

WWT/JNCC/SNH Goose & Swan Monitoring Programme

survey results 2014/15

Bewick's Swan *Cygnus columbianus bewickii*

1. Abundance

WeBS/I-WeBS

The abundance of Bewick's Swans in the UK and the Republic of Ireland in 2014/15 was monitored through the Wetland Bird Survey (WeBS) and the Irish Wetland Bird Survey (I-WeBS), respectively. Results from these schemes are presented in survey reports which are available to download from the schemes' websites.

International Swan Census

The 8th census of Bewick's Swan in Britain and Ireland was undertaken in January 2015. This census is carried out every five years and the results of the latest will be available in late 2015.

The 7th census in January 2010 produced a British and Irish total of 7,079 Bewick's Swans, a decrease of 1.9% compared with the 2005 census (Figure 1). A brief summary of the results was presented in the 2011/12 results for Bewick's Swan (see the 'Previous results' tab).

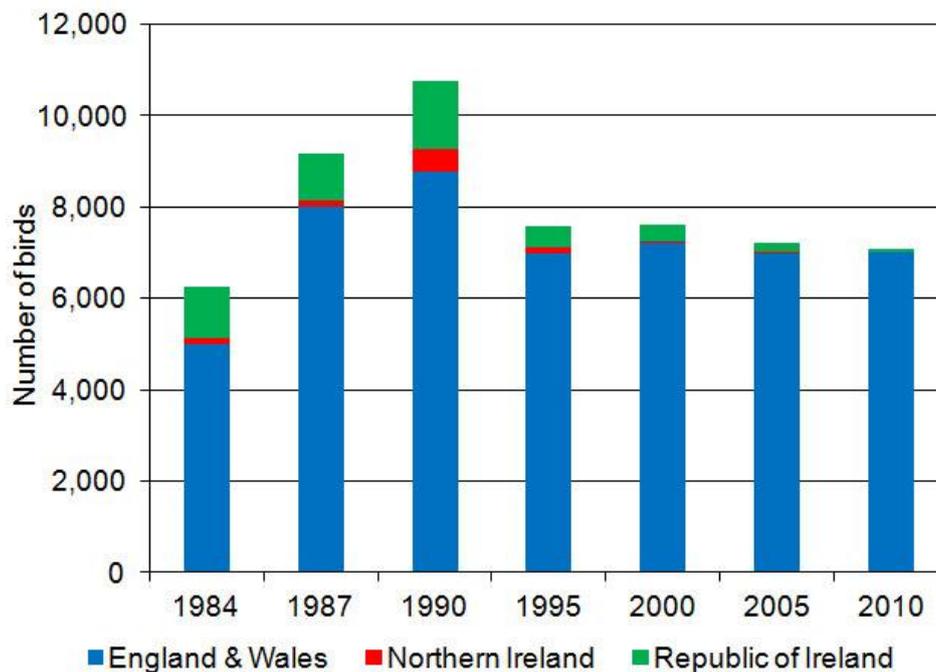


Figure 1. Number of Bewick's Swans recorded in Britain and Ireland during the International Swan Census, 1984-2010.

2. Breeding success

Bewick's Swan age assessments were conducted in four regions across England and Wales during winter 2014/15 (Table 1) as part of a coordinated assessment of breeding success conducted within a three-day window that coincided with the International Swan Census (held on 17/18 January). Such coordination helps to avoid bias that could arise from repeated observations of the same families at a particular site. Mid-winter is the best period for this assessment because a relatively high proportion of early arrivals (*i.e.* those present in October and November) are non/failed breeders (Rees *et al.* 1997), thus age assessments made in mid-winter are more representative of the population as a whole. Regional variation in the percentage of young was also assessed in order to determine any differences in the geographical distribution of family parties.

A total of 3,633 Bewick's Swans was aged and brood sizes were recorded for 219 families: 209 in east central England, three in northern England and seven in southwest England. Brood sizes were not determined for flocks surveyed in Wales. Overall, Bewick's Swan flocks contained 10.3% cygnets and the mean brood size of pairs with young was 1.5 cygnets (Table 1).

Table 1. The percentage of young (%) and mean brood size for Bewick's Swans at sites in Britain during the 2014/15 winter (regions defined below).

Region	Total aged	Percentage of young (%)	Number of broods	Mean brood size
East Central England	3,337	10.2	209	1.5
North England	39	15.4	3	limited data
Southwest England	192	7.3	7	2
East Wales	65	18.5	no data	no data
Overall	3,633	10.3	219	1.5

Regions (counties from which data were received in 2014/15):

- East central England: Cambridgeshire and Norfolk (WWT Welney/Ouse Washes), Kent, Suffolk
- North England: Lancashire (WWT Martin Mere/Ribble Estuary), Yorkshire
- Southwest England: Gloucestershire (WWT Slimbridge)
- East Wales: Flintshire, Monmouthshire

There was variation in the proportion of cygnets recorded across Britain, with the percentage of young ranging from 7.3% in southwest England to 18.5% in east Wales, although sample sizes varied considerably (Table 1). Variation between all sites in the proportion of juveniles recorded was statistically significant ($X^2_{23} = 7.7$, $P = 0.05$).

The mean percentage of young in flocks at and around WWT centres (Martin Mere/Ribble Estuary, the Ouse Washes and Slimbridge), where data are collected annually, was 9.7% (n = 3,314), which was similar to the previous ten-year average (10.5% ± 1.1 SE) but below the previous five-year average (12.6% ± 1.4 SE) for these sites. The mean brood size of 1.5 cygnets (213 broods) was also below the previous ten-year mean (1.8 ± 0.09 SE) (Figures 2 & 3).

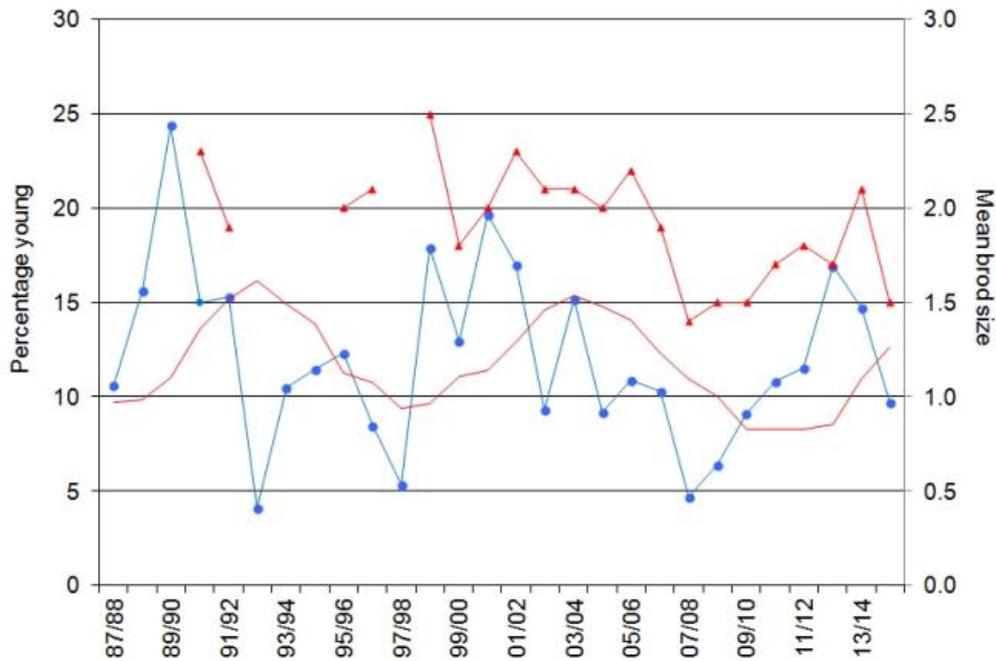


Figure 2: The percentage of young (blue circles), with the rolling five-year mean of % young (red line), and mean brood size (red triangles) of Bewick's Swans recorded at WWT Slimbridge, the Ouse Washes/Nene Washes and WWT Martin Mere/Ribble Estuary, 1990/91-2014/15. Five-year mean values for the percentage of young were calculated for the five years preceding the year in question.

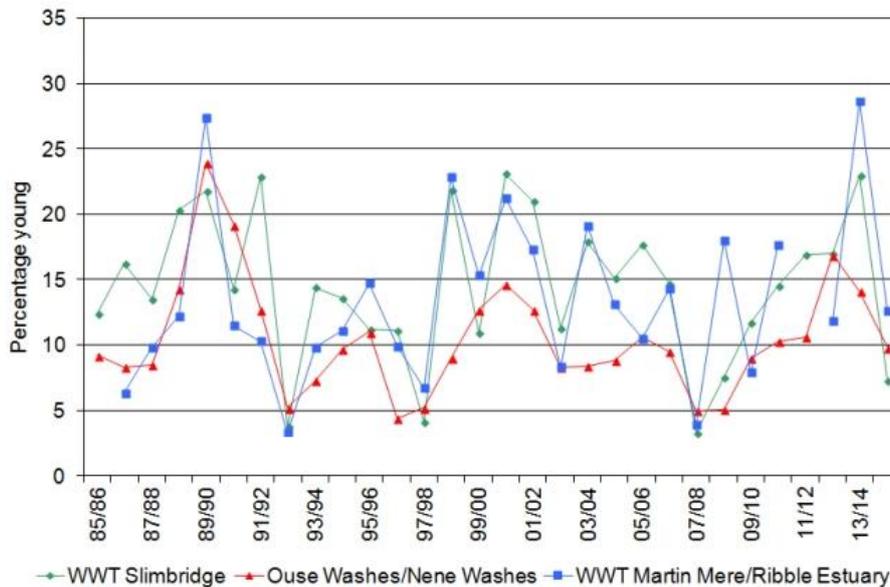


Figure 3. The percentage of young Bewick's Swans recorded at WWT Slimbridge, the Ouse Washes/Nene Washes and WWT Martin Mere/Ribble Estuary, 1984/85–2014/15.

3. Discussion

Overall, Bewick's Swan had a poor breeding season in 2014 with 10.3% young recorded in flocks wintering in Britain. Flocks in and around WWT centres comprised 9.7% young which was similar to the previous ten-year average (10.5%) but below the previous five-year average (12.6%) for these sites.

Conditions on the breeding grounds are important in determining the population's breeding success, in particular weather conditions during the short Arctic breeding season (Poorter 1991). Temperatures in the Pechora Delta (in the vicinity of an important breeding area for the species) in May and June 2014 averaged 0.9°C and 8.4°C, respectively, which was lower than the previous five year averages for the area (of 3°C and 9.8°C, respectively) (TuTiempo 2014).

4. Acknowledgments

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5. References

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Rees, E.C., J.S. Kirby & A. Gilburn. 1997. Site selection by swans wintering in Britain; the importance of habitat and geographic location. *Ibis* 139: 337-352.

TuTiempo: <http://www.tutiempo.net/en/> [accessed June 2015]

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Goose & Swan Monitoring