

WWT/JNCC/SNH Goose & Swan Monitoring Programme
survey results 2015/16
Bewick's Swan *Cygnus columbianus bewickii*

1. Abundance

The abundance of Bewick's Swans in the UK and the Republic of Ireland in 2015/16 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 eighth internationally coordinated census of the Northwest European Bewick's Swan population was undertaken in January 2015. The census was organised overall by the Wetlands International / IUCN SSC Swan Specialist Group and coordinated in Britain and Ireland by WWT in partnership with BirdWatch Ireland. The census yielded a total of 4,371 Bewick's Swans in Britain and 21 in Ireland, which together represent a decline of 38% compared with the Britain and Ireland total in 2010, and is by far the lowest census total to date (Figure 1).

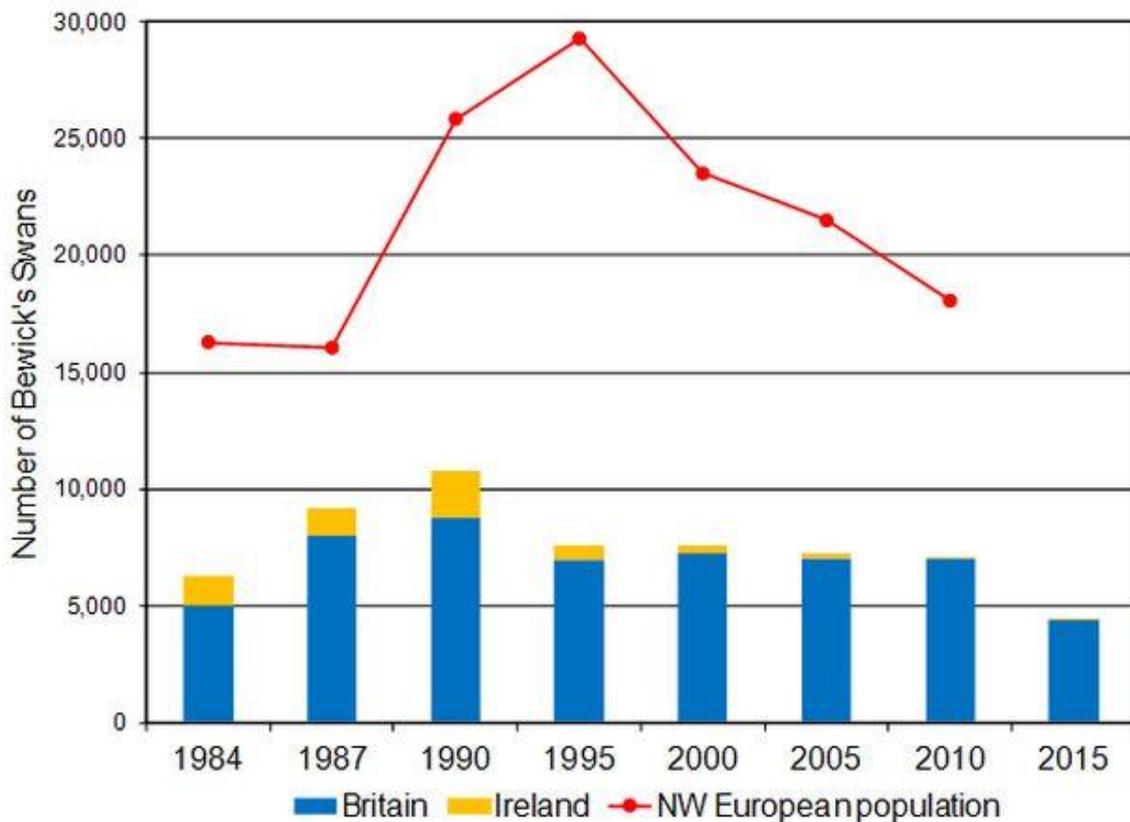


Figure 1. The number of Bewick's Swans recorded in Britain and Ireland during the International Swan Census and the Northwest European population estimate (Beekman *et al.* 2015), 1984–2015.

Swans were recorded at 26 sites in England and Wales, from Northumberland to Dorset (Figure 2). The majority of birds (85% of the British total) were recorded at two sites: the Ouse Washes, Norfolk/Cambridgeshire (3,197 birds), and the Nene Washes, Cambridgeshire (528). WWT Slimbridge (Severn Estuary), Gloucestershire, Hickling Broad, Norfolk, and Walland Marsh, Kent, recorded 192, 138 and 90 swans, respectively. All other sites recorded fewer than 50 birds.

Bewick's Swans were recorded at four sites in the Republic of Ireland (Figure 2): with one site, Wexford Harbour & Slobs, holding 13 birds, whilst the remaining three sites held fewer than five birds.



Figure 2: Number and distribution of Bewick's Swans recorded in Britain and Ireland during the International Swan Census, January 2015.

During the census, the Ouse Washes and the Nene Washes held numbers exceeding the 1% threshold for international importance (220 birds; Wetlands International 2016), whilst WWT Slimbridge, Hickling Broad and Walland Marsh each supported numbers above the nationally important threshold (70 birds; Musgrove *et al.* 2011). No sites in Ireland supported nationally important numbers (20 birds; Crowe *et al.* 2013).

2. Breeding success

Bewick's Swan age assessments were conducted in four regions across England and Wales during winter 2015/16 (Table 1). Age assessments were made in all regions in mid-winter (between 15 and 19 January 2016) because a relatively high proportion of early arrivals (*i.e.* those present in October and November) comprise mostly non/failed breeders (Rees *et al.* 1997). Thus, age assessments made in mid-winter are

more representative of the population as a whole. The percentage of young and mean brood size was derived from age counts conducted within a five-day window in an effort to avoid any bias that would arise from repeated observations of the same families at a particular site. Regional variation in the percentage of young was also assessed in order to determine any differences in the geographical distribution of family parties.

Table 1. The proportion of young (%) and mean brood size for Bewick's Swans at sites in Britain during the 2015/16 winter.

Region	Total aged	Percentage of young (%)	Number of broods	Mean brood size
East Central England	1,320 (173)	13.1	98 (173)	1.8
North England	5 (1)	Limited data	1 (1)	Limited data
Southwest England	116 (20)	17.2	13 (20)	1.5
Overall	1,441 (194)	13.5	112 (194)	1.7

Regions (counties from which data were received in 2015/16):

- East central England: Cambridgeshire and Norfolk (WWT Welney/Ouse Washes/Nene Washes)
- North England: Lancashire (Ribble Estuary)
- Southwest England: Gloucestershire (WWT Slimbridge)

A total of 1,441 Bewick's Swans was aged and brood sizes were recorded for 112 families: 98 in east central England, one in northern England and 13 in southwest England. Overall, Bewick's Swan flocks contained 13.5% cygnets, which is above the previous five-year and ten-year averages ($12.7\% \pm 1.3$ SE and $10.5\% \pm 1.1$ SE, respectively) for these sites (Table 1, Figures 4 & 5). The mean brood size of 1.7 cygnets equalled the previous ten-year mean (1.7 ± 0.09 SE) (Table1, Figures 4 & 5).

There was variation in the proportion of cygnets recorded across Britain, where the percentage of young was 13.1% in east central England and 17.2% in southwest England (Table 1), although this variation was not statistically significant ($X^2_2 = 1.6$, $P > 0.05$).

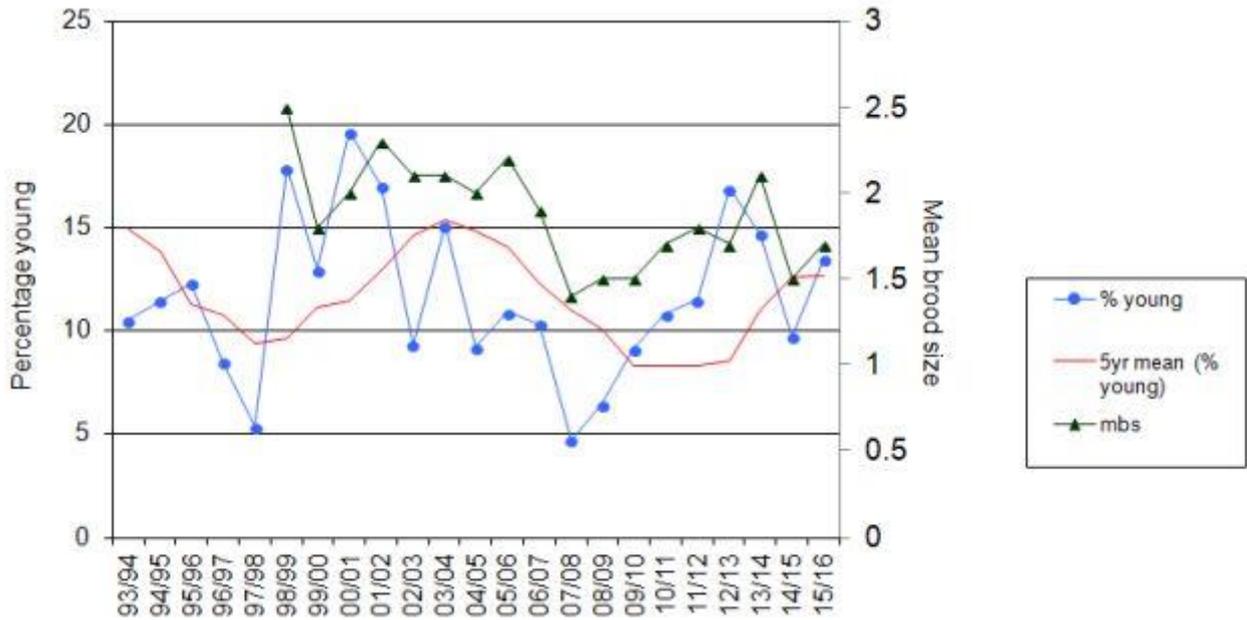


Figure 3: The percentage of young (blue circles), with the rolling five-year mean of % young (red line): five-year mean values were calculated for the five years preceding the year in question. Mean brood size (green triangles) is for Bewick's Swans recorded at WWT Slimbridge, the Ouse and Nene Washes and the Ribble Estuary combined, 1993/94–2015/16.

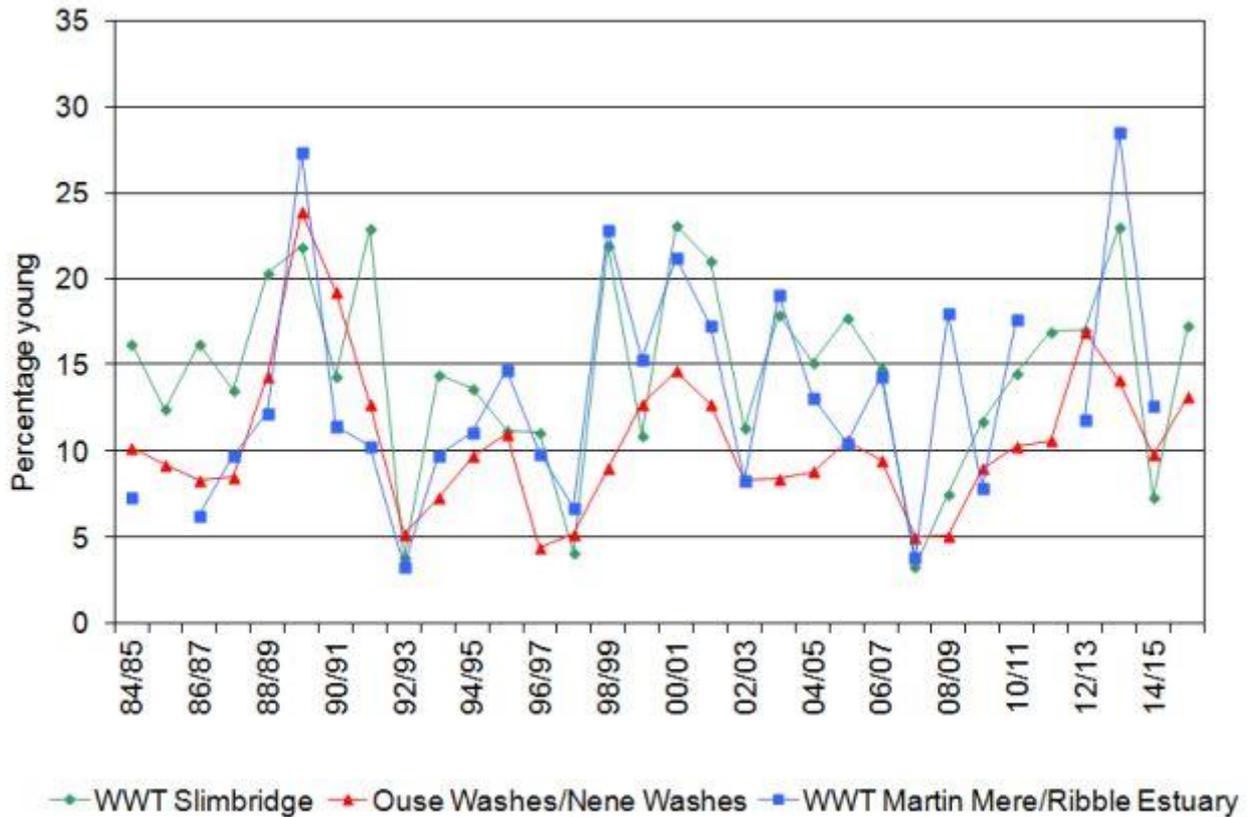


Figure 4. The percentage of young Bewick's Swans recorded at WWT Slimbridge, the Ouse and Nene Washes and the Ribble Estuary, 1987/88–2015/16.

3. Discussion

Overall, Bewick's Swans wintering in Britain had a reasonable breeding season in 2015 with 13.5% young; above the previous five-year and ten-year means ($12.7\% \pm 1.3$ SE and $10.5\% \pm 1.1$ SE, respectively).

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).

Temperatures in the Pechora Delta (in the vicinity of an important breeding area for the species) in May 2015 averaged 6.1°C which was higher than the previous five year average for the area (of 3.5°C) (TuTiempo 2015).

Results from the 2015 Bewick's Swan census show a notable decline in the number of birds wintering in Britain and Ireland since the previous census in 2010. However, interestingly, since 2000, Britain has held an increasing proportion of the overall population despite the overall decline in the Northwest European population (Figure 5). Comparatively, census results show a constant decline in the number of Bewick's Swans wintering in Ireland since the peak count recorded during the 1990 census. Given the large decline observed in Britain during the 2015 census, it will be interesting to see whether numbers elsewhere along the flyway also fell so markedly – at the time of writing, results from other countries are still being collated, but early indications suggest numbers were lower than those recorded during the 2010 census.

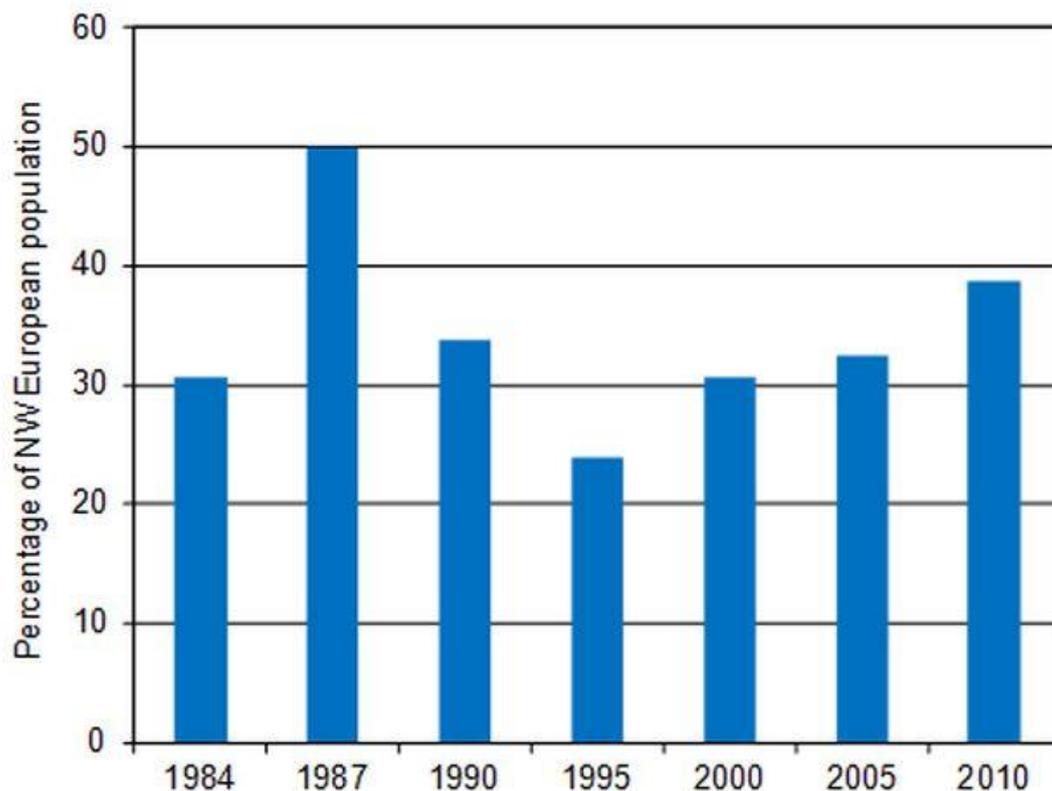


Figure 5: Percentage of Northwest European Bewick's Swan population recorded in Britain during the International Swan Census, 1984–2010.

Acknowledgements

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4. References

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Goose & Swan Monitoring