

WWT/JNCC/SNH Goose & Swan Monitoring Programme

survey results 2010/11

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 in five regions across Britain and Ireland during the 2010/11 winter. For East Central England (WWT Welney/Ouse Washes) and Northwest England (WWT Martin Mere/Ribble Estuary) the percentage of young and mean brood size were derived from age counts conducted on one day (18 January), to avoid biasing age assessments for the population through the inclusion of repeat observations of swans (likely the same individuals) at a particular site. In Southwest Scotland (WWT Caerlaverock), breeding success was determined from data collected on 18 December 2010, whilst counts were conducted between 1023 January in Northern Ireland and between 824 January in the Republic of Ireland. Regional variation was also assessed in order to determine the differences in the geographical distribution of family parties.

A total of 9,969 Whooper Swans was aged: 4,807 birds in England, 275 in Scotland, 2,540 in Northern Ireland and 2,347 in the Republic of Ireland. Brood sizes were recorded for 777 families: 329 in England, 25 in Scotland, 254 in Northern Ireland and 169 in the Republic of Ireland. Overall, Whooper Swan flocks contained 16.3% cygnets and mean brood size of pairs with young was 2.1 cygnets.

The mean percentage young at Martin Mere/Ribble Estuary, the Ouse Washes and Caerlaverock, from where data are collected annually, was 14.4%, just below the previous five-year mean (2005/06-2009/10; 14.7% \pm 1.6 SE). The mean brood size for these three areas was 2.1 cygnets per family, again just lower than the previous five-year mean (2005/06-2009/10; 2.3 \pm 0.13 SE).

The proportion of young and mean brood size of Whooper Swan flocks during the 2010/11 winter.

Region	Total aged (no. of young)	% young	No. of broods (no. of young)	Mean brood size
WWT Martin Mere/Ribble Estuary (Northwest England)	7 (3)	Limited data	1 (3)	Limited data
Ouse Washes (East central England)	2,494 (283)	11.3	154 (278)	1.8
WWT Slimbridge (Southwest England)	284 (48)	16.9	19 (48)	2.5
Northern Ireland	4 (0)	Limited data	0 (0)	Limited data
Republic of Ireland	16 (1)	6.3	1 (1)	Limited data
Overall	2,805 (335)	11.9	175 (330)	1.9

[1]Regions are defined as follows:

Northwest England: Lancashire

East Central England: Norfolk

Southwest Scotland: Dumfriesshire

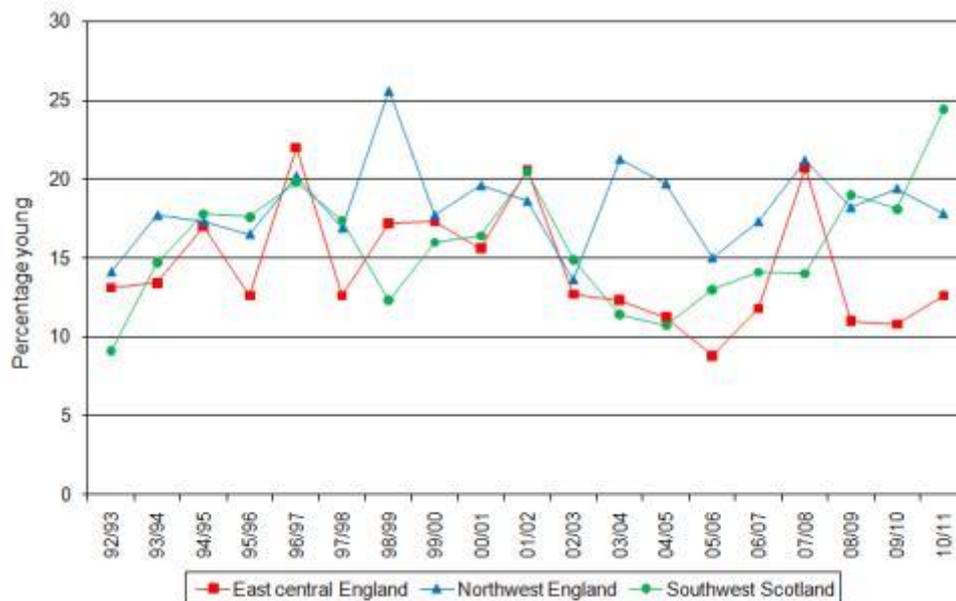
Northern Ireland: Co. Londonderry, Co. Antrim, Co. Tyrone, Co. Fermanagh, Co. Armagh, Co. Down

Republic of Ireland: Co. Clare, Co. Cork, Co. Donegal, Co. Galway, Co. Limerick, Co. Mayo, Co. Meath, Co. Monaghan, Co. Offaly, Co.

Roscommon, Co. Tipperary, Co. Waterford, Co. Wexford

* Brood sizes were not recorded for all flocks aged. The total number of cygnets used for the % young and the mean brood size estimates therefore differ for the regions indicated.

There was evidence of regional variation in the distribution of families between regions ($X^2_4 = 66.4$, $P < 0.01$). The highest breeding success was found amongst birds in Southwest Scotland (24.4%) and Northern Ireland (19.0%), with the lowest recorded for those wintering in East Central England (12.6). Regional variation in brood size was also evident, ranging from 1.9 cygnets per family in Northwest England and Northern Ireland to 2.7 cygnets per family in Southwest Scotland.



The mean percentage of young Whooper Swans recorded on the Ouse Washes, WWT Caerlaverock and WWT Martin Mere/Ribble Estuary, 1991/92-2009/10

3. Discussion

In 2010/11, the overall proportion of young for Whooper Swans was slightly higher than that recorded in Britain and Ireland during the 2010 International Whooper Swan census (16.1%). Given that 92% of Icelandic-breeding Whooper Swans winter in Britain and Ireland, this figure reflects breeding success for the population as a whole. The regional variation in the distribution of families may reflect a preference for Whooper Swan families in selecting wintering sites closest to their Icelandic breeding grounds, with non-breeding birds travelling further south (Rees *et al.* 1997). Studies have also shown that Whooper Swans ringed in the Suður & Norður-Pingeyjarsýsla regions of northern Iceland are more likely to winter in England, that those ringed in the eastern region of Norður-Múlasýsla are more likely to winter in Scotland and that birds ringed further west in Skagafjörður, are more likely to spend their winter in Ireland (Newth *et al.* 2007; McElwaine *et al.* 1995; Gardarsson 1991). Regional variation in the distribution of families in winter therefore may also be linked to environmental conditions on the Icelandic breeding grounds in spring and summer

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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- Holt, CA, GE Austin, NA Calbrade, HJ Mellan, C Mitchell, DA Stroud, SR Wotton & AJ Musgrove. 2011. *Waterbirds in the UK 2009/10: The Wetland Bird Survey*. BTO/RSPB/JNCC. Thetford.

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Goose & Swan Monitoring