

WWT/JNCC/SNH Goose & Swan Monitoring Programme

survey results 2009/10

Whooper swan *Cygnus cygnus*

1. Abundance

The sixth International Census of Whooper Swans took place in January 2010. Results from the census will be posted here when they are available.

The fifth International Census of Whooper Swans was undertaken in January 2005. The results of this census have been previously reported here in greater detail (see 2005/06), and are available in Worden *et al.* (2009).

2. Breeding success

Whooper Swan age counts were conducted within six regions across Britain and Ireland during the 2009/10 winter. A total of 17,618 was aged in England (7,331 birds), Scotland (349 birds), Northern Ireland (1,563 birds) and the Republic of Ireland (8,375 birds) between 11 January and 28 January 2010. Age counts for all regions, with the exception of North and East Scotland and East Central England (the Ouse Washes), were mostly derived from observations made during the International Swan Census in January 2010. Brood sizes were recorded for 729 families: 440 in England, 24 in Scotland, 160 in Northern Ireland and 105 in the Republic of Ireland.

For East Central England, Northwest England (WWT Martin Mere/Ribble Estuary) and Southwest Scotland (WWT Caerlaverock), the percentage of young and mean brood size were derived from age counts conducted within four days of each other. Age counts were conducted on 17 January in Northwest England and on 20 January in East Central England and Southwest Scotland. This was to avoid any bias that would arise from repeated observations of the same families at certain sites. In Scotland, breeding success was determined from data collected across three days (17 January in Fife, 23 January in Roxborough and 28 January in Grampian). Counts were conducted between 13 22 January in Northern Ireland and between 11 27 January in the Republic of Ireland.

Overall, Whooper Swan flocks contained 15.4% cygnets, and the mean brood size of pairs with young was 2.0 cygnets. The mean percentage young in annually monitored regions Martin Mere/Ribble Estuary, the Ouse Washes and Caerlaverock (13.0%) fell marginally under the five-year mean recorded over the five winters up to 2009/10 ($14.7\% \pm 1.6$ SE) and continued the overall decline in breeding success since the 2007/08 winter. Similarly, the mean brood size for those three areas (1.9 cygnets per family) fell below the five year average recorded up to and including 2008/09 (2.4 cygnets ± 0.08 SE).

The proportion of young and mean brood size of Whooper Swan flocks during the 2009/10 winter.

Region ¹	Total aged (no. of young)	% young	No. broods (no. of young)	Mean brood size
Northwest England	1,738 (337)	19.4	133 (249)	1.9
East Central England	5,593 (603)	10.8	307 (584)	1.9
Southwest Scotland	260 (47)	18.1	20 (47)	2.4
North and East Scotland	89 (26)	29.2	4 (8)	Limited data
Northern Ireland	1,563 (315)	20.2	160 (315)	2.0
Republic of Ireland	8,375 (1,391)	16.6	105 (262)	2.5
Total	17,618 (2,719)	15.4	729 (1,465)	2.0

¹Regions are defined as follows:

Northwest England: Lancashire

East Central England: Norfolk

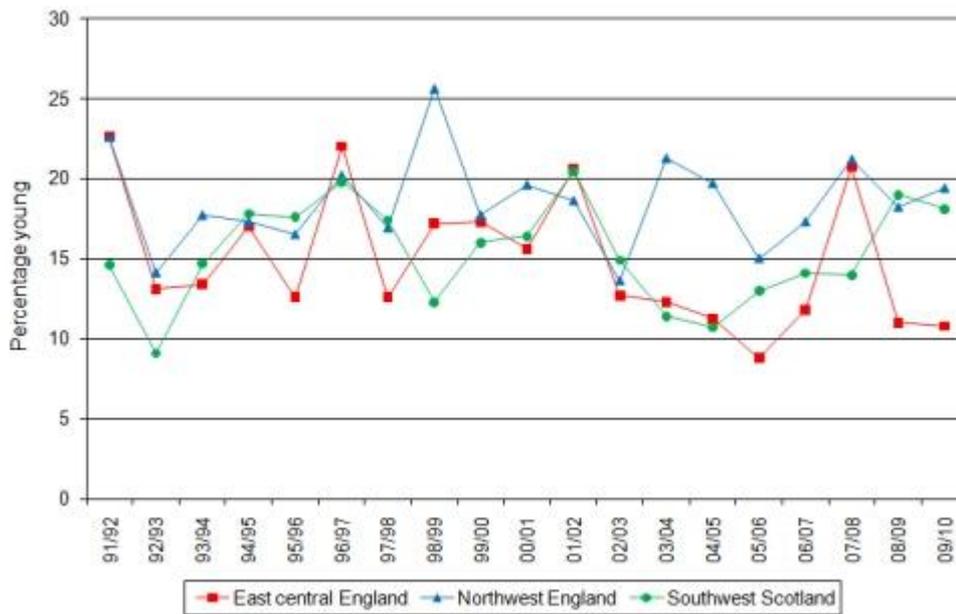
Southwest Scotland: Dumfriesshire

North and East Scotland: Grampian, Roxborough, Fife

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

Republic of Ireland: Co. Cavan, Co. Clare, Co. Cork, Co. Donegal, Co. Galway, Co. Kerry, Co. Kildare, Co. Kilkenny, Co. Laois, Co. Leitrim, Co. Limerick, Co. Longford, Co. Mayo, Co. Meath, Co. Monaghan, Co. Offaly, Co. Roscommon, Co. Sligo, Co. Tipperary, Co. Waterford, Co. Westmeath, Co. Wexford, Co. Wicklow

There was evidence of regional variation in the percentage of young recorded between regions with the highest proportions recorded in North and East Scotland (29.2%), Northern Ireland (20.2%) and Northwest England (19.4%). Those wintering in East Central England had considerably lower breeding success than that found in all other regions (10.8%) and this also represented the lowest proportion of young recorded in the area since 2005/06 (8.8%). Regional variation in brood size was evident, ranging from an average of 1.9 cygnets per family for flocks wintering in Northwest and East Central England and 2.5 cygnets per family in the Republic of Ireland.



The mean percentage of young Whooper Swans recorded on the Ouse Washes (East central England), WWT Caerlaverock (Southwest Scotland) and WWT Martin Mere/Ribble Estuary (Northwest England), 1991/92-2009/10.

3. Discussion

Overall, the percentage of young found in Whooper Swan flocks wintering in Britain and Ireland was 15.4%, which was lower than that recorded during the 2005 international Whooper Swan census (19.2%, Worden *et al* 2009). The mean percentage young recorded at WWT centres (13.0%), from where data are collected annually, also fell below the 5-year mean for these sites (14.7%). Overall breeding success in summer 2009 was most probably influenced by the warm and dry conditions encountered across Iceland in June and the first half of July, where temperatures were above average throughout the country (Icelandic Meteorological Office, accessed 17 June 2010). A brief cold snap at the end of July did not appear to impact significantly on the swans' breeding success.

There was evidence of variation in the distribution of families between regions in winter 2009/10, with the poorest breeding success found for birds wintering in East Central England (10.8%) and the highest found in North and East Scotland (29.2%). This may reflect a preference for Whooper Swan families in selecting sites closest to their Icelandic breeding grounds, with non-breeding birds travelling further south. Research has also shown that smaller flocks comprise higher proportions of young than do larger flocks, which may partly explain the higher percentage of young recorded in North and East Scotland (where the average flock size was 30 birds) compared to that recorded in East Central England (140 birds). These differences also relate to annually monitored regions, which are predominantly to the south and east of the range, and regions elsewhere that are generally only monitored during international censuses every five years. In 2009/10, the proportion of young was 13.0% in the annually monitored regions and 17.3% in the others, suggesting that there may be a bias in the overall estimate in years when an international census is not carried out.

4. References

Worden, J, O Crowe, O Einarsson, A Gardarsson, G McElwaine & EC Rees. 2009. Population size and breeding success of the Icelandic Whooper Swan *Cygnus cygnus*: results of the January 2005 International Census. *Wildfowl* 59:17-40.

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Goose & Swan Monitoring