

WWT/JNCC/SNH Goose & Swan Monitoring Programme

survey results 2008/09

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 2008/09: WWT Slimbridge (Southwest England), WWT Martin Mere/Ribble Estuary (Northwest England) and the Ouse Washes (East Central England). A total of 1,025 swans was aged. Data described here for Martin Mere/Ribble Estuary and for the Ouse Washes were collected in December and January as there is a low percentage of juvenile swans arriving in the UK in October indicating that early migrants are mostly non/failed-breeders (Rees *et al* 1997). Age counts at WWT 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 (November to March). Brood sizes were recorded for 33 families: 16 at the Ouse Washes, 11 at WWT Slimbridge and six at WWT Martin Mere/Ribble Estuary.

With the exception of WWT Slimbridge, the percentage of juveniles 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 29 January at WWT Martin Mere/Ribble Estuary and at 6 January on the Ouse Washes. Brood sizes were recorded on 16 December at the Ouse Washes.

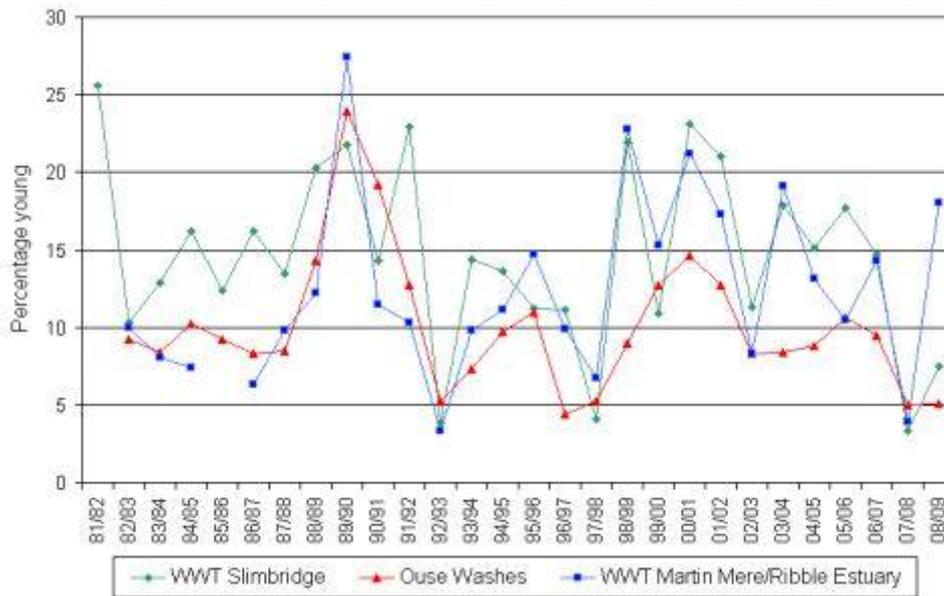
Regional variation in the percentage of juveniles was assessed in order to determine any differences in the geographical distribution of family parties.

Breeding success was well below average for all regions surveyed with the exception of birds wintering at Martin Mere/Ribble Estuary. Overall, Bewick's Swan flocks contained 6.4% cygnets, and the mean brood size of pairs with young was 1.5 cygnets. The percentage of young was much lower than the five-year mean of 10.0% (± 1.7 SE for 2003/04 - 2007/08 inclusive) and following the exceptionally poor breeding season in 2007, represented the lowest percentage since the 1997/98 winter (5.3%).

The proportion of young and mean brood size for Bewick's Swans at three UK regions during the 2008/09 winter.

Region	Total aged (no. of young)	% young	No. of broods (no. of young)	Mean brood size
WWT Martin Mere/Ribble Estuary (Northwest England)	61 (11)	18.0	6 (11)	Limited data
Ouse Washes (East central England)	724 (37)	5.1	16 (22)	1.4
WWT Slimbridge (Southwest England)	240 (18)	7.5	11 (18)	1.6
Overall	1,025 (66)	6.4	33 (51)	1.5

There was marked variation in the proportion of cygnets recorded in different parts of the UK with the percentage of young ranging from 5.1% to 18.0%. The highest proportion of young was found at WWT Martin Mere/Ribble Estuary (18.0%). This was much higher than the five-year average for the region (12.2% ± 2.5 SE) and contrasted greatly with the low breeding success found on the Ouse Washes (5.1%) and at WWT Slimbridge (7.5%).



The annual average percentage of young Bewick's Swans in WWT Slimbridge, Ouse Washes and WWT Martin Mere/Ribble Estuary, 1982/83 to 2008/09.

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 - 2008/09.

Region	2005/06		2006/07		2007/08		2008/09	
	No. of broods	Mean brood size						
WWT Martin Mere/Ribble Estuary	61	2.3	10	2.8	1	Limited data	6	Limited data
Ouse Washes	47	2.1	66	1.7	39	1.3	16	1.4
WWT Slimbridge	24	2.2	22	2.1	4	Limited data	11	1.6
Overall	132	2.2	98	1.9	44	1.4	33	1.5

3. Discussion

Age counts of Bewick's Swans wintering in the UK in 2008/09 indicate exceptionally poor breeding success in the 2008 breeding season. Overall, 6.4% young was recorded in flocks in different parts of the country. This falls well below the percentage of young seen four years ago, during the international census made in January 2005 (14.4%) (Worden *et al* 2006), and follows successive poor breeding seasons since 2001 where the percentage young in UK wintering flocks has been less than 19.0%.

Poor breeding success was also found in the Netherlands where only 4.0% of 3,000 birds aged in November were juvenile. A coordinated age count of 6,942 birds wintering at sites in the UK and on the continent (the Netherlands and Denmark) on 20 and 21 December found 7.2% young, thus confirming that 2008 was a very poor breeding year for the Northwest European population of Bewick's Swan (W. Tijsen, pers comm. 2008).

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 (mid-June) in the Pechora Delta region of the Russian arctic in 2008 (A. Glotov pers comm. 2008) is likely to have impacted on the breeding programme for swans nesting at least in that part of the breeding range.

There was marked regional variation in the distribution of Bewick's Swan families recorded in different parts of England with particularly high breeding success found in the Northwest (18.0%). This was far higher than the proportion of juveniles found in Southwest England (7.5% at WWT Slimbridge) and in East Central England (5.1% on the Ouse Washes). The Ouse Washes is the most important site for the population in January (Delany *et al.* 1999), so the proportion of juveniles recorded there is representative not only of most Bewick's Swans wintering in the UK, but also of a large section of the Northwest European population.

4. References

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This report should be cited as:

WWT. 2009. *Goose & Swan Monitoring Programme: survey results 2008/09 Bewick's Swan* *Cygnus columbianus bewickii*. WWT/JNCC/SNH, Slimbridge.

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This report was produced under the Goose & Swan Monitoring Programme (GSMP). This programme monitors numbers and breeding success of geese and swans in the UK during the non-breeding season. GSMP is organised by the Wildfowl & Wetlands Trust in partnership with the Joint Nature Conservation Committee (on behalf of Natural Resources Wales, Natural England and the Council for Nature Conservation and the Countryside) and Scottish Natural Heritage.



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