	4,974	3,881	3,803	4,936	8,324	13,540	14,221	15,752	14,243	11,561	10,874	10,519
Chilean Flamingo	0	0	0	0	0	0	0	0	0	1	0	0
Mute Swan	6,753	6,104	6,305	7,534	8,461	13,350	15,646	15,483	14,598	14,608	12,418	11,259
Black Swan	8	5	5	5	10	5	13	16	15	17	14	14
Bewick's Swan	5	2	0	0	0	1	11	2,679	4,642	7,992	8,014	2,452
Trumpeter Swan	0	0	0	0	0	0	0	0	0	0	2	0
Whooper Swan	193	27	15	9	12	20	417	2,879	3,155	3,477	3,066	2,501
Magpie Goose	0	0	0	0	0	0	0	0	0	0	0	1
Swan Goose	0	11	12	0	13	19	14	22	11	27	18	23
Bean Goose	0	0	0	0	0	1	71	221	20	80	224	44
Pink-footed Goose	23,614	322	48	27	45	18,376	200,343	181,813	91,074	73,146	36,062	48,936
White-fronted Goose[1]	0	0	0	0	0	0	0	0	2	0	9	0
European Whitefront	1	1	1	3	2	14	16	286	1,132	5,604	6,903	3,954
Greenland Whitefront	178	2	0	0	0	0	17,594	21,546	19,822	17,533	18,340	19,909
Lesser White-fronted Goose	0	0	1	1	0	0	2	0	0	0	3	0
Greylag Goose: Icelandic	1,295	134	316	408	617	1,309	47,814	82,722	21,648	21,595	23,461	12,995
Naturalised[2]	5,694	5,073	6,788	7,808	11,245	15,838	15,584	16,149	14,684	13,588	12,357	10,329
Scottish	-	-	-	-	2,587	-	-	1,879	-	-	2,580	-
Bar-headed Goose	10	5	8	3	2	9	12	11	8	17	11	11
Snow Goose	29	2	25	29	29	57	95	59	33	59	65	55
Ross's Goose	1	1	1	1	1	1	0	1	1	1	2	1
Emperor Goose	0	1	0	0	0	1	1	1	1	0	1	1
Canada Goose	9,946	9,655	17,190	19,538	25,686	35,120	37,635	37,808	34,652	35,195	28,429	20,344
Barnacle Goose	9,718	3,960	138	257	96	362	9,167	46,707	8,099	47,276	17,241	6,302
Brent Goose[1]	0	0	0	0	0	0	0	0	40	48	61	0
Dark-bellied Brent	2,802	588	25	60	68	145	20,625	80,436	77,637	87,847	87,584	101,076
Light-bellied Brent	29	6	0	1	0	588	70	2,518	2,406	1,396	304	432
Red-breasted Goose	0	0	0	0	0	2	0	0	0	0	0	0
Egyptian Goose	34	35	61	67	119	228	113	125	84	95	100	61
Feral/hybrid Goose	40	48	43	63	57	46	254	286	229	256	203	139
Ruddy Shelduck	5	2	2	10	6	2	9	11	3	5	4	4
Cape Shelduck	1	0	0	0	0	0	0	0	1	0	0	0
Paradise Shelduck	0	0	0	1	1	0	0	0	0	0	0	1
Shelduck	25,636	16,805	17,455	15,156	17,350	26,176	41,132	62,294	60,723	77,890	69,150	58,411
Muscovy Duck	7	6	8	6	5	69	79	100	65	95	81	17
Wood Duck	0	2	0	3	0	1	1	2	4	3	4	1
Mandarin	21	32	17	56	32	50	78	199	187	175	122	49
Wigeon	4,287	303	158	207	609	32,764	171,832	210,837	339,319	347,552	298,630	209,171
American Wigeon	0	0	1	0	0	0	1	4	2	3	3	2
Chiloe Wigeon	0	0	0	2	0	1	1	0	1	0	0	0
Gadwall	1,870	1,276	1,220	1,055	3,054	6,551	7,104	9,938	10,526	9,858	8,215	6,142

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Teal	6,315	239	327	1,089	11,391	54,906	82,624	119,581	128,569	120,494	87,703	52,959
Speckled Teal	0	0	0	0	0	0	0	0	0	1	0	0
Mallard	22,218	22,874	30,291	40,122	75,366	123,706	140,693	148,459	146,804	131,631	91,149	55,435
Black Duck	0	0	0	0	0	0	1	0	0	0	0	0
Pintail	142	31	12	10	40	5,954	18,174	19,465	20,696	26,728	16,926	9,284
Bahama Pintail	2	0	0	0	0	0	1	1	0	1	0	0
Garganey	14	28	4	8	66	32	16	1	1	0	1	2
Shoveler	1,226	448	239	321	2,854	7,771	9,900	12,153	9,396	7,765	5,577	5,930
Ringed Teal	1	0	0	0	0	0	2	0	0	0	0	0
Maned Duck	0	0	0	0	0	0	0	4	0	0	0	0
Red-crested Pochard	3	8	8	7	14	13	47	109	43	56	63	63
Pochard	907	593	681	2,909	8,951	12,457	26,534	37,125	43,726	41,547	40,213	27,700
Ring-necked Duck	3	2	2	0	0	1	1	1	1	1	0	2
Ferruginous Duck	0	0	0	0	0	1	1	1	1	2	1	0
Tufted Duck	16,478	7,699	7,164	18,145	30,697	38,332	42,319	48,302	48,791	42,796	40,818	35,205
Scaup	1,497	73	9	5	20	61	1,076	1,980	2,718	4,419	4,347	2,883
Eider	13,142	12,703	20,890	24,760	23,646	23,059	23,346	20,877	18,837	18,347	16,523	18,531
King Eider	1	0	0	0	1	2	0	0	0	0	0	0
Long-tailed Duck	270	211	3	2	1	7	48	967	1,208	1,327	698	620
Common Scoter	2,113	578	467	145	163	1,980	3,653	11,374	18,623	2,504	6,257	8,446
Surf Scoter	3	0	0	0	0	0	0	7	2	8	4	5
Velvet Scoter	328	341	154	105	180	44	345	1,112	916	447	425	292
Goldeneye	3,029	89	34	49	147	196	999	10,165	11,953	13,307	15,063	12,873
Smew	2	0	2	0	0	0	2	12	131	208	313	116
Red-breasted Merganser	1,711	624	912	1,070	1,045	1,822	2,862	3,798	4,135	3,347	3,728	3,696
Goosander	373	199	291	622	823	754	898	1,706	3,495	3,623	4,260	2,762
Ruddy Duck	972	525	455	548	998	2,105	2,029	3,052	3,031	3,107	2,603	2,465
White-headed Duck	0	0	0	0	0	0	0	0	1	0	0	0
Feral/hybrid Mallard type	37	43	54	62	78	106	92	109	134	94	111	88
Hybrid *Aythya*	1	1	0	0	0	1	2	0	2	1	4	0
Water Rail	33	36	26	29	85	177	197	387	430	294	188	203
Spotted Crake	0	0	0	0	2	4	4	0	0	0	0	0
Moorhen	4,134	3,488	3,070	4,401	7,434	10,159	10,651	11,429	10,727	10,668	9,430	8,895
Coot	17,066	13,382	17,659	31,310	55,021	81,139	92,486	107,376	93,009	90,535	76,054	52,143
Crane	0	0	0	0	0	0	0	0	3	0	0	0
Oystercatcher	58,706	33,157	31,672	64,158	148,228	211,846	225,275	190,721	196,871	217,026	202,905	143,412
Black-winged Stilt	0	0	0	0	0	1	1	1	1	0	1	1
Avocet	703	442	297	610	694	1,313	1,208	1,983	1,960	1,806	1,299	1,331
Stone Curlew	0	0	0	0	0	1	0	0	0	0	0	0
Little Ringed Plover	196	211	200	341	118	57	11	0	1	0	0	12
Ringed Plover	4,775	9,902	1,354	1,966	14,851	18,758	14,003	9,673	10,107	9,483	8,183	5,835
Kentish Plover	0	0	1	0	0	1	0	0	1	1	1	0
Dotterel	0	3	0	0	3	2	0	0	0	0	0	0
American Golden Plover	0	0	1	0	0	0	0	0	0	0	0	0
Pacific Golden Plover	0	0	0	0	1	0	0	0	0	0	0	0
Golden Plover	6,412	119	56	2,691	12,941	39,707	81,845	147,908	96,245	91,820	38,721	47,040
Grey Plover	15,599	9,745	1,405	2,386	30,790	40,063	39,190	39,694	32,153	45,832	43,962	40,183
Lapwing	7,005	4,744	9,076	38,143	46,979	116,066	171,831	406,538	281,226	261,751	163,108	134,424
Knot	34,483	13,161	8,893	9,260	100,766	78,678	122,133	163,916	167,677	205,128	231,783	157,371
Sanderling	5,961	15,145	468	963	8,719	5,846	7,631	4,846	6,583	4,713	4,598	5,367
Little Stint	9	12	3	4	19	545	71	44	7	5	0	1
Temminck's Stint	0	3	0	0	0	1	0	0	0	0	0	0
White-rumped Sandpiper	0	0	0	0	2	0	0	0	0	0	0	0
Pectoral Sandpiper	0	0	0	0	2	1	1	0	0	0	0	0
Curlew Sandpiper	1	11	1	19	43	217	40	7	1	1	0	0
Purple Sandpiper	626	87	0	7	27	108	175	979	1,050	1,149	1,052	519
Dunlin	95,196	105,371	2,321	32,532	97,104	101,552	164,176	368,404	354,100	477,324	426,515	305,282
Ruff	396	21	15	214	466	1,135	649	412	228	447	363	439
Jack Snipe	19	1	0	0	0	2	62	116	94	106	75	110

Terns[5]

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Number of sites where terns counted	*617*	*618*	*576*	*598*	*623*	*962*	*1,155*	*1,260*	*1,109*	*1,146*	*1,089*	*1,027*
Sandwich Tern	564	1,574	1,637	4,525	8,386	2,950	289	4	1	0	0	13
Roseate Tern	0	0	0	7	1	0	0	0	0	0	0	0
Common Tern	107	1,774	2,086	3,501	6,227	2,032	246	0	0	0	0	2
Arctic Tern	10	662	362	1,603	1,793	41	13	0	0	0	0	0
Little Tern	15	400	210	239	1,344	193	2	0	0	0	0	0
Whiskered Tern	0	1	0	0	0	0	0	0	0	0	0	0
Black Tern	0	13	0	0	63	141	22	0	0	0	0	0
White-winged Black Tern	0	0	0	0	0	1	0	0	0	0	0	0
Unidentified Tern	0	36	74	2	2	4	41	0	0	0	0	0
TOTAL	696	4,460	4,369	9,877	17,816	5,362	613	4	1	0	0	15

Kingfisher

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Kingfisher	59	64	85	113	176	328	330	310	281	162	99	165

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

1 *Indicates White-fronted and Brent Geese which were not identified to subspecies*

2 *In all months except September, the naturalised component of this species is approximated by totalling counts from English (excluding Northumberland) and Welsh sites only and adding 2,340 (after Delany 1992) for the re-established birds in Scotland. All other birds in Great Britain (apart from the native population in the Outer Hebrides, Coll, Tiree, Colonsay and parts of Sutherland) are considered to be from the Icelandic population*

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

4 *Total waterfowl represents numbers of all wildfowl (as above), waders and herons*

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

Separate totals are provided for waders counted on estuarine/coastal sites and on inland sites in Appendix 3.

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Snipe	1,093	440	57	215	1,627	3,023	5,026	7,095	7,398	6,712	4,222	4,949
Great Snipe	0	0	0	0	0	0	0	0	0	0	0	1
Long-billed Dowitcher	0	0	0	0	0	0	1	1	1	0	1	0
Woodcock	4	1	0	0	2	1	3	49	51	71	50	37
Black-tailed Godwit	5,755	991	433	3,185	11,415	12,866	12,434	11,089	5,638	11,419	10,746	7,559
Hudsonian Godwit	0	0	0	0	0	1	0	0	0	0	0	0
Bar-tailed Godwit	2,019	1,796	2,596	9,065	23,970	28,483	29,263	24,640	36,113	46,106	56,136	44,841
Whimbrel	201	1,217	189	1,143	2,010	650	65	11	12	4	4	19
Curlew	23,983	3,755	6,183	50,788	75,938	102,621	94,669	62,099	57,942	60,562	64,522	64,238
Spotted Redshank	53	6	5	130	198	348	912	96	54	74	87	54
Redshank	40,363	4,556	3,406	21,046	60,026	84,655	79,719	78,602	66,013	63,852	52,614	49,131
Greenshank	119	65	12	715	1,286	2,150	1,149	311	199	138	168	128
Lesser Yellowlegs	0	0	0	0	0	0	0	0	1	0	0	0
Green Sandpiper	82	5	26	311	551	368	202	141	81	84	73	68
Wood Sandpiper	0	9	5	8	38	24	2	0	0	0	0	0
Common Sandpiper	132	470	271	998	1,106	620	105	33	28	31	19	47
Spotted Sandpiper	0	0	0	0	0	0	0	2	1	0	1	1
Turnstone	9,755	2,736	500	1,598	11,040	11,920	11,747	13,647	12,104	13,619	11,869	11,531
Red-necked Phalarope	0	0	0	0	0	2	0	0	0	0	0	0
Grey Phalarope	0	0	0	0	0	0	1	0	0	0	1	0
TOTAL WILDFOWL[3]	194,400	117,233	140,468	189,309	305,970	542,232	1,054,615	1,365,921	1,280,278	1,292,694	1,057,686	835,632
TOTAL WADERS	313,646	208,182	69,446	242,496	650,960	863,632	1,063,600	1,533,058	1,333,941	1,519,264	1,323,079	1,023,931
TOTAL WATERFOWL[4]	510,003	327,453	211,684	433,968	960,364	1,410,455	2,122,998	2,903,216	2,617,652	2,814,849	2,383,453	1,862,436

Gulls[5]

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Number of sites where gulls counted	*638*	*594*	*576*	*601*	*636*	*1,004*	*1,188*	*1,320*	*1,179*	*1,289*	*1,246*	*1,243*
Mediterranean Gull	7	14	10	37	29	49	39	26	74	50	56	82
Little Gull	68	17	20	181	23	101	2	1	1	22	17	9
Black-headed Gull	40,869	28,231	30,879	88,681	148,721	151,404	179,695	239,869	197,722	267,754	220,046	233,433
Ring-billed Gull	0	0	0	2	0	0	0	1	1	0	3	2
Common Gull	10,266	3,302	1,934	5,558	11,016	31,376	34,161	48,336	40,225	72,614	63,916	68,458
Lesser Black-backed Gull	14,251	18,961	32,434	35,165	17,243	12,630	13,998	15,796	6,417	4,612	13,940	18,988
Herring Gull	31,160	28,151	34,287	38,920	37,446	63,944	47,231	51,093	50,260	66,119	85,158	50,429
Iceland Gull	4	3	0	0	0	0	0	0	2	4	8	7
Glaucous Gull	1	1	0	0	0	1	1	4	3	11	13	12
Great Black-backed Gull	2,932	1,750	1,707	2,427	4,624	9,804	11,036	12,222	9,296	10,794	5,772	3,170
Kittiwake	476	442	472	2,098	7,880	3,678	318	84	397	34	329	90
TOTAL	100,034	80,872	101,743	173,069	226,982	272,987	286,481	367,432	304,398	422,014	389,258	374,680

Table 2. TOTAL NUMBERS OF WATERFOWL RECORDED BY WeBS AT ALL WETLAND SITES IN NORTHERN IRELAND DURING 1995-96.

Wader totals for coastal and inland sites are given in Appendix 3

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Number of sites visited	*4*	*4*	*3*	*3*	*4*	*14*	*30*	*37*	*47*	*39*	*42*	*41*
Number of count units visited	*16*	*22*	*15*	*12*	*22*	*37*	*83*	*88*	*108*	*102*	*69*	*93*
Red-throated Diver	0	0	0	0	0	0	10	8	95	7	11	25
Black-throated Diver	0	0	0	0	0	0	0	0	3	0	1	0
Great Northern Diver	0	5	0	0	0	0	0	0	15	27	0	18
Unidentified diver	0	0	0	0	0	0	0	0	0	0	1	0
Little Grebe	1	59	1	1	350	801	566	751	765	320	338	192
Great Crested Grebe	3	1,448	1	8	2,464	2,997	2,063	2,149	2,264	1,277	1,300	1,111
Slavonian Grebe	0	0	0	0	0	0	0	3	103	4	4	19
Grey Heron	24	87	37	32	225	387	303	302	241	101	199	84
Cormorant	92	240	41	86	1,020	1,907	1,613	1,085	1,248	859	838	681
Mute Swan	132	1,097	44	57	2,232	2,312	2,011	2,419	2,110	1,465	1,692	1,390
Black Swan	0	0	0	0	0	0	0	0	1	0	0	0
Bewick's Swan	1	0	0	0	0	0	0	61	176	206	125	58
Whooper Swan	12	16	0	0	7	8	1,551	1,824	1,823	1,418	2,005	1,230
Pink-footed Goose	0	0	0	0	0	0	1	0	0	3	0	0
Greenland Whitefront	0	0	0	0	0	0	34	128	72	1	99	195
Greylag Goose	0	2	0	0	1	162	101	362	283	546	500	317
Canada Goose	0	0	0	0	0	96	44	209	580	1	352	79
Barnacle Goose	0	0	0	0	0	88	88	84	89	89	79	74
Dark-bellied Brent	0	0	0	0	0	0	0	0	1	0	0	0
Light-bellied Brent	361	2	0	0	0	5,851	16,908	8,553	3,867	3,157	2,934	3,315
Shelduck	117	371	64	28	68	341	538	2,769	3,803	3,858	3,598	2,210
Wigeon	16	26	0	7	237	1,800	10,650	5,502	8,649	2,771	5,326	2,712
Gadwall	0	59	0	0	31	146	207	198	165	141	152	159
Teal	21	7	4	2	263	1,155	2,840	2,950	4,745	2,725	2,646	1,610
Mallard	177	1,351	262	635	9,532	11,519	11,340	8,021	7,296	4,171	3,623	2,079
Pintail	0	2	0	0	0	1	111	161	177	86	77	68
Shoveler	2	12	0	0	40	71	104	265	283	142	149	99
Pochard	0	49	0	0	613	1,036	6,038	29,029	25,996	20,535	4,242	1,839
Tufted Duck	0	1,554	0	1	5,070	11,080	15,830	21,284	25,226	25,751	16,070	9,847
Scaup	0	341	0	0	0	0	51	1,411	2,294	2,891	5,092	1,735
Eider	8	4	4	83	0	817	785	238	1,338	464	389	564
Long-tailed Duck	0	0	0	0	0	0	2	10	31	13	13	0
Common Scoter	0	0	0	0	0	0	2	1	3	1	2	0
Velvet Scoter	0	0	0	0	0	0	0	2	2	1	0	0
Goldeneye	14	202	0	0	82	138	385	10,448	10,128	7,082	5,745	7,489
Smew	0	0	0	0	0	0	0	0	3	1	1	1
Red-breasted Merganser	28	39	2	0	99	850	516	465	803	371	400	496
Goosander	0	0	0	0	0	0	0	0	0	0	1	0
Ruddy Duck	0	36	0	0	17	47	73	22	45	5	13	5
Water Rail	0	0	0	0	0	0	1	2	0	0	0	0
Moorhen	4	141	1	0	266	323	308	315	306	152	226	182
Coot	0	957	0	0	4,725	8,604	9,253	7,366	7,975	3,938	4,385	2,419
Oystercatcher	859	638	622	1,153	3,435	15,661	18,081	16,119	16,218	12,100	14,554	8,441
Ringed Plover	82	114	5	11	95	314	708	704	615	590	205	245
Golden Plover	516	0	0	0	11	3,316	15,107	16,359	18,345	13,110	9,831	11,262
Grey Plover	1	0	0	1	1	13	291	183	250	174	147	204
Lapwing	150	173	104	227	1,001	2,514	4,881	33,032	33,776	19,033	13,859	2,504
Knot	0	0	0	0	12	193	1,375	5,730	5,123	7,177	15,322	3,549
Sanderling	0	7	0	0	14	1	0	0	0	27	0	12
Little Stint	0	0	0	0	0	5	0	0	0	0	0	0
Curlew Sandpiper	0	0	0	0	0	26	1	0	0	0	0	0

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Purple Sandpiper	0	0	0	0	0	7	17	25	58	71	29	61
Dunlin	73	562	24	29	193	392	2,841	11,616	12,923	10,211	20,261	8,961
Ruff	1	0	0	0	0	3	2	1	0	0	0	0
Jack Snipe	0	0	0	0	0	0	0	1	0	1	0	2
Snipe	1	5	0	0	24	42	83	180	450	75	169	144
Black-tailed Godwit	7	1	0	1	11	661	301	109	100	287	334	202
Bar-tailed Godwit	0	1	1	2	1	222	1,364	1,501	1,759	2,211	2,712	906
Whimbrel	68	50	0	11	3	1	0	2	0	0	0	0
Curlew	199	108	517	1,755	2,506	4,778	5,552	5,427	5,534	5,459	5,196	4,455
Spotted Redshank	1	0	0	0	0	1	1	1	1	1	0	0
Redshank	852	80	30	484	1,091	7,649	7,181	7,984	7,359	4,849	4,766	5,529
Greenshank	0	1	0	15	6	73	131	74	95	64	78	46
Common Sandpiper	0	2	0	7	1	0	0	0	0	0	0	0
Turnstone	94	0	0	0	30	946	1,316	1,312	1,537	1,931	875	1,448
TOTAL WILDFOWL[2]	989	8,020	424	908	27,117	52,150	84,024	108,095	112,763	84,479	62,429	42,218
TOTAL	2,904	1,742	1,303	3,696	8,435	36,818	59,233	100,360	104,143	77,371	88,338	47,971
TOTAL WATERFOWL[3]	3,917	9,849	1,764	4,636	35,777	89,355	143,560	208,757	217,147	161,951	150,966	90,273

Gulls[4]

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Number of sites where gulls counted	*4*	*3*	*3*	*3*	*4*	*8*	*16*	*17*	*21*	*28*	*28*	*18*
Black-headed Gull	339	169	308	1,165	4,416	9,014	9,859	7,245	6,721	8,551	9,553	9,899
Common Gull	95	65	107	623	1,876	1,638	1,416	1,290	3,917	1,992	3,009	1,072
Lesser Black-backed Gull	32	0	4	0	1,447	920	459	47	47	33	85	166
Herring Gull	311	116	152	162	378	2,136	2,191	1,393	1,488	5,809	4,862	3,084
Iceland Gull	0	0	0	0	0	0	0	0	1	0	1	0
Glaucous Gull	0	0	0	0	0	1	0	0	0	4	3	1
Great Black-backed Gull	71	48	66	82	143	589	365	186	122	644	290	214
Kittiwake	0	0	0	0	9	26	2	0	0	6	20	0
TOTAL	848	398	637	2,032	8,269	14,324	14,292	10,161	12,296	17,039	17,823	14,436

Terns[4]

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Number of sites where terns counted	*3*	*3*	*3*	*3*	*4*	*7*	*10*	*5*	*9*	*8*	*8*	*9*
Sandwich Tern	30	71	43	120	256	274	12	0	0	0	0	0
Common Tern	0	89	0	4	24	7	1	0	0	0	0	0
Arctic Tern	0	3	0	0	0	1	1	0	0	0	0	0
TOTAL	30	163	43	124	280	282	14	0	0	0	0	0

Kingfisher

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Kingfisher	1	0	0	0	0	5	2	0	1	1	1	0

UK Totals

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Wildfowl[2]	195,389	125,253	140,892	190,217	333,087	594,382	1,138,639	1,474,016	1,393,041	1,377,173	1,120,115	877,850
Waders	316,550	209,924	70,749	246,192	659,395	900,450	1,122,833	1,633,418	1,438,084	1,596,635	1,411,417	1,071,902
Waterfowl[3]	511,939	335,177	211,641	436,409	992,482	1,494,832	2,261,472	3,107,434	2,831,125	2,973,808	2,531,532	1,949,752
Gulls[4]	100,882	81,270	102,380	175,101	235,251	287,311	300,773	377,593	316,694	439,053	407,081	389,116
Terns[4]	726	4,623	4,412	10,001	18,096	5,644	627	4	1	0	0	15
Kingfisher	60	64	85	113	176	333	332	310	282	163	100	165

It is not possible to separate birds from the naturalised and Icelandic populations in Northern Ireland
Total wildfowl represents numbers of all divers, grebes, Cormorant, swans, geese, ducks and rails
Total waterfowl represents numbers of all wildfowl (as above), waders and herons
Counting gulls and terns was optional, and thus totals are incomplete at a national level

MONTHLY FLUCTUATIONS

The vast majority of the wintering populations of most wader species is found on estuaries. Coverage of estuaries by WeBS remained at a relatively high and more or less constant level throughout winter 1995-96, enabling meaningful comparisons of total monthly counts to be made for many species. However, the number of sites of different habitats counted in each month can differ quite widely. Since wildfowl are more widely distributed across both inland and coastal habitats than waders, changes in monthly count totals given in Tables 1 & 2 may not necessarily reflect true changes in relative abundance during the season. Also, the presentation of data for seven months, which includes the migratory periods for some species, means that there are real fluctuations in total numbers of wildfowl during the period considered in this report.

These fluctuations may be examined by using 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. The 1995-96 figures are given in Tables 3 & 4 for Great Britain and Northern Ireland separately, with averages from the last five seasons for comparison. Non-migratory, scarce and irregularly counted species are omitted and only WeBS Core Counts have been used in this calculation. Caution should be used in interpreting figures for species which only occur in small numbers (see Tables 1 & 2). 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.

Broad differences in the monthly values between species reflect their status in the UK. Resident species, or those with large UK breeding populations, such as the grebes, Mallard and, to a certain extent, Gadwall, 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 pattern in 1995-96 was similar to the five year average for most species in Great Britain. Of note were maxima in March for both European White-fronted Geese and Dark-bellied Brent Geese. These peaks were later than normal and perhaps influenced by the cold weather across both Britain and the near European mainland during the previous month. The proportion present in March was also greater than normal for around half of the remaining species, suggesting that these too may have included birds displaced from the continent.

Noteworthy values in Northern Ireland were earlier than normal maxima for Pochard and particularly Goldeneye, both in November. Conversely, very few species were present in greater number than usual in March, though only small numbers of each species would have been involved in these calculations.

Table 3. PROPORTIONS IN EACH MONTH OF THE PEAK WINTER POPULATION OF CERTAIN WILDFOWL AND ALLIES PRESENT ON 1,188 BRITISH SITES THAT WERE COUNTED IN ALL SEVEN MONTHS OF 1995-96.

Bracketed figures give averages for the 1991-92 to 1995-96 period.

	Sep		Oct		Nov		Dec		Jan		Feb		Mar	
ittle Grebe	100	(99)	89	(95)	86	(82)	79	(74)	59	(62)	49	(60)	47	(56)
ireat Crested Grebe	100	(100)	90	(96)	91	(88)	87	(77)	63	(70)	60	(72)	68	(76)
ormorant	100	(93)	93	(99)	95	(90)	91	(89)	73	(84)	71	(86)	70	(76)
ewick's Swan	0	(0)	0	(1)	36	(38)	61	(78)	100	(93)	87	(83)	31	(11)
Whooper Swan	0	(1)	6	(25)	68	(86)	80	(88)	100	(89)	85	(90)	76	(74)
uropean White-fronted Goose	0	(0)	0	(1)	1	(10)	14	(32)	31	(73)	56	(83)	100	(42)
ark-bellied Brent Goose	0	(2)	21	(43)	75	(85)	71	(90)	84	(93)	84	(91)	100	(64)
helduck	30	(30)	52	(63)	81	(83)	81	(91)	100	(98)	91	(91)	80	(79)
Vigeon	10	(11)	42	(48)	57	(78)	97	(97)	100	(93)	85	(74)	59	(44)
adwall	70	(79)	69	(82)	93	(97)	100	(99)	85	(87)	71	(75)	57	(49)
eal	48	(48)	64	(66)	96	(88)	100	(100)	99	(91)	68	(68)	46	(40)
allard	100	(93)	93	(94)	97	(96)	99	(99)	81	(88)	59	(61)	38	(37)
intail	20	(25)	64	(74)	76	(75)	83	(91)	100	(92)	69	(67)	40	(24)
hoveler	63	(83)	83	(91)	100	(95)	72	(84)	57	(70)	42	(70)	46	(63)
ochard	43	(35)	71	(62)	88	(87)	100	(93)	95	(99)	99	(89)	70	(39)
ufted Duck	98	(87)	88	(82)	97	(93)	100	(99)	81	(91)	82	(83)	75	(73)
oldeneye	2	(2)	8	(14)	50	(53)	75	(81)	85	(90)	100	(100)	95	(85)
oosander	20	(29)	18	(41)	29	(53)	61	(83)	85	(96)	100	(92)	61	(66)
oot	100	(93)	95	(94)	100	(94)	93	(93)	81	(82)	73	(62)	52	(45)

Table 4. PROPORTIONS IN EACH MONTH OF THE PEAK WINTER POPULATION OF CERTAIN WILDFOWL AND ALLIES PRESENT ON 37 NORTHERN IRELAND SITES THAT WERE COUNTED IN ALL SEVEN MONTHS OF 1995-96.

Bracketed figures give averages for the 1991-92 to 1995-96 period (only data from 1992-93 onwards are available for Light-bellied Brent Geese).

	Sep		Oct		Nov		Dec		Jan		Feb		Mar	
ittle Grebe	100	(85)	67	(93)	81	(78)	83	(65)	37	(59)	32	(38)	21	(24)
reat Crested Grebe	100	(94)	69	(71)	69	(37)	71	(32)	41	(47)	35	(34)	37	(64)
ormorant	100	(99)	80	(82)	48	(66)	48	(58)	29	(46)	32	(52)	34	(46)
ewick's Swan	0	(0)	0	(13)	28	(41)	62	(58)	100	(80)	82	(92)	37	(35)
Whooper Swan	1	(0)	100	(71)	70	(81)	62	(62)	68	(83)	53	(73)	55	(72)
ight-bellied Brent Goose	35	(49)	100	(100)	51	(57)	22	(38)	16	(30)	17	(23)	19	(19)
helduck	9	(5)	15	(16)	76	(50)	99	(82)	100	(95)	94	(83)	60	(64)
Vigeon	17	(42)	100	(87)	45	(69)	65	(66)	25	(58)	35	(53)	25	(33)
adwall	78	(84)	100	(76)	91	(75)	79	(67)	71	(76)	74	(56)	85	(66)
eal	33	(41)	80	(69)	80	(78)	100	(94)	66	(75)	46	(71)	38	(37)
allard	100	(98)	96	(93)	64	(66)	52	(64)	33	(49)	25	(33)	17	(19)
intail	1	(7)	63	(50)	91	(77)	100	(88)	49	(72)	42	(54)	38	(21)
hoveler	29	(45)	43	(67)	100	(98)	94	(87)	55	(66)	55	(65)	41	(52)
ochard	4	(8)	21	(29)	100	(68)	89	(72)	71	(90)	13	(35)	6	(7)
ufted Duck	43	(29)	62	(73)	82	(84)	97	(82)	100	(92)	61	(69)	38	(44)
caup	0	(0)	1	(19)	33	(25)	42	(33)	52	(46)	100	(69)	40	(85)
oldeneye	1	(2)	4	(13)	100	(56)	96	(69)	67	(93)	51	(76)	71	(61)
oot	95	(88)	100	(94)	77	(79)	84	(81)	42	(44)	44	(38)	25	(25)

INDICES

Because the same WeBS sites are not necessarily covered each year, changes in waterfowl 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 populations, even if the true population size is unknown. A new technique developed specifically for waterbird populations, the 'Underhill index' (Underhill 1989), has been adopted for use in this report.

A full explanation of this indexing process and its application for major waterfowl populations in the UK is given in Prŷs-Jones *et al.* (1994), Underhill & Prŷs-Jones (1994) and Kirby *et al.* (1995). In summary, the index calculates missing counts, i.e. when the site was not counted, using a formula that assumes that a count of a species at any site in any month and year can be represented by the combination of a site factor, a month factor and a year factor. This allows the 'holes' in the data to be filled and effectively means that data are available for the same set of sites in each year. The new total counts are thus directly comparable from one year to the next and the changes in the population can be calculated.

It should be borne in mind that the missing values 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 published 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.

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 in the footnote 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).

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, the 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 *Surveys and Projects*). Many sea-ducks are also excluded from the indexing process because of the extreme censusing 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. Waterfowl species which only occur in small numbers in Britain and Ireland have also been excluded.

Index values for wildfowl species in Britain and Northern Ireland have been provided separately. However, index values calculated for the populations of waders in Northern Ireland were found to be statistically unreliable due to the small number of estuaries contributing to each index value. It was therefore decided to combine the Northern Ireland data with that for Great Britain to produce UK indices for waders.

Figures 4, 5 & 6 plot indices for all wildfowl and allies for which values have been calculated. The index values for the most recent five years are presented in the *Species Accounts* only to indicate recent changes in the population. Index values for waders at coastal sites are presented in Table 5.

The size of the species population has been constrained to equal 100 in the base year (1970-71 for wildfowl in Great Britain, 1987-88 for wildfowl in Northern Ireland, and 1972-73 for waders). Underhill index values presented in the figures 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. For simplicity, the base year adopted for the recently monitored species in Great Britain and for all wildfowl in Northern Ireland is 1987-88 (see footnote for details). It should be reiterated that, since comparatively few years' data are available for these newly monitored species, their index values should be viewed with caution, especially in Northern Ireland where only a relatively small number of sites contribute to the index values. Many of these index values have comparatively large consistency intervals (which provide a measure of confidence in the accuracy of the index but are not presented here for clarity). Since the Underhill technique uses data from all available years to calculate index values, future data will refine the index values further.

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.

Wildfowl and allies

Interpretation of the additional year's index values provided for the first time in this report are inevitably speculative to some extent, as increases or decreases may relate only to temporary factors or natural fluctuations, or indicate interchange with other countries, especially during particularly cold or mild weather. Nevertheless, consistent trends over the most recent five years provide a degree of confidence that real long-term changes may be occurring, whilst values for individual years may reflect more accurately particular short-term changes than the total counts.

Index values for most wildfowl species were consistent with recent trends. Those for Little Grebe, re-established Greylag Goose, Wigeon, Gadwall and Shoveler continued the steady climb of recent years. Values for Ruddy Duck also continued to rise following lower values in the early 1990s. Indices for Icelandic breeders, notably Whooper Swans and Pink-footed and Icelandic Greylag Geese, all showed a downturn. This continued the recent decline for Greylags, but was only the second time that the Pinkfoot index had fallen sine the mid 1980s. Particularly large increases were noted for Bewick's Swan and Goosander, both following recent declines, and were probably influenced by cold weather influxes from the continent.

Changes of 20% or more in the index values between 1994-95 and 1995-96 in Great Britain were noted for Little Grebe (20%), Bewick's Swan (96%), Pink-footed Goose (-23%), Shoveler (23%), Red-breasted Merganser (-24%), Goosander (56%) and Ruddy Duck (21%), and in Northern Ireland for Bewick's Swan (44%), Gadwall (-26%), Mallard (23%), Pochard (42%), Tufted Duck (20%) and Coot (39%).

Footnote

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), with the exception Little Grebe (1985-86 onward), Great Crested Grebe (1982-83), Cormorant (1986-87), Coot (1982-83), and all species in Northern Ireland (1986-87). 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).

The first letter of the months September to March is used to indicate those months used in calculating indices for each species in Great Britain and Northern Ireland

Species	GB	NI
Little Grebe	SO	SON
Great Crested Grebe	SON	SONDJFM
Cormorant	SONDJFM	SOND
Mute Swan	SONDJFM	SONDJ
Bewick's Swan	JF	NDJF
Whooper Swan	ND	ONDJFM
Pink-footed Goose	O or N	-
European Whitefront	JF	-
Greenland Whitefront	N or M	N or M
Greylag Goose: Icelandic	O or N	-
naturalised	S	-
Canada Goose	S	-
Barnacle Goose: Svalbard	any month	-
Dark-bellied Brent	DJF	-
Light-bellied Brent	-	SONDJFM
Shelduck	JF	DJFM
Wigeon	J	SONDJFM
Gadwall	SONDJFM	SONDJ
Teal	D	DJ
Mallard	D	SO
Pintail	ONDJ	ONDJFM
Shoveler	SO	SONDJFM
Pochard	NDJ	NDJF
Tufted Duck	NDJF	ONDJFM
Goldeneye	F	DJFM
Red-breasted Merganser	ONDJFM	SONDJFM
Goosander	DJF	-
Ruddy Duck	SONDJFM	-
Coot	SONDJ	SONDJFM

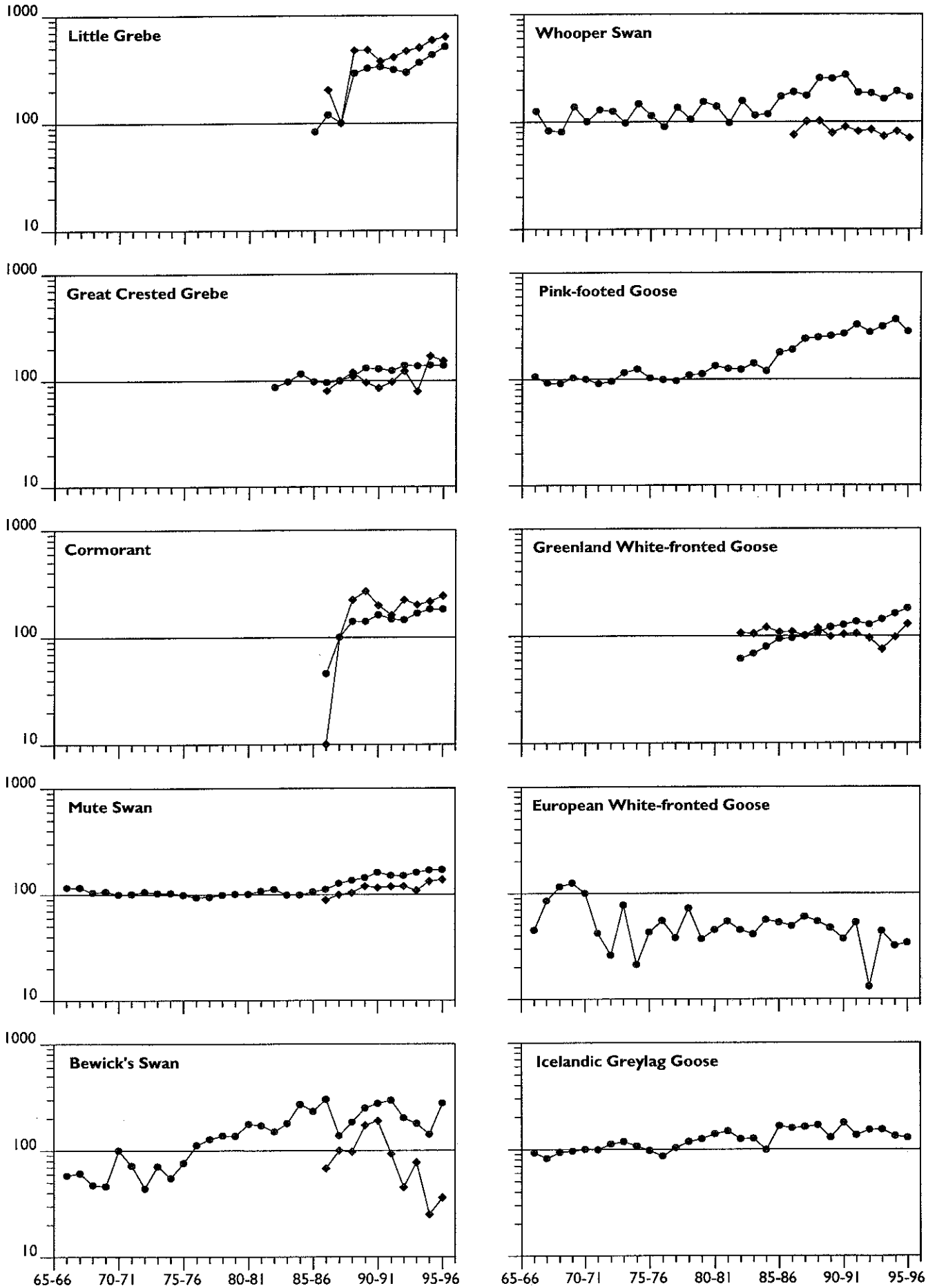


Figure 4. Index values for various waterfowl species (see text for details). Circles represent values for Great Britain, diamonds for Northern Ireland. Note log scale.

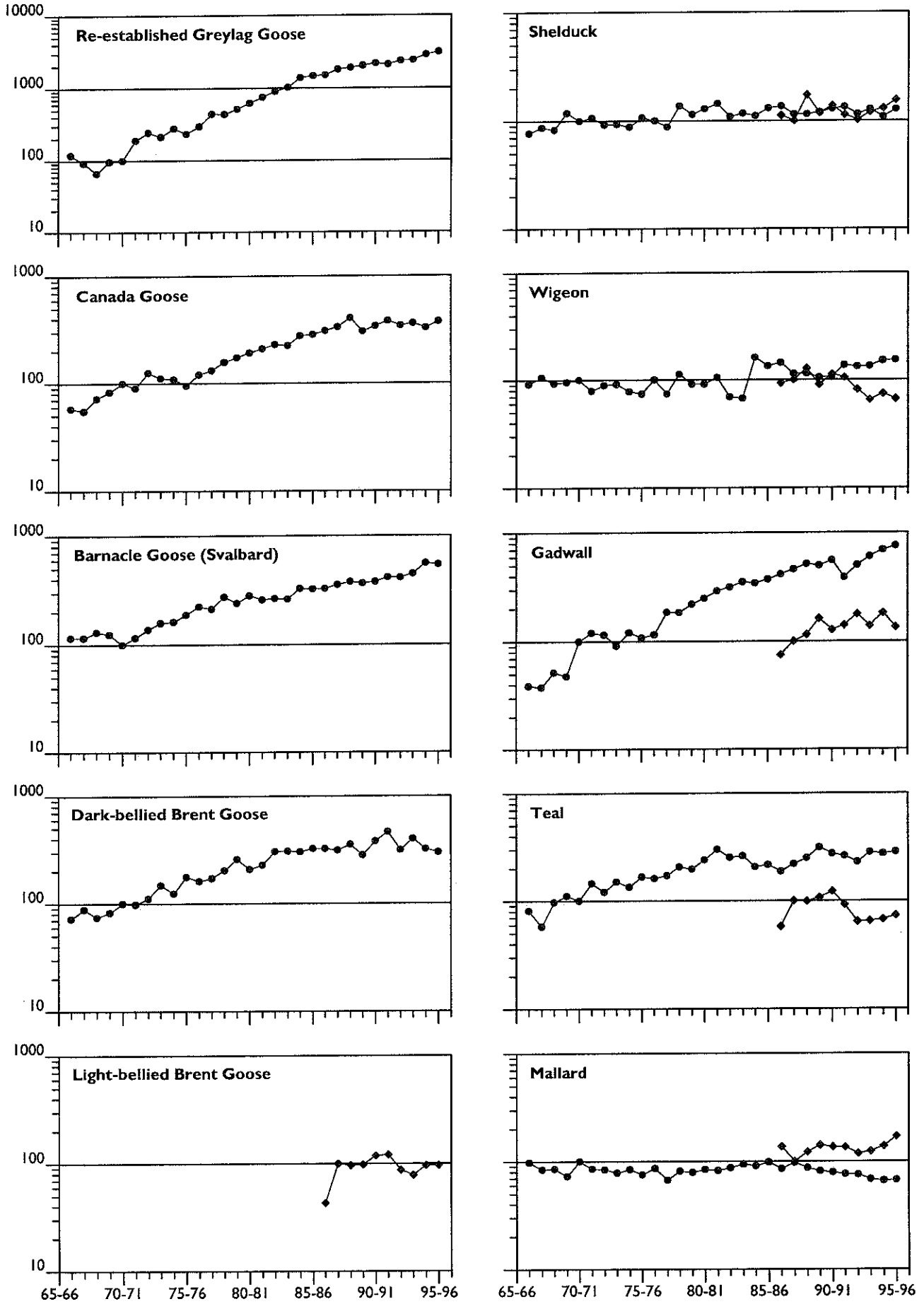


Figure 5. Index values for various waterfowl species (see text for details). Circles represent values for Great Britain, diamonds for Northern Ireland. Note log scale. Note different scale for re-established Greylag Goose.

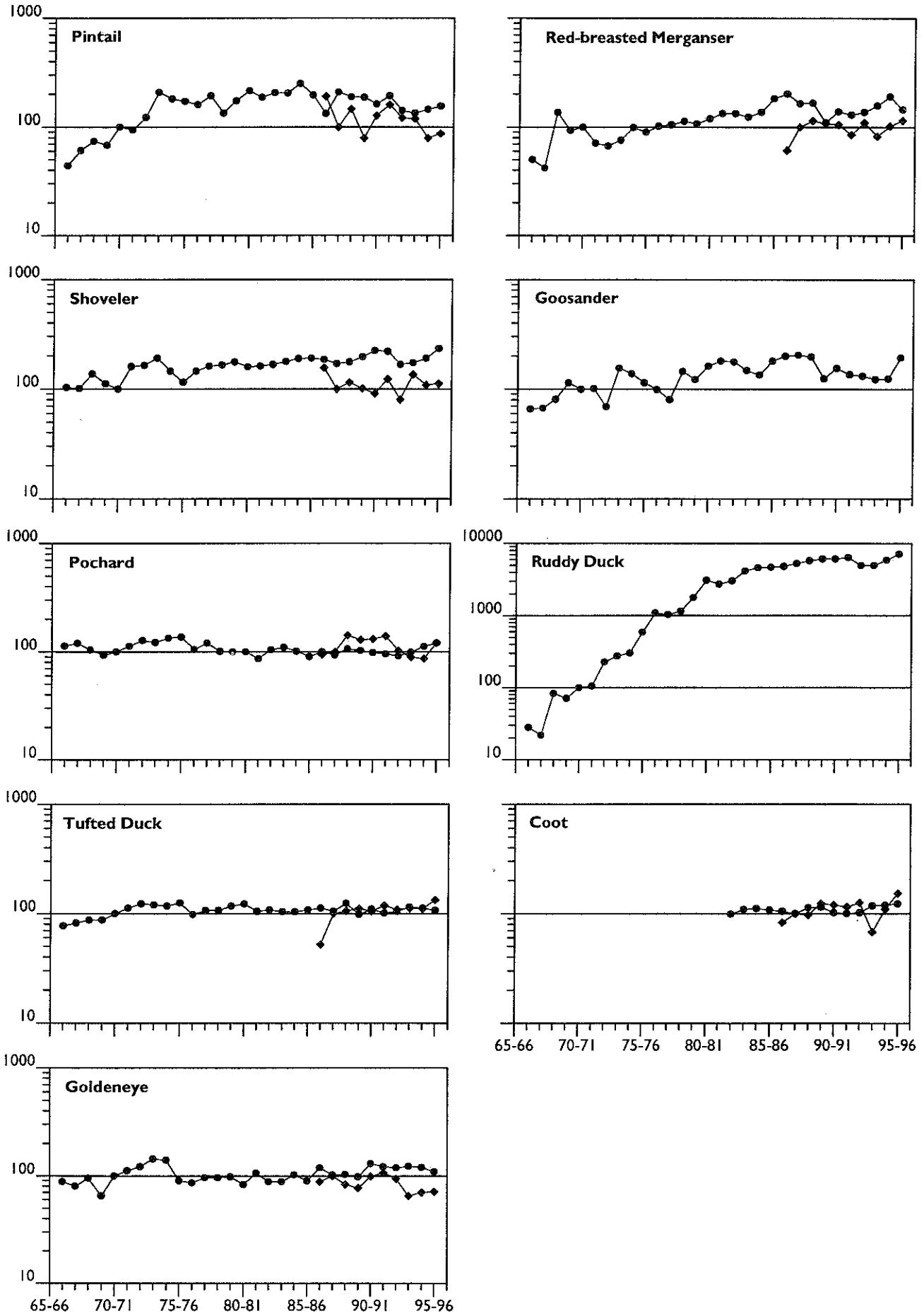


Figure 6. Index values for various waterfowl species (see text for details). Circles represent values for Great Britain, diamonds for Northern Ireland. Note log scale. Note different scale for Ruddy Duck.

Vaders

here was a general decline in the winter index for the ıain wader species in 1995-96 compared to the winter 994-95 index. Eight species showed a decrease, and two pecies increased, with the index for Knot remaining nchanged. The greatest declines were recorded for :urlew (26%), Redshank (-17%) and Sanderling (-16%). he current winter index values for Curlew and Redshank re at a six year low, with Redshank falling below the 100 alue . The decline in index values for Sanderling reversed some of the 50% increase recorded during 1994-95, although the index remains higher than in recent winters. Around 50% of the Sanderling recorded by WeBS are on the Ribble Estuary, and this site recorded an above average increase of 50% during 1994-95. The index changes for the remaining species were increases for Bar-tailed Godwit (+33%) and Ringed Plover (+6%). The huge increase in the index for Bar-tailed Godwit pushed it to its highest level for six years, whilst Ringed Plover reached a five year high. The winter index value for Knot remained below 100.

Table 5. LONG-TERM INDICES FOR WINTER WADER NUMBERS IN THE UK

	Month†	Mean 71-72 to 75-76	Mean 76-77 to 80-81	Mean 81-82 to 85-86	Mean 86-87 to 90-91	91-92	92-93	93-94	94-95	95-96
)ystercatcher	DJF	110	127	137	156	149	144	133	141	129
inged Plover	DJF	108	101	96	119	107	108	104	108	115
irey Plover	DJF	128	176	249	416	477	445	524	621	587
.not	DJF	96	68	77	86	90	94	78	83	83
anderling	DJF	120	111	95	101	116	81	74	109	92
)unlin	DJF	107	95	76	82	99	83	86	96	90
lack-tailed Godwit	DJF	86	91	108	148	174	184	242	261	238
ar-tailed Godwit	DJF	105	117	127	120	104	104	94	93	124
:urlew	DJF	115	105	109	129	146	150	135	168	124
.edshank	DJF	105	94	85	109	109	100	102	120	99
'urnstone	DJF	107	114	120	143	146	129	126	129	116

the first letter of the months September to March is used to indicate those months used in calculating indices for each species

SPECIES ACCOUNTS

The following accounts provide information for each species in the following areas:

Key sites

Tables rank the principal sites for each species according to average seasonal maxima for the last five seasons, 1991-92 to 1995-96. Peak counts, where available, are given for each of the last five seasons, and the month in which the peak 1995-96 count occurred at each site is given in the column labelled "Month". A dash "-" indicates a missing count and incomplete counts are bracketed. In the first instance, average maxima were calculated using only complete counts but, if any incomplete counts exceeded this initial average, they were then also incorporated and the averages recalculated. Averages enclosed by brackets are based solely on incomplete counts. Sources of non-WeBS data are cited accordingly. Notably high or low counts and any consistent increases or declines in numbers at individual sites are highlighted in the text.

In accounts for divers, grebes, Cormorant, herons, wildfowl and Kingfisher, seasonal maxima are derived from any month in 1994-95 and 1995-96 and from any of the months July to March inclusive in other years. Peak counts of wildfowl in April are normally attributed to the previous winter, e.g. a count in April 95 would be used as the 1994-95 peak. Where available, April 1996 counts included in the tables are identified using Apr96 in the month column. The tables presented in the wader accounts include data from only the winter period, November to March, although the text includes reports of sizable counts from any part of the year, especially for species with important passage populations. The use of different months for the derivation of maxima is given in the table headings for each species.

Several species have only recently been included in WeBS. Where three seasons' data are now available, these have been provided as tables and average seasonal maxima calculated. This approach is in line with the recommendation of the Ramsar Convention that at least three years' data are used in the evaluation of the international importance of sites using averages of seasonal maxima. Whilst at least five years' data are normally used in such evaluations, averages based on three or four years data may be used in provisional assessments.

Due to delays in the production of this report, it has been decided to omit species accounts for gulls and terns. These will be reinstated in future years.

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) are given in the tables using a strict interpretation of the 1% threshold. However, it should be noted that, where this level is less than 50 birds, 50 is normally taken as the minimum threshold. 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.

In the wildfowl accounts, all sites which, in 1995-96, held nationally important numbers, or numbers exceeding the adopted threshold, but with five year means below this value are listed in the text. This serves to highlight important sites worthy of continued close attention. In the wader accounts, the "recent averages" mentioned refer to the averages based on the winters 1990-91 to 1994-95. The locations of sites mentioned in the species accounts are given in Appendix 2.

For convenience, sites in the Channel Islands are identified using 1% thresholds for Great Britain and included under the Great Britain section of the tables where relevant.

A few sites that have not been counted in recent years due to their isolated location, but were of national or international importance for one or more species when last counted, are listed in the accounts. This also serves to highlight the urgent need for counting to be resumed at these sites.

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

National context

The national totals (from Tables 1 & 2) and the yearly index values for the last five winters, where calculated (from Tables 5, 6 & 7), are repeated at the start of each species account for ease of reference. These are discussed in the text, providing the context to any notable counts at individual sites. The results of any other national or regional surveys and assessments of breeding success are also included.

1% thresholds

The 1% thresholds for International, Great Britain and all-Ireland populations are given for each species, except where these are unknown (indicated using a question mark "?"), where the population is too small for a meaningful figure to be obtained (indicated using a plus "+"), where the population is derived from naturalised or escaped birds (see below) or where the species is scarce

or a rarity in the UK (indicated using "vagrant" for wildfowl and allies and "scarce" for other species). These values are used to identify sites of importance which may qualify for designation under international and national legislation and Conventions. However, it should be noted that, where this value is less than 50 birds, 50 is normally used as the minimum threshold. An asterisk "*" has been used to highlight these instances (see Appendix 1 for a full explanation of national and international qualifying criteria).

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 waterfowl, 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 international 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.

Recent Research

A summary of key findings from relevant reports, scientific papers and journals published during the past year is provided for each species. Other highlights from the year are also included, such as conservation successes or failures, important conferences, or changes in legislation.

Non-native species

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 a area of former occurrence); and 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.

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. Note, however, that 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 1996). The native range is given in the species account for naturalised species, escapes and vagrants. Species are listed in approximately Voous order. A number of scientific names have been changed following the recommendations of the British Ornithological Union Records Committee (BOURC 1997).

Key to symbols commonly used in the species accounts

In tables of important sites:

- \- No data available.
- ( ) Incomplete count.

As footnotes to international and national thresholds:

- ? Population size not accurately known.
- \+ Population too small for meaningful figure to be obtained.
- * Where 1% of the national wintering 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 waterfowl qualifies as internationally important by virtue of absolute numbers.

RED-THROATED DIVER
Gavia stellata

International importance: 750
Great Britain importance: 50
All-Ireland importance: 10*
*50 is normally used as a minimum threshold

GB maximum: 1,361 Dec **Trend not available**
NI maximum: 95 Dec

Peak counts of Red-throated Divers in 1995-96 exceeded previous maxima by a considerable margin. Totals in the last five winters in Great Britain have usually been between 400 and 600 birds and in Northern Ireland between 20 and 40. In both cases, the large numbers in 1995-96 were recorded in just one month, more normal counts being made during the rest of the winter, and were due to especially high counts at just one site in each country. This illustrates the difficulties involved in monitoring waterfowl on the sea, with accurate counts possible only when weather and viewing conditions are ideal.

The count for Cardigan Bay was made during a normal WeBS count, when 900 birds were located close inshore off the mouth of the Dyfi Estuary. The dedicated counts of sea-ducks and divers in the Bay did not take place in 1995-96 and, potentially, birds in other areas went unrecorded. This flock was presumably a result of extraordinary abundance of food, as has been the case in the past with large concentrations of essentially marine species in nearshore areas. Cardigan Bay remains the most important site, on average, supporting over 10% of the British winter population. Numbers at other sites were generally low, although it is not clear whether this relates to few opportunities to observe the birds or genuinely lower numbers in the area, highlighting the need to develop more reliable approach to monitoring this species and other marine waterfowl. Gatherings of passage birds, such as on the Clyde, contributed to a secondary national peak in March. The Durham Coast (78, Nov), Loch Ryan (75, Mar) and the North Norfolk Marshes (71, Dec) were the only other sites to hold 50 or more birds. An SNH funded survey of divers, grebes and sea-duck in SE Scotland found 63 Red-throated Divers in St Andrews Bay in March (WWT, unpubl. data).

Table 6. RED-THROATED DIVER: MAXIMA AT MAIN RESORTS

	91-92	92-93	93-94	94-95	95-96	Month	Average
Great Britain							
Cardigan Bay	[1]495	[1]390	[1]740	[1]252	900	Dec	555
Moray Firth	[2]248	[2]350	[2]411	[2]385	(72)	Dec	349
Dengie Flats	150	175	89	143	41	Mar	120
Minsmere Levels	213	318	50	17	0		120
Forth Est.	101	63	83	72	98	Nov	83
Clyde Est.	9	73	11	50	126	Mar	54
Northern Ireland							
Lo. Foyle	2	34	15	[3]40	83	Dec	35
Belfast Lo.	24	13	20	28	10	Oct/Mar	19

1 *Data from Friends of Cardigan Bay, e.g. Green & Elliott (1993)*
2 *RSPB/BP studies, e.g. Stenning (1994)*
3 *unpublished data*

BLACK-THROATED DIVER
Gavia arctica

International importance: 1,200
Great Britain importance: 7*
All-Ireland importance: 1*
*50 is normally used as a minimum threshold

GB maximum: 43 Dec **Trend not available**
NI maximum: 3 Dec

The Great Britain total in 1995-96 was similar to that of previous years. Winter distribution, though well scattered, shows this species favours the sea lochs of the Scottish west coast (Parrack 1986) and therefore, inevitably, only a small proportion recorded by WeBS. All WeBS sites used regularly by Black-throated Divers are in Scotland, with other counts of more than five birds in 1995-96 at Aignish Bay (8, Sep), Doon Estuary (7, Jan/Mar) and the Forth Estuary (7, Dec). The records of birds from Belfast and Carlingford Loughs in Northern Ireland are notable, although observations in Ireland have increased in recent years and an exceptionally large flock of up to 22 birds was present in Strangford Lough at the end of December 1994 (Smiddy & O'Sullivan 1995).

A dedicated RSPB survey of nearshore seabirds in southwest England (Slade 1996) included monthly counts of divers, grebes, sea-ducks between November 1994 and

March 1995. Counts in an area between Helford River and Gribbin Head, at the east end of St Austell Bay, recorded average monthly totals 94 birds, with a peak of 135, sufficient, were these maintained over a period of winters, to qualify the area as nationally important.

Table 7. BLACK-THROATED DIVER: MAXIMA AT MAIN RESORTS

	91-92	92-93	93-94	94-95	95-96	Month	Average
Great Britain							
Moray Firth	[1]20	[1]13	[1]53	[1]35	(5)	Jan	25
Lo. Indaal	3	2	0	31	11	Dec	9
Arran	4	13	9	18	1	Apr/Aug/Oct	9

1 *RSPB/BP studies, e.g. Stenning (1994)*

GREAT NORTHERN DIVER
Gavia immer

International importance: 50
Great Britain importance: 30*†
All-Ireland importance: ?†
***50 is normally used as a minimum threshold**

GB maximum: 47 Dec **Trend not available**
NI maximum: 27 Jan

Numbers of Great Northern Divers in 1995-96, in both Great Britain and Northern Ireland, were around average for the last five winters, although those in Northern Ireland, in particular, tend to fluctuate from one year to the next. The big hole in WeBS coverage of coastal waters in west Scotland and the Shetland and Orkney Islands coincides almost exactly with the winter distribution for this species in Britain. The large numbers around all of Ireland, except for the east coast, is reflected by the relatively large numbers recorded in Northern Ireland and by over 300 birds recorded in the Republic by I-WeBS in January 1995 (Delany 1996).

The other key wintering area in Britain, as shown in the *Winter Atlas*, is southwest Cornwall. RSPB surveys in 1994-95 recorded an average monthly total of 53 birds between November and March, with a peak of 88, between the Helford River and St Austell Bay (Slade 1996). The report recommends that this area is considered as an Important Bird Area, on the basis of the potentially internationally important numbers present.

Table 8. GREAT NORTHERN DIVER: MAXIMA AT MAIN RESORTS

	91-92	92-93	93-94	94-95	95-96	Month)	Average
Great Britain†							
Lo. na Keal	27	-	-	-	-		27
Moray Firth	[1]17	[1]40	[1]17	[1]14	(2)	Jan	22
Lo. Indaal	22	21	8	13	16	May	16
Lo. Beg/Scridain	6	5	5	4	6	Nov/Feb	5
Northern Ireland†							
Lo. Foyle	10	29	0	[2]20	15	Mar	15
Dundrum Bay	20	40	0	2	0		12
Carlingford Lo.	0	13	1	12	26	Mar	10

† *as no site in GB is of national importance for Great Northern Diver and as no threshold has been set in Northern Ireland for national importance, a qualifying level of five has been used as the basis for selecting sites for presentation in this report*
1 *RSPB/BP studies (e.g. Stenning 1994)*
2 *unpublished data*

LITTLE GREBE
Tachybaptus ruficollis

International importance: ?
Great Britain importance: 30*
All-Ireland importance: ?†
*50 is normally used as a minimum threshold

			Trend	91-92	92-93	93-94	94-95	95-96
GB maximum:	**4,128**	**Nov**	**GB**	**310**	**294**	**361**	**426**	**510**
NI maximum:	**801**	**Sep**	**NI**	**408**	**464**	**498**	**586**	**627**

1995-96 was an exceptional winter for Little Grebe in both Great Britain and Northern Ireland. Having surpassed the 3,000 total for the first time in 1994-95, counts in Great Britain exceeded 4,000 in three months, peaking unusually late in November, revealing the current winter population estimate for Great Britain of 3,000 birds as too low. In Northern Ireland, over 800 birds were recorded for only the second time since counts began, despite the decline in the coverage of smaller inland sites in the province in recent years. Index values reached an all time high for both areas in 1995-96.

Given that the species is thought to be susceptible to cold winters (Moss & Moss 1993), the peak count in 1995-96 is perhaps surprising. However, close inspection of the Great Britain monthly fluctuations (Table 3) shows that, following the normal decline in mid winter, a smaller than average proportion of the population was present in February and March, after the harsh conditions in late December and early February. In Northern Ireland, the low proportion of the population present in the March counts (Table 4) probably reflects the dispersal of birds to breeding sites not covered by the WeBS scheme.

The number of sites in Table 9 has almost doubled since the 1993-94 report (Cranswick *et al.* 1995). The count of 626 birds at Loughs Neagh & Beg is the highest recorded at any site in the UK since routine monitoring of this species began in 1985-86. The five-year peak mean count on the Thames Estuary has more than doubled in the last two years following exceptional counts at Cliffe Pits on the North Kent Marshes, whilst counts on the Swale, Holme Pierrepont Gravel Pits, the Wash and Chew Valley Lake have all increased to over 100 birds in both of the last two winters. Other sites to hold 30 or more birds in 1995-96 were Stanford Training Area (68, Sep), Pitsford Reservoir (64, Sep), Bewl Water (57, Oct), Kilconquhar Loch (52, Oct), Alde Complex (51, Dec), King's Dyke Pits (48, Oct), Rye Harbour (46, Nov), Abberton Reservoir (45, Sep), Hurworth Burn Reservoir (44, Aug), Tees Estuary (42, Aug), Fairburn Ings (40, Aug), Cemlyn Bay/Lagoon (40, Dec), Whisby Gravel Pits (39, Sep), Crouch/Roach Estuary (38, Feb), Pirton Pool (37, Sep), Somerset Levels (37, Oct), Orwell Estuary (36, Mar), River Derwent: Chatsworth (35, Sep), Cefni Reservoir (34, Aug), Stenhouse Reservoir (34, Oct), Lough Money (33, Dec), Hanningfield Reservoir (32, Aug), Haverton Hole (32, Sep), Fen Drayton Gravel Pit (31, Nov), Benacre Broad (30, Dec), Langstone Harbour (30, Dec) and Irvine/Garnock Estuary (30, Jan).

Table 9. LITTLE GREBE: MAXIMA AT MAIN RESORTS

	91-92	92-93	93-94	94-95	95-96	Month	Average
Great Britain							
Thames Est.	108	182	160	328	477	Nov	251
Swale Est.	94	65	83	202	195	Dec	128
Holme Pierrepont GP	45	95	127	105	162	Sep	107
Wash	48	60	92	120	146	Dec	93
Chew Valley Lake	80	83	75	106	122	Sep	93
Avon Valley (Mid)	38	51	67	81	86	Jul	65
Deben Est.	69	48	75	66	49	Jan	61
Chichester Hbr	53	36	35	50	100	Dec	55
North Norfolk Marshes	36	34	58	56	93	Aug/Sep	55
Barleycroft GP	-	-	-	-	54	Sep	54
Medway Est.	53	49	51	54	60	Nov	53
Kings Mill Rsr	64	70	68	40	23	Jan	53
R. Test: Fullerton to Stockbridge	39	63	43	55	62	Oct	52
Rutland Water	27	15	68	60	83	Nov	51
Cameron Rsr	54	18	40	63	70	Oct	49
Cleddau Est.	29	31	27	49	75	Jan	42
Fleet/Wey	42	46	41	37	37	Nov	41
R. Soar: Leicester	64	43	-	-	17	Dec	41
Sutton/Lound GP	-	26	-	17	72	Sep	38
Eyebrook Rsr	21	28	27	43	70	Sep	38
Hampton & Kempton Rsr	45	28	26	36	54	Sep	38
Blagdon Lake	24	39	26	39	59	Sep	37
Blackwater Est.	22	24	29	52	59	Aug	37
Hamford Water	9	21	52	28	72	Dec	36
Middle Tame Valley GP	25	40	40	25	52	Oct	36

	91-92	92-93	93-94	94-95	95-96	Month	Average
Lee Valley GP	30	31	44	27	44	Sep	35
Fisherwick/Elford GP	-	39	37	20	40	Sep	34
Morecambe Bay	36	30	46	32	27	Jan	34
Southampton Water	33	25	42	26	37	Dec	33
Wraysbury GP	20	49	33	32	27	Feb	32
Portsmouth Hbr	24	28	32	32	36	Dec	30
Northern Ireland†							
Lo. Neagh/Beg	324	442	399	535	626	Sep	465
Strangford Lo.	105	134	123	102	169	Dec	127
Upper Lo. Erne	49	27	54	84	62	Feb	55

† *as no threshold has been set for national importance for Little Grebe in Northern Ireland, a qualifying level of 30 has been used as the basis for selecting sites for presentation in this report*

GREAT CRESTED GREBE
Podiceps cristatus

International importance: ?
Great Britain importance: 100
All-Ireland importance: 30*
***50 is normally used as a minimum threshold**

			Trend	91-92	92-93	93-94	94-95	95-96
GB maximum:	**8,858**	**Nov**	**GB**	**124**	**140**	**137**	**139**	**138**
NI maximum:	**2,997**	**Sep**	**NI**	**97**	**123**	**79**	**170**	**153**

The peak count in Great Britain in 1995-96 was roughly on a par with those recorded in recent years by WeBS. The highest counts occur early in the winter, dropping steadily as the winter progresses with a slight rise in March as birds wintering on poorly monitored coastal waters return to their breeding territories. As with Little Grebe, monthly fluctuations (Tables 3 & 4) show a lower than average proportion of the population on WeBS sites following the midwinter cold spells. Indices have remained remarkably stable for the last four years. Northern Ireland counts peaked only slightly below the record counts of 1994-95, though still significantly above the long term average.

The two outstandingly important sites in the UK, Loughs Neagh & Beg and Belfast Lough, are both in Northern Ireland and hold almost double the number of birds recorded at any other site. The high numbers recorded at the former in 1994-95 were almost matched in 1995-96, making it the most important site in the UK, although numbers are much more variable than at Belfast Lough, where there has been a steady increase since the late 1980s. Counts at the top two British sites both fell in 1995-96. Sites in southeast England, particularly large reservoirs and estuaries, make up the majority of British sites in the bottom half of Table 10. Noteworthy counts were received from King George VI, Queen Elizabeth II, Wraysbury and Abberton reservoirs; it is possible that the unusually dry summer and subsequent low water levels may have had a temporary impact on the ecology and productivity of some of these waterbodies, whilst the count at Pegwell Bay in 1994-95 was exceptional. Peak counts on both the Colne and the Dengie have been consistently lower in the last three winters. Other sites supporting 100 or more birds in 1995-96 were Southampton Water (169, Dec), Swale Estuary (152, Nov), Bough Beech Reservoir (145, Sep), Fen Drayton Gravel Pit (116, Dec), Sonning Gravel Pits (115, Oct), Solway Estuary (113, Apr), Dee Estuary (Eng/Wal) (110, Nov), Thrapston Gravel Pit (110, Oct), Weirwood Reservoir (108, Jul), Thorpe Water Park (106, Jan) and Queen Mother Reservoir (100, Mar).

Table 10. GREAT CRESTED GREBE: MAXIMA AT MAIN RESORTS

	91-92	92-93	93-94	94-95	95-96	Month	Average
Great Britain							
Rutland Water	878	720	894	741	579	Sep	762
Forth Est.	678	920	671	627	411	Sep	661
Chew Valley Lake	550	520	675	600	615	Sep	592
Lade Sands	-	-	580	-	[1]277	Feb	429
Queen Mary Rsr	359	349	411	307	298	Jul	345
NE Kent/Thanet	200	339	250	504	-		323
Morecambe Bay	332	353	348	277	296	Dec	321
Cardigan Bay	[2]376	[2]322	[2]229	(4)	(54)	Dec	309
Grafham Water	522	180	181	175	377	Dec	287
Lo. Ryan	(30)	252	(42)	[3]258	[3]201	Oct	237
Stour Est.	161	187	250	260	312	Oct	234
Cotswold WP West	200	223	214	233	189	Jan/Nov	212
Colne Est.	207	614	40	98	67	Nov	205
Lavan Sands	[4]270	[4]273	[4]275	79	87	Dec	197

	91-92	92-93	93-94	94-95	95-96	Month	Average
Pitsford Rsr	243	141	172	215	188	Jan	192
Hanningfield Rsr	233	117	298	185	124	Sep	191
Dyfi Est	(4)	(4)	278	(3)	54	Dec	166
King George VI Rsr	76	56	(47)	104	401	Sep	159
Pegwell Bay	126	93	44	450	82	Dec	159
Wraysbury GP	68	157	178	167	167	Dec	147
Abberton Rsr	63	247	55	59	238	Nov	132
Blackwater Est.	121	122	84	145	171	Nov	129
Alton Water	93	142	107	183	120	Sep	129
Blithfield Rsr	166	122	115	155	70	Sep	126
Mersey Est.	58	277	139	95	61	Nov	126
Wraysbury Rsr	87	70	114	82	265	Aug	124
Attenborough GP	108	120	134	137	120	Nov	124
Dengie Flats	312	253	12	8	10	Jan	119
Medway Est.	110	135	72	104	161	Nov	116
Eyebrook Rsr	112	146	38	99	167	Dec	112
Queen Elizabeth II Rsr	46	70	54	105	258	Sep	107
Thames Est.	119	103	70	174	67	Oct	107
Wash	112	55	140	128	96	Oct	106
Lo. Leven	126	40	33	102	210	Mar	102
Draycote Water	133	81	144	69	77	Nov	101
Northern Ireland							
Lo. Neagh/Beg	753	2,022	316	2,533	2,440	Aug	1,613
Belfast Lo.	1,141	1,771	1,318	1,650	1,350	Nov	1,446
Lo. Foyle	101	224	80	[5]480	488	Dec	275
Carlingford Lo.	279	140	101	295	143	Feb	192
Upper Lo. Erne	195	231	164	111	90	Feb/Nov	158
Larne Lo.	128	92	110	122	147	Sep	120
Strangford Lo.	60	71	95	40	182	Oct	90
Dundrum Bay	78	84	9	2	0		35

1 *D. Walker* (in litt.)
2 *data from Friends of Cardigan Bay, e.g. Green & Elliott (1993)*
3 *P. Collin* (in litt.)
4 *data from CCW*
5 *unpublished data*

RED-NECKED GREBE
Podiceps grisegena

International importance: 330
Great Britain importance: 1*†
All-Ireland importance: ?
***50 is normally used as a minimum threshold**

GB maximum: 80 Mar
NI maximum: 0

Trend not available

Midwinter numbers in 1995-96, although lower than the record counts the previous year, were generally above average for the five winters in which this species has been recorded nationally. The March peak is curious, as, unlike some divers which congregate at British sites in spring *en route* to northern breeding grounds, Britain represents the eastern limit of the Red-necked Grebe's wintering distribution and numbers might be expected to decline at this time. Most of the March count comprises single birds or pairs at inland sites and the peak may have arisen due to cold weather on the continent and easterly winds in late February, forcing birds west. However, the timing does not correspond with the influxes of other species, e.g. sawbills, which had occurred principally by the February count.

The Forth remains by far the prime British wintering site, all peak counts in the last five years higher even than the exceptional 1995-96 count on the North Norfolk Marshes. Other sites holding five or more birds were the Clyde Estuary (5, Mar) and Lindisfarne (5, Feb/Dec). Two birds at Larne Lough in 1994-95 remain the only WeBS record in Northern Ireland. Up to 26 birds were recorded in southwest Cornwall by a nearshore survey by RSPB in 1994-95, Carrick Roads, at the mouth of the Fal, alone holding up to 14 birds (Slade 1996).

Table 11. RED-NECKED GREBE: MAXIMA AT MAIN RESORTS

	91-92	92-93	93-94	94-95	95-96	Month	Average
Great Britain†							
Forth Est.	32	22	44	89	[1]52	Apr 96	48
North Norfolk Marshes	2	1	0	4	19	Dec	5

† *as the 1% threshold for national importance in Great Britain is so small, a qualifying level of five has been used as the basis for selecting sites for presentation in this report*

1 *SNH funded surveys in SE Scotland, WWT unpubl. data*

SLAVONIAN GREBE
Podiceps auritus

International importance: 50
Great Britain importance: 4*
All-Ireland importance: ?†
***50 is normally used as a minimum threshold**

GB maximum: 258 Mar **Trend not available**
NI maximum: 103 Dec

The 1995-96 British totals of Slavonian Grebe were similar to those of 1994-95, around twice the number recorded previously. As with Red-necked Grebe, the peak count occurred at the end of the winter. This may represent gatherings of Scottish breeders, and would correspond well with the timing of the main arrival on the breeding sites in early April (Summers & Mavor 1995), or Icelandic breeders on passage, although it might be expected that this phenomenon would have been recorded previously by WeBS. Cold weather may also have boosted numbers, as for Red-necked Grebe.

The Moray Firth and Firth of Forth are the only internationally important sites in the UK, although whether the true value of the former site will continue to be recorded on a regular basis without the dedicated surveys of the RSPB/BP monitoring scheme remains to be seen. It appears likely, however, that such monitoring on Lough Foyle would raise its status to that of international importance also. Currently, it is unclear whether low or nil counts at the site represent undercounts or an absence of birds; were the low counts in recent years treated as incomplete, the average would change to 75. With all-Ireland totals rarely exceeding 100 (Sheppard 1993), it is by far the most important site in both Northern Ireland and the Republic. Lough Larne (4, Jan), was the only other Northern Ireland site to support four or more birds in 1995-96.

An additional fourteen British sites support average numbers matching a strict interpretation of the 1% threshold for Slavonian Grebe, although fifty is normally used as a minimum threshold even for birds with small populations. The count on the North Norfolk Marshes was exceptional for that site, similar to the high totals recorded on the Forth and at Pagham the previous winter. Other sites holding four or more birds were the Tamar Complex (9, Dec) and Langstone Harbour (5, Jan). Counts by an RSPB survey of nearshore sites in southwest Cornwall in 1994-95 recorded a peak of 36 birds, the majority in Gerrans Bay (Slade 1996), and sea-duck surveys of SE Scotland found 44 birds in St Andrews Bay in March (WWT, unpubl. data).

Table 12. SLAVONIAN GREBE: MAXIMA AT MAIN RESORTS

	91-92	92-93	93-94	94-95	95-96	Month	Average
International							
Moray Fth	[1]57	[1]60	[1]53	66	(8)	Dec	59
Forth Est.	17	32	28	78	[2]108	Apr 96	53
Great Britain†							
Pagham Hbr	7	57	14	75	23	Jan	35
Lo. of Harray	29	39	9	36	31	Mar	29
Lo. Indaal	36	19	22	37	20	Sep	27
North Norfolk Marshes	2	2	6	6	77	Dec	19
Triagh Luskentyre	-	12	-	-	24	Mar	18
Blackwater Est.	18	11	8	13	22	Mar	14
Studland Bay	-	-	8	17	16	Feb	14
Poole Hbr	6	10	8	15	13	Nov	10
Clyde Est.	4	6	1	8	25	Mar	9
Lo. Ryan	3	7	0	[3]6	[3]19	Nov	7
Exe Est.	7	4	11	5	6	Jan	7
North West Solent	1	4	6	5	13	Feb	6
Lindisfarne	0	2	4	4	15	Jan	5
Lo. of Swannay	-	-	4	4	8	Feb	5

	91-92	92-93	93-94	94-95	95-96	Month	Average
Northern Ireland†							
Lo. Foyle	8	51	0	[4]71	103	Dec	47

† *as no threshold has been set for national importance for Slavonian Grebe in Northern Ireland, a qualifying level of four has been used as the basis for selecting sites for presentation in this report*

1 *RSPB/BP studies (e.g. Stenning 1994)*
2 *SNH funded surveys in SE Scotland (WWT, unpubl. data)*
3 *P. Collin (*in litt.*)*
4 *unpublished data*

BLACK-NECKED GREBE
Podiceps nigricollis

International importance: 1,000
Great Britain importance: 1*†
All-Ireland importance: ?
***50 is normally used as a minimum threshold**

GB maximum: 62 Feb **Trend not available**
NI maximum: 0

Monthly totals of Black-necked Grebes in 1995-96 represent the highest recorded by WeBS. Many records of single birds were made at inland waters, but all large groups, with the exception of some spring and summer counts in or close to breeding areas, were made at estuarine sites, including the other counts of more than 10 birds in 1995-96 on the Fal Complex (24, Dec) and Poole Harbour (15, Feb). The peak count in southwest Cornwall recorded by an RSPB survey in 1994-95 was 14 birds, the majority near Falmouth (Slade 1996).

Table 13. BLACK-NECKED GREBE: MAXIMA AT MAIN RESORTS

	91-92	92-93	93-94	94-95	95-96	Month	Average
Great Britain†							
Langstone Hbr	20	28	26	21	21	Feb	23
Studland Bay	-	-	11	14	12	Feb/Nov	12

† *as the 1% threshold for national importance in Great Britain is so small, a qualifying level of 10 has been used as the basis for selecting sites for presentation in this report*

CORMORANT
Phalacrocorax carbo

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

GB maximum: 15,752 Nov
NI maximum: 1,907 Sep

Trend	91-92	92-93	93-94	94-95	95-96
GB	147	144	166	181	181
NI	160	222	200	214	241

Monthly totals of Cormorant in Great Britain in 1995-96 were some of the highest recorded by the WeBS scheme since this species was first recorded in the mid 1980s, the November peak just surpassing the previous record in 1993-94. Excluding the first two winters when counts were very low, presumably a result of the species only recently having been added to the recording form, numbers have risen by around 30% in eight years. This is similar to the trend for the *carbo* subspecies in other countries in Northwest Europe: rapid increases in France followed legal protection and the establishment of reserves, whilst numbers in Norway, which supports the majority of the 40,500 pairs in Europe, have continued to grow steadily following a dip in the mid 1980s thought to be linked to reduced fish stocks (Debout *et al.* 1995). Numbers in Northern Ireland fluctuate between winters but are generally stable. Counts in 1995-96 represent the highest in the 1990s, but compare with three monthly totals of more than 2,000 birds in 1989-90. MacDonald (1987) estimated around 2,400 Cormorants in Northern Ireland out of an all-Ireland total of 10,500 wintering birds in the mid 1980s, a large increase since the late 1960s, partly as a result of the spread of Roach *Rutilus rutilus*. The six sites in Table 14 thus hold a sizeable proportion of the total in the province.

Noteworthy site counts in 1995-96 include those on the Tees Estuary, North Norfolk Marshes, Queen Mary Reservoir, Draycote Water, Walthamstow Reservoir, Farmoor Reservoir, Wraysbury Reservoir and Carlingford Lough, all around 50% higher than their respective five year averages. Counts at Abberton Reservoir in the last two years have also been considerably higher than previously, linked to the increase in the size of the breeding colony at this site combined with the collection and reporting of counts from summer months. However, numbers decline markedly during the winter, with December counts generally of 100 or fewer birds. Other sites holding 130 or more birds were Ranworth & Cockshoot Broads (295,

Nov), Tay Estuary (245, Sep), Wraysbury Gravel Pits (206, Nov), Dungeness Gravel Pits (186, Jul), Lee Valley Gravel Pits (185, Jan), Traeth Bach (180, Sep), Holme Pierrepont Gravel Pits (171, Mar), Fleet/Wey (166, Dec), Middle Tame Valley Gravel Pits (157, Nov), Lower Windrush Valley Gravel Pits (151, Nov), Long Eaton Gravel Pits (154, Feb), Orwell Estuary (145, Oct), Clwyd Estuary (143, Apr) and Rye Harbour & Pett Levels (131, Dec). Only on the Colne and Humber Estuaries were maxima well below normal.

The UK Government is currently funding a three year programme of research into the impact of fish-eating birds on fish populations. Five different projects have been let: a comprehensive literature review, plus studies on population dynamics (being led by the BTO), feeding ecology (WWT), case studies of impact (Liverpool John Moores University) and effectiveness of management measures (Central Science Laboratories). The BTO's studies of population dynamics incorporates a subcontract to WWT to analyse WeBS data, and will include recommendations for future monitoring of both Cormorants and Goosanders.

Table 14. CORMORANT: MAXIMA AT MAIN RESORTS

	91-92	92-93	93-94	94-95	95-96	Month	Average
Great Britain							
Morecambe Bay	1,113	802	895	793	1,115	Sep	944
Forth Est.	951	737	622	579	806	Oct	739
Inner Moray Fth	117	167	1,945	624	388	Oct	648
Solway Est.	606	757	682	450	639	Sep	627
Rutland Water	445	532	800	661	655	Dec	619
Inner Clyde Est.	810	565	377	459	464	Dec	535
Abberton Rsr	380	351	159	800	755	May	489
Poole Hbr	377	380	368	284	471	Aug	376
Lo. Leven	390	317	297	442	410	Feb	371
Tees Est.	211	345	181	396	676	Sep	362
Dee (Eng/Wal) Est.	201	313	431	354	460	Sep	352
Ranworth/Cockshoot Br.	327	271	259	462	295	Nov	323
Alt Est.	252	143	455	447	285	Sep	316
Grafham Water	350	270	470	170	310	Dec	314
Colne Est.	286	384	676	181	43	Jan	314
North Norfolk Marshes	174	87	1426	398	463	Nov	310
Blackwater Est.	210	244	501	269	249	Jan	295
Wash	193	206	297	394	348	Aug	288
Rostherne Mere	159	261	369	273	244	Jan	261
Ouse Washes	182	248	335	244	285	Jan	259
Queen Mary Rsr	226	124	407	137	387	Mar	256
Medway Est.	417	108	212	212	310	Sep	252
Hanningfield Rsr	156	258	240	283	211	Mar	230
Irvine to Saltcoats	-	260	190	197	250	Mar	224
William Girling Rsr	177	186	132	400	200	Oct	219
Thames Est.	211	204	204	246	205	Oct	214
Dysynni Est.	200	(9)	245	125	248	Sep	205
Swale Est.	238	161	236	208	174	Oct	203
Draycote Water	75	135	152	347	292	Dec	200
Dengie Flats	201	401	203	43	152	Mar	200
Chew Valley Lake	162	160	220	195	250	Nov	197
Carmarthen Bay	151	131	237	249	(45)	Dec	192
Ribble Est.	161	222	175	167	191	Oct	183
Ayr to Troon	190	337	146	115	121	Sep	182
Stour Est.	175	145	250	169	157	Oct	179
Queen Elizabeth II Rsr	430	70	98	118	169	Aug	177
Pagham Hbr	135	161	199	158	204	Mar	171
Windermere	177	174	186	167	137	Nov	168
Barn Elms Rsr	260	118	247	28	-		163
Walthamstow Rsr	80	100	90	130	400	May	160
NE Kent/Thanet	205	25	247	150	-		157
Farmoor Rsr	135	130	183	97	225	Dec	154
Staines Rsr	8	183	226	-	194	Oct	153
Breydon Water	126	122	113	187	198	Aug	149
Southampton Water	145	175	120	138	135	Feb	143
Irvine/Garnock Est.	151	147	121	146	130	Mar	139
Exe Est.	104	238	119	107	123	Sep	138
Wraysbury Rsr	79	246	69	43	241	Sep	136
Humber Est.	134	181	128	145	75	Oct	133

	91-92	92-93	93-94	94-95	95-96	Month	Average
Northern Ireland†							
Lo. Neagh/Beg	446	1,018	546	631	951	Sep	718
Belfast Lo.	343	380	483	401	536	Sep	429
Strangford Lo.	123	189	259	165	180	Sep	183
Carlingford Lo.	174	167	130	101	244	Jan	163
Outer Ards	146	97	100	177	147	Dec	133
Upper Lo. Erne	194	111	109	76	162	Feb	130

† *as no threshold has been set for national importance for Cormorant in Northern Ireland, a qualifying level of 130 has been used as the basis for selecting sites for presentation in this report*

l *includes a count of roosting birds at Holkham Lake*

MUTE SWAN
Cygnus olor

International importance: 2,400
Great Britain importance: 260
All-Ireland importance: 55

			Trend	91-92	92-93	93-94	94-95	95-96
GB maximum:	**15,646**	**Oct**	**GB**	**151**	**150**	**161**	**169**	**171**
NI maximum:	**2,419**	**Nov**	**NI**	**119**	**120**	**109**	**133**	**138**

Although the peak count of Mute Swans in Great Britain in 1995-96 was slightly lower than in the previous winter, monthly totals were, on the whole, very similar. With the exception of a small decline in the early 1990s, indices show the population has continued to grow. The 1995-96 value, the highest yet, suggests an annual growth rate of 5.1% over the last 11 years, with an overall increase of 73% during the period. Numbers in Northern Ireland also represent some of the highest recorded by WeBS to date, exceeded only by a count of 2,517 in October 1989. Index values suggest a reasonably constant increase during the 10 years for which data are available.

The increase in Mute Swan numbers has also been noted in other countries and the total in Northwest Europe as a whole has risen by 60% between 1984 and 1994 (Rose 1995). The most recent estimate places the total at 240,000 birds, two thirds of which are found around the Baltic and in Scandinavia (Scott & Rose 1996). The sedentary nature of the Mute Swan throughout many parts of its range, as demonstrated by extensive ringing schemes, has lead to the identification of many populations and sub-populations. Scott & Rose (1996) suggest that birds in Britain and in Ireland constitute discrete populations of 25,750 and 10,000 respectively. New 1% thresholds derived from these figures would qualify all sites in Great Britain and the top four in Northern Ireland listed in Table 15 as internationally important.

The count at Lough Neagh represents the highest WeBS count to date for Mute Swan at any site, surpassing the old 1% threshold for international importance, and was the only site where the 1995-96 counts exceeded the five year mean by a notable margin. Numbers on the Tweed Estuary were the lowest for many years, whilst numbers at Loch of Skene continued to fall. Other sites holding 260 or more birds were Montrose Basin (299, Jul) and the River Welland: Spalding to Borough Fen (283, Nov).

Table 15. MUTE SWAN: MAXIMA AT MAIN RESORTS

	91-92	92-93	93-94	94-95	95-96	Month	Average
Great Britain							
Fleet/Wey	1,173	1,126	1,196	1,227	1,151	Dec	1,175
Ouse Washes	365	615	923	726	427	Jan	611
Abberton Rsr	562	487	572	624	538	Aug	557
Tweed Est.	370	640	720	593	212	Jan	507
Somerset Levels	252	525	467	660	570	Nov	495
Avon Valley (Mid)	446	398	327	438	476	Nov	417
Lo. of Harray	564	261	275	211	219	Feb	306
Rutland Water	299	211	342	280	295	Dec	285
Morecambe Bay	248	199	356	310	285	Jan	280
Lo. of Skene	329	375	404	180	101	Sep	278
Northern Ireland							
Lo. Neagh/Beg	1,601	1,746	1,115	1,683	2,179	Aug	1,665
Upper Lo. Erne	520	355	413	456	456	Feb	440
Broad Water Canal	128	(6)	175	-	-		152
Strangford Lo.	114	118	213	133	98	Oct	135
Dundrum Bay	79	100	145	103	63	Apr	98
Lo. Foyle	102	95	80	102	104	Dec	97
Upper R. Quoile	45	76	38	114	73	Oct	69
Corbet Lo.	100	36	-	-	-		68

BLACK SWAN
Cygnus atratus

Escape
Native range: Australia

GB maximum:	**17**	**Jan**
NI maximum:	**1**	**Jan**

Black Swans are widely spread in the UK, recorded at 32 sites in 1995-96. The largest counts were at Thorpe Water Park (7, Dec), Salhouse Broad (5, Aug), Somerset Levels (4, Nov) and Solway Estuary (3, Apr). The only Northern Ireland record was of one at Lough Foyle in December. Summing site maxima gives a total of 50 birds for the UK in 1995-96, though this is likely to including a degree of double-counting as the same birds move between sites, especially given that it is such a conspicuous species.

BEWICK'S SWAN
Cygnus columbianus bewickii

International importance: 170
Great Britain importance: 70
All-Ireland importance: 25*
***50 is normally used as a minimum threshold**

GB maximum	**8,014**	**Feb**
NI maximum:	**206**	**Jan**

Trend	**91-92**	**92-93**	**93-94**	**94-95**	**95-96**
GB	**295**	**200**	**178**	**141**	**277**
NI	**92**	**45**	**77**	**25**	**36**

Count totals and index values for Bewick's Swans in Great Britain in 1995-96 have only been exceeded on two previous occasions: in the mid 1980s and at the start of the 1990s. Since the mid 1960s, numbers had shown a generally steady increase, but dropped dramatically following both these peaks. The large rise again in 1995-96 was no doubt influenced by the cold conditions in continental Europe, causing an influx of birds to many sites in the southeast in February and March, notably Breydon Water and St Benet's Levels, whilst the Arun Valley also received higher than normal numbers. Several other sites holding more than 70 birds also matched this pattern, including Dungeness (104, Dec) and the Alde Complex (77, Jan). The westerly movement of birds was apparent in counts on the Severn Estuary and Somerset Levels, and it is likely that data from Ireland will show higher numbers than in recent years also. Despite this influx, few birds ventured north and the count on the Dee Estuary (Eng/Wal) (72, Feb) was exceptional. Counts at Martin Mere, by far the lowest for many years, and at nearly all key sites in Northern Ireland held numbers which were well below average and the index value for Northern Ireland remained low. Breeding success was relatively poor in 1995, with only 11-14.7% young recorded at WWT Centres (WWT, unpubl. data).

Increases in Britain in the 1980s resulted from a shift of birds from wintering grounds in The Netherlands (Scott & Rose 1996). Apart from this, the trend in British numbers appears to match that of the population as a whole, with relatively stable numbers in recent years, although data as yet are considered inconclusive at an international level (Rose 1995). However, some very high counts in the early 1990s, including one of 17,500 at a spring staging site in Estonia, have cast doubt over the current population estimate and suggest numbers may be as high as 25,000 in some years, whilst aerial surveys of the breeding grounds point to a possibly even higher figure (Scott & Rose 1996). The current international estimate has been retained in the absence of conclusive evidence regarding the size of any change.

Table 16. BEWICK'S SWAN: MAXIMA AT MAIN RESORTS

	91-92	92-93	93-94	94-95	95-96	Month	Average
nternational							
Ouse Washes	5,542	5,169	4,172	3,920	4,830	Jan	4,727
Nene Washes	1,189	2,543	1,922	1,913	1,025	Jan	1,718
Martin Mere/Ribble Est.	[1]848	[1]764	[1]582	[1]548	[1]350	Feb	618
Breydon Water	394	268	331	209	752	Feb	391
Severn Est.	[1]322	[1]329	[1]313	253	[1]370	Jan	308
Walland Marsh	[2]300	[2]315	[2]288	-	[2]327	Feb	308
St Benet's Levels	294	173	179	404	391	Jan	288
Somerset Levels	170	209	195	115	345	Feb	207
Great Britain							
Walmore Common	[1]97	[1]163	127	[1]127	[1]139	Mar	131
Avon Valley (Mid)	213	128	90	82	118	Feb	126
Arun Valley	110	66	24	80	133	Mar	83

	91-92	92-93	93-94	94-95	95-96	Month	Average
Northern Ireland							
Lo. Neagh/Beg	232	163	115	90	80	Jan	136
Canary Road	135	-	59	-	43	Dec	79
Lo. Foyle	106	59	92	37	94	Feb	78
R. Lagan: Flatfield	11	41	84	-	32	Jan	42
Boghill Fields	104	31	26	-	0		40
Strangford Lo.	0	0	133	0	0		27

1 *from WWT annual swan reports (e.g. Bowler* et al. *1994)*
2 *D. Walker (in litt.)*

TRUMPETER SWAN
Cygnus buccinator

Escape
Native range: North America

GB maximum: **2** **Feb**
NI maximum: **0**

Two birds were recorded at Tansor Gravel Pits Feb in Northamptonshire, having first been recorded there in 1990.

WHOOPER SWAN
Cygnus cygnus

International importance: 160
Great Britain importance: 55
All-Ireland importance: 100

GB maximum: **3,477** **Jan**
NI maximum: **2,005** **Feb**

Trend	91-92	92-93	93-94	94-95	95-96
GB	186	182	162	191	169
NI	81	84	73	81	70

Numbers of Whooper Swans recorded by WeBS in 1995-96 were on a par with those of recent years in both Northern Ireland and Great Britain. Indices for Great Britain suggest that, following a decline from high levels in the late 1980s, numbers have stabilised at around two thirds of this level whilst index values for Northern Ireland suggest relatively stable numbers for the last seven winters. Breeding success was reasonable in 1995, with 12.6-17.7% young at WWT Centres (WWT, unpubl. data).

Comparison with the results of the International Swan Census in January 1995 (Cranswick *et al.* 1997b) shows that WeBS records between two thirds and three quarters of the actual numbers present in mid winter. Almost half of the census total of 15,482 birds was found in the Republic of Ireland (44.6%), with the much of remainder divided between Northern Ireland (17.6%), Scotland (16.4%) and England (14.3%). Just over 6% remained in Iceland, whilst Wales and the Isle of Man each held less than 1%. Around 400 birds from the Icelandic population wintered on the continent, whilst an unknown but almost certainly smaller number of Scandinavian/Russian birds wintered in eastern Britain. The total represents a considerable decline from the 1991 census figure of 18,035 birds, although the earlier figure included a degree of double counting. Thus, whilst there has been a genuine decrease in the size of the population, and the estimate revised downwards accordingly, it is not thought to have been as dramatic as the figures at first suggest.

The count at Lough Foyle in 1995-96, one of the largest site counts of Whooper Swans by WeBS, illustrates the use of the Swilly/Foyle area as one of the key landfall sites, with sightings of ringed birds suggesting a large turnover of birds at this site for a prolonged period in autumn (McElwaine *et al.* 1995). Data since 1979-80 shows that this not only includes birds newly arrived from Iceland, passing through to other sites in Ireland and also sites in Britain, but also a number of birds that had first made landfall in east Scotland. It is suggested that these movements between Britain and Ireland relate to reorientation of birds which were blown off course during their migration from Iceland. The 1995-96 count on the Ouse Washes was a site record and demonstrates the continuing growth in size of a herd that numbered just a handful of birds in the mid 1960s. The count at Loch of Skene, like that of Mute Swan at this site, remained low for the second winter in succession. River Lagan: Flatfield (135, Jan) was the only other site in Northern Ireland to support more than 100 birds whilst counts of 55 or more were made at five sites in Great Britain: Balgray Reservoir (89, Dec), St Benet's Levels (72, Dec), Loch of Boardhouse (61, Apr), Linton Pond Reservoir (60, Jan) and Bemersyde Moss (59, Feb).

The flight paths of seven birds migrating between Scotland and Iceland in 1994 and 1995 were followed using satellite transmitters and air pressure and temperature sensors to measure altitude (Pennycuick *et al.* 1996). Birds flew no higher than necessary for terrain clearance when crossing

and and, with the exception of two birds which attained eights of 500 m and 1,700 m during the southerly nigration in autumn, generally remained at low altitudes ver the sea. Birds flew by day, or on clear nights, but anded at times of poor visibility, and made frequent and ometimes prolonged stops on the water. The swans took generally direct routes between Iceland and Scotland or Ireland, except when forced off course by gales. Calculations suggested that Whoopers lack sufficient power to climb to great heights and could not reach altitudes of 8,000 m, as has been previously reported, except by use of lee winds.

Table 17. WHOOPER SWAN: MAXIMA AT MAIN RESORTS

	91-92	92-93	93-94	94-95	95-96	Month	Average
nternational							
o. Neagh/Beg	1,182	883	1,083	1,102	906	Jan	1,031
)use Washes	[1]778	[1]856	[1]986	[1]1,142	[1]1,288	Dec	1,010
o. Foyle	596	1,166	569	596	1,521	Oct	890
Ipper Lo. Erne	889	612	721	756	980	Feb	792
lartin Mere/Ribble Est.	[1]631	[1]666	[1]650	[1]738	[1]740	Feb	685
.. Foyle: Grange	211	-	297	-	266	Mar	258
o. Eye/Cromarty Fth	[2]340	[2]389	72	190	76	Feb	213
o. of Skene	340	425	243	0	8	Oct	203
olway Est.	190	[1]200	[1]175	[1]176	[1]198	Dec	188
lack Cart Water	-	-	262	-	110	Oct	186
o. of Strathbeg	176	140	302	75	221	Nov	183
o. Insh & Spey Marshes	184	-	(0)	200	115	Dec	166
;reat Britain							
o. of Spiggie	165	141	-	84	180	Nov	143
o. Leven	90	127	99	96	94	Dec	101
.. Tweed: Kelso - Coldstream	51	139	137	75	88	Dec	98
'eviot Haughs	156	69	58	68	95	Jan	89
Vigtown Bay	80	105	75	98	72	Feb	86
:argen Water: Islesteps	96	71	74	-	-		80
ıner Moray Firth	97	[2]155	19	40	47	Feb	72
lerryton Ponds	78	63	72	72	-		71
Vash	111	7	76	120	24	Oct	68
och Heilen	56	25	-	110	-		64
o. of Skaill	-	18	21	104	95	Nov	60
o. of Ayre	-	-	-	-	60	Nov	60
lilldam & Ballfour Mains Pools	66	58	60	57	46	Dec	57
asterloch Uyeasound	56	57	-	-	-		57
ast Fortune Ponds	51	48	96	63	20	Nov	56

from WWT annual swan reports (e.g. Bowler et al. *1994)*
*R.J. Evans (*in litt.*)*

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lAGPIE GOOSE — **Escape**
ınseranas semipalmata — **Native range: Australasia**

;B maximum: 1 Mar
ıl maximum: 0

)ne bird on the Lower Windrush Valley Gravel Pits in larch was one of the most surprising species noted on a VeBS count.

;WAN GOOSE — **Escape**
ınser cygnoides — **Native range: Eastern Asia**

;B maximum: 27 Jan
ıl maximum: 0

'his species was recorded at nine sites in 1995-96, with hree or more at Esthwaite Water (13, ıug/Sep/Nov/Jan/Feb), Etherow Country Park (6, Nov/Dec/Jan), Grafham Water (3, Oct-Mar) and Tresco Great Pool (3, Oct).

BEAN GOOSE
Anser fabalis

International importance: 800
Great Britain importance: 4*†
All-Ireland importance: +*
***50 is normally used as a minimum threshold**

GB maximum:	**224**	**Feb**	**Trend**	**not available**
NI maximum:	**0**			

The majority of Bean Geese wintering in Britain are found at two traditional sites, the Yare and Carron Valleys, and are of the *fabalis*, or so-called Taiga, race of Bean Goose. The large count at Heigham Holmes in 1993-94 is believed to have been of birds of the *rossicus* subspecies, and thus not part of Yare flock which comprises *fabalis* birds (M. Blackburn, pers. comm.). A study group has recently been established for the purposes of monitoring numbers and reviewing the conservation of the Scottish flock, and includes representatives from SNH, RSPB and WWT.

The cold winter of 1995-96 caused an influx of birds from the near continent and a large number of sites, all in eastern England, held 10 or more birds: North Warren & Thorpeness Mere (48, Feb), Medway Estuary (38, Oct), Breydon Water (25, Jan), St. Benet's Levels (24, Jan), Humber Estuary (12, Feb), Bolton on Swale Gravel Pits (10, Feb) and the Nene Washes (10, Feb). Associated with the influx were small numbers of *rossicus* or Tundra Bean Geese, although not specifically identified for WeBS. Despite the obvious increase in numbers in February (Table 1), Britain supports only a fraction of the international populations of Bean Geese even in cold winters: numbers of *fabalis*, wintering chiefly in north European countries, are estimated at 80,000, and *rossicus*, which winters throughout central Europe, at 300,000, although it has been suggested that these figures are too low and may be as high as 100,000 and 500,000, respectively (Scott & Rose 1996).

Table 18. BEAN GOOSE: MAXIMA AT MAIN RESORTS

	91-92	92-93	93-94	94-95	95-96	Month	Average
Great Britain†							
Middle Yare Valley	[1]405	350	305	[2]310	[2]195	Feb	313
Carron Valley	[3]146	[3]126	[4]135	[3]132	[3]123	Oct	132
Heigham Holmes	-	24	365	8	103	Nov	125

† *as the 1% threshold for national importance in Great Britain is so small, a qualifying level of 10 has been used as the basis for selecting sites for presentation in this report*
1 *data from M. Parslow-Otsu*
2 *M. Blackburn, pers. comm.*
3 *data from J. Simpson and A. Maciver*
4 *Smith* et al. *(1994)*

PINK-FOOTED GOOSE
Anser brachyrhynchus

International importance: 2,250
Great Britain importance: 2,250
All-Ireland importance: +*

GB maximum:	**+200,343**	**Oct**	**Trend**	**91-92**	**92-93**	**93-94**	**94-95**	**95-96**
NI maximum:	**3**	**Jan**	**GB**	**324**	**275**	**312**	**362**	**279**

The national census totals of 200,300 and 181,800 Pinkfeet in October and November, respectively (Mitchell 1996), were much lower than expected, the October count being 24% down on the same time in 1994. Whilst the 1995 breeding season was below average for Pink-footed Geese, with only 13.8% young and 2.4 young per successful pair present in autumn flocks, this alone is insufficient to account for a difference of 60,000 birds compared with the previous year. The counts were carried out under good conditions and no major sites were missed. However, the low estimate, compared with 1994, suggests that some birds were almost certainly missed. Night-time feeding was reported during the October count weekend and this may have affected the population estimate. Further, Pink-footed Geese arrived slightly earlier in 1995 than in recent autumns, with peak numbers at many sites in east-central Scotland counted during the last week of September, and a count of *c.* 25,000 birds at Martin Mere, Lancashire, on 30 September. This early dispersal may also have been partly responsible for some of the undercounting. Over 54% of the October total was found at just six sites, compared with 62% at just five sites in 1994, again suggesting early movement away from key arrival sites, reducing the ability of the census to obtain an accurate total.

Dupplin Lochs remain the most important site, with the count of 62,000 recorded there in October 1994 the largest ever gathering of this species. Loch of Strathbeg continues to support, on average, close to 40,000 birds, whilst Snettisham, south-west Lancashire, Montrose Basin and West Water Reservoir regularly hold 30,000, some 10,000 more than the next nine most important sites which

upport over 10,000 Pink-footed Geese. The count at Hule Moss was one of the highest for many years, following a much lower than average peak the previous year, whilst numbers have increased greatly on the Solway and at Carsebreck & Rhynd Lochs in recent years. Large counts in 1995-96 were also made at Wigtown Bay and on the Cromarty Firth/Loch Eye, whilst other sites holding 1,900 or more birds in 1995-96 were Holbeach St Matthew (5,030, Feb), Caithness (3,916, Mar), Loch Spynie (3,000, Mar), Loch Kindar (2,740, Mar) and Whitton Loch (2,200, Oct). Unusually low counts were made at Loch of Kinnordy and Drummond Pond, and also at Glenfarg Reservoir. Following the record total in 1994-95 at this last site, the use of fishing boats has been extended until December, and consequently no birds used the roost.

Although not meeting the national threshold, a count of 7,360 birds on the Humber Estuary in November is of interest, representing the largest count for many years in what, until the 1970s, was a traditional wintering haunt, supporting up to 10,000 birds (Pashby 1992).

Winter 1995-96 saw the completion of a three year study undertaken by WWT examining the distribution of Pink-footed and Greylag Geese in mid winter and spring. Volunteer goose counters contributed co-ordinated counts once in mid winter (usually January) and once in late spring (usually the end of March). The final report emphasized the dispersed nature of flocks at these times of year, with the mid winter and spring counts recording on average 68% and 45%, respectively, of the autumn Pinkfoot population estimate (Mitchell *et al.* 1996). Most birds were recorded in Norfolk in January (26% of the total count), with Snettisham holding an average peak of 45,900 over the three winters. In late March, most birds were recorded in north-east Scotland (41% of total count), with the Ythan Estuary holding an average peak of 23,880 over the three springs.

Table 19. PINK-FOOTED GOOSE: MAXIMA AT MAIN RESORTS*

	91-92	92-93	93-94	94-95	95-96	Month	Average
nternational							
Dupplin Lo.	57,500	25,500	36,500	62,000	35,000	Sep	43,300
o. of Strathbeg	23,350	30,650	38,970	58,150	48,500	Oct	39,924
nettisham[1]	17,160	24,400	45,925	31,000	39,130	Jan	31,523
W Lancashire[2]	38,240	32,800	25,185	31,000	28,850	Nov	31,215
Montrose Basin	25,000	35,000	41,210	36,000	18,500	Oct	31,142
Vest Water Rsr	32,636	25,000	40,000	26,500	31,500	Oct	31,127
o. Leven	21,880	23,070	18,870	16,154	17,898	Sep	19,574
Holkham[1]	14,300	9,150	27,760	16,000	19,230	Jan	17,288
Hule Moss	18,500	15,880	14,100	8,700	24,900	Oct	16,416
Cameron Rsr	12,270	15,477	27,300	14,860	11,260	Nov	16,233
colt Head[1]	19,600	15,200	16,860	13,150	15,635	Nov	16,089
olway Est.	9,330	12,388	17,470	20,202	20,523	Feb	15,983
lains Lo./Ythan Est.	(2,300)	4,360	23,880	6,060	25,000	Oct	14,825
Aberlady Bay	9,995	7,000	26,000	5,750	11,320	Oct	12,013
Carsebreck/Rhynd Lo.	9,250	8,000	7,120	14,500	13,500	Oct	10,474
ala Flow	16,410	4,800	6,450	3,500	2,437	Sep	6,719
ylde/Morecambe Bay	9,000	6,100	6,100	(540)	5,503	Mar	6,676
Castle Lo., Lochmaben	14,000	3,000	4,000	(1)	800	Mar	5,450
o. of Kinnordy	6,120	4,630	9,195	3,420	434	Oct	4,760
Vigtown Bay	3,810	3,009	3,530	5,912	7,229	Mar	4,698
Cowgill Rsr	2,800	6,700	5,400	3,820	4,560	Oct	4,656
Tay Est.	5,208	2,800	(300)	1,938	6,117	Oct	4,016
Glenfarg Rsr	320	4,800	3,800	9,080	0		3,600
Crombie Lo.	4,250	3,500	3,000	-	-		3,583
o. Tullybelton	4,500	5,800	4,100	1,800	1,395	Oct	3,519
Gladhouse Rsr	2,700	2,300	2,500	4,550	3,290	Oct	3,068
Ardoch Lo.	2,620	-	-	(0)	(0)		2,620
kinflats	2,155	2,596	2,051	2,100	3,070	Oct	2,394
Tay/Isla Valley	1,204	712	3,820	3,202	2,785	Oct	2,345
o. Eye/Cromarty Fth	1,527	800	1,662	525	7,150	Mar	2,333
Lightae Lo.	2,430	400	4,000	(0)	(0)		2,277
Drummond Pond	3,450	3,000	2,550	2,250	110	Oct	2,272

includes data from Paul Fisher (in litt.)
includes data from Lancashire Goose Report (e.g. Forshaw 1995)

EUROPEAN WHITE-FRONTED GOOSE
Anser albifrons albifrons

International importance: 6,000
Great Britain importance: 60
All-Ireland importance: +*

GB maximum:	**6,903**	**Feb**
NI maximum:	**0**	

Trend	**91-92**	**92-93**	**93-94**	**94-95**	**95-96**
GB	**53**	**13**	**44**	**32**	**34**

The February total of European Whitefronts was the highest in Great Britain since 1987-88. However, even with these figures, the average index value for the 1990s represents the lowest of any five year period since the 1960s for which figures are calculated (Figure 4). The monthly pattern of numbers was similar to that of most winters, with peak numbers occurring in late winter. However, it is clear that the large numbers in 1995-96 were the result of a cold weather influx from the continent. Many sites on or close to the east coast received record numbers, particularly Heigham Holmes, North Warren & Thorpeness Mere and the Swale Estuary, whilst all others to hold 60 or more birds in 1995-96, namely St Benet's Levels (146, Jan), Ouse Washes (88, Mar) and Crouch/Roach Estuary (70, Jan), also fitted this pattern. Ten sites in Scotland held birds at this time, with counts at East Fortune Ponds (54, Feb), North Ronaldsay (42, Dec) and Loch Watten (24, Feb) being notable, although not reaching the 1% threshold. However, there appeared to be little or no westerly movement of birds associated with the influx, and only moderate numbers were recorded at other traditional haunts, including Slimbridge and the Avon Valley.

Twenty-three percent of birds at WWT Slimbridge were first years, indicating reasonable breeding success, with an average brood size of 2.9 birds (WWT unpubl. data). The breeding success of birds wintering in southern Zeeland, The Netherlands, shows a cyclic pattern which coincides with that of Dark-bellied Brent Geese (Van Impe 1996). This pattern was not evident in the Bean Geese in this area, and it is probable that the Whitefronts, which nest further north than the Beans, are subject to the same prey-switching, between lemmings in good "lemming years" and other prey in poor years, by Arctic Foxes *Alopex lagopus* that dictates Brent numbers.

The population in Northwest Europe has increased from around 60,000 birds in the 1960s to *c.* 400,000 in the late 1980s and has passed 600,000 in recent years, and the international 1% threshold has been revised accordingly (Scott & Rose 1996). The proportion of the population in Britain has fallen dramatically between the 1960s, when Slimbridge alone held 10% of the population on a number of occasions, and the 1990s, when less than 1% was present in the country in most winters.

Table 20. EUROPEAN WHITE-FRONTED GOOSE: MAXIMA AT MAIN RESORTS

	91-92	92-93	93-94	94-95	95-96	Month	Average
Great Britain							
Severn Est.	5,100	1,401	3,000	2,200	2,170	Feb	2,774
Swale Est.	1,500	900	1,652	1,681	2,088	Feb	1,564
Heigham Holmes	-	350	163	185	1,043	Feb	435
North Norfolk Marshes	163	567	316	248	476	Mar	354
Middle Yare Valley	165	238	+265	189	180	Mar	207
Breydon Water	50	539	80	88	64	Feb	164
North Warren/Thorpeness Mere	1	66	120	47	450	Feb	137
Thames Est.	178	122	103	0	41	Mar	89
Dungeness GP	168	11	174	0	8	Jan	72
Minsmere Levels	108	9	69	64	83	Jan	67
Avon Valley (Lower)	172	54	20	50	21	Nov	63
Avon Valley (Mid)	221	84	0	0	0		61
Walland Marsh	-	-	-	-	[1]300	Feb	60

1 *D. Walker (in litt.)*

GREENLAND WHITE-FRONTED GOOSE
Anser albifrons flavirostris

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

GB maximum:	**+21,546**	**Nov**
NI maximum:	**+195**	**Feb**

Trend	**91-92**	**92-93**	**93-94**	**94-95**	**95-96**
GB	**135**	**127**	**142**	**160**	**179**
NI	**105**	**95**	**75**	**97**	**128**

The international census of Greenland Whitefronts in autumn recorded the highest number yet in Great Britain, largely as a result of record counts on Islay (Fox & Francis 1996). Consequently, the index value rose sharply with a 25% increase in just two years. This follows a good breeding year, with 18.8% young and an average brood size

of 3.96, some of the highest values since the late 1980s. Counts at the two key sites in Northern Ireland were the highest since regular monitoring began in the early 1980s (D.W. Norriss, pers. comm.), ironically following three of the lowest index values for the province. Including Republic of Ireland totals, the total population numbers over 34,600 birds, 2,500 more than the previous winter.

At the start of regular co-ordinated monitoring in 1982, the number of birds on Islay represented just over half the Scottish total. The rate of increase on the island in the late 1980s exceeded that of the population as a whole, with the result that as much as 70% of the Scottish birds were present. Although numbers on Islay have grown tremendously during the 1990s, the proportion of the total has remained relatively stable, at around two thirds. A number of other sites also held record numbers of birds in 1995-96, notably at Machrihanish, following a period of very stable numbers, and Tiree, following three poor years. Steady increases have been noted at Danna & Keills and Loch Heilen/Loch Mey, whilst counts at Benderloch and Westfield Marshes were also well above average. In addition to sites in Table 21, West Freugh (240, Nov), Clachan (191, Jan), Loons/Loch of Isbister (166, Mar) and Jura (160, Nov) all held in excess of the national threshold in 1995-96.

Table 21. GREENLAND WHITE-FRONTED GOOSE: MAXIMA AT MAIN RESORTS+

	91-92	92-93	93-94	94-95	95-96	Month	Average
International							
Islay[1]	10,003	10,905	11,368	12,350	14,495	Nov	11,824
Rhunahaorine	1,499	726	1,050	1,361	1,360	Feb	1,199
Machrihanish	1,023	1,110	1,103	1,044	1,339	Oct	1,124
Coll	621	438	896	1,026	962	Dec	789
Tiree	1,101	418	499	512	1,387	Mar	783
Stranraer Lo.	438	550	565	565	550	Dec	534
Lo. Ken	382	323	325	293	360	Mar	337
Danna/Keills	287	288	308	381	414	Dec	336
Great Britain							
Appin/Eriska/Benderloch[2]	270	112	323	336	376	Mar	283
Westfield Marshes	329	190	196	206	352	Oct	255
Lo. Lomond: Endrick Mouth	350	250	137	230	230	Mar	239
Bute	250	130	213	226	210	Mar	206
Colonsay/Oronsay	210	195	150	185	206	Nov	189
Lo. Heilen/Lo. Mey	148	160	180	196	258	Nov	188
Jura	-	(20)	-	148	160	Nov	154
Dyfi Est.	143	134	160	155	147	Apr	148
Linne Mhuirich/Lo. na Cille[2]	-	284	0	-	-		142

\+ *based largely on data from GWGS reports (e.g. Fox & Francis 1996)*

1 *data represent SNH 'adopted' counts: whole-island counts are made on two consecutive days and the average taken, unless one count is deemed inaccurate due to operational difficulties. Note that figures presented here may differ from those previously published*

2 *probably significant numbers of the same birds moving between these sites*

LESSER WHITE-FRONTED GOOSE
Anser erythropus

Vagrant and escape
Native range: SE Europe and Asia

GB maximum: **3** **Feb**
NI maximum: **0**

Singles were recorded at six sites: Hardley Flood (Jun/Jul), Ranworth & Cockshoot Broads Oct, Weirwood Reservoir Oct, Brandesburton Gravel Pits Feb, Severn Estuary Feb and Stratfield Saye Feb. Most birds in the UK appear likely to be escaped collection birds, although genuine vagrants have also occurred as have birds from the re-establishment scheme in Sweden and Finland. In Europe, the wintering population has probably declined by around 90%, largely for unknown reasons, and is believed to number between 15,000 and 35,000 birds (Scott & Rose 1996).

GREYLAG GOOSE
Anser anser

Icelandic Population

International importance: 1,000
Great Britain importance: 1,000
All-Ireland importance: 40*
***50 is normally used as a minimum threshold**

			Trend	91-92	92-93	93-94	94-95	95-96
GB maximum:	**+82,722**	**Nov**	**GB**	**136**	**152**	**153**	**133**	**128**
NI maximum:	**0**							

The 1995 breeding season was below average for Greylag Geese, with just 11.5% young and 2.4 young per successful pair (Mitchell 1996). The numbers counted in the October and November censuses were 47,800 and 82,700, respectively, the November count representing a second successive low total and was the lowest population estimate since that of 64,000 in 1984. Although night-time feeding was suspected to have occurred in some areas, the counts were carried out under good conditions and no major sites were missed, and the overall count is believed to have been accurate. Although the slightly later than normal census date may have missed some birds as a result of the dispersal of flocks by this time, it is believed that the population has at least stabilised, if not declined slightly, in recent years.

Dinnet Lochs remains the most important site, with steadily increasing maxima in recent years and a peak in 1995-96 that represents the largest ever gathering of Greylag Geese recorded in Britain. Loch Eye/Cromarty Firth and Loch of Skene continue to support over 10,000 Greylag Geese, although numbers at both sites show a fair degree of fluctuation, and current averages are slightly smaller than in recent years. Numbers at Caithness Lochs, on Orkney, Bute and at Loch of Strathbeg in 1995-96 were much higher than usual. In contrast, totals on the Inner Moray Firth and at Stranraer Lochs were well below average. Other sites holding 1,000 or more birds in 1995-96 were Caistron Quarry (1,530, Mar), Bemersyde Moss (1,400 Dec),Tay Estuary (1,358, Feb), Loch Flemington (1,300, Nov), Meadownay Farm Pools (1,233, Feb), Loch of Tankerness (1,100, Feb) and Hirsel Lake (1,050, Jan).

The final report of the three year study to examine the distribution of Pinkfeet and Greylag Geese in mid winter and spring noted the much more dispersed nature of the population at these times, recording 54% and 43%, respectively, of the autumn population estimate (Mitchell *et al.* 1996). Most Greylags were recorded in east-central Scotland in January (28% of the total), with Dinnet Lochs holding an average peak of 25,408 over the three winters (in December, rather than January). In late March, most birds were recorded in north Scotland (32% of total count), with an average of 4,300 at Haddo House Country Park being notable.

Table 22. GREYLAG GOOSE (ICELANDIC POPULATION): MAXIMA AT MAIN RESORTS

	91-92	92-93	93-94	94-95	95-96	Month	Average
International							
Dinnet Lo./R. Dee	18,400	21,650	27,173	33,119	36,525	Oct	27,373
Lo. Eye/Cromarty Fth	4,659	16,842	14,842	11,714	8,550	Oct	11,321
Lo. of Skene	5,298	14,100	14,000	8,500	12,300	Nov	10,840
Caithness Lo.	4,216	6,800	5,443	5,563	12,376	Nov	6,880
Lo. Spynie	6,600	7,280	5,000	7,000	5,500	Nov	6,276
Orkney	4,042	3,934	4,112	2,702	7,373	Jan	4,433
Haddo House Lo.	6,000	4,200	4,600	1,900	4,900	Apr	4,320
Inner Moray Fth	7,000	4,900	6,300	2,510	408	Jan	4,224
Tay/Isla Valley	5,072	7,414	3,877	3,064	1,661	Nov	4,218
Lower Bogrotten	1,200	3,000	5,620	5,180	3,000	Oct	3,600
Drummond Pond	1,840	5,050	4,000	3,430	1,680	Nov	3,200
Findhorn Bay	2,140	4,900	2,640	3,065	3,150	Jan	3,179
Lo. of Lintrathen	3,950	3,900	4,100	1,240	2,300	Jan	3,098
Stranraer Lo.	3,300	3,600	2,500	2,500	760	Nov	2,532
Bute	1,725	2,100	1,500	2,370	4,280	Jan	2,395
Holburn Moss	2,750	2,500	1,500	2,000	2,000	Jan	2,150
Lindisfarne	2,450	690	2,000	2,600	750	Feb/Mar	1,698
Lo. of Strathbeg	900	850	1,600	253	4,280	Jan	1,577
Lo. Garten	1,280	1,057	1,550	1,482	1,987	Nov	1,471
Dornoch Fth	927	1,560	692	1,975	1,937	Dec	1,418
Carlhurlie Reservoir	(1)	(8)	2,470	1,850	1,276	Jan	1,399
Ballo Rsr	1,420	3,000	133	(5)	700	Nov	1,313
Lo. Fleet	940	1,570	1,500	1,300	960	Nov	1,254
Corby Lo.	1,400	1,100	1,080	-	-		1,193
Fincastle Lo.	275	1,997	-	-	-		1,136
R. Spey: Boat of Balliefirth	-	-	1,115	-	-		1,115

	91-92	92-93	93-94	94-95	95-96	Month	Average
Kilconquhar Lo.	524	1,018	1,844	918	1,135	Jan	1,088
Hoselaw Lo.	1,750	450	472	2,370	330	Jan	1,074
Eden Est.	816	293	2,020	650	1,520	Jan	1,060
Gadloch	807	1,292	850	985	1,100	Nov	1,007

Northwest Scotland Population

International importance: 50
Great Britain importance: 50

GB maximum: **+2,587** **Aug**

Trend	**91-92**	**92-93**	**93-94**	**94-95**	**95-96**
GB	**123**	**151**	**154**	**160**	**183**

Numbers of this native population have increased gradually since regular monitoring began in the mid 1980s. Two annual censuses are made on the Uists, which holds up to half the population, during the year: an August count to measure the post-breeding population, including assessments of breeding success, and a post-hunting count in February (see Mitchell *et al.* 1995). The 1995-96 peak represents the highest Uist total to date, following a year of average breeding success, with 22.5% and 2.5 young per pair (C. Mitchell, pers. comm.). Counts have also been made on Coll and Tiree in recent years. The next full census, which will include coverage of sites in Caithness/Sutherland and on the west coast of mainland Scotland, is scheduled for 1997-98.

Table 23. GREYLAG GOOSE (NORTHWEST SCOTLAND POPULATION): MAXIMA AT MAIN RESORTS+

	91-92	92-93	93-94	94-95	95-96	Month	Average
International							
North Uist[1]	1,231	1,273	1,556	1,346	1,345	Aug	1,350
Tiree[2]	1,258	837	1,206	1,526	1,451	Nov	1,048
South Uist[1]	643	847	880	752	1,157	Aug	856
Coll[2]	-	-	-	592	428	Nov	510
Benbecula[1]	227	135	136	156	264	Feb	184

\+ *Based largely on data from Mitchell* (et al. *1995) and SNH*
1 *Birds occasionally move between adjacent islands*
2 *Birds probably move between Coll and Tiree but are presented here separately due to the absence of data for Coll in some years*

Naturalised Population

Naturalised re-establishment

GB maximum: **16,149** **Nov**
NI maximum: **546** **Jan**

Trend	**91-92**	**92-93**	**93-94**	**94-95**	**95-96**
GB	**2,101**	**2,368**	**2,421**	**2,880**	**3,136**

The 1995-96 count in Britain was the highest by WeBS to date, although numbers of feral birds exceeded 15,000 in several winters in the 1990s. Index values, calculated using the Underhill technique, are presented here for the first time and show sustained growth since the mid 1960s (Figure 7). The 1995-96 index value suggests an average annual increase of just under 15% over the 25 years since 1970-71, and compares favourably with the figure of 13% obtained by Owen & Salmon (1988). This rate of growth is exceeded only by Ruddy Duck and suggests the population has increased by 50% since 1990, when a summer survey of feral geese in Britain recorded 19,501 Greylag (Delany 1995).

Sites supporting more than 500 birds, believed to be wholly or mostly of feral stock, in 1995-96 were all located in the east or south-east of the country: North Norfolk Marshes (1,204, Sep), Alton Water (815, Dec), Swale Estuary (673, Aug), Bough Beech Reservoir (650, Sep), Little Paxton Gravel Pits (644, Nov), Hamford Water (576, Sep), Bolton-on-Swale Gravel Pits (572, Sep), Langtoft West End Gravel Pits (550, Jan) and The Wash (511, Sep).

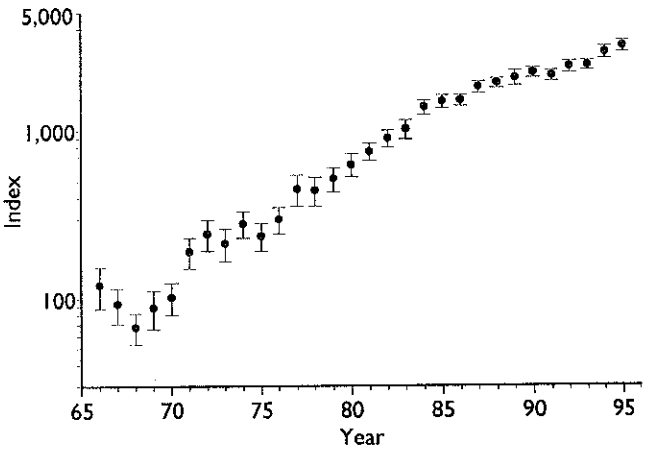

Figure 7. Index values (with 90% confidence intervals) for naturalised Greylag Geese in Britain, based on September counts, 1966-67 to 1995-96 (note log scale).

The majority of birds in Northern Ireland are believed to be of introduced origin (Merne 1986), the 1995-96 peak comparing reasonably with the estimate of 625 birds during a 1986 survey of Greylags in Ireland. However, a proportion of the WeBS count may also be of Icelandic origin, given the large number of birds wintering further south in the Republic (see Delany 1996), and consequently all sites meeting the 1% all-Ireland threshold of 40 birds are listed in Table 24. Two additional sites held 40 or more birds in 1995-96, namely Belfast Lough (77, Sep) and Larne Lough (42, Mar).

Table 24. GREYLAG GOOSE (ALL BIRDS): MAXIMA AT MAIN RESORTS IN NORTHERN IRELAND

	91-92	92-93	93-94	94-95	95-96	Month	Average
Northern Ireland							
Strangford Lo.	348	522	461	591	173	Mar	419
Temple Water	162	151	250	378	158	Nov	220
Lo. Neagh/Beg	214	7	70	243	347	Feb	176
Lo. Foyle	134	90	48	184	43	Mar	100

BAR-HEADED GOOSE
Anser indicus

Escape
Native range: Southern Asia

GB maximum: **17** **Jan**
NI maximum: **0**

Bar-headed Geese were recorded at 38 sites in 1995-96, chiefly in central and southern England. Three or more birds were found at Queens Park, Chesterfield (6, Jan), River Trent: Burton Joyce to Stoke Ferry (4, Jan), Stratfield Saye (4, Feb) and King's Dyke Pits, Whittlesey (3, Dec). One on Loch Ore in July was the only non-English record.

SNOW GOOSE
Anser caerulescens

Vagrant and escape
Native range: North America

GB maximum: **95** **Oct**
NI maximum: **0**

Around one third of the total is made up of a large, mobile flock of birds in Hampshire and which accounted for all three 1995-96 records of 20 or more birds: Eversley Cross/Yately Gravel Pits (34, Jan), Stratfield Saye (28, Aug) and Bramshill Park (24, Sep). A double-count of 27 of these birds occurred in October and the total should be should be adjusted to 67, fractionally lower than in recent years, which compares with a total of 160 birds recorded by the feral goose survey in Great Britain in 1990 (Delany 1995).

ROSS'S GOOSE
Anser rossii

Escape
Native range: North America

GB maximum: **2** **Feb**
NI maximum: **0**

Two birds were recorded at three sites: one recorded in most months moving between Kings Bromley Gravel Pit and Barton Pool and one on the Severn Estuary (Nov/Dec/Feb).

EMPEROR GOOSE
Anser canagicus

Escape
Native range: Alaska and NE Siberia

GB maximum: **1** **Sep-Dec/Feb/Mar**
NI maximum: **0**

Records of singles at Hunterston Sands May, Abbots Moss (Sep-Dec) and Derwent Water (Feb/Mar), possibly related to just one individual.

CANADA GOOSE
Branta canadensis

Naturalised introduction†
Native range: North America

			Trend	91-92	92-93	93-94	94-95	95-96
GB maximum:	**37,808**	**Nov**	**GB**	**381**	**344**	**362**	**328**	**376**
NI maximum:	**580**	**Dec**						

The peak count of Britain's most populous introduced goose species in 1995-96 was the highest for three seasons. Following an average growth rate during the previous 15 years of around 7-8% (Delany 1992), index values have fluctuated between 330-380 value during the last five, and although there was a 14% increase in 1995-96, the pattern is one of general stability in recent years. The feral population in Northern Ireland is still comparatively small, peaking in 1995-96 at just under 600 birds, only the second time the figure has passed 500. Monthly counts fluctuate widely, probably due to the species' mobility and poor coverage away from the principal sites.

The highest count occurred at Rutland Water, where numbers have only once failed to exceed 1,000 in the last five years. Livermere also recorded a four-figure count in 1994-95, as did the Stour Estuary in 1995-96, whilst two successive counts of this magnitude at Walthamstow Reservoirs illustrate a spectacular rise at this site in the last two years. This may be in part a result of better monitoring during the summer months over the last two years, with the peak counts occurring in July and June respectively. A similar, though less dramatic increase, is also apparent at Fairburn Ings. Dorchester Gravel Pits appears to be the only site exhibiting a sustained fall in numbers. In Northern Ireland counts originate predominantly from two sites, Strangford Lough and Upper Lough Erne, and occasionally from adjacent sites such as Drumgay Lough. Other sites holding 600 or more were Chew Valley Lake (855, Jul), Dyfi Estuary (681, Feb), Holme Pierrepont Gravel Pits (648, Dec), Eversley Cross & Yately Gravel Pits (647, Oct), Dee Estuary (Eng/Wal) (645, Jan), Kings Bromley Gravel Pits (627, Sep), Daventry Reservoir (616, Oct), Attenborough Gravel Pits (615, Jul), Cuckmere Haven & Seven Sisters (614, Oct) and Hanningfield Reservoir (602, Sep).

Table 25. CANADA GOOSE: MAXIMA AT MAIN RESORTS

	91-92	92-93	93-94	94-95	95-96	Month	Average
Great Britain†							
Rutland Water	1,118	889	1,025	1,137	1,282	Sep	1,090
Stratfield Saye	2,350	1,090	705	700	440	Feb	1,057
Kedleston Park Lake	570	520	1,100	-	(900)	Dec	773
Alde Est.	1,053	932	532	545	729	Oct	758
Bewl Water	660	943	420	833	820	Aug	735
Livermere	-	-	-	1,215	251	Sep	733
Stour Est.	428	803	593	551	1,261	Sep	727
Lower Derwent Valley	250	1,000	919	732	-		725
Dorchester GP	860	1,075	901	475	221	Oct	706
Abberton Rsr	396	1,251	975	302	550	Aug	695
Middle Tame Valley GP	504	869	666	649	769	Nov	691
Lackford GP	1,000	380	-	-	-		690
Blithfield Rsr	930	890	484	688	342	Oct	667
Arun Valley	735	616	562	537	868	Oct	664
Fairburn Ings	324	360	479	922	953	Aug	608
Walthamstow Rsr	436	203	228	1,072	1,062	Jun	600

† *as Canada Goose is an introduced species in the UK, site designation does not occur and the 1% criterion is not applied. A qualifying level of 600 (based on the population estimate of Kirby (1995)) has been used as the basis for selecting sites for presentation in this report*

BARNACLE GOOSE
Branta leucopsis

Greenland Population

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

GB maximum:	**+31,009**	**Jan**	**Trend**	**not available**

The vast majority of the Greenlandic population of Barnacle Geese winter on Islay, with smaller numbers distributed throughout the Hebridean islands and coastal fringes of northern Scotland, and islands off the west coast of Ireland. Very few Greenland Barnacles are therefore monitored by WeBS, and, except on the larger, inhabited islands listed in Table 26, counts are only possible by aerial survey, conducted as part of five-yearly censuses of the whole wintering range (e.g. Delany & Ogilvie 1994). Regular monitoring on Islay, most recently by SNH as a

series of whole-island counts two or three times each winter month, has shown a steady rise in numbers from 5,000 birds in the 1950s which appears to be continuing. This is fuelled largely by an increase in the population as a whole, but also by a continuing concentration of the population on Islay, with numbers on small, uninhabited islands having decreased from 5,127 birds (19% of the population) in 1988 to 2,368 (8%) in 1994 (Delany & Ogilvie 1994). Breeding success in 1995 was below average with 7.1% young, and an average brood size of 2.0 young per pair (M. Ogilvie *in litt.*).

Table 26. BARNACLE GOOSE (GREENLAND POPULATION): MAXIMA AT MAIN RESORTS

	91-92	92-93	93-94	94-95	95-96	Month	Average
International							
Islay	+25,947	+26,776	+27,791	+28,298	+31,099	Jan	27,982
Coll[1]	670	3,093	764	991	682	Jan	1,240
Tiree[1]	1,535	984	684	1,145	1,465	Apr 96	1,163
South Walls (Orkney)[2]	1,200	1,050	890	1,208	1,000	Dec	1,070
Colonsay[1]	600	475	500	500	-		519
Danna/Keills/Eilan Mor[1]	400	270	450	400	120	Nov	328

1 *data from the Argyll Bird Report and SNH*
2 *data from the Orkney Bird Report*

Svalbard Population

International importance: 120
Great Britain importance: 120

GB maximum: 17,450 Apr 96

Trend	91-92	92-93	93-94	94-95	95-96
GB	416	413	448	559	545

The number of birds counted on the Solway Estuary, which supports virtually the entire population throughout the winter, rose markedly in 1994-95 and 1995-96. A number of co-ordinated counts over the last two winters has confirmed this increase to be real. This has lead to a considerable dilemma, since no other major wintering sites are known and, more importantly, 'life-history' parameters, such as breeding success and mortality rates, derived from one of the longest running population studies in the ornithological world, have been used to predict that the population would stabilise at around 12,000 (Owen & Norderhaug 1977). This prediction appeared to hold true throughout the 1990s, hence the surprise when much larger counts were first made. A thorough analysis of the extensive dataset collected on the Solway, on the breeding grounds and at passage sites is currently underway and suggests that a proportion of the population has arrived on the Solway on increasingly later dates. This has lead to underestimates both of the population size, since the co-ordinated census takes place in early winter before birds disperse widely across the Solway, and of breeding success, due to the later arrival of some families (WWT, unpubl. data).

Unlike the Greenland population, Svalbard birds had a good breeding season in 1995, with 20.9% young, by far the highest figure since 1984, and an average brood size of 2.05 birds (WWT unpubl. data). This would be expected to produce an increase in the index value (calculated directly from Solway census totals in each year), but birds short-stopping at other sites in Britain and, it is suspected, in Norway also, need to be included before this can be calculated properly. These data will appear in the results of the current analysis. The large count at Loch of Strathbeg raised its status to internationally important. The count at this site, with several hundred birds remaining well into the winter, and a count of 492 birds on the Inner Moray Firth in October, demonstrate the problems now experienced in monitoring this population.

An action plan for this population is being prepared for eventual adoption under the African Eurasian Waterbird Agreement of the Bonn Convention (Black in prep.).

Table 27. BARNACLE GOOSE (SVALBARD POPULATION): MAXIMA AT MAIN RESORTS

	91-92	92-93	93-94	94-95	95-96	Month	Average
International							
Solway Est.	12,700	12,200	13,700	17,900	17,450	Apr 96	14,790
Lo. of Strathbeg	63	45	41	150	533	Oct	226

Naturalised Population **Naturalised establishment**

GB maximum:	**657**	**Jan**	**Trend**	**not available**
NI maximum:	**89**	**Dec/Jan**		

Barnacle Geese south of a line from the Solway to Northumberland are likely to be predominately feral birds, as this both excludes all regular wintering sites for Svalbard and Greenlandic birds, and encompasses nearly all of the breeding birds in Britain (Delany 1992; Wilson 1993). The January peak obtained by summing these birds at these sites is not greatly different from the 819 birds recorded during the 1991 feral goose survey (Delany 1992). However, the majority of the 174 birds recorded at Slimbridge in that survey have since been grounded, whilst numbers in Hampshire, including 218 birds at Eversley Cross & Yately Gravel Pits in January, and in Norfolk have increased markedly. It is possible that small numbers from the Russian population, which winter on the near continent, are included in this total, having moved to sites in southeast England in response to the hard weather. All birds recorded by WeBS in Northern Ireland were of feral origin, comprising the well established flock at Strangford Lough (89, Dec/Jan).

DARK-BELLIED BRENT GOOSE
Branta bernicla bernicla

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

GB maximum:	**101,076**	**Mar**	**Trend**	**91-92**	**92-93**	**93-94**	**94-95**	**95-96**
NI maximum:	**1**	**Dec**	**GB**	**464**	**315**	**399**	**321**	**298**

The peak count of Dark-bellied Brents has numbered about 100,000 birds in three of the five most recent years winters, with 125,000 and 138,000 in the other two. The 1995-96 figure is notable in that it occurred in March, compared with the usual January, February or occasionally December peak. Midwinter counts were all below 88,000 (Table 1), accounting for the low index value which is based on data from those months, and although the proportion of young birds in 1995 was 0.3%, indicating another breeding failure (Mitchell & King 1996), these counts are still somewhat lower than might be expected. In recent winters, when the size of the world population and the number of Dark-bellied Brents wintering in Britain appear to have stabilised, the yearly fluctuations in numbers have been closely correlated with the proportion of young (Figure 8).

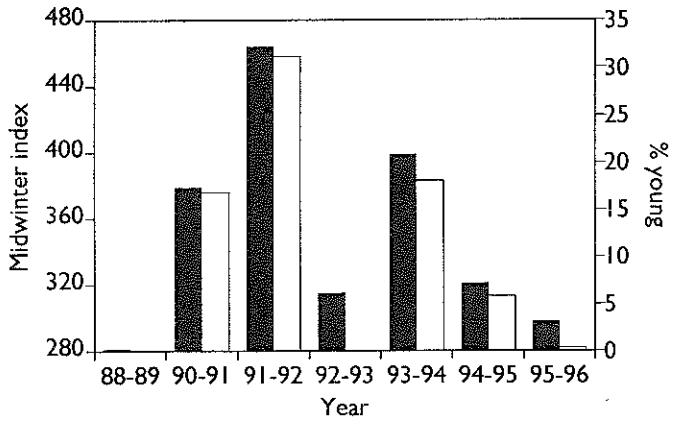

Figure 8. The midwinter index of Dark-bellied Brent Goose numbers in Britain (solid bars) and the proportion of young (open bars), 1988-89 to 1995-96. Note that the axis for index values begins at 280.

After staging in the Wadden Sea in October, the majority of the population moves on to winter, in roughly equal numbers, in Britain and in western France (Boudewijn & Ebbinge 1994). Birds leave France after February and Britain after March to spend April and May in the German and Dutch Wadden Sea. The cold weather in 1995-96 may have forced some British birds on to France in larger numbers than normal, accounting for the low midwinter totals. Similarly, cold weather on the continent in late winter may have forced birds to take a more northerly return passage from France to The Netherlands than normal, retracing the autumn migration route (Ebbinge & St Joseph 1992) and resulting in larger numbers in Britain at this time. Alternatively, the March peak may have resulted from birds forced from the Dutch coast by bad weather, although a westerly movement such as this would have been expected to coincide with that of other species one month earlier. The picture should become clearer once data from other European countries are available.

A WWT review of the conservation management of Brent Geese in the UK (Rowcliffe & Mitchell 1996) examined growth in numbers at a regional level. Figure 9 shows regions in which there is evidence of a stabilisation in midwinter population size, and in which numbers are still increasing as the world population increases. January numbers in each region are plotted against the global population estimate for each year from 1960 to 1993 The extent to which the slope of the resulting line tends to become flat (zero) indicates the degree of stabilisation in numbers. Overall, the British population is increasing at the same rate as the global population (a slope of one), although the pattern in individual regions may differ. In some, the population has stabilised, particularly the Thames region, South Essex, South Devon and Hampshire, whilst there has been disproportionate growth in Norfolk, Kent and Dorset, as well as in the smaller, more recently established populations in North England and South Wales.

Matching the low national totals, numbers at key sites in 1995-96 were generally smaller than their respective five year means, particularly on the Thames and Blackwater Estuaries and North Norfolk Marshes. The increase on Southampton Water is thus notable, whilst the enormous count at Hamford Water, three times the normal figure, will have contributed to the national count and perhaps supports the notion of some returning French birds using the autumn migration path, when large numbers congregate at Foulness, on the Thames Estuary, before dispersing to other sites in Britain and France.

The world population has increased markedly from around 16,500 in 1955 to around 300,000 in recent years (Scott & Rose 1996) and the international 1% has consequently been revised to 3,000.

Table 28. DARK-BELLIED BRENT GOOSE: MAXIMA AT MAIN RESORTS

	91-92	92-93	93-94	94-95	95-96	Month	Average
International							
Wash	27,518	19,146	24,446	19,108	21,023	Mar	22,248
Thames Est.	17,211	15,691	18,733	16,399	10,714	Nov	15,750
Blackwater Est.	11,445	12,500	12,208	12,763	8,525	Jan	11,488
North Norfolk Marshes	11,128	9,318	15,061	13,364	8,110	Dec	11,396
Chichester Hbr	11,582	11,099	12,647	9,567	10,769	Feb	11,133
Langstone Hbr	7,860	7,056	7,776	6,814	6,215	Jan	7,144
Hamford Water	4,008	3,677	8,154	4,395	14,466	Mar	6,940
Crouch/Roach Est.	7,978	3,159	4,913	5,022	3,820	Jan	4,978
Colne Est.	6,705	6,453	4,920	2,929	3,529	Jan	4,907
Medway Est.	4,484	3,822	5,104	3,121	2,733	Nov	3,853
Fleet/Wey	4,355	1,982	3,983	2,962	2,630	Nov	3,182
NW Solent	4,868	3,334	2,650	2,046	2,643	Dec	3,108
Great Britain							
Pagham Hbr	3,669	2,969	2,638	2,611	3,016	Jan	2,981
Portsmouth Hbr	3,580	2,557	3,583	2,284	2,773	Mar	2,955
Humber Est.	3,773	2,615	1,795	3,243	2,078	Dec	2,701
Deben Est.	3,000	1,555	3,282	2,206	2,536	Feb	2,516
Southampton Water	2,752	2,314	2,420	1,475	3,007	Jan	2,394
Dengie Flats	2,350	2,320	2,780	1,650	2,440	Mar	2,308
Stour Est.	1,980	1,849	1,742	2,293	1,801	Mar	1,933
Swale Est.	2,101	1,959	1,843	1,650	1,903	Nov	1,891
Exe Est.	2,020	1,815	1,495	2,056	1,587	Nov	1,795
Newtown Est.	1,213	1,664	1,708	1,559	1,475	Jan	1,524
Poole Hbr	1,711	1,278	1,486	1,529	1,460	Feb	1,493
Orwell Est.	900	1,169	1,565	1,981	1,290	Feb	1,381
Beaulieu Est.	1,110	1,548	1,272	1,417	1,290	Jan	1,327
Burry Inlet	1,525	991	849	814	928	Jan	1,021

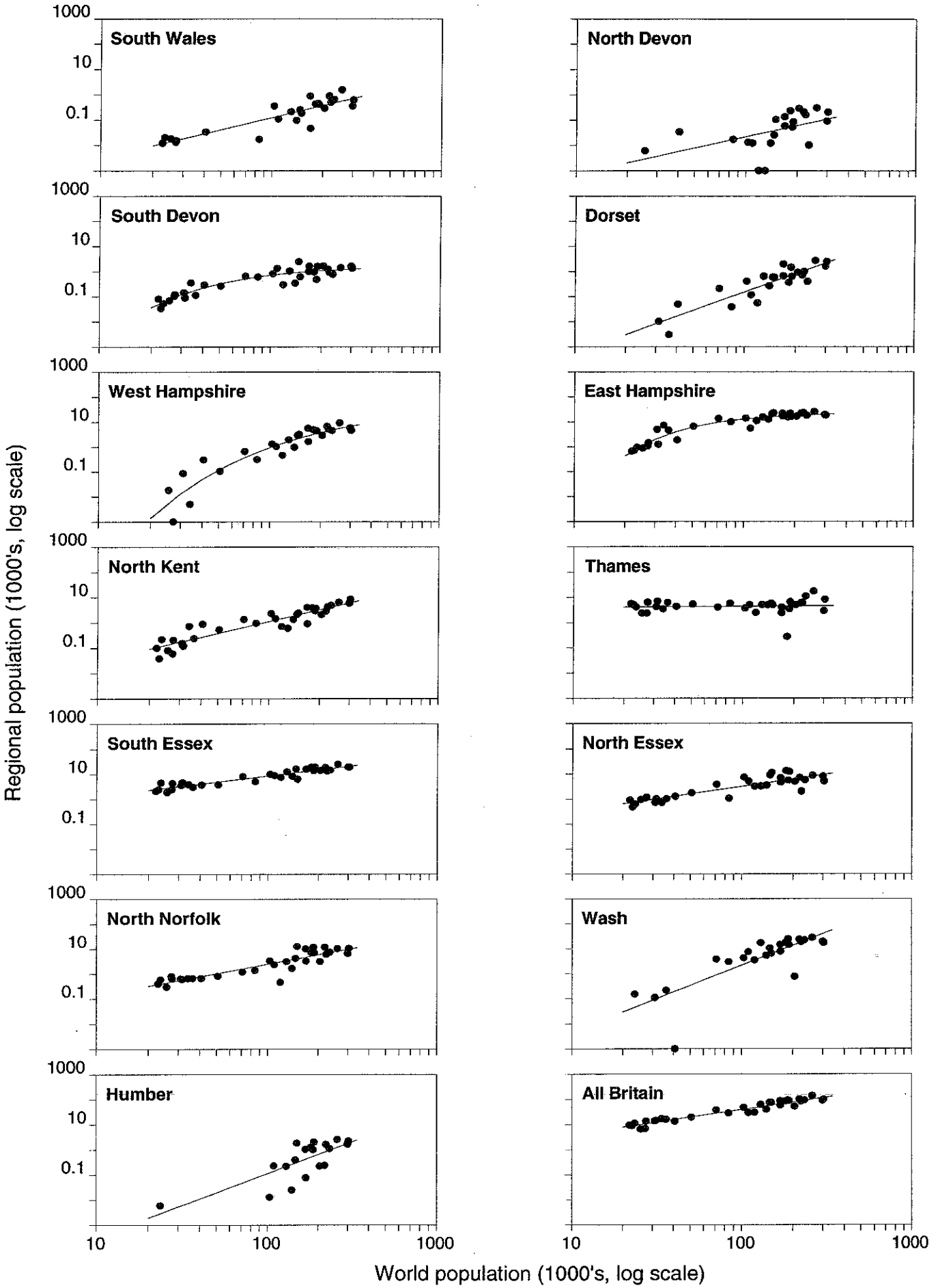

Figure 9. Regional Dark-bellied Brent Goose totals plotted against total population size for the period 1960 to 1993, indicating the extent to which regional populations are stabilising (from Rowcliffe & Mitchell 1996).

LIGHT-BELLIED BRENT GOOSE
Branta bernicla hrota

Canada/Greenland Population

International importance: 200
All-Ireland importance: 200

NI maximum: 16,908 Oct

Trend	91-92	92-93	93-94	94-95	95-96
NI	121	87	78	96	96

Numbers of Canadian/Greenland Light-bellied Brent Geese in Northern Ireland in 1995-96 were the highest recorded by WeBS since a count of 17,580 in October 1985. The index value was, however, only around average for recent years owing to the rapid decline in numbers in other months during 1995-96 which are included in calculating these figures. As more data become available for Northern Ireland, it is likely that the months selected for the index will be refined and consequently that the index will match the changes in peak counts more closely. Breeding success in 1995 was again poor, with only 3.9% young following a year in which there was virtually a complete breeding failure.

The internationally important sites in Northern Ireland include most of the estuaries in the province, though Strangford Lough is by far the most important. Numbers at Lough Foyle fluctuate between years, e.g. over 6,000 in 1990-91, although the five year mean remains relatively stable. Birds disperse from these traditional arrival points to the Republic of Ireland, particularly Dublin Bay and the south-east around Wexford Slobs (Delany 1996). In an attempt to obtain accurate population counts and estimates of breeding success in this population, in a similar vein to the monitoring of Dark-bellied Brents in Britain, an Irish Brent Goose Study Group, including representatives from BirdWatch Ireland and WWT, was reformed in 1996. Small numbers of birds also cross the Irish Sea: counts at Inland Sea (36, Feb) and Foryd Bay (32, Feb) in 1995-96 almost certainly related to this population, as did a count of 60 Brents, not identified to subspecies, on the Braint Estuary in February, a site which held 25 Light-bellied Brents the previous winter.

Table 29. LIGHT-BELLIED BRENT GOOSE (CANADA/GREENLAND POPULATION): MAXIMA AT MAIN RESORTS

	91-92	92-93	93-94	94-95	95-96	Month	Average
International							
Strangford Lo.	10,359	8,367	12,795	8,519	11,337	Oct	10,275
Lo. Foyle	5,395	1,765	1,934	4,007	5,550	Oct	3,730
Carlingford Lo.	267	243	596	301	189	Jan	319
Killough Hbr	-	-	-	274	(356)	Apr	315
Larne Lo.	227	201	290	206	209	Dec	227
Outer Ards	238	132	181	256	196	Jan	201

Svalbard Population

International importance: 50
Great Britain importance: 25*
***50 is normally used as a minimum threshold**

GB maximum: 2,518 Nov

Trend not available

Numbers at Lindisfarne, the key British site for this population, rose to their highest level for five winters. Correspondingly, the peak count in Britain was the largest since 1990-91. The population as a whole, which is divided between Britain and Denmark during winter, is believed to be relatively stable (Scott & Rose 1996), although the international 1% threshold has recently been revised from 40 to 50. The increase at Lindisfarne in 1995-96 appears simply to be a result of a larger proportion than normal crossing from Denmark. The early arrival of birds in November suggests that this was not a weather induced movement, although large counts of Light-bellied Brents at Tyninghame Estuary (84, Jan) and Hamford Water (51, Feb) during the cold spell probably involved wandering birds from this population. Breeding success in 1995 was again poor, with 4.9% young.

The population of Svalbard Brents was formerly much larger, with 40,000 to 50,000 birds in the early 1900s (Scott & Rose 1996), up to 10,000 of which were found on the Moray (Owen *et al.* 1986). Numbers crashed to around 2,000 in the late 1960s, due to the effects of disease on *Zostera*, the staple food supply, and hunting pressure, but have since slowly recovered. It is thought that competition with the expanding Barnacle Goose population on the breeding grounds and predation are preventing numbers recovering to former levels.