

# WWT/JNCC/SNH Goose & Swan Monitoring Programme

## survey results 2012/13

### Whooper Swan *Cygnus cygnus*

## 1. Abundance

### WeBS/I-WeBS

The abundance of Whooper Swans in the UK and the Republic of Ireland in 2012/13 was monitored through the Wetland Bird Survey (WeBS) and the Irish Wetland Bird Survey (I-WeBS), respectively. Results from these schemes are presented in survey reports which are available to download from the schemes' websites.

### International Swan Census

The 6th international census of Whooper Swans (International Swan Census) was undertaken in January 2010, covering Britain, Ireland and Iceland: this census is carried out every five years. A total of 29,232 Whooper Swans was recorded, representing an increase of 10.9% since the previous census in 2005 (Figure 1). The results from this census have been presented in Hall *et al.* (2012).

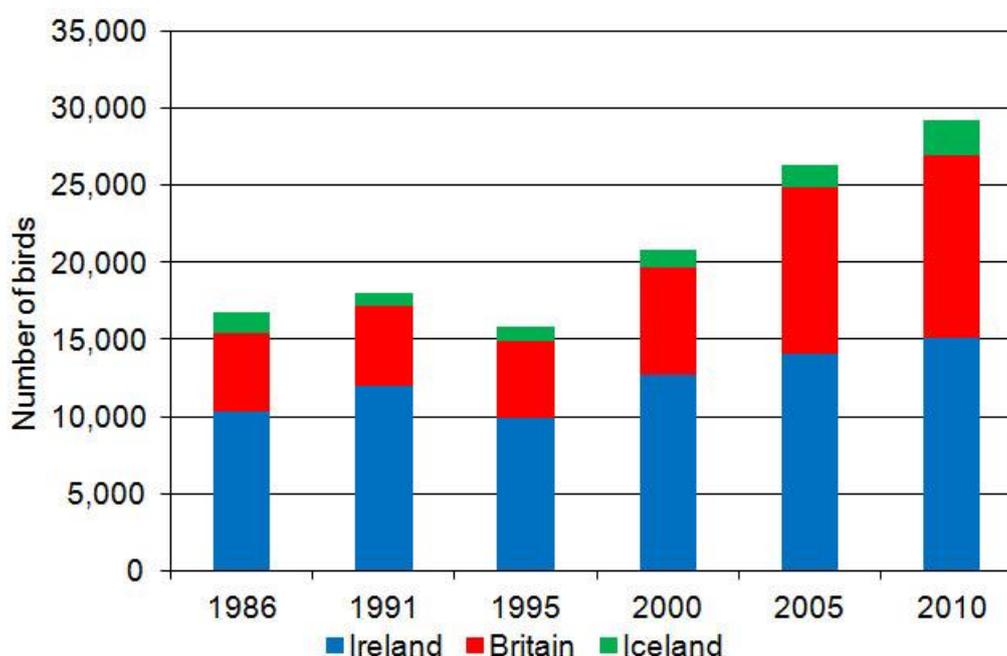


Figure 1. Number of Whooper Swans recorded in Britain, Ireland and Iceland during the International Swan Census, 1984 – 2010.

## 2. Breeding success

Whooper Swan age assessments were conducted in eight regions across Britain and Ireland during winter 2012/13 (Table 1). All age assessments were made in mid-winter (between 8 and 29 January 2013), when the majority of families were likely to have arrived from Iceland to wintering sites in Britain and Ireland. Where possible, surveys were conducted within two days of 15 January to avoid biasing age assessments for the population through inclusion of repeat observations of swans (likely the same individuals) at a particular site. Regional variation in the percentage of young and mean brood size was assessed to determine any bias in the geographical distribution of family parties.

A total of 13,703 Whooper Swans was aged: 7,069 birds in England, 533 in Scotland, 2,531 in Northern Ireland and 3,570 in the Republic of Ireland (Table 1). Overall, 16.0% of birds were cygnets and the mean brood size for pairs with young was 2.0 cygnets.

Table 1. The proportion of young (%) and mean brood size of Whooper Swans during the 2012/13 winter (regions defined below).

Region	Total aged	Proportion of young (%)	Number of broods	Mean brood size
Northwest England	1,932	19.4	169	1.9
East Central England	5,137	10.8	245	1.9
Southwest Scotland	267	9.7	9	2.3
West Scotland	131	20.6	12	2.3
East Scotland	34	26.5	-	-
North and Central Scotland	101	18.8	7	1.9
Northern Ireland	2,531	17.9	214	2.1
Republic of Ireland	3,570	20.3	303	2.2
<b>Overall</b>	<b>13,703</b>	<b>16.0</b>	<b>959</b>	<b>2.0</b>

Regions (counties from which data were received in 2012/13):

Northwest England: Cumbria, Lancashire, Derbyshire

East central England: Cambridgeshire, Norfolk

Southwest Scotland: Dumfriesshire

West Scotland: Argyll and Bute

East Scotland: Fife

North and central Scotland: Aberdeenshire, Perthshire, Shetland

Northern Ireland: Co. Londonderry, Co. Antrim, Co. Tyrone, Co. Fermanagh, Co. Armagh, Co. Down

Republic of Ireland: Co. Clare, Co. Cork, Co. Donegal, Co. Galway, Co. Kerry, Co. Kilkenny, Co. Laois, Co.

Limerick, Co. Mayo, Co. Meath, Co. Offaly, Co. Roscommon, Co. Sligo, Co. Tipperary, Co. Waterford, Co.

Westmeath, Co. Wexford, Co. Wicklow

There was evidence of variation in the distribution of families between regions ( $X^2_{26} = 185.9$ ,  $P < 0.01$ ) (data from east Scotland was omitted from statistical analysis due to small sample size). The highest breeding success was found amongst birds in East Scotland (26.5%) and west Scotland (20.6%) although the sample size for east Scotland was comparatively lower than for the other regions surveyed (Table 1). Research has shown that smaller flocks comprise higher proportions of young than do larger flocks (Rees *et al.* 1997). However, higher breeding success was found in northern regions (northwest England, Scotland and Northern Ireland) compared to southern regions (east central England) (18.2%,  $n = 4,996$  and 10.8%,  $n = 5,137$ , respectively;  $X^2_{21} = 111.3$ ,  $P < 0.01$ ), which may reflect a general preference for Whooper Swan families to select wintering sites closest to their Icelandic breeding grounds (Rees *et al.* 1997). Regional variation in brood size was also evident, ranging from 1.9 cygnets per family in northwest and east central England and north and central Scotland to 2.3 cygnets per family in southwest and west Scotland.

The mean percentage of young in flocks at and around WWT centres (i.e. Martin Mere/Ribble Estuary, Welney/Ouse Washes and Nene Washes and Caerlaverock), where data are collected annually, was 13% ( $n = 7,336$ ), which was lower than the previous ten year mean (2002/03–2011/12;  $14\% \pm 0.9$  SE) (Figure 2). The mean brood size for these three regions was 1.9 cygnets per family, also below the ten-year average (2002/03–2011/12;  $2.3 \pm 0.09$  SE).

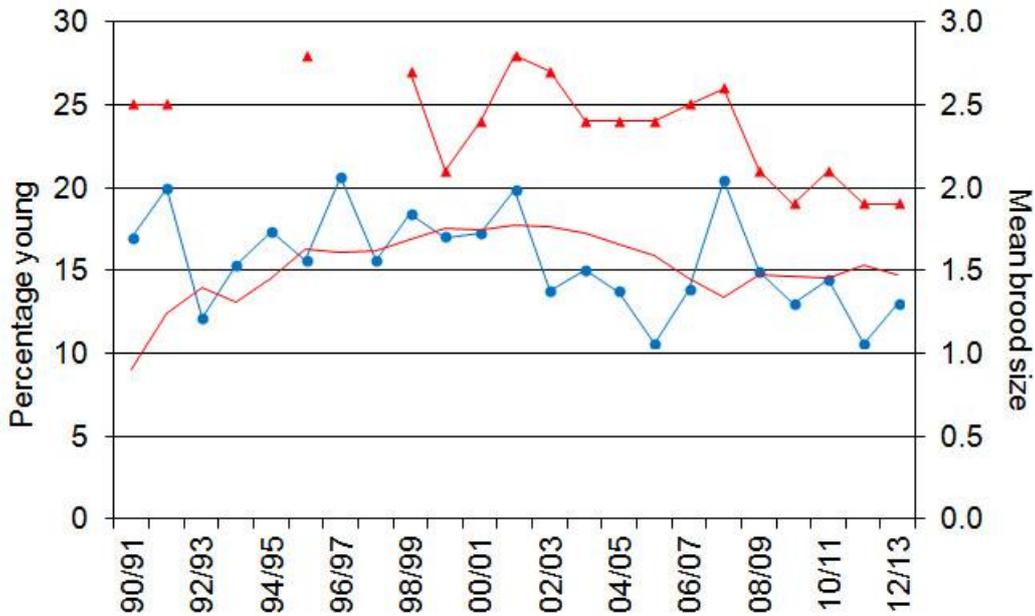


Figure 2: The percentage of young (blue circles), with the rolling five-year mean of % young (red line), and mean brood size (red triangles) of Whooper Swans recorded at WWT Welney/Ouse and Nene Washes, WWT Caerlaverock and WWT Martin Mere/Ribble Estuary, 1994/95 – 2012/2013. Five-year mean values for the percentage of young were calculated for the five years preceding the year in question.

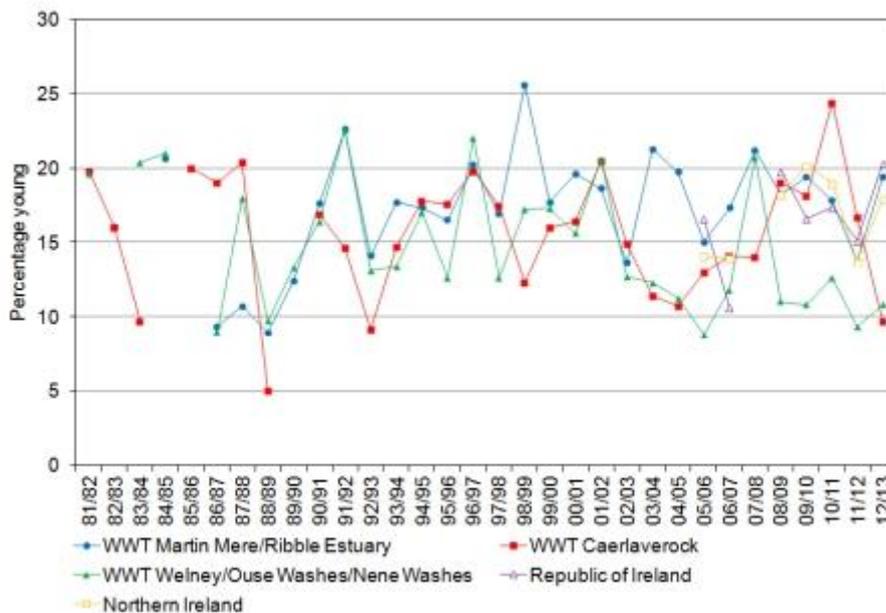


Figure 3: The percentage of young Whooper Swans recorded at WWT Welney/Ouse Washes/Nene Washes, WWT Caerlaverock, WWT Martin Mere/Ribble Estuary, Northern Ireland and the Republic of Ireland, 1994/95–2012/13.

### 3. Discussion

In 2012, Icelandic Whooper Swans experienced a fairly average breeding season, with the proportion of young wintering at and around WWT centres (13%) only slightly lower than the average recorded at these sites over the previous ten years (14%). There were mixed reports from the breeding grounds last spring. Icelandic colleagues reported that the spring and summer had been very dry and warm with almost no rain (S. Thorstensen pers. comm.). During the annual ringing expedition, Sverrir Thorstensen observed many cygnets in Suður-Pingeyjarsýsla, an important breeding area for the swans in the north. Exceptionally bad weather in September saw heavy snow covering much of the higher ground and the valleys in the region. To what extent this bad weather may have affected the condition and survival of cygnets and contributed to regional variation in the proportion of cygnets recorded in flocks in the winter, remains unclear. A different picture emerged from Skagafjörður with fewer breeding pairs noted possibly as a result of a flash flood in the spring (O. Einarsson pers. comm.).

## 4. References

- Hall, C., J.R. Glanville, H. Boland, Ó. Einarsson, J.G. McElwaine, C.A. Holt, C.J. Spray & E.C. Rees. 2012. Population size and breeding success of Icelandic Whooper Swans *Cygnus cygnus*: results of the 2010 international census. *Wildfowl* 62: 73-96.
- Rees, E.C., J.S. Kirby & A. Gilburn. 1997. 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