

# WWT/JNCC/SNH Goose & Swan Monitoring Programme

## survey results 2012/13

### Greenland Barnacle Goose *Branta leucopsis*

## 1. Abundance

### International Census 2013

In March 2013, the most recent flyway-wide census of Greenland Barnacle Geese took place, including those parts of the winter range that need to be checked using a light aircraft. In Scotland, 226 sites were surveyed, including 190 islands by aerial census, and in Ireland, a further 72 sites were checked. Barnacle Geese were found at 38 sites in Scotland and 31 in Ireland (Figure 1). In total 80,670 birds were counted, a 14.4% increase on the last complete census conducted in 2008 (70,501 counted) (Figure 2). In Scotland, the total was 63,170, an increase of 8.4% since 2008. Islay was the most important site with 44,914 birds found there – an almost identical count to the one recorded there five years previously. In Ireland, 17,500 birds were counted, an increase of 43% since 2008.

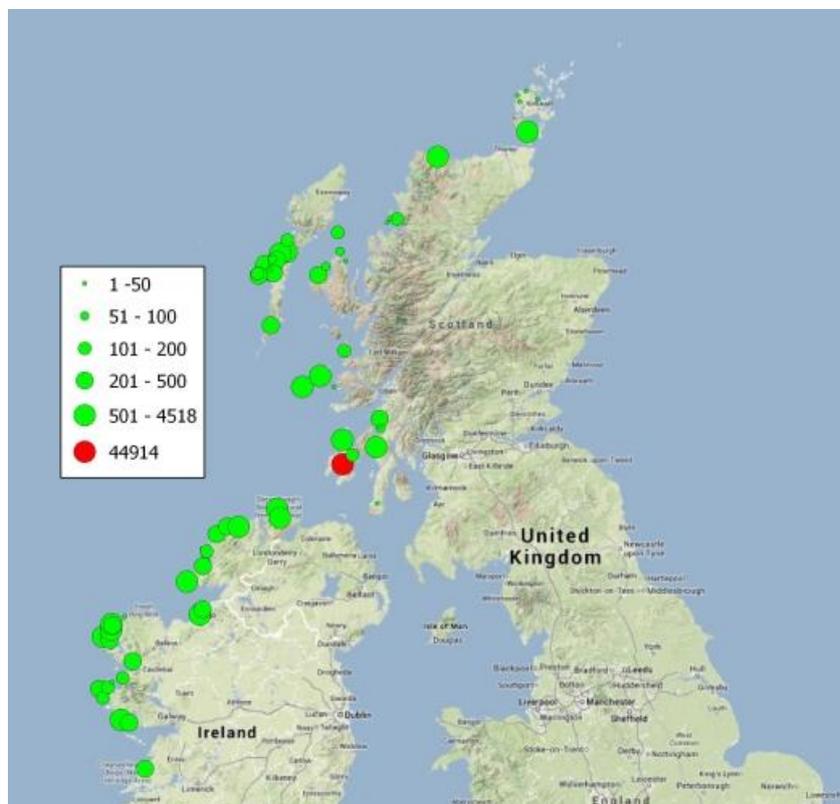


Figure 1. The distribution of Greenland Barnacle Geese recorded during the mid-March 2013 international census.

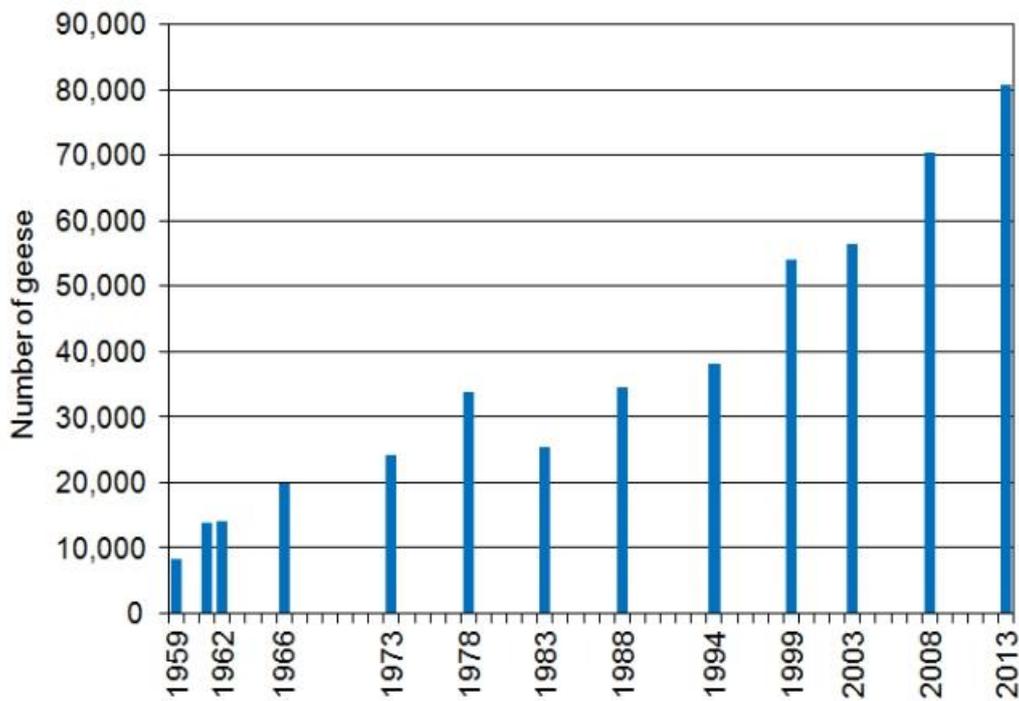


Figure 2. International census totals for Greenland Barnacle Geese, 1959–2013.

### Annual counts at key sites

Two comprehensive counts are organised on Islay, the most important wintering site for Greenland Barnacle Geese, by Scottish Natural Heritage (SNH) each winter. The Islay population size is estimated from the mean of the December and March counts (where emphasis is placed on obtaining greatest coordinated coverage) and in winter 2012/13, this figure was 46,903 (Figure 3).

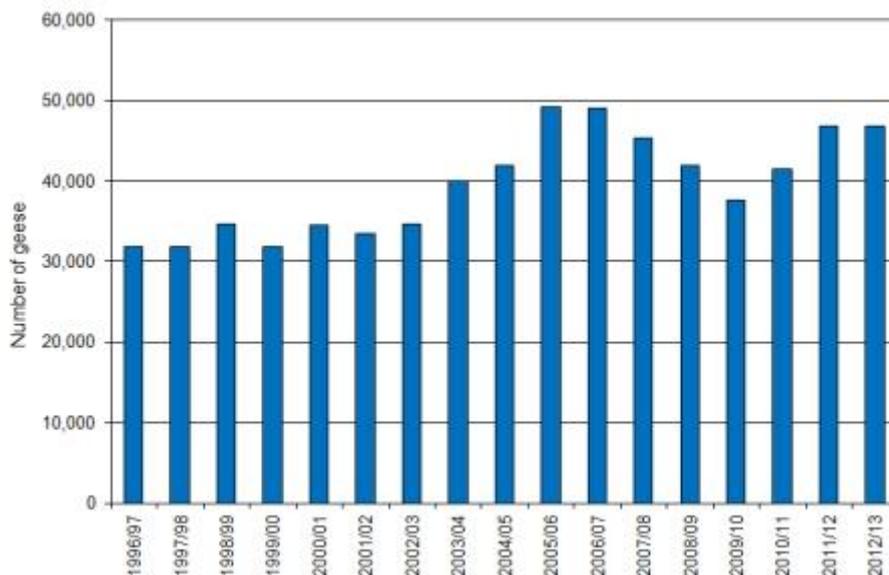


Figure 3. Adopted counts (mean of the two winter counts) of Greenland Barnacle Geese on Islay, 1996/97-2012/13.

Since complete census of the entire population is carried out only once every five years, tracking the trend at seven of the most important sites in Scotland (i.e. Uists – Outer Hebrides; Islay, Tiree, Coll, Colonsay/Oronsay and Danna – Inner Hebrides; and South Walls on Orkney) was, traditionally, thought to have reflected changes at the population level. However, the large difference in the rate of increase between Scotland (8.4%) and Ireland (43%) since the 2008 census suggests this may no longer be the case, and the annual counts in Scotland only allow us to track changes in the Scottish wintering population (which is approximately three quarters of the total population) (e.g. Figures 3 & 4).

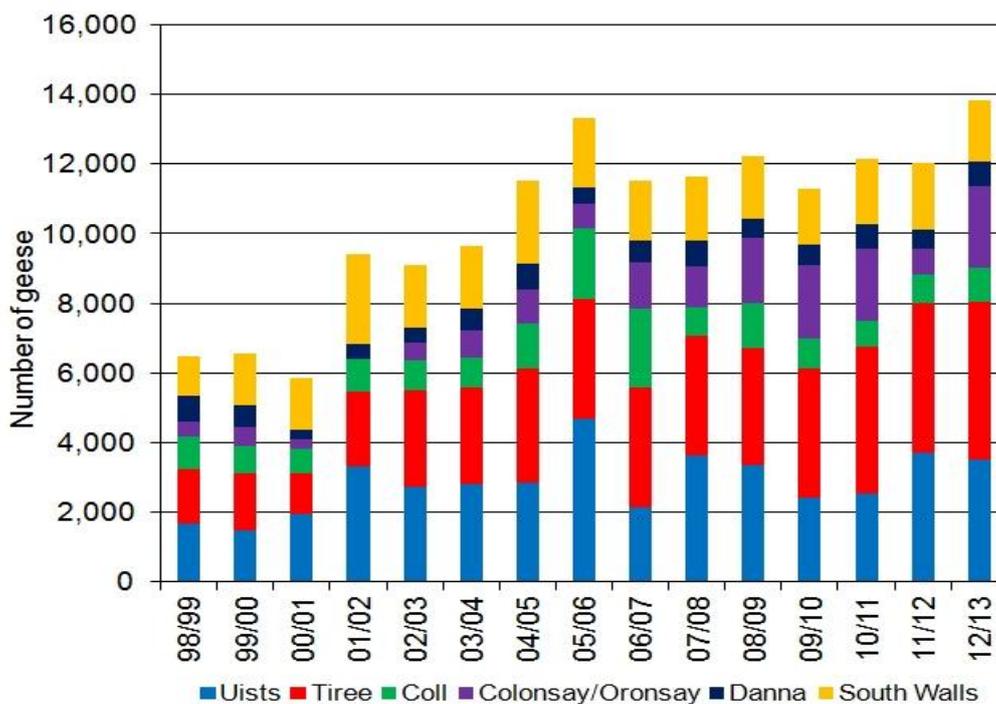


Figure 4. Winter peaks of Greenland Barnacle Geese at Uists, Tiree, Coll, Colonsay/Oronsay, Danna and South Walls, 1999/2000 – 2012/13.

## 2. Breeding success

Breeding success in the population was assessed on Islay and Tiree. The Islay sample was much the larger and sampled flocks held 7.0% young, with a mean brood size of 1.8 young (Table 1 & Figure 5). On Tiree, 400 birds were aged and these contained 20 (5%) young, with a mean brood size of 1.05 young (Table 1). For six out of the last eight years, breeding success has been below 10% young. However, despite the low annual productivity, the population has increased by 14.4% during the past five years.

Table 1. The proportion of young and mean brood size of Greenland Barnacle Geese during winter 2012/13.

Site	Number aged	Proportion of young (%)	Mean brood size
Islay	6,164	7.0	1.80
Tiree	400	5.0	1.05
<b>Overall</b>	<b>6,564</b>	<b>6.9</b>	<b>1.74</b>

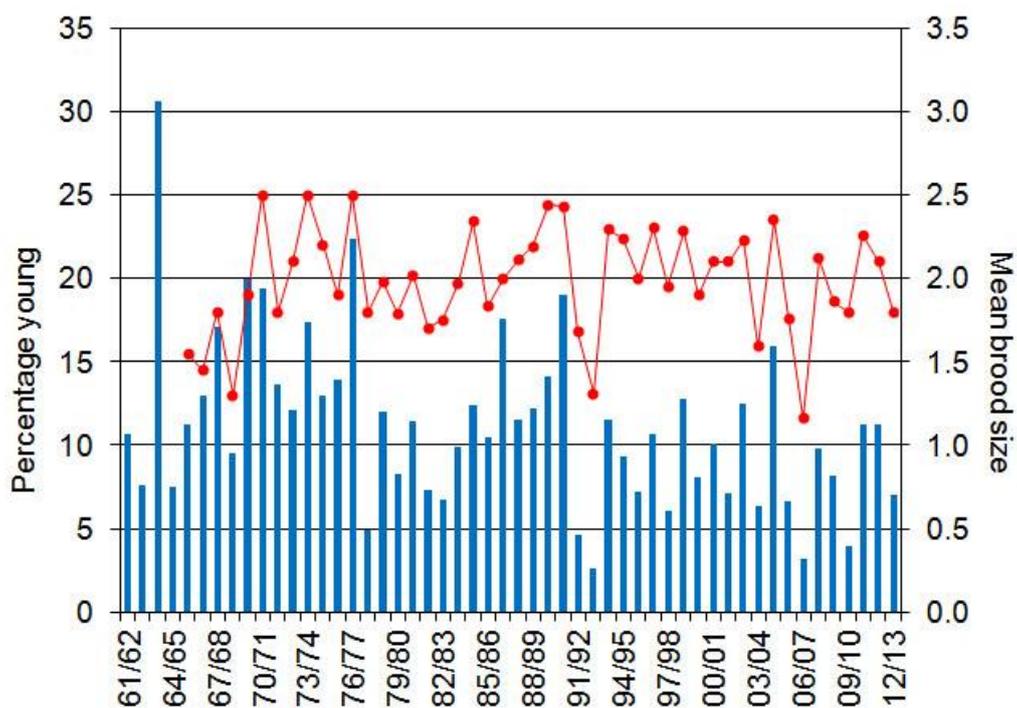


Figure 5. Percentage young (blue columns) and mean brood size (red circles) of Greenland Barnacle Goose on Islay (where data have been collected regularly), 1961/62–2012/13.

### 3. Discussion

Several key sites in Scotland hold the majority of Greenland Barnacle Geese with most of these wintering on Islay. Combined numbers at the key sites, including Islay, underwent a sustained increase up to 2006/07, however, counts in the following three winters indicate an apparent decrease in the size of the Scottish wintering population compared to the peak year, followed by a slight increase again in winters 2010/11 to 2012/13. Annual breeding success has been low in the last ten years (see below) and this is undoubtedly an important part of this decrease in abundance. In addition, *c.* 1,000–1,500 Greenland Barnacle Geese are shot in Iceland each year and licences to shoot up to 2,400 on Islay have been issued by the Scottish Government in recent years. It has been suggested that an increase in disturbance on Islay in recent years due, in part, to the lethal scaring programme may have led to a redistribution of Greenland Barnacle Geese within Scotland and possibly to Ireland. Compared to 2008, there were large increases in numbers in areas surrounding Islay; numbers on Tiree and Coll increased by 54% to 5,498; on North Uist (mainland), numbers increased by 128% to 3,523 and on Colonsay, numbers increased by 95% to 2,342. In addition, there were large increases in the number of geese recorded in north and west Ireland.

Results from age assessments conducted during 2012/13 on Islay (from where the largest sample is provided) show that the 2011 breeding season was low; the figure of 7.0% young recorded being similar to the previous ten-year mean of 8.9% ( $\pm 1.26$  SE). Since 2003, annual breeding success has been below 10% in seven out of the ten years. Mean brood size on Islay in 2012 was also average at 1.80 young per successful pair, and similar to the previous ten-year mean of 1.92 young ( $\pm 0.1$  SE).

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## Goose & Swan Monitoring