

# WWT/JNCC/SNH Goose & Swan Monitoring Programme

## survey results 2005/06

### Whooper swan *Cygnus cygnus*

#### 1. Abundance

The fifth international census of Whooper Swans wintering in Britain, Ireland and Iceland was undertaken by a network of volunteer counters in January 2005, and aimed at complete coverage of known and potential Whooper Swan sites. Coordinated counts were organised for 15/16 January 2005, the dates being chosen to coincide with the national waterbird monitoring schemes in the UK (WeBS) and in the Republic of Ireland (I-WeBS), and also with a census of the Northwest European population of Whooper Swans being made in mainland Europe.

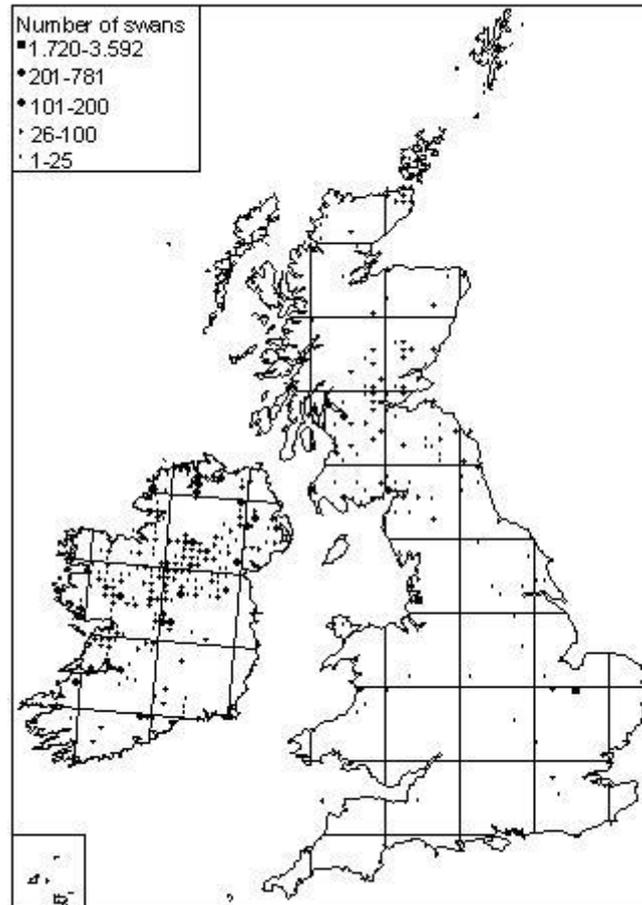
Coverage during January 2005 was generally good with few omissions of known sites of importance for Whooper Swans. In Ireland, 23 sites were not visited in 2005 that had been covered in the 2000 census, when combined numbers totalled 245 individuals. In Britain, of those sites holding more than five birds during the previous census in 2000, no data were received for 17, which combined held a total of 673 individuals in January 2000. The estimated total of missed birds for Britain and Ireland combined (918) represents approximately 3% of the total number of birds counted. Taking a cautious approach, these estimated counts were not added to the census total since little information was available to confirm whether these sites were used by Whooper Swans during 2005.

Total numbers of Whooper Swans in Iceland, Britain and Ireland in January 2005, and percentage change between censuses.

	Number of flocks	Number of birds	% change in number of birds 2000-2005
Iceland	126	1,556	29
Northern Ireland	102	4,331	18
Republic of Ireland	289	9,748	8
Wales	11	94	-16
Scotland	219	4,142	45
Isle of Man	1	15	7
England	67	6,480	65
<b>Total</b>	<b>815</b>	<b>26,366</b>	<b>26</b>

The total of number of Whooper Swans counted in January 2005 resulted in the highest census total to date (26,366), representing a 26% increase on the January 2000 census total (20,856), and a 66% increase compared with the census total of 1995 (15,842).

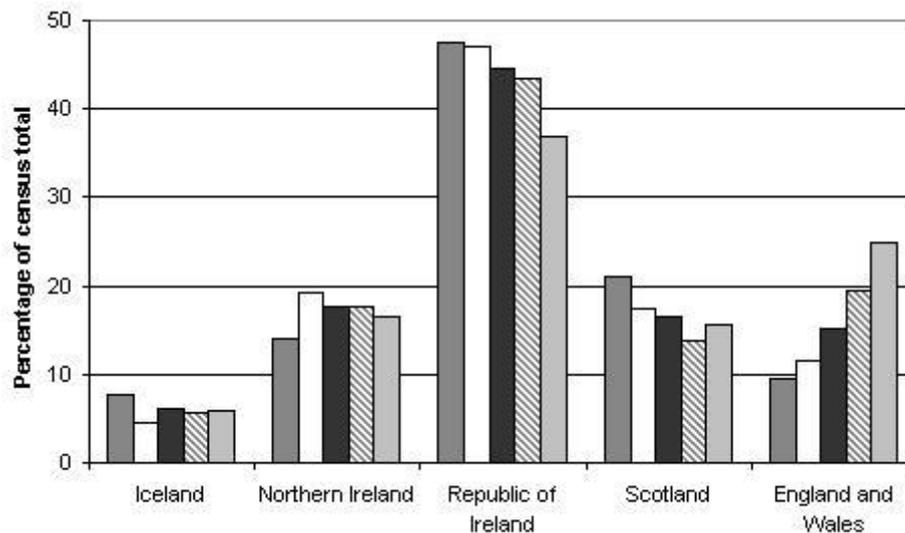
Of the 26,366 swans counted, 37% were recorded in the Republic of Ireland, 25% in England, 16% in Scotland, 16% in Northern Ireland and 6% in Iceland. Less than 1% of the wintering population was found in Wales and the Isle of Man. Numbers increased in all countries (with the exception of Wales), with the most marked increases occurring in England and Scotland. The proportion of swans recorded in the Republic of Ireland decreased from 43% to 37% between 2000 and 2005, and likewise a decrease of 18% to 16% was seen in Northern Ireland. Conversely, the proportions in England and Scotland increased from 19% to 25%, and 14% to 16%, respectively. A similar proportion of the census total remained in Iceland in winter when compared to January 2000.



Distribution of Whooper Swans in Britain and Ireland in January 2005. Counts are summed by 10-km square (grid lines indicate 100-km squares).

The large rise in numbers in England is attributed to continuing increases concentrated at just two sites in the country; Ouse Washes in Norfolk and Martin Mere in Lancashire. These two sites held 86% (5,544 individuals) of the total number of birds counted in England in January 2005. As in 2000, the Highlands region held the largest numbers of birds (829) in Scotland in 2005, although many areas experienced substantial changes in numbers between the two censuses. Decreases were apparent in central Scotland and Borders, but were accompanied by increases of more than 50% in Lothians, Fife, Tayside, Grampian, Highlands and Shetland regions. Increases of between 25-50% occurred in Dumfries & Galloway, Western Isles and Orkney. In Northern Ireland, numbers decreased in Co. Fermanagh and Co. Antrim but increases were seen elsewhere, particularly in Co. Londonderry and Co. Tyrone (80% and 71%, respectively). In Iceland, most birds were located in the southern lowlands and the southwest, the latter region showing the largest regional increase (57%). Smaller numbers were present in the north of the country and remained similar to that of the previous census.

Only three sites in Britain and 11 in Ireland exceeded numbers equivalent to 1% of the January 2005 census total (264 birds). However, 23 sites in Ireland exceeded the current All-Ireland threshold (100) and 25 sites in Britain exceeded the Great Britain threshold for national importance (57). Sites exceeding the current international threshold for importance (210) in January 2005 numbered 18 in Ireland and five in Britain.



Changes in the distribution of Whooper Swans in Iceland, Britain and Ireland 1986-2005: dark grey (1986), white (1990), black (1995), hashed lines (2000) and pale grey (2005).

## 2. Breeding success

Age counts were conducted within six regions across Britain and Ireland during the 2005/06 winter. A total of 34,201 Whooper Swans was aged in England, Southwest Scotland, Northern Ireland and the Republic of Ireland in December 2005 and January 2006. Observations were made on a near daily basis at Caerlaverock (Southwest Scotland) and several times a week on the Ribble Estuary (Northwest England) in these months. Whooper Swans in North and Central Scotland were aged over a longer period, between 21st October and 29th January. Brood sizes were recorded for 484 families: 244 in England, 83 in Scotland, 29 in Northern Ireland and 128 in the Republic of Ireland. A low number of broods were recorded in southwest Scotland, particularly in relation to the total number of birds aged.

The overall percentage of young was 12.1% and the mean brood size of pairs with young was 2.5 cygnets. The mean percentage young at Martin Mere/Ribble Estuary, the Ouse Washes and Caerlaverock was 10.6%. This is well below the five year mean of 15.9%, recorded in the five winters up to 2005/06.

In all regions, the percentage of young was below average, with the exception of flocks found in the Republic of Ireland, where productivity was higher than both the winter's average and the five year mean. Particularly low numbers of juveniles (8.8%) were found in flocks at the Ouse Washes. This continues the decline seen in the percentage young wintering there since 2001/02. Although regional variation was evident this winter, cygnets appear to have been more evenly distributed across the wintering range than in 2003/04 and 2004/05, when the percentage young ranged from 10.7% in Southwest Scotland to 21.4% in Northern Ireland. Regional variation in brood size was also evident, ranging from an average of 3.4 cygnets per family for flocks wintering in Southwest Scotland, to 2.0 cygnets per family in East central England.

The percentage of juveniles in flocks in Northwest England and Southwest Scotland, increased at the beginning of the winter, before stabilising at around 15.5% in November. Thereafter, productivity remained relatively stable during mid-winter (November to February) for all regions, prior to a decline in the proportion of young in Northwest England from February onwards and, a dramatic rise in Southwest Scotland during April. The high number of young found in East central England in October is most likely attributable to a small sample size, rather than a true reflection of breeding success. Thereafter, productivity remained steady and low (under 10%) in this region.

The proportion of young and mean brood size of Whooper Swans during the 2005/06 winter (regions defined below).

Region <sup>1</sup>	Total aged	% young	No. broods	Mean brood size
Northwest England <sup>2</sup>	5,347	14.9	143	2.6
East central England <sup>2</sup>	8,128	8.8	101	2.0
Southwest Scotland <sup>2</sup>	17,349	13.0	16	3.4
North and Central Scotland	1,547	13.0	67	2.8
Northern Ireland	391	14.1	29	1.8
Republic of Ireland	1,439	16.6	128	2.3
<b>Total</b>	<b>34,201<sup>2</sup></b>	<b>12.1<sup>2</sup></b>	<b>484</b>	<b>2.5</b>

<sup>1</sup>Regions are defined as follows:

Northwest England: Lancashire, Mersey, Cumbria, Greater Manchester

East central England: Norfolk, Cambridgeshire

Southwest Scotland: Dumfriesshire

North and Central Scotland: Aberdeenshire, Grampian, Highland, Western Isles, Orkney, Shetland, Perthshire

Northern Ireland: Londonderry

Republic of Ireland: Co. Clare, Co. Limerick, Co. Tipperary, Co. Cork, Co. Waterford, Co. Kerry.

<sup>2</sup>The total aged exceeded the maximum number of swans recorded for these areas (1,490 for Northwest England, 3,988 for East central England, and 301 for Southwest Scotland) because birds at major sites were counted at least twice during December and January. The total percentage young therefore, is weighted to the maximum counts in these three areas.

### 3. Discussion

The total of 26,366 Whooper Swans recorded during the international census in January 2005 was the highest to date, equating to a 26% increase on numbers counted in 2000. This represents an average annual rate of increase of 4.7%.

There was a disproportionate increase in the number of birds using sites in Britain during January 2005 compared with the rest of the range. Numbers increased by just 11% in Ireland, in contrast to 55% in Britain, between 2000 and 2005 (compared with 29% and 36% increases between 1995 and 2000). The increase in numbers of birds in England was not accompanied by a significant increase in the number of flocks recorded, and distribution is concentrated at relatively few sites. In fact, the continuing increase in numbers using the Ouse Washes in Norfolk accounted for 82% of the rise in total numbers found in England.

It is possible that the increasing British numbers of Whooper Swans, particularly in East central England, may be inflated by an increasing proportion of birds from the Northwest European population wintering in Britain. This population breeds from Fenno-Scandia to northwest Russia and winters in continental Europe, but it is known from ringing studies that a small number winter in Britain. A greater understanding of the extent of interchange between populations and use of British and Irish wintering grounds by the Northwest European population is necessary to ascertain the true size of these expanding populations.

## 4. References

Rees, EC, JS Kirby & A Gilburn. 1997b. Site selection by swans wintering in Britain; the importance of habitat and geographic location. *Ibis* 139: 337-352.

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# Goose & Swan Monitoring