

WWT/JNCC/SNH Goose & Swan Monitoring Programme

survey results 2010/11

Bewick's Swan *Cygnus columbianus bewickii*

1. Abundance

The seventh International Census of Bewick's Swans took place in January 2010. Results from the census will be posted here when they are available.

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

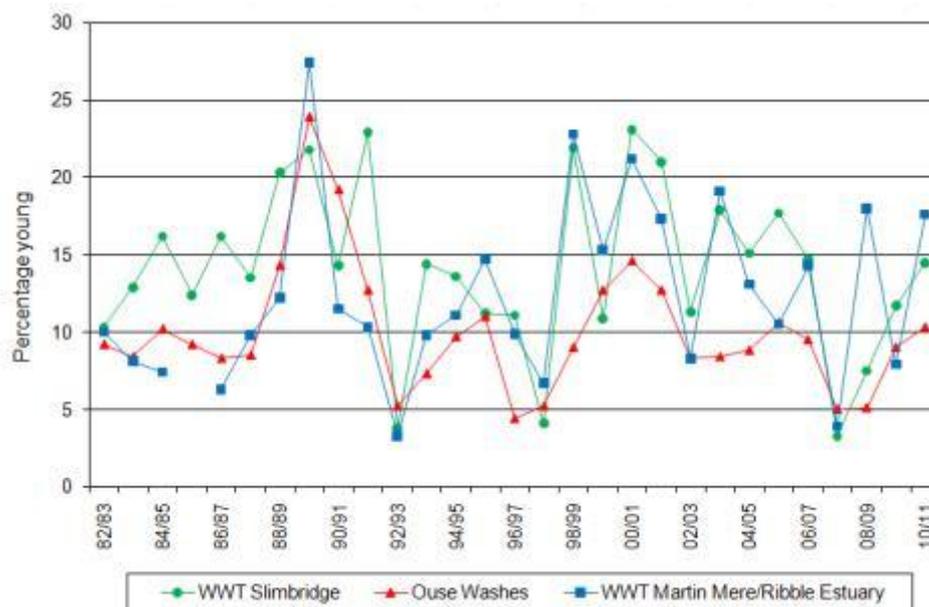
Bewick's Swan age counts were conducted at three major wintering sites for the species in Britain during winter 2010/11: at WWT Slimbridge (Southwest England), WWT Martin Mere/Ribble Estuary (Northwest England) and the Ouse Washes (East Central England). Data from Martin Mere/Ribble Estuary and the Ouse Washes were collected in January 2011 because early arrivals (*i.e.* those present in October and November) tend to be non/failed breeders (Rees *et al.* 1997b), whereas age assessments made in January can be taken as being more representative of the population as a whole. Age counts at Slimbridge, where individual swans wintering at the site are identified daily by their natural bill markings, are for all swans recorded there during the winter season (October to March). With the exception of Slimbridge, the percentage of juveniles and mean brood size was derived from age counts conducted within a four-day window, 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 15-16 January at Martin Mere/Ribble Estuary and on 18 January on the Ouse Washes. Regional variation in the percentage of juveniles was also assessed in order to determine any differences in the geographical distribution of family parties.

A total of 4,335 Bewick's Swans was aged and brood sizes were recorded for 275 families: 235 on the Ouse Washes, 35 at Slimbridge and five at Martin Mere/Ribble Estuary. The low brood count at Martin Mere/Ribble Estuary reflected the relatively few Bewick's Swans wintering in this part of the country. Overall, Bewick's Swan flocks contained 10.8% cygnets, this being slightly lower than the previous ten-year mean (2000/01-09/10; 11.2% \pm 1.5 SE). Mean brood size of pairs with young was 1.7 cygnets, equalling the previous five-year mean (2005/06-2009/10; 1.7 \pm 0.15 SE).

The proportion of young and mean brood size for Bewick's Swans at three UK regions 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)	34 (6)	17.6	5 (6)	1.2
Ouse Washes (East central England)	3,813 (392)	10.3	235 (392)	1.7
WWT Slimbridge (Southwest England)	488 (71)	14.5	35 (71)	2.0
Overall	4,335 (469)	10.8	275 (469)	1.7

There was significant variation ($X^2_2 = 9.8$, $P=0.007$) in the proportion of cygnets recorded in different parts of Britain with the percentage of young ranging from 10.3% on the Ouse Washes to 17.6% at Martin Mere/Ribble Estuary. Regional variation in brood size could not be assessed accurately in 2010/11 because very few broods were recorded at Martin Mere/Ribble.



The annual average percentage of young Bewick's Swans in WWT Slimbridge, Ouse Washes and WWT Martin Mere/Ribble Estuary, 1982/83-2010/11.

3. Discussion

These data indicate that Bewick's Swan breeding success was again relatively poor in 2010. Although annual breeding success has improved since the particularly poor 2007 breeding season, this is the seventh consecutive year that breeding success has been below the ten-year mean and follows successive poor breeding seasons since 2003 where the percentage of young in British wintering flocks has remained less than 15.0%.

A co-ordinated age count of 7,275 birds wintering at sites in Britain and the Netherlands between 17 and 21 December 2010 found 10.5% young, thus confirming that 2010 was a poor breeding year for the Northwest European population of Bewick's Swan (W. Tjisen pers. comm. 2010).

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). Although an early spring thaw (first week of May) in the Pechora Delta region of the Russian arctic in 2010 (D. Boiko pers. comm. 2010) likely favoured the onset of breeding for birds arriving there in May, strong wind and rain throughout August may have reduced the post-hatch survival of cygnets, at least in that part of the breeding range.

There was regional variation in the distribution of Bewick's Swan families recorded in different parts of England, with the highest proportion of young found in Northwest England (17.6%). This reflects the tendency for smaller flocks, such as those recorded in the Northwest, to include a higher proportion of families than the larger flocks, whereas the latter include a higher proportion of non-breeding (or failed breeding) birds (Rees *et al.* 1997b).

4. References

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- Rees, EC, & JH Beekman. 2010. Northwest European Bewick's Swan: a population in decline. *British Birds* 103: 640-650.
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Goose & Swan Monitoring