WWT/JNCC/NatureScot Goose & Swan Monitoring Programme survey results 2020/21

Whooper Swan *Cygnus cygnus*

1. Abundance

WeBS/I-WeBS

The abundance of Whooper Swan in the UK and the Republic of Ireland in 2020/21 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 international census of the Iceland Whooper Swan population is carried out every five years. The census is organised overall by the 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 8th census was carried out in January 2020. A total of 43,255 Whooper Swans was recorded, representing an increase of 27% since the previous census in 2015 and is the highest population estimate for the Iceland Whooper Swan to date (Figure 1).

All countries except the Isle of Man saw an increase in wintering numbers. Overall, 36.8% of the population (15,927 birds) was recorded in England, 33.4% (14,467) in the Republic of Ireland, 11.7% (5,052) in Scotland, 10.7% (4,644) in Northern Ireland and 6.8% (2,923) in Iceland, with < 1% in each of Wales, the Isle of Man and the Channel Islands.

Despite numbers increasing in both the Republic of Ireland and Northern Ireland since 2015, the proportion of the total population in the Republic of Ireland was significantly lower in 2020 and no significant difference was detected for Northern Ireland, whereas proportions in England and Scotland were significantly higher in 2020 (Brides *et al.* In press).

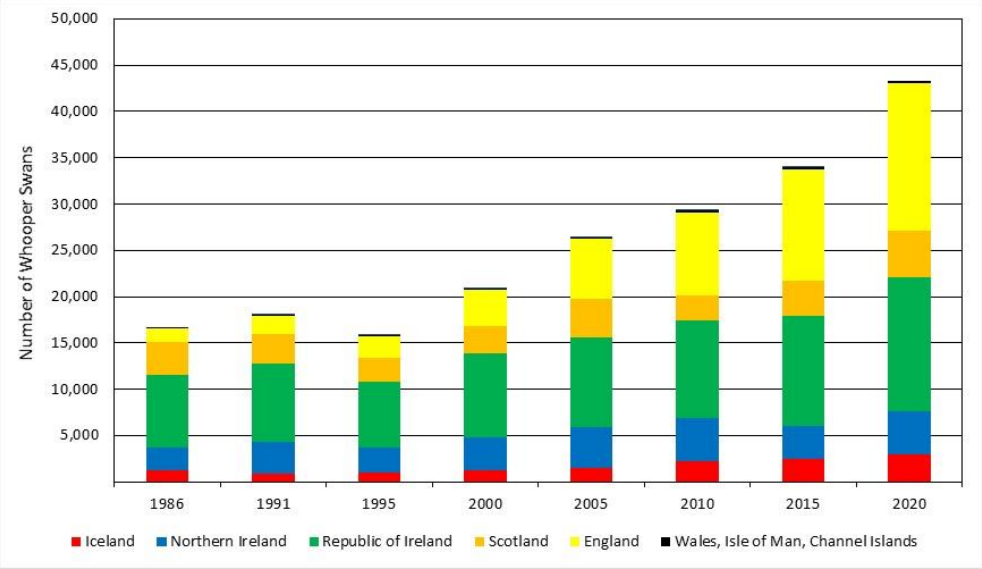

Figure 1. The number of Iceland Whooper Swans recorded during the International Swan Census, 1986-2015. Note: Wales, the Isle of Man and the Channel Islands are combined as each held less than 1% of the total population.

2. Breeding success

During 2020/21, Whooper Swan age assessments were conducted in five regions across Britain (Table 1). Age assessments were made in all regions in mid-winter (17–21 January 2021), when the majority of families were likely to have arrived from Iceland to wintering sites (Rees *et al.* 1997).

As a result of the Covid-19 restrictions in place during the 2020/21 season, surveys were not undertaken in Northern Ireland or the Republic of Ireland and coverage of flocks in East Central England (the key area for wintering Whooper Swans in Britain) was lower due to reduced counter availability.

A total of 4,327 Whooper Swans was aged (10% of the total population; Brides et al. In Press): 3,810 birds in England and 517 in Scotland (Table 1). Overall, 11.8% of birds were cygnets, this being lower than the previous ten-year mean for Whooper Swans wintering at sites in Britain and Ireland (16.0% ± 0.07 SE for 2010/11–2019/20). The mean brood size for pairs with young was 2.12 which was higher than the previous ten-year mean (2.01 ± 0.03 SE for 2010/11–2019/20).

Table 1. The percentage of young (%) and mean brood size of Whooper Swans during the 2020/21 winter (regions defined below).

Region	Total aged (number of young)	Percentage of young (%)	Number of broods (number of young)	Mean brood size
East Central England	2,939 (288)	9.8	52 (105)	2.02
Northwest England	871 (137)	15.7	15 (33)	2.20
South Scotland	278 (26)	9.4	8 (16)	2.00
Southwest Scotland	130 (30)	23.1	3 (7)	2.33
West Scotland	109 (28)	25.7	5 (15)	3.00
Total	**4,327 (509)**	**11.8**	**83 (176)**	**2.12**

Regions from which data were received in 2020/21:

- East Central England: Cambridgeshire and Norfolk (WWT Welney, Ouse Washes, Nene Washes).
- Northwest England: Lancashire (WWT Martin Mere, Ribble Estuary)
- South Scotland: Borders (Cauldshiels Loch, Synton Moss, Teviot Haughs)
- Southwest Scotland: Dumfries & Galloway (WWT Caerlaverock)
- West Scotland: Argyll and Bute (Isle of Tiree)

Age assessments of Whooper swans have been regularly undertaken at and around WWT centres (WWT Welney/Ouse and Nene Washes, WWT Martin Mere/Ribble Estuary and WWT Caerlaverock) since the early 1980s. In 2020/21, the mean percentage of young in flocks at these sites combined, was 11.5% (3,940 birds aged) (Figure 2), which is lower than the previous ten-year mean (2010/11–2019/20; 13.7% ± 0.68 SE); the mean brood size was 1.90 cygnets per family, this being slightly lower than the previous ten-year mean (2010/11–2019/20; 1.95 ± 0.02 SE). At the individual sites, the percentage of young was highest amongst flocks at WWT Caerlaverock (23.1%), with flocks at WWT Martin Mere/Ribble Estuary and WWT Welney/Ouse and Nene Washes holding 15.7% and 9.8% young, respectively (Figure 3).

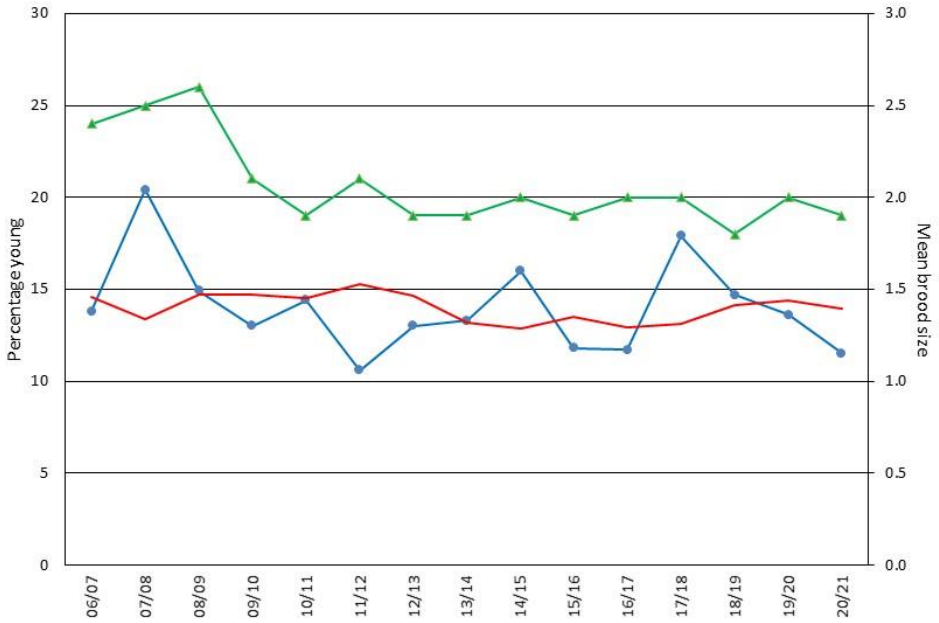

*Figure 2. The percentage (%) young (blue circles), with the rolling five-year mean (red line), and mean brood size (green triangles) combined of Whooper Swans recorded at WWT Welney/Ouse and Nene Washes, WWT Caerlaverock and WWT Martin Mere/Ribble Estuary, 2006/07–2020/21. Five-year mean values for the percentage of young were calculated for the five years preceding the year in question (*e.g. *mean presented for 2020/21 is for 2015/16–2019/20.*

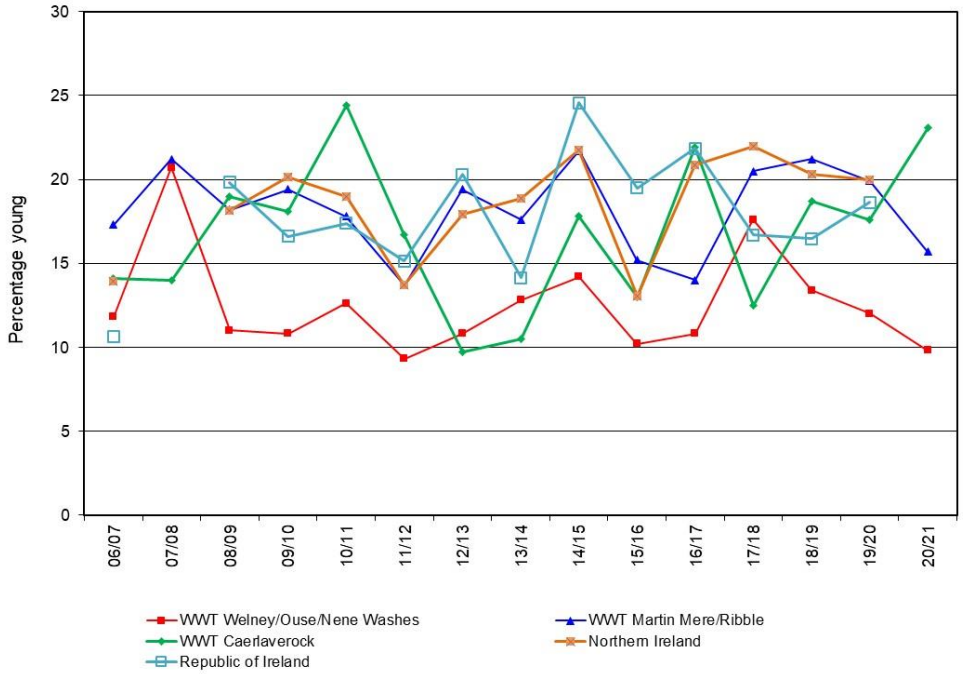

Figure 3. The percentage of young Whooper Swans recorded at WWT Martin Mere/Ribble Estuary, WWT Caerlaverock, WWT Welney/Ouse Washes and Nene Washes (Britain), Northern Ireland and the Republic of Ireland, 2006/07–2020/21. Note, no breeding success data were collected in Ireland during the 2020/21 season.

3. Discussion

In 2020/21, the overall percentage of young among Whooper Swans wintering in Britain was lower than the average (for Britain and Ireland) recorded over the previous ten years. Breeding success in summer 2020 may have been influenced by weather conditions encountered across Iceland in June: the mean temperature in the north of the country (10.7°C) was slightly higher than the five-year average (9.7°C) (TuTiempo 2021); however, wet weather affected many areas.

Results from the 2020 international Whooper Swan census produced the highest population estimate recorded to date for the Iceland population, continuing the upward trend that has been observed since the 1995 census. With each census, there has been a gradual increase in the proportion of the population recorded in Britain, whilst Ireland has seen a continued decline (although numbers in both countries have been increasing): in 2020, Britain held a larger proportion of the population than Ireland for the second time since the censuses began, previously having done so in 2015, although in both cases by just a small percentage.

Interestingly, the steady population growth in the Iceland population is similar to that seen for the North West Mainland European population which increased by 133% between 1995 and 2015 (Laubek et al. 2019; Lehikoinen 2020).

The complete results of the 2020 census will be published as Brides *et al.* 2021 (In Press).

4. Acknowledgements

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5. References

Brides, K., K.A. Wood, C. Hall, B. Burke, G. McElwaine, Ó. Einarsson, N. Calbrade, Ó. Hill, & E. Rees. In Press (2021). The Icelandic Whooper Swan *Cygnus cygnus* population: current status and long-term (1986–2020) trends in its numbers and distribution. *Wildfowl* 71: 000–000.

Hall, C., O. Crowe, G. McElwaine, Ó. 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.

Laubek, B., P. Clausen, L. Nilsson, J. Wahl, M. Wieloch, W. Meissner, P. Shimmings, B.H. Larsen, M. Hornman, T. Langendoen, A. Lehikoinen, L. Luigujõe, A. Stīpniece, S. Švažas, L. Sniauksta, V. Keller, C. Gaudard, K. Devos, Z. Musilová, N. Teufelbauer, E.C. Rees & A.D. Fox. 2019. Whooper Swan *Cygnus cygnus* January population censuses for Northwest Mainland Europe, 1995–2015. *Wildfowl* (Special Issue No. 5): 103–122.

Lehikoinen, A. 2020. Cygnus cygnus Whooper Swan. In V. Keller, S. Herrando, P. Voříšek, M. Franch, M. Kipson, P. Milanesi, D. Martí, M. Anton, A. Klvaňová, M.V. Kalyakin, H.-G. Bauer & R.P.B. Foppen (eds.), *European Breeding Bird Atlas 2: Distribution, Abundance and Change*, pp.102–103. European Bird Census Council & Lynx Edicions, Barcelona, Spain.

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. 2020. http://www.tutiempo.net/en/. Accessed June 2021.

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Goose & Swan Monitoring