

# WWT/JNCC/SNH Goose & Swan Monitoring Programme survey results 2017/18

## 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 2017/18 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 as part of the international census. The census was organised overall by the Wetlands International / IUCN SSC Swan Specialist Group, and coordinated in Britain and Ireland WWT in partnership with BirdWatch Ireland. This census is carried out every five years.

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 (Figure 1). This is by far the lowest census total to date. A brief summary of the results was presented in the 2015/16 results for Bewick's Swan: see the Previous results tab.

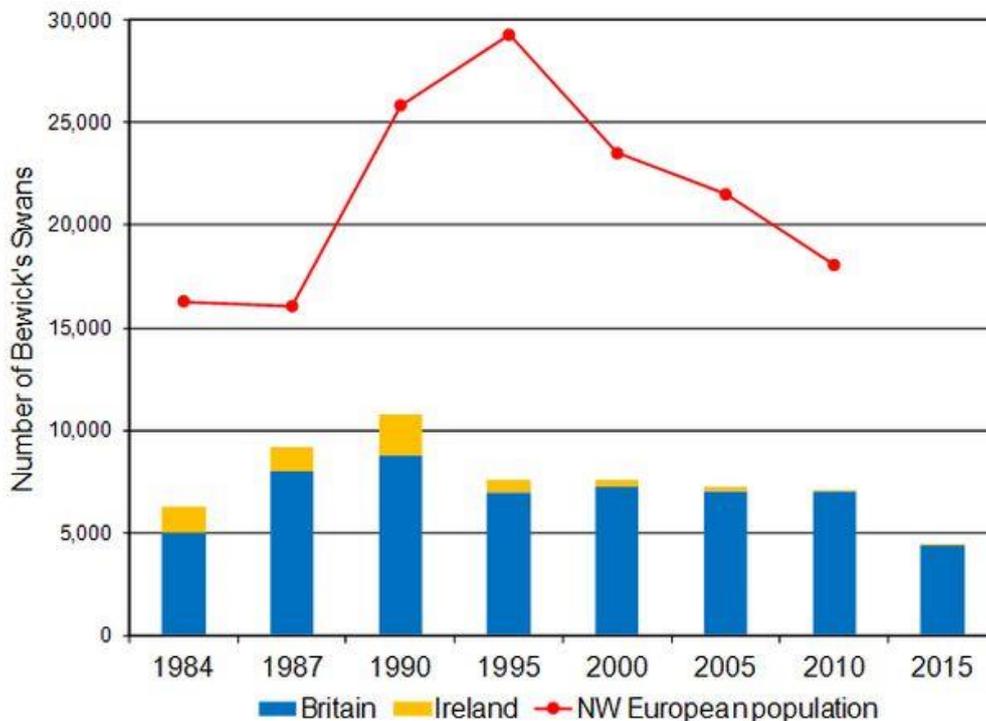


Figure 1. Number of Bewick's Swans recorded in Britain and Ireland during the International Swan Census, 1984–2015 (the overall 2015 NW European population estimate has yet to be calculated, with the analysis being undertaken by the Wetlands International / IUCN SSC Swan Specialist group)

## 2. Breeding success

Bewick's Swan age assessments were conducted in three regions across England during winter 2017/18 (Table 1). Age assessments were made in all regions in mid-winter (between 14 and 16 January), because a relatively high proportion of early arrivals (*i.e.* those present in October and November) typically comprise mostly non/failed breeders (Rees *et al.* 1997), whereas age assessments made in mid-winter can be taken as being more representative of the population as a whole. The percentage of young and mean brood size were derived from age counts conducted within two days 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.

A total of 1,198 Bewick's Swans was aged and brood sizes were recorded for 38 families: 1,068 in east central England, ten in northwest England and 120 in southwest England. No Bewick's Swans were recorded at Martin Mere/Ribble Estuary during the survey period. Overall, Bewick's Swan flocks contained 5.7% cygnets which fell below the previous ten-year average recorded at wintering sites in England ( $11.6\% \pm 1.3$  SE for 2007/08–2016/17). 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 2017/18 winter.

Region	Total aged (number of young)	Percentage of young (%)	Number of broods (number of young)	Mean brood size
East Central England	1,068 (58)	5.4	33 (48)	1.5
Northwest England	10 (0)	0.0	0 (0)	0
Southwest England	120 (10)	8.3	5 (10)	2.0
<b>Overall</b>	<b>1,198 (68)</b>	<b>5.7</b>	<b>38 (58)</b>	<b>1.5</b>

Regions (counties from which data were received in 2017/18):

- East central England: Cambridgeshire and Norfolk (WWT Welney/Ouse Washes/Nene Washes) and Kent (Walland Marsh, St Groves Marsh, Grove Ferry)
- North England: Lancashire (the Flyde, Martin Mere/Ribble Estuary)
- Southwest England: Gloucestershire (WWT Slimbridge)

There was no significant variation in the percentage of young recorded in east central England (5.4%) and southwest England (8.3 %) (Table 1;  $X^2_1 = 1.7$ ,  $P > 0.05$ ). The mean percentage of young in flocks at and around WWT centres (the Ouse/Nene Washes and Slimbridge), where data is collected annually, was 5.2 % ( $n = 1,144$ ), which also fell well below the previous five-year and ten-year averages ( $14.3\% \pm 1.3$  SE and  $11.4\% \pm 1.3$  SE, respectively) for these sites (Table 1, Figures 2 & 3). The mean brood size of 1.5 cygnets (38 broods) was also below the previous ten-year mean ( $1.7 \pm 0.1$  SE).



Figure 2: The percentage of young (blue circles), with the rolling five-year mean of percentage young (red line). Mean brood size (green triangles) is for Bewick's swans recorded at WWT Slimbridge, the Ouse and Nene Washes and WWT Martin Mere/the Ribble Estuary combined, 1995/96–2017/18. Five-year mean values for the percentage of young were calculated for the five years preceding the year in question (e.g. mean presented for 2017/18 is for 2012/13–2016/17).

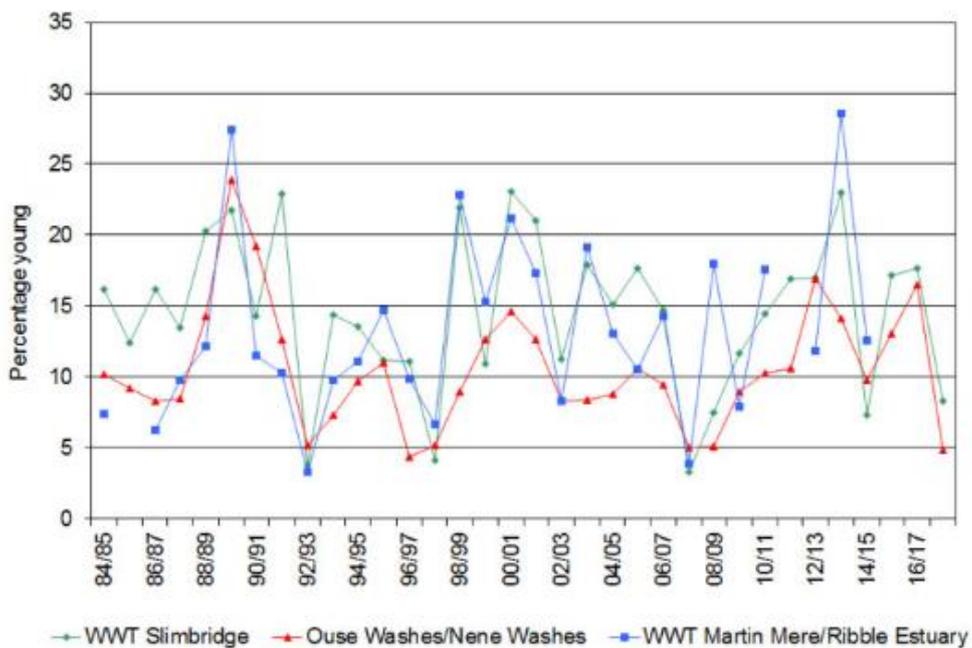


Figure 3. The percentage of young Bewick's Swans recorded at WWT Slimbridge, the Ouse and Nene Washes, and WWT Martin Mere/Ribble Estuary, 1984/85–2017/18.

### 3. Discussion

Overall, Bewick's swans wintering in the UK had a very poor breeding season in 2017 with just 5.7% young recorded which was below the previous ten-year average (11.6%) for sites in England.

The results from an international age count held in December 2017 support these findings. Preliminary results indicate that 8,383 Bewick's Swans were aged across six countries in northern Europe (including Britain) and, overall, 3.9% young was found amongst the flocks surveyed: compared with 8.2% in 2016 (W. Tijsen and J. Beekman pers. comm.). The mean brood size was 1.61 cygnets (in 109 broods aged): compared with 1.9 cygnets in 2016.

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 2017 averaged -2 °C which was considerably lower than the previous five-year averages for the area (of 3.7°C) (TuTiempo 2017). In the Pechora Delta, where a high concentration of Bewick's Swans breed every year, the first eggs were known to have hatched in early July (A. Eames pers comm) indicating that the breeding season was delayed by at least three weeks in 2017, most likely due to the harsh conditions encountered in the spring and early summer.

### 4. Acknowledgements

Special thanks to all observers who took part in the age counts. Thanks also to Dutch ornithologists Jan Beekman and Wim Tijsen for providing the international data.

### 5. References

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This report should be cited as:

WWT. 2018. *Goose & Swan Monitoring Programme: survey results 2017/18 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.



## Goose & Swan Monitoring