

# WWT/JNCC/SNH Goose & Swan Monitoring Programme survey results 2018/19

## Whooper Swan *Cygnus cygnus*

### 1. Abundance

#### WeBS / I-WeBS

The abundance of Whooper Swan in the UK and the Republic of Ireland in 2018/19 was monitored through the Wetland Bird Survey (WeBS) and the Irish Wetland Bird Survey (I-WeBS), respectively. Results from these schemes are presented in reports which are available via the schemes' websites.

#### International Swan Census

The seventh international census of the Icelandic Whooper Swan population took place in January 2015. The census was organised overall by the Wetlands International / IUCN SSC Swan Specialist Group, and coordinated in Britain, Ireland and Iceland by WWT in partnership with BirdWatch Ireland, the Irish Whooper Swan Study Group and colleagues in Iceland. The census is carried out every five years.

A total of 34,004 Whooper Swans was recorded, representing an increase of 16% since the previous census in 2010 (Figure 1). The results from this census have been presented in Hall *et al.* (2016).

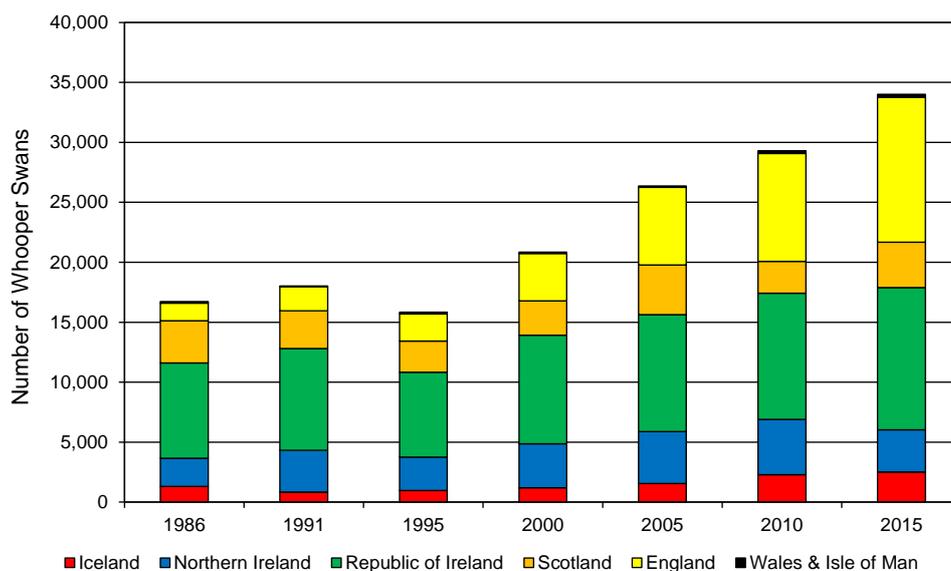


Figure 1: The number of Icelandic Whooper Swans recorded during the International Swan Census, 1986–2015. Note: Wales and the Isle of Man are combined as each holds less than 1% of the total population.

### 2. Breeding success

Whooper Swan age assessments were conducted in seven regions across Britain and Ireland during winter 2018/19 (Table 1). Age assessments were made in all regions in mid-winter (21–22 January 2019 in Britain and 10–20 January 2019 in Ireland), when the majority of families were likely to have arrived from Iceland to wintering sites (Rees *et al.* 1997). Regional variation in the percentage of young and mean brood size was assessed to determine any bias in the geographical distribution of family parties.

A total of 17,218 Whooper Swans was aged (50.6 % of the total population recorded at the last International Swan Census in 2015; Hall *et al.* 2016): 8,494 birds in England, 434 in Scotland, 2,304 in Northern Ireland and 5,986 in the Republic of Ireland (Table 1). Overall, 16.1% of birds were cygnets, this being marginally

higher than the previous ten-year mean for Whooper Swans wintering at sites in Britain and Ireland ( $15.9\% \pm 0.7$  SE for 2008/09–2017/18). The mean brood size for pairs with young was 1.9 cygnets.

Table 1: The percentage of young (%) and mean brood size of Whooper Swans during the 2018/19 winter (regions defined below).

Region	Total aged (number of young)	Percentage of young (%)	Number of broods (number of young)	Mean brood size
Northwest England	1,246 (264)	21.2	133 (269)	2
East Central England	7,248 (971)	13.4	549 (969)	1.8
Southwest Scotland	252 (47)	18.7	23 (47)	2
West Scotland	182 (36)	19.8	19 (36)	1.9
Southern Scotland	35 (22)	62.9	6 (17)	2.8
Northern Ireland	2,304 (468)	20.3	203 (423)	2.1
Republic of Ireland	5,986 (985)	16.5	457 (951)	2.1
<b>Overall</b>	<b>17,218 (2,771)</b>	<b>16.1</b>	<b>1,384 (2,695)</b>	<b>1.9</b>

Regions (counties from which data were received in 2018/19):

- Northwest England: Lancashire (WWT Martin Mere/Ribble Estuary)
- East Central England: Cambridgeshire and Norfolk (WWT Welney/Ouse Washes/Nene Washes)
- Southwest Scotland: Dumfries & Galloway
- West Scotland: Argyll and Bute
- Northern Ireland: Co. Antrim, Co. Armagh, Co. Down, Co. Fermanagh, Co. Londonderry, Co. Tyrone
- Republic of Ireland: Co. Cavan, Co. Clare, Co. Cork, Co. Donegal, Co. Galway, Co. Kerry, Co. Leitrim, Co. Limerick, Co. Mayo, Co. Meath, Co. Monaghan, Co. Offaly, Co. Roscommon, Co. Sligo, Co. Tipperary, Co. Waterford, Co. Wexford and Co. Wicklow

There was evidence of variation in the distribution of families between regions ( $X_{25} = 97.0$ ,  $P < 0.05$ ).

Highest breeding success was found for birds which subsequently wintered in Northwest England (21.2%), Northern Ireland (20.3 %) and West Scotland (19.8 %) (Table 1). Lowest breeding success was found for birds wintering in East Central England (13.4 %).

Overall, higher breeding success was found in northern regions (Scotland, Northwest England and Northern Ireland) compared to those wintering in the southeast (East Central England and the Republic of Ireland) (20.5 %,  $n = 3,984$  and 14.8 %,  $n = 13,234$ , respectively;  $X_{21} = 73.1$ ,  $P = < 0.05$ ). Regional variation in brood size was also evident, ranging from 1.8 cygnets per family in East Central England to 2.1 cygnets per family in Northern Ireland and the Republic of Ireland.

The mean percentage of young in flocks at and around WWT centres (*i.e.* WWT Martin Mere/Ribble Estuary, WWT Welney/Ouse Washes/Nene Washes and WWT Caerlaverock), where long-term data has been collected annually, was 14.7% ( $n = 8,746$ ), which was marginally higher than the previous five and ten-year means (2008/09–2017/18;  $14.1\% \pm 1.2$  and  $13.7\% \pm 0.7$ , respectively) (Figures 2 & 3). The mean brood size for these three regions was 1.8 cygnets per family, which was lower than the previous five and ten-year means ( $1.9 \pm 0.02$  and  $2.04 \pm 0.07$ , respectively).

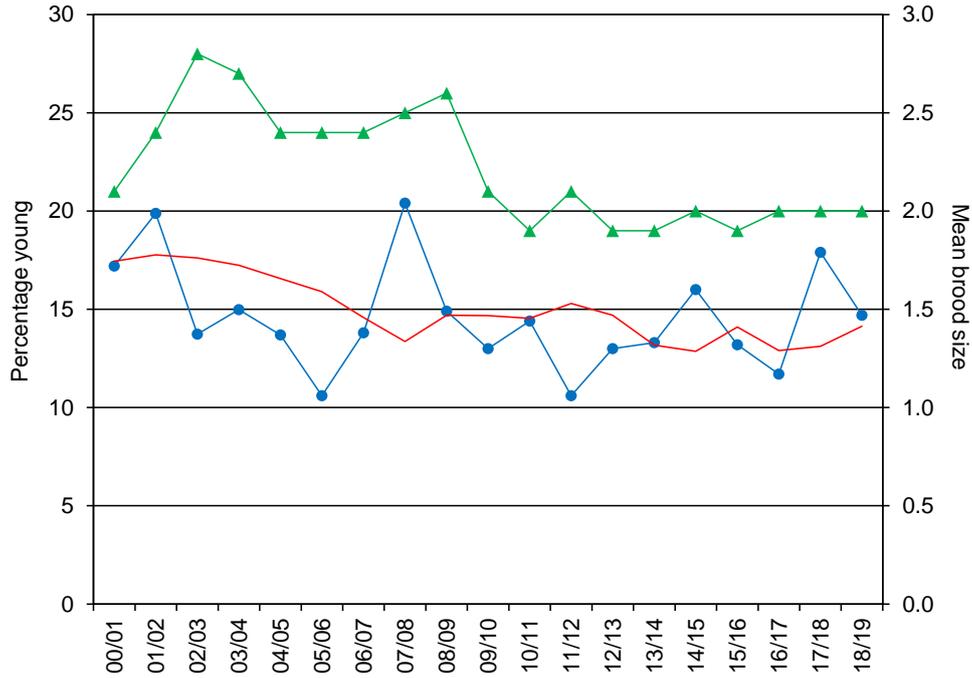


Figure 2: The percentage of young (blue circles), with the rolling five-year mean of % young (red line), and mean brood size (green triangles) of Whooper Swans recorded at WWT Welney/Ouse and Nene Washes, WWT Caerlaverock and WWT Martin Mere/Ribble Estuary, 2000/01–2018/2019. Five-year mean values for the percentage of young were calculated for the five years preceding the year in question (e.g. mean presented for 2018/19 is for 2013/14–2017/18).

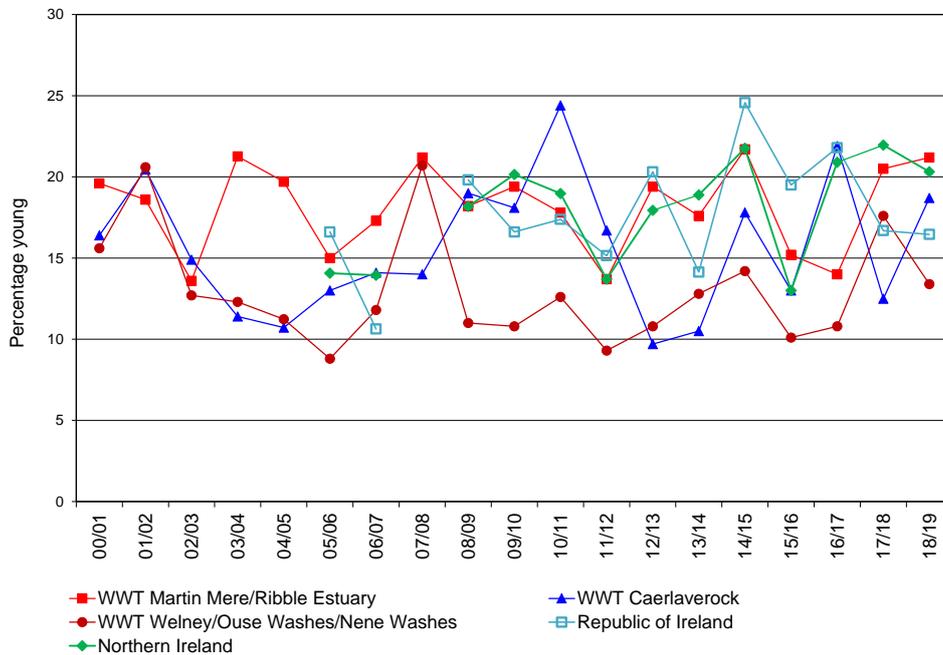


Figure 3: The percentage of young Whooper Swans recorded at WWT Welney/Ouse Washes/Nene Washes, WWT Caerlaverock, WWT Martin Mere/Ribble Estuary, Northern Ireland and the Republic of Ireland, 2000/01–2018/19.

### 3. Discussion

Overall, Icelandic Whooper Swans wintering in Britain and Ireland had an average breeding season in 2018 with 16.1% young recorded at sites. This was marginally higher than the average recorded over the previous ten years (15.9%) in all regions and also at WWT centres (14.7%).

The mean temperature (10.5°C) for Akureyri, a key breeding area, in June 2018, near equalled the mean June temperature recorded in the previous five years (2013–2017: 10.4°C; Tutiempo 2019) and no extreme conditions likely to have impacted on the swans breeding success were reported on the breeding grounds in late spring/early summer.

Higher breeding success found in northern compared with southern regions may reflect a general preference for Whooper Swan families to select wintering sites closest to their Icelandic breeding grounds (Rees *et al.* 1997).

### 4. Acknowledgements

Special thanks to all observers who took part in the productivity surveys. We are especially grateful to the Irish Whooper Swan Study Group who coordinate and conduct the annual productivity counts across Ireland and kindly provided their data for us to reproduce here.

### 5. References

Hall, C., O. Crowe., G. McElwaine., O. Einarsson., N. Calbrade & E. Rees. 2016. Population size and breeding success of the Icelandic Whooper Swan *Cygnus cygnus*: results of the 2015 international census. *Wildfowl* 66: 75–97.

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 [Accessed June 2019]: <https://en.tutiempo.net/climate/06-2016/ws-40630.html>

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## Goose & Swan Monitoring