

WWT/JNCC/SNH Goose & Swan Monitoring Programme

survey results 2007/08

Bewick's Swan *Cygnus columbianus bewickii*

1. Abundance

The sixth internationally coordinated census of Bewick's Swans was undertaken in January 2005. The results of this census have been previously reported here in greater detail (see 2005/06), and are now available in Worden *et al.* (2006).

2. Breeding success

Bewick's Swan age counts were conducted at three major wintering sites for the species in the UK during winter 2007/08: WWT Slimbridge (Southwest England), WWT Martin Mere/Ribble Estuary (Northwest England) and the Ouse Washes (East central England). A total of 2,278 swans was aged. Data described here for Martin Mere/Ribble Estuary and for the Ouse Washes were collected in January 2008. Age counts at Slimbridge (where individual swans wintering at the site are identified daily by their natural bill markings) are for all swans recorded at the site during the winter season (October to March). Brood sizes were recorded for 44 families: 39 on the Ouse Washes, four at Slimbridge and one at Martin Mere/Ribble Estuary.

With the exception of Slimbridge, the percentage of young and mean brood size was derived from age counts conducted on just one day, in an effort to avoid any bias that would arise from repeated observations of the same families at certain sites. Age counts were conducted on 22 January at Martin Mere/Ribble Estuary and on 4 January on the Ouse Washes.

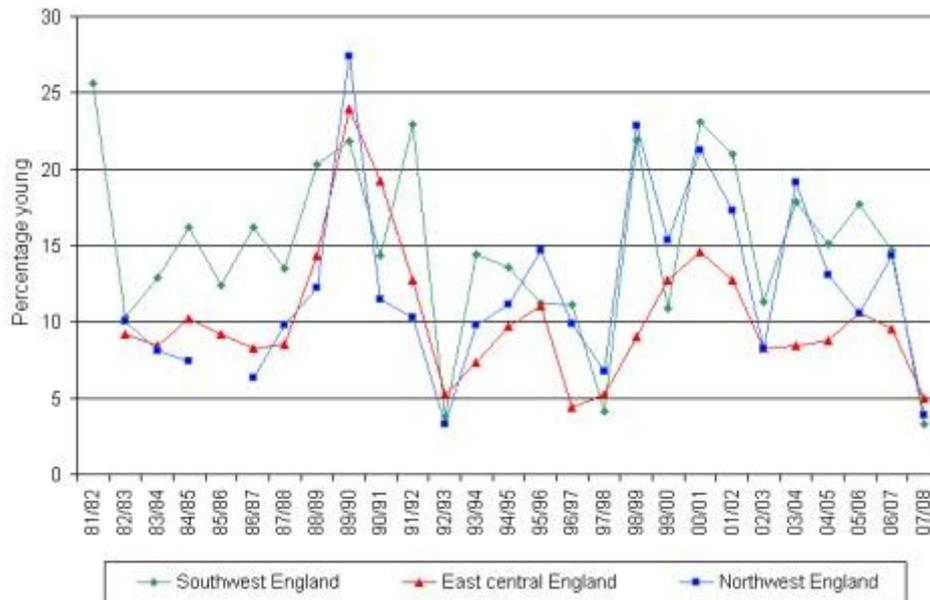
Overall, flocks contained 4.7% young and the mean brood size per successful pair was 1.4. The percentage young was much lower than the five-year mean of 11.0% (± 1.1 s.e., 2002/03 2006/07 inclusive) and was the lowest since 1992/93 (4.1%).

The proportion of young and mean brood size for Bewick's Swans at three UK regions during the 2007/08 winter.

Region	Total aged	% young	No. of broods	Mean brood size
Northwest England	51	3.9	1 ⁽¹⁾	2.0
East central England	1,954	5.0	39	1.3
Southwest England	273	3.3	4	2.3
Overall	2,278	4.7	44	1.4

⁽¹⁾This figure refers to the brood count for the maximum number of birds observed on 22 January at Lytham Moss, Lancashire. A brood of three cygnets was also recorded at the same location on 12 January.

Regional variation in the percentage of young was assessed in order to determine any differences in the geographical distribution of family parties. Breeding success was well below average for all regions surveyed. The highest proportion of young was recorded on the Ouse Washes (5.0%), although this still remained the lowest proportion recorded in the area since 1996/97 (4.4%). The proportion of young at Martin Mere/Ribble Estuary (3.9%) was similarly below the region's five-year mean (13.1%, ± 1.8 s.e) and was the lowest recorded there since 1992/93 (3.3%). The lowest reproductive success was found at Slimbridge where the percentage of young (3.3%) was far below that of the preceding five-year mean for the site (15.3%, ± 1.2 s.e) and was the lowest since a handful of adults were counted in the 1958/59 winter (0%, WWT unpubl. data). There was less evidence of regional variation in breeding success during 2007/08 than in 2006/07 with the percentage of young ranging from 3.3% to 5.0%.



The annual average percentage of young Bewick's Swans in Southwest England (WWT Slimbridge), East central England (Ouse Washes) and Northwest England (WWT Martin Mere/Ribble Estuary), 1982/83 to 2007/08.

Regional variation in brood size could not be assessed accurately in 2008/09 because very few broods were recorded at WWT Martin Mere/Ribble. However, the overall mean brood size for all three regions combined (1.5 cygnets per family) was below that recorded in 2005/06 (2.2%) and 2006/07 (1.9%) although marginally above that recorded in 2007/08 (1.4%).

Mean brood sizes of Bewick's Swans during winters 2004/05 - 2007/08.

Region	2004/05		2005/06		2006/07		2007/08	
	No. of broods	Mean brood size						
Northwest England	8	2.2	61	2.3	10	2.8	1	2.0
East central England	150	1.8	47	2.1	66	1.7	39	1.3
Southwest England	18	2.1	24	2.2	22	2.1	4	2.3
Overall	176	2.0	132	2.2	98	1.9	44	1.4

3. Discussion

The total of 7,216 Bewick's Swans counted in Britain and Ireland during January 2005 represents an increase of 16% on the 6,239 recorded in these countries during the first international Bewick's Swan census in 1984. Numbers are, however, lower than those found during the 1995 and 2000 censuses, with a 5% decline since January 2000. Numbers in both Northern Ireland and the Republic of Ireland have decreased dramatically from 1,244 birds in 1984, to just 224 birds in January 2005. Declines have also occurred in many western regions of Britain. Two areas which have seen increases, however, are East Anglia and Southeast England, which suggests a possible eastward contraction of the wintering range.

The Northwest Europe population of Bewick's Swans as a whole (including those on the continent) underwent a substantial increase from 16,046 to 29,277 between 1987 and 1995, with the largest increase in numbers in the Netherlands. The population throughout the rest of Northwest Europe was also censused in January 2000 and 2005, but the full results are still awaited. These results will help to determine whether declining numbers in parts of Britain and Ireland reflect the trend for the whole population or whether changing climatic conditions and warmer winters are causing more swans to remain closer to their breeding grounds.

Age counts of Bewick's Swans wintering in England in 2007/08 indicate exceptionally poor breeding success in the 2007 breeding season. Overall, 4.7% young was recorded in flocks in different parts of the country. A similar level of breeding success was recorded on the continent, where only 3.8% of 6,341 birds aged in November were juvenile (W. Tijssen, pers comm., 2007). This gives an overall percentage of young for the whole population of 4.3%, and indicates that 2007 was an exceptionally poor breeding year for the Northwest European population of Bewick's Swan.

Conditions on the breeding grounds are likely to be important in determining the population's breeding success, in particular, weather conditions during the short Arctic breeding season (Poorter 1991). Reports of a late spring thaw in the Pechora Delta in 2007 (A. Glotov pers comm., 2007) may have impacted on the breeding programme for swans nesting at least in that part of the breeding range.

There was some regional variation in the distribution of Bewick's Swan families recorded in different parts of England, although this was less evident than in the previous four winters. A particularly low proportion of young was recorded in Southwest England (3.3% at WWT Slimbridge). This was an exceptionally low proportion given that swans wintering at Slimbridge are generally found to have above average breeding success when compared with the rest of the population.

The highest proportion of young was found in East central England (5.0% on the Ouse Washes). However, this was still the lowest breeding success recorded in the area since the 1996/97 winter. The Ouse Washes is the most important site for the population in January (Delany *et al.* 1999), so the proportion of young recorded there is representative not only of most Bewick's Swans wintering in the UK, but also of the Northwest European population.

4. References

Worden, J, PA Cranswick, O Crowe, G McElwaine & EC Rees. 2006. Numbers and distribution of Bewick's Swan *Cygnus columbianus bewickii* wintering in Britain and Ireland: results of the International Censuses, January 1995, 2000 and 2005. *Wildfowl* 56: 3-22.

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Delany, SN, C Reyes, E Hubert, S Pihl, EC Rees, L Haanstra, & A van Strien. 1999. *Results from the International Waterbird Census in the Western Palearctic and Southwest Asia 1995 and 1996*. Wetlands International Publication No. 54, Wetlands International, Wageningen, The Netherlands.

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Goose & Swan Monitoring